



UNIVERSITY OF HAWAII SYSTEM

‘ŌNAEHANA KULANUI O HAWAII

Legislative Testimony

Hō'ike Mana'o I Mua O Ka 'Aha'ōlelo

Testimony Presented Before the
House Committee on Energy & Environmental Protection
House Committee on Water & Land
Tuesday, February 13, 2024 at 9:05 a.m.

By

Darren T. Lerner, PhD

Director, University of Hawai'i (UH) Sea Grant College Program
School of Ocean and Earth Science and Technology

And

Thomas Giambelluca, PhD

Director, UH Water Resources Research Center

And

Michael Bruno, PhD

Provost

University of Hawai'i at Mānoa

HB 1691 – RELATING TO THE ENVIRONMENT

Chairs Lowen and Ichiyama, Vice Chairs Cochran and Poepoe, and Members of the Committees:

The University of Hawai'i Sea Grant College Program and UH Water Resources Research Center appreciate the positive intent behind HB 1691 while also identifying areas where **improvements can be made through suggested considerations or amendments.**

The impact of nutrient discharge from wastewater systems on coral reefs can be significant and long-lasting. Thus, implementing measures to mitigate excess nitrogen through denitrification is crucial for enhancing reef resilience, especially considering the ongoing impacts of climate change on coastal ecosystems. HB 1691 proposes requiring individual wastewater systems identified as high risk to nearshore waters to incorporate denitrification capacity.

However, we urge careful consideration regarding specific requirements outlined in the bill. The stipulation regarding elevation thresholds, particularly the 1500 ft elevation delineation, seems arbitrary and could inadvertently encompass a disproportionately large fraction of Onsite Sewage Disposal Systems (OSDS) in the state. Given that a significant portion of Hawai'i's population resides below this elevation, we recommend a more nuanced approach based on a scientifically sound methodology. Additionally, the current soil characteristic requirements lack clarity, potentially leading to inconsistent interpretation and implementation of the law.

Moreover, it's important to note that the majority of the State's shorelines are experiencing erosion, which may impact the viability of new, stationary, and costly systems within decades. While it's essential to mitigate harmful nutrients reaching shorelines from inadequate sewage treatment, implementing measures in this manner could add undesired complexity to sea-level rise-related management options, such as managed relocation.

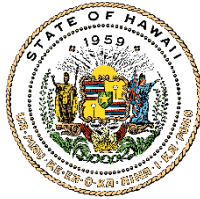
To address these concerns, we propose striking the criteria outlined in subsections 1) and 2), pertaining to shoreline location, elevation, substrate age, and soil characteristics. Instead, we recommend utilizing the "Priority 1 cesspools" identification from the University of Hawai'i's most recent cesspool hazard assessment and prioritization tool. While this tool was not specifically designed to identify areas that would benefit from additional denitrification capacity, it does consider fifteen site-specific risk factors that control the movement of pollution, reduce capacity, or otherwise affect the overall level of impact onsite sewage disposal has on the land and also the water quality nearby. These include proximity to drinking water sources, distance to streams and wetlands, and sea-level rise zones, among others. This adjustment maintains the bill's intent while addressing practical considerations.

However, we acknowledge that this tool only tangentially identifies areas that would benefit from additional denitrification. Therefore, we suggest recommending and potentially allocating funding to conduct a more focused analysis to develop evidence-based thresholds that strike a reasonable balance between cost and benefit. Such an analysis could involve compiling and consolidating percolation tests, estimating groundwater travel time, and other relevant factors.

Thank you for considering our input on this matter. We appreciate the opportunity to contribute to the legislative process.

