The Nature Conservancy
Hawai'i and Palmyra

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Testimony of The Nature Conservancy
Support for SCR 122
Committee on Water and Land
March 25, 2024, 1:00 p.m.
Conference Room 229 & Videoconference

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

The Nature Conservancy (TNC) **supports** SCR 122, requesting the Department of Land and Natural Resources to work with the National Oceanic and Atmospheric Administration and other experts to conduct a study on the population status of coral reef herbivores around the island of O'ahu and develop effective policies for substantially increasing those populations within the decade.

Ensuring that reefs have healthy herbivore populations, including uhu populations, is one of the most important and effective actions we can take to make reefs as resilient as possible in a changing world. Many stressors can kill corals and lead to the loss of the habitat they create, and the ability of reefs to recover from damage depends on the presence of an abundant, diverse population of herbivores that can keep seaweed populations in check, keeping reef area clear for new corals to settle and grow. Studies from around the world have demonstrated that resilience and recovery is enhanced by healthy herbivore populations. Recent research in Hawai'i has reinforced this finding, with a statewide analysis showing that reefs in West Hawai'i that had abundant herbivores recovering more quickly from the impacts of the 2015 mass coral bleaching.

There is very strong evidence, however, that herbivore populations in Hawai'i are depleted. Communities across the state have voiced concerns that many species of herbivores are not as abundant as they used to be, and in-water surveys conducted by many organizations across the state show that herbivore populations in many areas are far below what could and should be present on those reefs. A just-released statewide analysis revealed that in many places, especially where herbivore abundance is low, fishing-driven reductions in herbivore populations have led to less healthy reefs. A stock assessment conducted by fisheries scientists from the National Oceanic and Atmospheric Administration found that both the surgeonfish kala and **parrotfish uhu palukaluka**, are experiencing overfishing (i.e., fish are being removed faster than they are replenished).

All herbivores are important for the health of the reef, but **uhu palukaluka is the single most important species in Hawai'i** for scraping the reef free of all algae and other coral-competitors so that new corals can settle and grow to repair reefs.

For over 40 years, TNC has actively managed nature preserves throughout Hawai‘i. We currently manage 40,000 acres in preserves on Hawai‘i Island, Maui, Moloka‘i, Lāna‘i, and Kaua‘i. We also work with over 30 coastal communities through networks and partnerships to help protect and restore the nearshore reefs and fisheries of the main Hawaiian Islands. Over our decades of experience of forest management and marine conservation, TNC has implemented many conservation actions that promote biodiversity and it is these experiences which underpin our support for this measure.

We look forward to continuing to support efforts to collectively raising awareness about the importance of our State’s natural resources.

Mahalo for the opportunity to testify in support of SCR 122.

LATE

SR-104
Submitted on: 3/24/2024 9:41:09 PM
Testimony for WTL on 3/25/2024 1:00:00 PM

Submitted By	Organization	Testifier Position	Testify
William Mae-Huihui	Testifying for Miloli’i Makai Watch	Support	Written Testimony Only

Comments:

In the kumulipo ko'a was the first to be born signifying the importance of their birth and where the true foundation of life begins. Without our reef there is no home or food for nearshore fish.

Understanding the the life cycle and population density is a great way to better understand our marine resources and learn how to help recover stressed areas.

I support SR104

William Ma'e-Huihui

Miloli'i Makai Watch Coordinator.

Scientific Testimony in Support of Resolutions
HR69, HCR83, SR104, SCR122
Relating to Coral Reef Herbivores of the Island of O'ahu

Dr. Mark Hixon (Professor, University of Hawai'i at Mānoa, School of Life Sciences)

Dr. Alan Friedlander (Chief Scientist, Pristine Seas, National Geographic Society, and University of Hawai'i Institute of Marine Biology)

Dr. Randy Kosaki (Marine Ecologist, NOAA, Papahānaumokuākea Marine National Monument)

Dr. Kawika Winter (Director, He'eia National Estuarine Research Reserve, and University of Hawai'i Institute of Marine Biology)

testifying as private citizens

Aloha Hawai'i State Legislators hearing these resolutions:

We marine scientists with long experience studying coral reef herbivores in Hawai'i, especially on O'ahu, strongly support House Resolutions HR69 and HCR83 and Senate Resolutions SR104 and SCR122. The scientific evidence is overwhelming that herbivores are severely depleted around O'ahu, and that strong remedial action must be taken very soon if our living-coral reefs are to survive.

Coral reefs provide extremely valuable ecosystem goods and services for the people of Hawai'i, including habitat for nearshore fisheries, opportunities for tourism and other industries and activities, sand production for our beaches, and coastal protection from waves, storms, and erosion as sea level rises.[1] Reefs are also fundamental to the fabric of local communities, providing a source of food, materials, and cultural activities.[1] From a purely economic perspective, Hawai'i's coral reefs generate about $800 million per year in gross revenues.[2] One estimate of the total economic value of coral reefs in the main Hawaiian Islands is nearly $34 billion.[3]

Hawai'i's coral reefs, especially on O'ahu, have suffered tremendously from increasing population density and coastal development, resulting in damage by snorkelers and divers, anchor drags and vessel groundings, runoff and leaching of sediment and fertilizers from poor land use practices, urban runoff and leaching of cesspool sewage and other pollutants, plastic debris, invasive species, and overfishing near population centers.[4] More recently, ever-increasing ocean warming has caused coral bleaching events that have killed over 50% of the corals on some reefs.[1] **Ocean climate models predict that Hawai'i's coral reefs will bleach every year starting sometime between 2040 and 2045 (Fig. 1).**[5]

Maintenance and recovery of coral reefs requires abundant and diverse herbivores, which are fishes and invertebrates that eat seaweeds (technically, benthic algae).[6] Herbivores prevent seaweeds from outcompeting and replacing corals, especially following coral mortality events.[6] Where herbivores are depleted, seaweeds eventually proliferate, which prevents reef recovery and eventually resulting in coral death.[6] The major herbivores that clean dead reef surfaces so corals can flourish are parrotfishes (uhu), surgeonfishes (kala, kole, manini, and others), and chubs (nenue or enenue).[7]