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA



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

P.O. BOX 621
HONOLULU, HAWAII 96809

Testimony of
DAWN N. S. CHANG
Chairperson

Before the House Committees on
ENERGY & ENVIRONMENTAL PROTECTION
and
WATER & LAND

Tuesday, February 13, 2024
9:05 AM

State Capitol, VIA VIDEOCONFERENCE, Conference Room 325

In consideration of
HOUSE BILL 1691
RELATING TO THE ENVIRONMENT

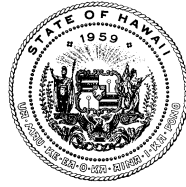
House Bill 1691 proposes to require individual wastewater systems that are near the shoreline, or likely to pollute groundwater, to include denitrification capacity. **The Department of Land and Natural Resources (Department) supports this bill.**

Clean nearshore waters are vital to both public health and the health of nearshore reefs and associated fisheries. Wastewater systems have the potential to pollute groundwater and nearshore waters by introducing elevated levels of contaminants such as nitrogen, phosphorus, and pathogens. A 2023 Hawai'i-based study¹ found that septic and cesspool pollution is a major driver of coral reef decline along the West Hawai'i coastline. When excess nutrients, such as nitrogen, from these wastewater systems enter nearshore waters, they stimulate the growth of algae, which can smother coral. Requiring denitrification capacity in wastewater systems that are near the shoreline or likely to pollute groundwater will reduce the amount of contaminants entering Hawai'i's nearshore waters and support more resilient coral reef ecosystems.

Mahalo for the opportunity to provide testimony in support of this measure.

¹ Gove, J.M., Williams, G.J., Lecky, J. *et al.* Coral reefs benefit from reduced land-sea impacts under ocean warming. *Nature* **621**, 536–542 (2023). <https://doi.org/10.1038/s41586-023-06394-w>

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT
RYAN K.P. KANAKA'OLE
FIRST DEPUTY
DEAN D. UYENO
ACTING DEPUTY DIRECTOR - WATER
AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE
MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES
ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS



STATE OF HAWAII
DEPARTMENT OF HEALTH
KA 'OIHANA OLAKINO
P. O. BOX 3378
HONOLULU, HI 96801-3378
doh.testimony@doh.hawaii.gov

In reply, please refer to:
File:

**Testimony COMMENTING on HB1691
RELATING TO CESSPOOLS**

REPRESENTATIVE NICOLE E. LOWEN, CHAIR
HOUSE COMMITTEE ON ENERGY & ENVIRONMENTAL PROTECTION

REPRESENTATIVE LINDA ICHIYAMA, CHAIR
HOUSE COMMITTEE ON WATER & LAND

Hearing Date: 2/13/2024

Room Number: 325

- 1 **Fiscal Implications:** None.
- 2 **Department Testimony:** The Department of Health (Department) acknowledges the intent of
3 this measure and offers comments. The Department concurs that decreasing or eliminating
4 pollutants and protecting nearshore waters and the coral reef systems are very important.
5 However, clarifications are required to define the minimum quantity of denitrification, provide
6 the basis for the 50-foot setback from the shoreline, provide the basis for the 1,500-feet above
7 sea level and below zone, identify who will determine whether the substrate is less than 5,000
8 years old, and identify who will determine whether the soil has low nutrient holding capacity,
9 low shrink and swell characteristics, and very fast water permeability based on the Hawai'i Soil
10 Atlas.
- 11 **Offered Amendments:** The Department respectfully suggests the following revisions to the
12 proposed HRS amendments. Addition appears as underlined and deletion appears as ~~strikeout~~.
- 13 SECTION 2, Page 2, lines 6-7: "(1) the wastewater system is located at or below one
14 thousand five hundred feet ~~below~~above sea level and:"
- 15 Thank you for the opportunity to testify.

COUNTY COUNCIL

Mel Rapozo, Chair
KipuKai Kualii, Vice Chair
Addison Bulosan
Bernard P. Carvalho, Jr.
Felicia Cowden
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OFFICE OF THE COUNTY CLERK

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Council Services Division
4396 Rice Street, Suite 209
Lihu'e, Kaua'i, Hawai'i 96766

February 1, 2024

**TESTIMONY OF ADDISON BULOSAN
COUNCILMEMBER, KAUAI COUNTY COUNCIL**

**ON
HB 2264, RELATING TO CESSPOOLS
AND
HB 1759, RELATING TO CESSPOOLS
AND
HB 1894, RELATING TO CESSPOOLS
AND
HB 1691, RELATING TO THE ENVIRONMENT
AND
HB 1892, RELATING TO CESSPOOLS
AND
HB 1893, RELATING TO CESSPOOL CONVERSIONS
AND
HB 2738, RELATING TO RENEWABLE ENERGY**
House Committee on Energy & Environmental Protection
House Committee on Water & Land
Tuesday, February 13, 2024
9:05 a.m.
Conference Room 325
Via Videoconference

Dear Chair Lowen, Chair Ichiyama, and Members of the Committees:

Thank you for this opportunity to provide testimony in SUPPORT of HB 2264, Relating to Cesspools, HB 1759, Relating to Cesspools, HB 1894, Relating to Cesspools, HB 1691, Relating to the Environment, HB 1892, Relating to Cesspools, HB 1893, Relating to Cesspool Conversions, and HB 2738, Relating to Renewable Energy. My testimony is submitted in my individual capacity as a member of the Kaua'i County Council.

I wholeheartedly support the intent of HB 2264, HB 1759, HB 1894, HB 1691, HB 1892, HB 1893, and HB 2738, which would greatly affect the Kaua'i community.

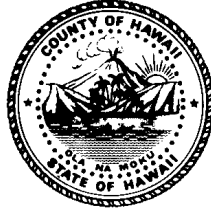
Thank you again for this opportunity to provide testimony in support of HB 2264, HB 1759, HB 1894, HB 1691, HB 1892, HB 1893, and HB 2738. Should you have any questions, please feel free to contact me or Council Services Staff at (808) 241-4188 or via email to cokcouncil@kauai.gov.

Sincerely,

ADDISON BULOSAN
Councilmember, Kaua'i County Council

AAO:ss

HEATHER L. KIMBALL
COUNCIL CHAIR
Council District 1 (North Hilo,
Hāmākua, and portion of Waimea)



Phone: (808) 961-8828
Fax: (808) 961-8912
Email: Heather.Kimball@hawaiicounty.gov

HAWAII COUNTY COUNCIL

25 Aupuni Street, Ste. 1402.
Hilo, Hawai'i 96720

February 12, 2024

House Committee on Energy and Environmental Protection
Honorable Representative Nicole E. Lowen, Chair

House Committee on Water and Land
Honorable Representative Linda Ichiyama, Chair

RE: Support for HB 1691

Dear Chair Lowen, Chair Ichiyama, and Members of the Committee on Energy and Environmental Protection and the Committee on Water and Land:

As the Chair of the Hawai'i County Council, I thank you for the opportunity to submit **testimony in SUPPORT of HB 1691, along with proposed amendments**, relating to the environment.

The study published in Nature in 2023 “Coral reefs benefit from reduced land–sea impacts under ocean warming”, clearly indicated that pollution from cesspools present a major threat to the wellbeing of our nearshore waters. Furthermore, it indicates that certain substrates septic leech fields are no better than cesspools as far as releasing contaminants into the environment. HB 1691 would require denitrification capacity for septic systems in these substrates, which would help reduce the nutrient released into nearshore waters.

In Miloli'i on Hawai'i Island, home of the last Hawaiian fishing village and adjacent to the community-based subsistence fishing area, the substrate is a porous, young lava flow. Just above this area is a 900-lot subdivision with approximately 200 lots developed. This is an example of an area where HB 1691 would apply. This bill gives us a chance to get ahead of the issue while this critical reef area is still in good condition.

I would like to suggest the following amendments:

Replace “denitrification capacity” with “a National Sanitation Foundation/American National Standards Institute Standard 245 class I aerobic unit”;

Increase the shoreline distance in (1) from fifty feet to two hundred feet; and

Correction from one thousand five hundred feet “below” sea level to “above” sea level in (2).

Chair Lowen
Chair Ichiyama
February 12, 2024
Page 2

I urge that this committee to continue to improve and move HB 1691 through the legislative process. I am certain we can come to a final bill that will be amenable to all involved. Thank you for the opportunity to submit this testimony. If you would like to discuss my knowledge of this matter further, please do not hesitate to contact me directly.

Sincerely,

A handwritten signature in cursive script that reads "Heather Kimball".