Building on previous studies, [8] a recent peer-reviewed publication by Donovan et al. (2023)[9] documented that **herbivore abundance in all moku around O‘ahu is not only the lowest in the state, but also less than 5% of its potential compared to relatively unexploited Kaho‘olawe (Fig. 2).** The Division of Aquatic Resources (DAR) considers the status of both parrotfishes and surgeonfishes in Hawai‘i to be “unsustainable”.[10] **The depletion of herbivores leaves Hawai‘i’s coral reefs extremely vulnerable to severe degradation because once coral dies and seaweeds cover a reef, corals cannot recover.**[11]

A major contributor to herbivore depletion is illegal or otherwise unethical spearing of these fish at night, especially parrotfishes while these fish sleep helplessly under reef ledges, and especially around O‘ahu (Fig. 3).[12] Legal and otherwise ethical (pono) fishing of herbivores occurs during the day by subsistence, recreational, and commercial fisheries.[10]

Management agencies have long been concerned about herbivore depletion.[13] DAR proposed a substantial package of herbivore fishing rules in December 2022.[14] By the time the final rules package was passed by the Board of Land and Natural Resources in December 2023,[15] **explicit protections of uhu and kala had been weakened to point where we believe these new rules will be ineffective, especially around O‘ahu. Importantly, the new rules do not address the sale of fish from successful poaching and pillaging, which the Division of Conservation and Resources Enforcement (DOCARE) reports is widespread at night around O‘ahu**.[12]

House Resolutions HR69 and HCR83 and Senate Resolutions SR104 and SCR104 are positive steps toward saving the coral reefs of O‘ahu and eventually other islands by encouraging action to increase the abundance of herbivores before coral bleaching becomes an annual event, predicted between 2040 and 2045.[5] Note that past studies have shown it takes decades to recover severely depleted populations of coral reef fishes, including in Hawai‘i.[16] Fortunately, O‘ahu’s coral reefs have high recovery potential.[17] **Unfortunately, if we do not act soon, we believe that O‘ahu will lose most of our living-coral reefs in the coming decades.**

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[1] https://dlnr.hawaii.gov/dar/habitat/coral-reefs/

[2] Hawai‘i Coral Reef Initiative Research Program. 2004. Economic value of Hawai‘i’s nearshore reefs. https://www.hawaii.edu/ssri/cron/files/econ_brochure.pdf

[3] Bishop, R.C., D.J. Chapman, B.J. Kanninen, J.A. Krosnick, B. Leeworthy, and N. F. Meade. 2011. Total economic value for protecting and restoring Hawaiian coral reef ecosystems: final report. NOAA Office of National Marine Sanctuaries, Office of Response and Restoration, and Coral Reef Conservation. Silver Spring, MD. Program. NOAA Technical Memorandum CRCP 16. 406 pp. https://repository.library.noaa.gov/view/noaa/684

[4] Friedlander, A.M., G. Aeby, E. Brown, A. Clark, S. Coles, S. Dollar, C. Hunter, P. Jokiel, J. Smith, B. Walsh, I. Williams, and W. Wiltse. 2005. The State of Coral Reef Ecosystems of the Main Hawaiian Islands. pp. 222-269. In: J. Waddell (ed.), The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2005. NOAA Technical Memorandum NOS NCCOS 11. NOAA/NCCOS Center for Coastal

Monitoring and Assessment's Biogeography Team. Silver Spring, MD. 522 pp. https://library.oarcloud.noaa.gov/noaa_documents.lib/NOS/NCCOS/TM_NOS_NCCOS/nos_nccos_11.pdf

[5] van Hooidonk, R., J. Maynard, J. Tamelander, J. Gove, G. Ahmadia, L. Raymundo, G. Williams, S.F. Heron, and S. Planes. 2016. Local-scale projections of coral reef futures and implications of the Paris Agreement. Scientific Reports 6:39666. DOI 10.1038/srep39666. Supplemental material details projected bleaching in Hawai'i.

[6] Review by Hixon, M.A. 2015. Reef fishes, seaweeds, and corals: a complex triangle. Pages 195-215 in C. Birkeland, editor. Coral reefs in the Anthropocene. Springer, Dordrecht, Netherlands. Hawai'i case study: Gove, J.M., G J. Williams, J. Lecky, E. Brown, E. Conklin, C. Counsell, G. Davis, M.K. Donovan, K. Falinski, L. Kramer, K. Kozar, N. Li, J.A. Maynard, A. McCutcheon, S.A. McKenna, B.J. Neilson, A. Safaie, C. Teague, R. Whittier, and G.P. Asner. 2023. Coral reefs benefit from reduced land-sea impacts under ocean warming. Nature 621:536-542. See also https://dlnr.hawaii.gov/holomua/files/2021/11/Sustainable-Herbivore-Management-Plan-2021.pdf

[7] Randall, J.E. 2007. Reef and shore fishes of the Hawaiian Islands. Sea Grant College Program, University of Hawai'i. 546 pp

[8] Studies in Hawai'i: Edwards, C.B., A.M. Friedlander, A.G. Green, M.J. Hardt, E. Sala, H.P. Sweatman, I.D. Williams, B. Zgliczynski, S.A. Sandin, and J.E. Smith. 2014. Global assessment of the status of coral reef herbivorous fishes: evidence for fishing effects. Proceedings of the Royal Society B 281:20131835. Nadon, M.O. 2017. Stock assessment of the coral reef fishes of Hawai'i, 2016. NOAA Technical Memorandum NMFS-PIFSC 60. Friedlander, A.M., M.K. Donovan, K.A. Stamoulis, I.D. Williams, E.K. Brown, E.J. Conklin, E E. DeMartini, K.S. Rodgers, R.T. Sparks, and W.J. Walsh. 2018. Human induced gradients of reef fish declines in the Hawaiian Archipelago viewed through the lens of traditional management boundaries. Aquatic Conservation: Marine and Freshwater Ecosystems 28:146-157. Gorospe, K.D., M.J. Donahue, A. Heenan, J.M. Gove, I.D. Williams, and R.E. Brainard. 2018. Local biomass baselines and the recovery potential for Hawaiian coral reef fish communities. Frontiers in Marine Science 5:DOI 10.3389/fmars.2018.00162. Stamoulis, K.A., J.M.S. Delevaux, I.D. Williams, M. Poti, J. Lecky, B. Costa, M.S. Kendall, S.J. Pittman, M.K. Donovan, L.M. Wedding, and A.M. Friedlander. 2018. Seascape models reveal places to focus coastal fisheries management. Ecological Applications 28:910-925.