HEATHER L. KIMBALL

HB-1691

Submitted on: 2/11/2024 9:27:19 AM

Testimony for EEP on 2/13/2024 9:05:00 AM

Submitted By	Organization	Testifier Position	Testify
Greg Asner	Center for Global Discovery and Conservation Science	Support	Written Testimony Only

Comments:

On behalf of the Center for Global Discovery and Conservation Science based in Hilo, I submit this written testimony in strong support of HB1691 to require denitrification technology in new construction of homes and other buildings in rocky substrates. Repeated scientific studies report that septic and cesspool pollution is a major driver of coral reef decline along our coastlines, by stimulating algae growth that smothers coral. The most vulnerable areas for this type of pollution are reefs near to rocky coastal substrates that fail to retain effluent from either septic tanks and cesspools. This Bill will require that new buildings utilize denitrification technology in nearshore rocky substrates, thereby greatly reducing future wastewater runoff onto our reefs. This is a critical contribution to our collective effort to restore our coral reefs.

Mahalo for your attention,

Gregory P. Asner, PhD

Director

27 February 2023

Today, as the president of the non-profit Hawaii Marine Education and Research Center which was created to support communities and our natural resources, I submit testimony in strong support of HB1691 to require individual wastewater systems that are near the shoreline, or likely to pollute groundwater, to include denitrification capacity. Protecting our nearshore waters from land-based pollutants, particularly wastewater pollutants is critical for reef resilience, public health and community livelihoods. I support this bill for the following reasons:

- There is now ample data showing individual wastewater systems, both cesspools and septic tanks, with standard leach fields are harmful to the environment, particularly where substrates are porous.
- There is now ample evidence showing individual wastewater systems, both cesspools and septic tanks, with standard leach fields are having detrimental impacts on our coastal ecosystems and coral reefs.
- There is now ample evidence showing that coral reefs that are protected from land-based pollutants, especially wastewater pollutants, are better able to recover from ocean warming events.
- There is now ample data showing that when installed in individual wastewater systems, denitrification significantly reduces the amount of nitrogen leaving the system.

Respectfully,



Robin Martin PhD
President, Hawaii Marine Education and Research Center



To: The Honorable Chairs Nicole Lowen, and Linda Ichiyama, the Honorable Vice Chairs Elle Cochran and Mahina Poepoe, and Members of the Committees on Energy and Environmental Protection and Water and Land.

From: Hawai'i Reef and Ocean Coalition (by Ted Bohlen)

Re: Hearing **HB1691 RELATING TO THE ENVIRONMENT**

Hearing: Tuesday February 13, 2024 9:05 a.m.

Aloha Chairs Lowen and Ichiyama, Vice Chairs Cochran and Poepoe, and Members of the Committees on Energy and Environmental Protection and Water and Land:

The Hawai'i Reef and Ocean Coalition (HIROC) is a group of scientists, educators, filmmakers and environmental advocates who have been working since 2017 to protect Hawaii's coral reefs and ocean. Hawai'i has over 80,000 cesspools that discharge about 50 million gallons of raw sewage into our groundwater every day! HIROC is deeply concerned about the impact the state's cesspools have on Hawaii's marine life, especially coral reefs during this time of warming oceans. Corals can bleach and die in the presence of nutrients discharged through cesspools.

The Hawai'i Reef and Ocean Coalition STRONGLY SUPPORTS the intent of HB1691 and proposes amendments!

A bill is needed now because nutrient pollution from cesspools is harming the public health, the quality of Hawaii's waters and marine life, including especially coral reefs.

The release of **nutrients from cesspools causes algae growth, which can smother the precious coral reefs that are essential to protecting our shorelines, nurturing our fisheries and native species, and enabling our lucrative recreational and visitor economy.** A study reported in Nature Journal last August found that “Coral reef ecosystems are being fundamentally restructured by local human impacts and climate-driven marine heatwaves that trigger mass coral bleaching and mortality.” Coral reefs benefit from reduced land–sea impacts under ocean warming. Gove, J.M., Williams, G.J., Lecky, J. *et al. Nature* **621**, 536–542 (2023). <https://doi.org/10.1038/s41586-023-06394-w>. **The study found that coral reefs that are protected from land-based pollutants, especially wastewater pollutants, are better able to recover from ocean warming events.**

This bill recognizes that cesspools and some other individual wastewater systems are especially harmful in certain locations, such as near to the shoreline or likely to pollute groundwater. It would require denitrification capacity for individual wastewater systems located 50 feet or less from the shoreline or at or below 1,500 altitude if the substrate is less than 5,000 years old, and the soils have low nutrient holding capacity, low shrink and swell characteristics, and very fast permeability based on the Hawaii Soil Atlas. In those areas, individual wastewater systems should have denitrifying capacity.