[9] Donovan, M.K., C.W.W. Counsell, M.J. Donahue, J. Lecky, L. Gajdzik, S.D. Marcoux, R. Sparks, and C. Teague. 2023. Evidence for managing herbivores for reef resilience. Proceedings of the Royal Society B 290:20232101.

[10] https://dlnr.hawaii.gov/holomua/files/2021/11/Sustainable-Herbivore-Management-Plan-2021.pdf

[11] Review by Williams, I.D., T.L. Kindinger, C.S. Couch, W.J. Walsh, D. Minton, and T.A. Oliver. 2019. Can herbivore management increase the persistence of Indo-Pacific coral reefs? Frontiers in Marine Science 6:doi 10.3389/fmars.2019.00557. Supplemental material focuses on Hawai'i.

[12] Recent examples: https://dlnr.hawaii.gov/blog/2023/11/08/nr23-192/, https://dlnr.hawaii.gov/blog/2023/05/16/nr23-91/, https://dlnr.hawaii.gov/blog/2022/10/10/nr22-150/, https://dlnr.hawaii.gov/blog/2021/10/24/nr21-188/, https://dlnr.hawaii.gov/blog/2020/09/18/nr20-144/, https://dlnr.hawaii.gov/blog/2020/08/18/nr20-121/, https://dlnr.hawaii.gov/blog/2024/03/06/nr24-23/

[13] WESPAC. 2008. Biology of parrotfish in Hawai'i. https://www.wpcouncil.org/coralreef/Hawaii%20Parrotfish_Jan%202008%20Final%20Report.pdf

[14] https://dlnr.hawaii.gov/wp-content/uploads/2022/12/F-5.pdf

[15] https://dlnr.hawaii.gov/wp-content/uploads/2023/12/F-5.pdf

[16] MacNeil, M. A., N. A. J. Graham, J. E. Cinner, S. K.Wilson, I. D.Williams, J. Maina, S. Newman, A. M. Friedlander, S. Jupiter, N. V. C. Polunin, and T. R. McClanahan. 2015. Recovery potential of the world's coral reef fishes. Nature 520:341-347. See also: Gorospe, K.D., M.J. Donahue, A. Heenan, J.M. Gove, I.D. Williams, and R.E. Brainard. 2018. Local biomass baselines and the recovery potential for Hawaiian coral reef fish communities. Frontiers in Marine Science 5:DOI 10.3389/fmars.2018.00162.

[17] Gorospe, K.D., M.J. Donahue, A. Heenan, J.M. Gove, I.D. Williams, and R.E. Brainard. 2018. Local biomass baselines and the recovery potential for Hawaiian coral reef fish communities. Frontiers in Marine Science 5:DOI 10.3389/fmars.2018.00162.