The National Sanitation Foundation and the American National Standards Institute have a nationally used “NSF/ANSI 245” standard for on-site residential wastewater treatment. This standard requires 50% reduction for total nitrogen. It is widely used to meet the growing demand for nutrient reduction in coastal areas and sensitive environments.

The Hawai'i Reef and Ocean Coalition proposes a couple of amendments to the bill.

On page 2, lines 2-3, it should read “Each individual wastewater system **that is newly installed or modified** shall have denitrification capacity if:”

On page 2, lines 6-7, it should read “(2) The wastewater system is located at or below one thousand five hundred feet ~~above~~ **below** sea level and .:”

On page 2, insert beginning at line 14, “Denitrification capacity means being certified to meet the National Sanitation Foundation and the American National Standards Institute NSF/ANSI 245 standard for on-site residential wastewater treatment.”

Please pass this bill with those amendments!

Mahalo!

Hawai'i Reef and Ocean Coalition (by Ted Bohlen)



Feb. 12, 2024

In Support of **HB1691** Relating to the Environment
House Committees on Energy & Environmental Protection (EEP) and Water & Land (WAL)
Hearing on Feb. 13, 9:05am, Rm. 325

Aloha, Chairs Lowen & Ichimura, Vice-Chairs Cochran & Poepoe, and Committee Members:

On behalf of the non-profit WAI: Wastewater Alternatives & Innovations and the Cesspool Legislative Task Force, I am writing in **strong support of HB1691**. This bill would require individual wastewater systems (IWS) to do denitrification and reduce nutrient pollution in nearshore areas with pool soil health in order to protect declining coral reefs.

Hawaii has more than 83,000 cesspools across the state, discharging 52 million gallons of raw sewage each day into Hawaii's waters. That's similar to a massive sewage spill every day! Along with threats to public health and drinking water resources, new research in *Nature* shows that this polluted wastewater poses significant harm to coral reefs and the near-shore environment. The people of Hawaii need this law to protect coral reefs and make sure their wastewater systems aren't polluting the groundwater or nearby surface waters. This pollution threatens our environment, public health and our economy, damaging Hawaii's reputation as a world class destination with pristine waters.

As an amendment, we recommend that the denitrification follow the guidelines set by NSF 234, which requires that IWS do a minimum of 50% nitrogen reduction. This will be crucial in areas that are near the coast and where there is only porous volcanic rock and very little healthy soils. New research published last August in *Nature* shows that the wastewater nutrients from cesspools and septic systems near the coast are killing coral reefs. As I wrote in my article in [Hawaii Business Magazine](#), the decline of our coral reefs poses serious threats to Hawaii's near-shore ecosystem, the visitor industry, our economy and our natural protection against major storms and flooding events.

WAI is an environmental non-profit dedicated to protecting our drinking water, groundwater and near-shore ecosystems by reducing sewage pollution from cesspools and failing septic systems. Our goal is to help find more innovative, affordable, and eco-friendly solutions to wastewater management and help homeowners with the conversion process. Better sanitation systems reduce sewage and nutrient pollution and make properties more valuable, while also protecting public health and valuable natural resources like groundwater, streams, coral reefs and coastal areas.

Hawaii is struggling with serious sewage pollution problems, and the state has a mandate to make sure all cesspools are converted in the next three decades. This bill will provide widely available technical solutions that will protect our coral reefs, our groundwater and our nearshore ecosystems. Mahalo for your leadership on this issue and support of this bill.