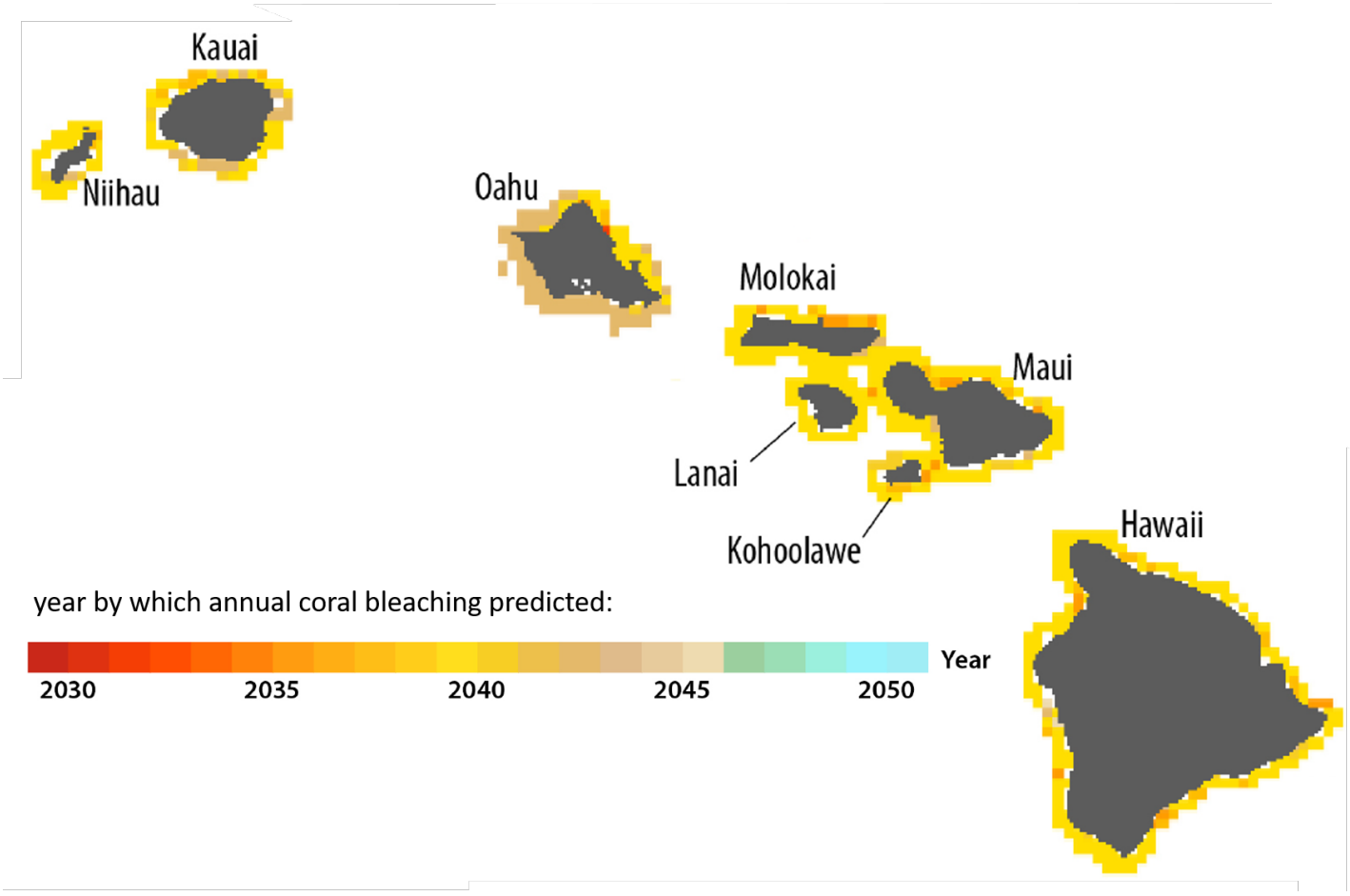

Fig. 1. Predicted year, ranging between 2040 and 2045, by which coral bleaching and death will become an annual event around the Main Hawaiian Islands because of intensifying ocean warming. Figure from van Hooidonk et al. (2016) Supplementary Information.[5]

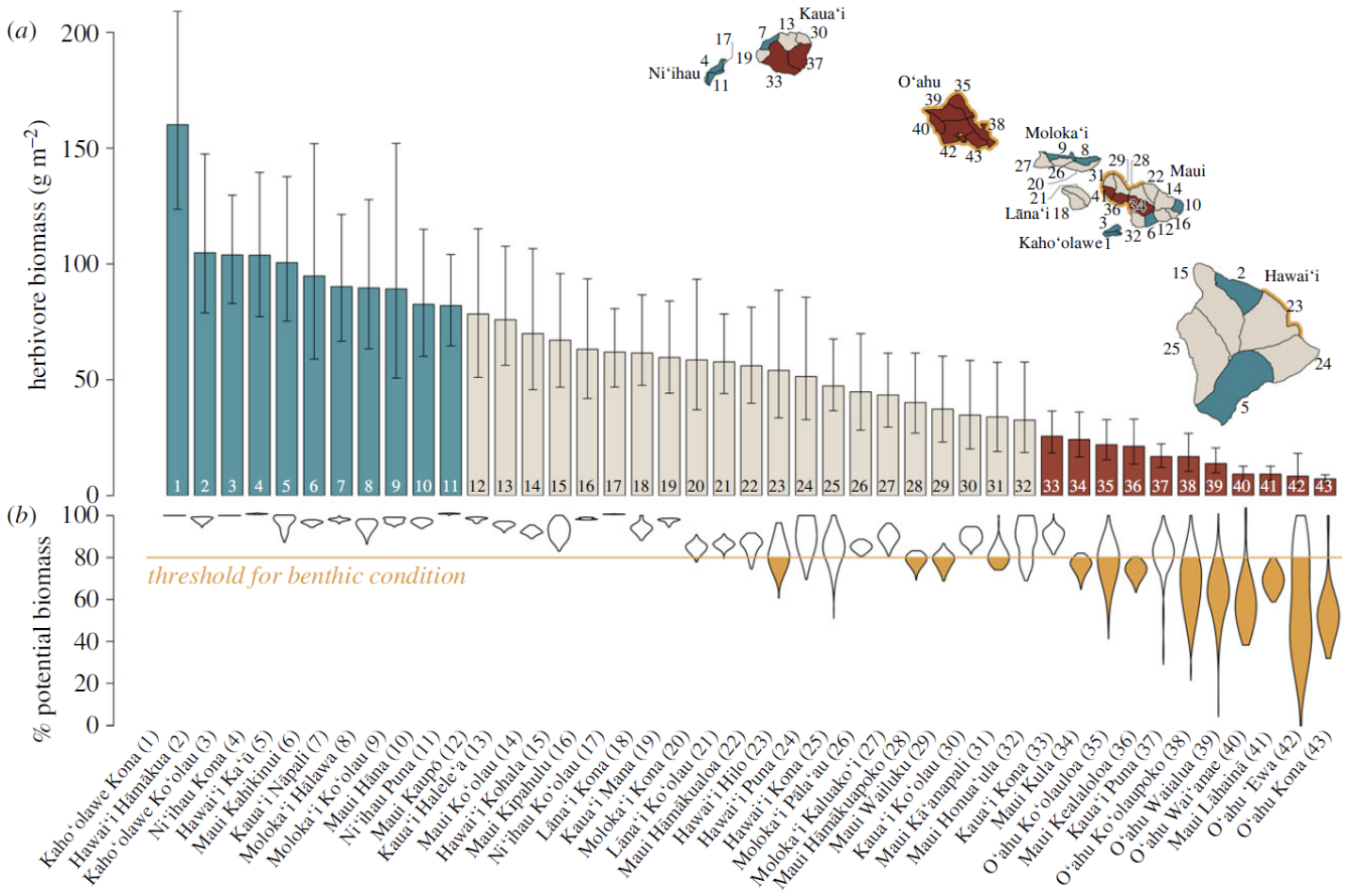

Fig. 2. (a) Estimated abundance of herbivorous fishes moku-by-moku in the Main Hawaiian Islands. Using Kahoʻolawe as a relatively unfished baseline (far left blue bar), it is obvious that Oʻahu is severely depleted (far right red bars), and most of Hawaiʻi is moderately depleted (gray bars). Numbers link moku identity (bottom of b) with bars and inset map. (b) Distribution of herbivore abundance in each moku, where biomass below 80% of its potential results in coral reef degradation. Note that Oʻahu has the most degraded reefs in Hawaiʻi. Figure from Donovan et al. (2023).[9]

Fig.3. Example of overexploitation of sleeping parrotfish (large red and blue fish) from a single night spearfishing. Photo courtesy of DAR.