Aloha,

Stuart Coleman

Stuart H. Coleman, Executive Director

HB-1691

Submitted on: 2/3/2024 5:48:17 PM

Testimony for EEP on 2/13/2024 9:05:00 AM

Submitted By	Organization	Testifier Position	Testify
jennifer valentine	Individual	Support	Written Testimony Only

Comments:

Mahalo for the opportunity to SUPPORT WITH AMENDMENTS HB2960 and HB2961. I appreciate that these measures reflect a continued commitment to pursue the full remediation of our lands and waters contaminated by the Navy’s Red Hill Bulk Fuel Storage Facility. However, I strongly urge you to amend these measures by: 1) Creating a single entity to work on the implementation of the Red Hill WAI Report’s goals, including through continuous public education and engagement. Creating two separate entities with overlapping roles only risks jurisdictional confusion and could lead to finger-pointing rather than problem-solving, as we have seen in other instances including throughout the Red Hill crisis; 2) Appropriately staffing this entity with individuals who have the requisite relevant expertise (in public relations, grant writing, remediation technology, community organizing, etc.) to meaningfully hold the Navy accountable and realize the WAI Report’s vision; and 3) Ensuring that this entity is adequately insulated from the military’s political influence over Hawai’i’s executive and legislative branches, which led to the governmental inaction that contributed to the poisoning of our ‘āina and wai. As it will take decades to fully remediate the contamination from the Red Hill facility, failing to do so will inevitably allow the Navy to exert its influence to excuse its inactions and ultimately evade the accountability these measures seek. Accordingly, any remediation entity should be governed by a board where the majority of its members are appointed by appropriately independent organizations with a vested interest in the integrity of our ‘āina and wai. For example, the Honolulu Board of Water Supply, the Association of Hawaiian Civic Clubs, the Office of Hawaiian Affairs, the University of Hawai’i Water Resources Research Center, and the Sierra Club of Hawai’i, and/or other appropriate entities, could and should be allowed to designate members of this board. Accordingly, I respectfully but strongly urge you to PASS these measures with the critical

HB-1691

Submitted on: 2/4/2024 5:05:05 PM

Testimony for EEP on 2/13/2024 9:05:00 AM

Submitted By	Organization	Testifier Position	Testify
Dorothy Norris	Individual	Support	Written Testimony Only

Comments:

Please consider this bill seriously since it has great repercussions on our nearshore coral communities. Nitrogen pollution is the prime factor in over enriching the groundwater that feeds our shoreline causing algae blooms which compete with the corals for sunlight and space.

HB-1691

Submitted on: 2/9/2024 3:00:15 PM

Testimony for EEP on 2/13/2024 9:05:00 AM

Submitted By	Organization	Testifier Position	Testify
Maki Morinoue	Individual	Support	Written Testimony Only

Comments:

Aloha

I Support HB1691.

So much Western scientific evidence supports ike Hawai'i's cesspool impact on our coral. We must take action to mitigate this.

Please keep passing this bill!

Mahalo

Maki Morinoue

Holualoa, HI

HB-1691

Submitted on: 2/9/2024 4:30:12 PM

Testimony for EEP on 2/13/2024 9:05:00 AM

Submitted By	Organization	Testifier Position	Testify
Robert Douglas	Individual	Support	Written Testimony Only

Comments:

I support HB1691.

A [landmark 2023 study](#) found that septic and cesspool pollution is a major driver of coral reef decline along the West Hawaii coastline, by stimulating algae growth that kills coral.

The most vulnerable areas for this type of pollution are reefs near to rocky coastal soils that fail to retain effluent from both septic tanks and cesspools.

This Bill will require that new buildings utilize denitrification technology in nearshore rocky soils, thereby greatly reducing future wastewater runoff onto our reefs.

This is a critical contribution to our collective effort to restore our coral reefs.

HB-1691

Submitted on: 2/10/2024 5:39:18 AM

Testimony for EEP on 2/13/2024 9:05:00 AM

Submitted By	Organization	Testifier Position	Testify
Motter Anne Snell	Individual	Support	Written Testimony Only

Comments:

I support HB 1691. Protect our ocean from harmful effects of nitrogen. Mahalo

HB-1691

Submitted on: 2/10/2024 9:04:27 AM

Testimony for EEP on 2/13/2024 9:05:00 AM

Submitted By	Organization	Testifier Position	Testify
Mike Nakachi	Moana Ohana LLC	Support	Written Testimony Only

Comments:

Aloha Mai kakou,

Please support HB1691. Times are changing, Infastructure is aging and more and more folks move to our Aina and things go on as the status quo... However, over the decdaes of time we have witnesssed the degradation of our natural resouces especially near shore resources and in the realm of Moananuiakea suffer over time. We need to do better and this bill is a step int he right direction to minimize our negative ground water impacts to Aina. Mahalo Chair Lowen for being a Champion for Moku O keawe and the Kekahawaiole region that you represent. We all humbly ask for other represnetatives of these committee's to all keep moving bills like this forward that can positivley impove our environment for all. Malama Pono, Mike Nakachi

HB-1691

Submitted on: 2/10/2024 9:28:57 AM

Testimony for EEP on 2/13/2024 9:05:00 AM

Submitted By	Organization	Testifier Position	Testify
Nancy Redfeather	Individual	Support	Written Testimony Only

Comments:

I am in full support of these measures. Mahalo

HB-1691

Submitted on: 2/10/2024 3:49:05 PM

Testimony for EEP on 2/13/2024 9:05:00 AM

Submitted By	Organization	Testifier Position	Testify
Steve Dennis	Individual	Support	Written Testimony Only

Comments:

Our behalf of our ohana including 6 grand-children, we strongly support the passage of HB 1691:

1. A [landmark 2023 study](#) found that septic and cesspool pollution is a major driver of coral reef decline along the West Hawaii coastline, by stimulating algae growth that smothers coral.
2. The most vulnerable areas for this type of pollution are reefs near to rocky coastal soils that fail to retain effluent from both septic tanks and cesspools.
3. This Bill will require that new buildings utilize denitrification technology in nearshore rocky soils, thereby greatly reducing future wastewater runoff onto our reefs.
4. This is a critical contribution to our collective effort to restore our coral reefs.

With respect,

Steve & Sona Dennis - Mauna Lani Terrace - Big Island of Hawaii

HB-1691

Submitted on: 2/10/2024 6:14:57 PM

Testimony for EEP on 2/13/2024 9:05:00 AM

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

Comments:

This Bill is a critical contribution to our collective effort to restore our coral reefs. It is our kuleana. As a resident and the executive director of a foundation that supports coral reef restoration, I believe this is an essential first step at preventing a wastewater disaster in the future. Requiring that new buildings utilize identification technology in nearshore rocky soils will greatly reduce future wastewater runoff onto our reefs. A landmark 2023 study found that septic and cesspool pollution is a major driver of coral reef decline along the West Hawaii coastline, by stimulating algae growth that smothers coral. What are we without healthy and nurtured reef systems, and healthy water? We're in trouble. I wholeheartedly support HB 1691. Mahalo nui,

Carrie Ostroski

HB-1691

Submitted on: 2/12/2024 10:49:04 AM

Testimony for EEP on 2/13/2024 9:05:00 AM

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

Comments:

I support this measure.

- U'ilani Naipo

HB-1691

Submitted on: 2/12/2024 11:00:14 AM

Testimony for EEP on 2/13/2024 9:05:00 AM

Submitted By	Organization	Testifier Position	Testify
Kelly Hondula	Individual	Support	Written Testimony Only

Comments:

As a resident of Hawaii County with more than 15 years of experience studying water quality and coastal ecosystems, I submit testimony in strong support of HB 1691 to require individual wastewater systems that are near the shoreline, or likely to pollute groundwater, to include denitrification capacity. There is now ample evidence documenting the harmful effects of effluent from both septic tanks and cesspools on coral reefs especially along the West Hawaii coastline. Denitrification technology in individual wastewater systems near the shoreline is critical for protecting coastal ecosystems from land-based pollution, and will therefore promote reef resilience, public health, and community livelihoods.