House Speaker Saiki,
Senate President Kouchi, and
Members of the Hawai‘i State Legislature

Aloha Legislators,

I **strongly support House Resolutions HR69/HCR83 and Senate Resolutions SR104/SCR122** for desperately needed assistance in replenishing herbivorous fishes on O‘ahu’s coral reefs. The herbivorous fishes on the reefs of O‘ahu, as on reefs of the other Hawaiian Islands, are mostly parrotfishes (*uhu*), surgeonfishes (like *kala*, *kole*, *manini*), and chubs (*nenue*). These fishes clean reef surfaces, preventing seaweeds from smothering corals. Although fished-down throughout our islands, they are most depleted on O‘ahu. Recent scientific research has shown that the abundance of these fishes around the island of O‘ahu is less than 5% its potential (Donovan et al. 2023 *Transactions of the Royal Society B*). Many reefs around O‘ahu are already degraded from poor land management practices, coral bleaching from warm water episodes in recent years, and the ever-warming ocean is predicted to cause coral bleaching and death every year by 2040 (van Hooidonk et al. 2016 *Scientific Reports*). Measures of herbivore protection are desperately needed on O‘ahu. Please pass these resolution so that Hawai‘i can take steps to replenish these essential, natural lawnmowers of the reef before we exceed the tipping point for corals on our O‘ahu reefs.

Mahalo,

Edward E. DeMartini, Ph.D.
Kaneohe, Hawai‘i
Retired Fisheries Research Biologist, NOAA, NMFS (1990-2016) and
Adjunct Professor, HIMB, SOEST, University of Hawaii Manoa (2006-present)

Aloha Legislators,

I **strongly support HR69/HCR83/SR104/SCR122** to help save the saviors of O‘ahu’s coral reefs: herbivorous fishes. Parrotfishes (*uhu*), surgeonfishes (*kala*, *kole*, *manini*, etc.), chubs (*nenue*) and other fishes clean reef surfaces, preventing seaweeds from smothering corals. Recent scientific research has shown that the abundance of these fishes around the island of O‘ahu is less than 5% its potential (Donavan et al. 2023 *Transactions of the Royal Society B*). Many reefs around O‘ahu are already degraded from poor land management practices, and the ever-warming ocean is predicted to cause coral bleaching and death every year by 2040 (van Hooidonk et al. 2016 *Scientific Reports*). Please pass these resolutions so that Hawai‘i can take steps to replenish our natural lawnmowers of the reef before it is too late.

Mahalo,
Daniela Escontrela Dieguez
Honolulu, Hawai‘i

Aloha Legislators,

I was born and raised on Oahu and have lived in Hawai'i for all of my 76 years. I am a fisherman, ocean swimmer and a diver, and in my lifetime I have witnessed a clear decline in the number of uhu on Oahu reefs. Therefore I strongly support HR69/HCR83/SR104/SCR122.

I testified in support HB 1689 to protect uhu, and thereby save our coral reef saviors from further severe overexploitation. Parrotfishes (uhu) are a key species that keep our reef surfaces clean so new coral can flourish. Unfortunately, uhu are severely depleted and the new herbivore fishing rules approved by the Board of Land and Natural Resources are insufficient to replenish these reef saviors.

Importantly, protecting uhu is about much more than fishing and feeding people. They are the natural resilience mechanism needed for our reefs to recover and thrive. As saviors of our reefs, they are far more valuable to all the people of Hawai'i alive than as food. Healthy coral reefs protect our coasts from erosion, provide fisheries for many species (not just herbivores), and are valuable sources of recreation, tourism, and spiritual connection.

Our reefs are seriously threatened by poor water quality and increasingly severe coral bleaching. Without abundant and diverse populations of uhu, many of Oahu's reefs are now covered in seaweeds, which quickly smother corals unless they are removed by these natural lawnmowers.

Uhu replenishment is about the long-term perspective of those who care about the future of our valuable coral reefs vs. the short-term perspective of those who would continue to allow the depletion of our reef saviors. Ultimately, by helping to replenish uhu populations now, HR69/HCR83/SR104/SCR122 will help sustain our fisheries and other benefits provided by our coral reefs, far into the future.

Mahalo,
Rick Gaffney
Kailua Kona, Hawai'i

Global March for Elephants and Rhinos

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gmfer@gmfer.org | march4elesandrhinos@gmail.com | www.gmfer.org

Gold Transparency 2024 Candid.

Rosemary Alles
Honokaa HI
Friday, March 8th, 2024.

House Speaker Saiki,
Senate President Kouchi, and
Members of the Hawai'i State Legislature

Aloha Legislators,

Re: Support for House Resolution HR69/HCR83/SR104/SCR122

My name is Rosemary Alles, I am a long-time resident of the Big Island and am keenly interested in the protection of earth's remaining fauna and flora. I am also the president of the Global March for Elephants and Rhinos (GMFER); our work underlines the grave reality of the 6th mass extinction. Unlike previous mass extinctions, the 6th is driven by human activity. Every unique biosphere on earth -even Antarctica- is experiencing the impact of anthropogenic stresses.

Humans stand at a unique crossroads, one that calls on us to engage in right-action, pono-action. The once vibrant rainbow that mirrored the historic abundance of Hawai'i's jeweled species is no more, still, what remains of that rainbow must be protected.

I, along with GMFER's board and its members call on those who have capacity and the power, Hawai'i's Legislature, to ***act today*** to protect our island home's remaining coral reefs.

I strongly support HR69/HCR83/SR104/SCR122 to help save the saviors of O'ahu's coral reefs: herbivorous fishes. Parrotfishes (uhu), surgeonfishes (kala, kole, manini, etc.), chubs (nenue) and other fishes clean reef surfaces, preventing seaweeds from smothering corals. Recent scientific research has shown that the abundance of these fishes around the island of O'ahu is less than 5% its potential (Donovan et al. 2023 Transactions of the Royal Society B). Many reefs around O'ahu are already degraded from poor land management practices, and the ever-warming ocean is predicted to cause coral bleaching and death every year by 2040 (van Hooidonk et al. 2016 Scientific Reports). Please pass these resolutions so that Hawai'i can take steps to replenish our natural lawnmowers of the reef before it is too late.

Mahalo nui

Rosemary Alles,
Honokaa, HI.

The mission of the Global March for Elephants and Rhinos (#GMFER) is to #MarchAgainstExtinction and work with indigenous communities to influence governments and world leaders to STOP the poaching of elephants and rhinos. GMFER visions a livable earth for all living things by building human communities that see non-human communities as deserving of justice.

Melissa Pavlicek
1099 Alakea Street, Suite 2530
Honolulu, Hawaii 9813

March 8, 2024

HCR 83, HR 69, SR 104, and SCR122:

REQUESTING THE DEPARTMENT OF LAND AND NATURAL RESOURCES TO WORK WITH THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION AND OTHER EXPERTS TO CONDUCT A STUDY ON THE POPULATION STATUS OF CORAL REEF HERBIVORES AROUND THE ISLAND OF OAHU AND DEVELOP EFFECTIVE POLICIES FOR SUBSTANTIALLY INCREASING THOSE POPULATIONS WITHIN A DECADE.

Aloha kākou:

My name is Melissa Pavlicek and I serve as an attorney and small business owner based in Honolulu. I am also a parent who is personally concerned about the population status of coral reef herbivores. I care about the future of our oceans for my children, my community, and all of our future generations.

I understand that studies have indicated that herbivores which are necessary for reef health around the island of O‘ahu may comprise less than 5% of their potential. Through my work as an advocate at the state capitol, I have had the opportunity to learn about this important issue from Dr. Mark Hixon from the University of Hawaii who refers to herbivores as nature’s “lawnmowers.” I am especially concerned that a major contributor to reef herbivore depletion is illegal/unethical spearing of these fish at night.

The introduction of these resolutions could not be timelier. Pilina Kanaloa – Ocean Day at the State Capitol – will be held during the month of March to raise awareness about significant ocean policy issues, environmental sustainability, and natural resource protection and restoration.

Please support these measures.

House Speaker Saiki,
Senate President Kouchi, and
Members of the Hawaiʻi State Legislature
Aloha Legislators,

Writing as a member on behalf of the ‘Big Island Reef Keepers hui’, we support HR69/HCR83/SR104/SCR122 to help save all herbivorous fishes, and especially our ‘Uhu’ (Parrotfish). And though we feel the science and data has already clearly shown the importance of the *ecologic services* provided by these animals on our reefs, we think additional studies will only lead to the same conclusions as advocates for HB 1689 have similarly presented.

It’s difficult to understand a system that doesn’t properly accord the important field work of scientists, nor take to heart the ample body of indigenous wisdom that plans for long term sustainability - throughout generations and not just election cycles!

Please pass these resolutions now so that Hawaiʻi can take the necessary steps to replenish our natural ‘tools’ for reef recovery before it is too late.

R A Culbertson
Member, on behalf of the Big Island Reef Keepers hui
Honokaa

Matthew Gurewitsch – 3415 Kuaua Place – Kihei HI 96753

House Speaker Saiki,
Senate President Kouchi, and
Members of the Hawai'i State Legislature

Aloha Legislators,

Time is not on our side.

I write to express my whole-hearted support for HR69/HCR83 and similar Senate resolutions to save the herbivorous fish on O'ahu's coral reefs. These species—which include parrotfishes (*uhu*), surgeonfishes (*kala, kole, manini*, etc.), chubs (*nenue*) and more—are the indispensable safeguard for the health of the reefs. Their cleaning action prevents the buildup of seaweeds that otherwise smother the coral.

Mālama 'āina!

We pride ourselves in Hawaii on our stewardship of the environment. Yet poor land-management practices and a warming ocean have decimated the herbivorous fish stocks in the O'ahu water to just five percent (5%) of their potential (see Donahue et al. 2023 *Transactions of the Royal Society B*).

Five percent! This is as shameful as it is tragic. The situation demands our urgent attention—and our action before we've lost everything. Let's push back with every means at our disposal. Passing these resolutions is the necessary first step. Help the reef flourish!

Mahalo,

Matthew Gurewitsch
3/8/24

HR69/HCR83/SR104/SCR122

We strongly urge you to protect the future of O'ahu's herbivorous fishes and **support** HR69/HCR83/SR104/SCR122.

O'ahu's fragile reef ecosystems are already plagued with invasive species, poor land management practices, warmer waters, and increased acidity. Recent scientific research has shown that the abundance of herbivorous fishes around the island of O'ahu is less than 5% its potential (Donovan et al. 2023 Transactions of the Royal Society B). The reefs need these herbivorous species to play their critical ecological role more than ever and we hope you will **SUPPORT** these resolutions.

Natalie Parra
Miloli'i HI
Co-Founder at Keiko Conservation
Campaign Director at Oceanic Preservation Society

House Speaker Saiki,
Senate President Kouchi, and
Members of the Hawaiʻi State Legislature

Aloha Legislators,

As a life-long resident here in Hawaii, I **strongly support HR69/HCR83/SR104/SCR122** to help save the saviors of Oʻahu's coral reefs: herbivorous fishes. Parrotfishes (*uhu*), surgeonfishes (*kala*, *kole*, *manini*, etc.), chubs (*nenue*) and other fishes clean reef surfaces, preventing seaweeds from smothering corals. Recent scientific research has shown that the abundance of these fishes around the island of Oʻahu is less than 5% its potential (Donovan et al. 2023 *Transactions of the Royal Society B*). Many reefs around Oʻahu are already degraded from poor land management practices, and the ever-warming ocean is predicted to cause coral bleaching and death every year by 2040 (van Hooidonk et al. 2016 *Scientific Reports*). Please pass these resolutions so that Hawaiʻi can take steps to replenish our natural lawnmowers of the reef before it is too late.

Mahalo,
Dennis Mahaffay
Honolulu, Hawaiʻi

RE: HR69/HCR83/SR104/SCR122

To whom it may concern:

Please support HR69/HCR83/SR104/SCR122. This is a very important resolution. Our nearshore Natural Resources are sadly diminished for many reasons. It is time to protect the herbivores that help maintain an appropriate natural balance.