Kelly Hondula, PhD

HB-1691

Submitted on: 2/12/2024 2:30:39 PM

Testimony for EEP on 2/13/2024 9:05:00 AM

Submitted By	Organization	Testifier Position	Testify
Jasper Oshun	Individual	Support	Written Testimony Only

Comments:

I write in support of HB 1691. I am a hydrogeologist working at the Center for Global Discovery and Conservation Science based in Hilo. The west coast of Hawai'i Island is home to the largest contiguous coral reef in the Hawaiian archipelago. These coral reefs provide important habitat for aquatic species, are culturally important, and draw tourists to the Big Island from around the world. The coral reefs depend on inputs of fresh groundwater draining from a basal aquifer that is connected to the ocean through highly permeable volcanic rock (e.g., Paytan et al., 2006; Oki, 1999). The basal aquifer, on top of which the majority of the population on the west coast of Hawai'i resides, is within a 2-year groundwater travel time to the ocean (Whittier and El-Kadi et al., 2014). The basal aquifer is recharged primarily by the drainage of groundwater from high recharge areas on the higher elevation slopes of Kohala, Mauna Kea, Hualalai, and Mauna Loa (e.g., Fackrell et al., 2013). The substrate of the basal aquifer, as well as the substrate underlying much of the west coast of the Big Island, is young and highly permeable volcanic rock (e.g., Oki et al., 1999). Due to its relatively young age and position on the leeward side of the Big Island, the basaltic bedrock of the west coast of the Big Island has experienced little weathering, and no caprock exists as found elsewhere in the Hawaiian archipelago. Due to the limited weathering, there is no clay rich soil to filter effluent from on-site sewer disposal systems (OSDS). As an analogy, water draining from OSDS installed in west Hawai'i would drain through the basaltic bedrock much like water flowing through a stack of wooden blocks. OSDS are generally designed to have leach fields which filter effluent. Unfortunately, the substrate in west Hawai'i allows for effluent to flow rapidly and at high concentrations along fractures and between layers within the bedrock. The reef is linked to terrestrial sources of groundwater evidenced by a range of tracers, including elevated levels of nitrates, phosphates, and fecal bacteria coming directly from the many OSDS lacking adequate treatment systems (Street et al., 2008; Knee et al., 2008; Whittier and El Kadi, 2014; Abaya et al., 2018; Delevaux et al., 2018; Okuhata et al., 2022 and 2023). Nobody wants to swim or recreate in ocean water with elevated levels of fecal bacteria. Furthermore, we know the corals up and down the west coast of Hawai'i are more resilient to extreme ocean temperatures (which are predicted to be more common in the future) when the influx of land-based pollutants is limited or non-existent (Gove et al., 2023). In order to protect one of Hawai'i's most treasured natural, cultural, and economic resources for future generations of Hawaiians and visitors, I recommend the state adopt HB 1691 in order to limit the flux of harmful effluent to coral reef habitat.

-Jasper Oshun

PhD, hydrogeology

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Submitted on: 2/12/2024 5:51:32 PM

Testimony for EEP on 2/13/2024 9:05:00 AM

Submitted By	Organization	Testifier Position	Testify
Lisen	Individual	Support	Written Testimony Only

Comments:

Please pass this legislation to protect our coral reefs. I have been swimming off the coast of Puako for many years and have witnessed the devastating deterioration of the reef and the reduction of fish. Any legislation that aims to reduce pollution and help the reef is crucial.

HB-1691

Submitted on: 2/13/2024 8:25:11 AM

Testimony for EEP on 2/13/2024 9:05:00 AM

Submitted By	Organization	Testifier Position	Testify
Kater	Individual	Support	Written Testimony Only

Comments:

Aloha,

As a long term West Hawai'i, Big Island resident, mother, marine science educator, and lover of coral reefs I am writing to you in support of HB 1691. It is far time we act now and not later for the future of our greatest resource in the islands, the coral reefs.

I believe that anything we can do to help support the health and vitality of our coral reefs needs to be done. I recognize that like all new programs there will be hurdles and obstacles to overcome but by passing this bill we (the collective) are starting in the right direction.

Please support HB 1691.

Kater Hiney