Mahalo for your support, Bob Leinau

Global March for Elephants and Rhinos

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Gold Transparency 2024 Candid.

House Speaker Saiki,
Senate President Kouchi, and
Members of the Hawai'i State Legislature

Hale Anderson
Honokaa ,HI

Friday, March 8th, 2024.

Aloha Legislators,
Re: Support for House Resolution HR69/HCR83/SR104/SCR122

I am keenly interested in the protection of earth's remaining fauna and flora. I am also the Vice president of the Global March for Elephants and Rhinos (GMFER); our work underlines the grave reality of the 6th mass extinction. Unlike previous mass extinctions, the 6th is driven by human activity. Every unique biosphere on earth -even Antarctica- is experiencing the impact of anthropogenic stresses.

Humans stand at a unique crossroads, one that calls on us to engage in right-action, pono-action. The once vibrant rainbow that mirrored the historic abundance of Hawai'i's jeweled species is no more, still, what remains of that rainbow must be protected.

I, along with GMFER's board and its members call on those who have capacity and the power, Hawai'i's Legislature, to act today to protect our island home's remaining coral reefs.

I strongly support resolutions HR69/HCR83/SR104/SCR122 to help save the saviors of O'ahu's coral reefs: herbivorous fishes. Parrotfishes (uhu), surgeonfishes (kala, kole, manini, etc.), chubs (nenue) and other fishes clean reef surfaces, preventing seaweeds from smothering corals. Recent scientific research has shown that the abundance of these fishes around the island of O'ahu is less than 5% its potential (Donovan et al. 2023 Transactions of the Royal Society B). Many reefs around O'ahu are already degraded from poor land management practices, and the ever-warming ocean is predicted to cause coral bleaching and death every year by 2040 (van Hooidonk et al. 2016 Scientific Reports). Please pass these resolutions so that Hawai'i can take steps to replenish our natural lawnmowers of the reef before it is too late.

Mahalo nui
Hale Anderson
Honokaa, HI

The mission of the Global March for Elephants and Rhinos (#GMFER) is to #MarchAgainstExtinction and work with indigenous communities to influence governments and world leaders to STOP the poaching of elephants and rhinos. GMFER visions a livable earth for all living things by building human communities that see non-human communities as deserving of justice.

House Speaker Saiki,
Senate President Kouchi, and
Members of the Hawai'i State Legislature

March 11, 2024

Aloha Legislators,

I **strongly support House Resolutions HR69/HCR83 and Senate Resolutions SR104/SCR122** to help save the sea gardeners of O'ahualua coral reefs. Uhu and other herbivores such as kala, kole, manini, and nenue, clean our coral reef surfaces, preventing seaweeds from smothering corals. Recent scientific research has shown that the abundance of these fishes around the island of O'ahu is less than 5% its potential (Donovan et al. 2023 *Transactions of the Royal Society B*). Many reefs around O'ahu are already degraded from poor land management practices, and the ever-warming ocean is predicted to cause coral bleaching and death every year by 2040 (van Hooidonk et al. 2016 *Scientific Reports*). Please pass these resolutions so that Hawai'i can take steps to replenish our natural lawnmowers of the reef before it is too late.

Mahalo,
U'ilani Naipo
Miloli'i Community-Based Subsistence Fishing Area Administrator
Miloli'i, Kapalilua, Hawai'i

March 13, 2024

House Speaker Saiki,
Senate President Kouchi, and
Members of the Hawai‘i Legislature

Re: **HR69/HCR83/SR104/SCR122**

Dear Legislators,

I moved to Maui from Oahu in 1987 but returned in 2018 – 2020 to study marine biology at Mānoa. It was shocking to see the condition of the Oahu nearshore at that time. The reefs off Waikiki were so eroded they looked like Swiss cheese and had only a few fishes. Even off Lanikai where there were some fishes, they were all very small. Maui reefs are also degraded from pollution and overfishing, but do not approach the devastation of Oahu.

We know we cannot avoid the threats from climate change: extreme weather events, warming seas, and ocean acidification. However, there are local harms that we can mitigate. Controlling non-point source pollution and curbing irresponsible fishing practices, such as night scuba fishing, would give the reefs a measure of resilience to meet global threats. More protected areas would give the reefs a chance to repopulate adjacent nearshore.

I urge you to take seriously the declining reefs of the main Hawai‘i islands and **support these resolutions** to protect them.

Diane E Shepherd, DVM
3329 Kehala Dr
Kihei, HI 96753
808-283-2024

House Speaker Saiki,
Senate President Kouchi, and
Members of the Hawai‘i State Legislature

Aloha Legislators,

I strongly support HR69/HCR83 and all Senate resolutions to protect herbivorous fishes of O’ahu’s coral reefs, including parrotfishes (uhu), surgeonfishes (kala, kole, manini), chubs (nenue). These **fishes keep our reefs alive and healthy** by feeding on the seaweeds and algae that smother corals if left to grow unchecked.

Corals are living animals. They create the structures of reefs. Healthy coral reefs sustain Hawai‘i by protecting coastlines from storms and erosion, providing jobs for our communities, offering tourism and recreational activity, and are sources of food and medicine for treating cancer. Our people depend on reefs for food, income, and protection. The reef ecosystems are culturally important to us.

But our reefs are severely threatened by human activity. Pollution. Poor waste management practices in costal zones. Sedimentation. Unsustainable fishing practices. Climate change that warms ocean temperatures and leads to ocean acidification. All these threats can stress corals and lead to coral bleaching and possible coral death. And coral bleaching and death are predicted to increase and occur every year by 2040 (van Hooidonk et al. 2016 Scientific Reports).

Sometimes coral damage is permanent. But **corals can recover from bleaching events and other stressors if conditions improve before they die. We can help our reefs survive by protecting the fish that protect the reefs.** It takes many years for these ecosystems to fully heal, so **we need to start now.**

Scientific research has shown that the abundance of herbivorous fishes around the island of O‘ahu is less than 5% its potential (Donovan et al. 2023 Transactions of the Royal Society B). **It can take up to a decade to recover depleted fish stock, so we need to start now.**

Please pass these resolutions so that Hawai‘i can take steps to replenish our natural lawnmowers of the reef before it is too late.

Mahalo,
Sarita Rich
Honolulu, Hawai‘i

House Speaker Saiki,
Senate President Kouchi, and
Members of the Hawai‘i State Legislature

Aloha Legislators,

I strongly support HR69/HCR83/SR104/SCR122 to protect the herbivores of coral reefs. Please save the parrotfishes (uhu), surgeonfishes (kala, kole, manini), chubs (nenue) because they keep our reefs healthy.

My name is Stella Rich and I'm a 3rd grader at Voyager Public Charter School. Today, I would like to speak up for the herbivores.

Herbivores keep our reefs healthy by eating algae that suffocate coral if left to grow out of control. Uhu also chomp dead coral with their beaks and teeth and then excrete clean sand. Some kinds of uhu produce up to 2000 pounds of sand individually, *every* year. Hawaii needs all of this sand.

I moved to Hawaii 5 years ago. Before I lived here I didn't know about herivores like parrotfish. I discovered them while doing research for a local art contest about acts of kindness. I found out how amazing parrotfish are and what they do for the environment and wanted to paint them because **fish deserve kindness too.**

Voting to save the herbivores is an important way to "malama ka aina." When your grandchildren ask if you took the chance to save the coral reefs by saving the fishes, that you will be able to say YES! Please say yes to choices that preserve both the land and our people so that keiki like me can grow up in a healthy Hawai‘i.

Mahalo,
Stella Rich
Honolulu, Hawai‘i

March 17, 2024

House Speaker Saiki,
Senate President Kouchi, and
Members of the Hawai‘i State Legislature

Aloha Legislators,

I **strongly support HR69/HCR83 and similar Senate resolutions SR104/SCR122** to help save the saviors of O‘ahu’s coral reefs: herbivorous fishes. Parrotfishes (*uhu*), surgeonfishes (*kala*, *kole*, *manini*, etc.), chubs (*nenue*) and other fishes clean reef surfaces, preventing seaweeds from smothering corals. Recent scientific research has shown that the abundance of these fishes around the island of O‘ahu is less than 5% its potential (Donovan et al. 2023 *Transactions of the Royal Society B*).

Many reefs around O‘ahu are already degraded from poor land management practices, and the ever-warming ocean is predicted to cause coral bleaching and death every year by 2040 (van Hooidonk et al. 2016 *Scientific Reports*). Please pass these resolutions so that Hawai‘i can take steps to replenish our natural lawnmowers of the reef before it is too late.

Mahalo,
Sherri Rigg
Honolulu, Hawai‘i

House Speaker Saiki,
Senate President Kouchi, and
Members of the Hawai‘i State Legislature

Aloha Legislators,

I strongly support HR69/HCR83/SR104/SCR122 to help conserve O‘ahu’s herbivorous fishes. Parrotfishes (*uhu*), surgeonfishes (*kala, kole, manini,* etc.), chubs (*nenue*) and other fishes clean reef surfaces, preventing invasive seaweeds from smothering corals. Our native *limu* are also being hurt by the invasive seaweeds and our herbivorous fishes are the answer to helping to bring our reefs back to their former abundance. Recent scientific research has shown that the abundance of these fishes around the island of O‘ahu is less than 5% its potential (Donovan et al. 2023 *Transactions of the Royal Society B*). Many reefs around O‘ahu are already degraded from poor land management practices, and the sedimentation and nutrient inputs that are flooding our reefs are helping the invasive algae grow prolifically. Please pass these resolutions so that Hawai‘i can take steps to replenish our natural lawnmowers of the reef before it is too late.

Mahalo,

James T. Fumo
Honolulu, Hawai‘i

College of Natural Sciences
School of Life Sciences

UNIVERSITY of HAWAI'I® MĀNOA

March 14, 2024

House Speaker Saiki,

Senate President Kouchi, and Members of the Hawai'i State Legislature

Aloha Legislators,

I strongly support HR69/HCR83 and similar Senate resolutions SR104/SCR122 to help save the saviors of O'ahu's coral reefs: herbivorous fishes. Parrotfishes (uhu), surgeonfishes (kala, kole, manini, etc.), chubs (nenue) and other fishes clean reef surfaces, preventing seaweeds from smothering corals.

Since 1977, I have spent thousands of hours underwater studying the behavior and habits of coral reef fishes in Hawai'i, including those on the Island of Oahu. At the beginning of that time, I personally observed very large parrotfishes feeding on bottom algae, reproducing on the reefs, and sleeping quietly in coral crevices at night along our north, west and south shores. Today it is a rare sight to see a large uhu or other herbivorous species, partially because they are the target of many spear and net fisher persons.

Recent scientific research has shown that the abundance of these fishes around the island of O'ahu is less than 5% its potential (Donovan et al. 2023 Transactions of the Royal Society B). Many reefs around O'ahu are already degraded from poor land management practices, and the ever-warming ocean is predicted to cause coral bleaching and death every year by 2040 (van Hooidonk et al. 2016 Scientific Reports). Please pass these resolutions so that Hawai'i can take steps to replenish our natural lawnmowers of the reef before it is too late.

Mahalo,

Timothy Tricas
Professor and Observer of these magnificent creatures

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LATE

SR-104
Submitted on: 3/25/2024 9:17:45 AM
Testimony for WTL on 3/25/2024 1:00:00 PM

Submitted By	Organization	Testifier Position	Testify
Uilani Naipo	Individual	Support	Written Testimony Only

Comments:

In strong SUPPORT of this resolution.

From the passing of DAR‘s herbivore rules package in which we do not have sufficient rules to protect our herbivores and coral reefs from further depletion and resilience, to the overwhelming testimony in our attempts to address that outcome in HB1689:

https://www.capitol.hawaii.gov/sessions/session2024/Testimony/HB1689_TESTIMONY_JHA_02-21-24_.PDF

we implore the passing of resolution to address the inadequate protection and the need to address the conditions of O‘ahu reefs.

Mahalo,

U‘ilani Naipo

Miloli‘i CBSFA Administrator