JOSH GREEN, M.D.
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STATE OF HAWAIʻI | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA ʻOIHANA KUMUWAIWAI ʻĀINA

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CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RYAN K.P. KANAKAʻOLE
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CIARA W.K. KAHAHANE
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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

Testimony of
DAWN N. S. CHANG
Chairperson

Before the House Committee on
AGRICULTURE & FOOD SYSTEMS

Wednesday, February 12, 2025
9:30 AM
State Capitol, VIA VIDEOCONFERENCE, Conference Room 325

In consideration of
HOUSE BILL 365
RELATING TO AQUACULTURE

House Bill 365 proposes to prohibit the aquaculture of octopus for human consumption. **The Department of Land and Natural Resources (Department) acknowledges the intent of this bill and provides the following comments.**

Octopus aquaculture:
Food produced for human consumption through aquaculture has increased from around 110 million tonnes per year in 2000 to approximately 158 million tonnes per year by 2020 (FAO 2022). Demand for food produced for human consumption is likely to continue to rise as populations increase. Octopuses appear to be ideal candidates for aquaculture because their popularity as menu items has increased (FAO 2022) and they are short lived and produce many offspring. However, it is presently difficult to raise octopuses solely in an aquaculture setting due to challenges in closing the lifecycle. Only one species (*Octopus vulgaris*) has been successfully cultured from eggs to adulthood.

There is very little information on octopus aquaculture for human consumption since there is currently only one facility operating in the world that purportedly has fully completed the life cycle of *Octopus vulgaris* (Canary Islands, Spain). One location in Mexico raises *Octopus maya* species, but they do not breed them in captivity and instead rely on wild populations for the brood stock. Therefore, these are not technically produced through a closed aquaculture system.

Comments on ethical treatment of octopuses:
No current guidelines exist for the treatment of cephalopods in aquaculture, though there are many academic reports on the care and welfare of cephalopods in research and permits are required for research internationally (Carere and Mather, 2019; Ponte et al, 2019; Fiorito et al, 2015).

Octopuses are mostly solitary and often cannibalistic (Hernandez-Urcera et al 2019), so if/when octopus aquaculture for human consumption occurs, appropriate holding tanks would need to be considered. As with any aquaculture operation, care would need to be taken to prevent disease, and identification of welfare biomarkers would need to be established.

Numerous research papers on cephalopod cognition and the ability to experience pain exist in the scientific literature (Crook, 2021; Mather, 2022; Alupay et al, 2014). This has led to questions about the ethics surrounding octopus aquaculture. These questions also apply to any animal that is being cultivated for human consumption.

Octopuses are carnivorous and therefore would require some type of fish or crustacean feed in an aquaculture setting. This is the same with other carnivorous species in aquaculture (tuna, salmon, trout, etc.). Some argue that by feeding octopuses protein, this is effectively removing other possible food resources for humans, thus canceling out the benefits of the aquaculture.

Comments on octopus life cycle:
The day octopus (*Octopus cyanea*) and the night octopus (*Octopus ornatus*) are the most commonly eaten octopus species in Hawai‘i. Both species have pelagic paralarvae (the larvae produced by octopuses) which are particularly challenging to grow to adult phase in captivity. Thus far, there have been no successful attempts at closing the life cycle in captivity for either species. The possibility of octopus aquaculture of these species is not presently feasible.

Conclusions:
The question of octopus aquaculture for human consumption is extremely complicated. Currently, no aquaculture of octopuses is occurring in the United States, but that does not mean that it will not happen in the future. If/When octopus aquaculture becomes possible, it warrants further conversation with managers and researchers to ensure appropriate ethical guidelines are considered.

Mahalo for the opportunity to provide comments on this measure.

JOSH GREEN, M.D.
Governor

SYLVIA LUKE
Lt. Governor

SHARON HURD
Chairperson, Board of Agriculture

DEAN M. MATSUKAWA
Deputy to the Chairperson

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TESTIMONY OF SHARON HURD
CHAIRPERSON, BOARD OF AGRICULTURE

BEFORE THE HOUSE COMMITTEE ON AGRICULTURE & FOOD SYSTEMS

FEBRUARY 12, 2025
9:30 AM
CONFERENCE ROOM 325

HOUSE BILL NO. 365
RELATING TO AQUACULTURE

Chair Kahaloa, Vice Chair Kusch, and Members of the Committee:

Thank you for the opportunity to testify on House Bill 365. HB365 prohibits certain octopus aquaculture. The Department offers comments.

A ban on any aquaculture activity that includes the propagation, cultivation, maintenance, and harvesting of any species of octopus for the purpose of human consumption, based on disease transmission and welfare concerns, may have a negative economic impact on a growing industry. The Department is tasked to double food production, however, protecting the biosecurity of the food systems is also a concern.

Disease transmission risk can be reduced through implementing strict biosecurity measures, proper water management procedures, and proactive health monitoring and disease prevention protocols. This bill prompts recognition of the complex challenges in balancing aquatic species welfare with economic, scientific, and practical considerations in the aquaculture industry. The Department comments that continued research would add confidence that both food production and biosecurity issues are met.

Thank you for the opportunity to comment on this measure.

HB-365
Submitted on: 2/7/2025 5:54:06 PM
Testimony for AGR on 2/12/2025 9:30:00 AM

Submitted By	Organization	Testifier Position	Testify
Cathy Goeggel	Animal Rights Hawai'i	Support	Remotely Via Zoom

Comments:

We are in strong support of HB365. Hawai'i MUST safeguard our wild population of cephalopods, and it is well known that they are ultimate escape artists. We should be guarding our oceans against possible disease, and pollution from wastewater which would accompany a commercial breeding venture.

Mahalo!

ANIMAL LEGAL DEFENSE FUND EST 1979

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February 12th, 2025

RE: Memorandum of Support – HB 365
Prohibits certain octopus aquaculture

Dear Chair Kahaloa, Vice Chair Kusch, and Honorable Members of the House Committee on Agriculture and Food Systems,

On behalf of the Animal Legal Defense Fund, the nation's preeminent legal advocacy organization for animals, and its hundreds of members in Hawai'i, I greatly appreciate the opportunity to submit this memorandum in support of HB 365, prohibiting the propagation, cultivation, maintenance, and harvesting of any species of octopus for the purpose of human consumption. The Animal Legal Defense Fund strongly supports this bill as it would prevent the establishment of a practice that is not only inhumane but also carries significant environmental and public health risks. We strongly urge the committee to pass this bill and further the state's reputation as a leader in environmental and animal welfare issues.

Background
In recent years, international companies and countries have begun researching the development of open-ocean net cages and tanks on land to farm octopuses to capitalize on a growing gourmet demand for the animal. Foreign food companies, such as the Spanish company Nueva Pescanova, and countries including Spain, Chile, Italy, Mexico, New Zealand, and Australia, have invested significant funds into this research.[1] Nueva Pescanova has plans to develop the first industrial octopus farm in the Canary Islands. This legislation would prevent the spread of this harmful practice from coming to Hawai'i and having devastating consequences.

It is important to note that there are currently no octopus farms for human consumption in Hawai'i, thus this legislation would have no financial impact on existing businesses. It would simply stop those who are currently researching octopus farming from coming to Hawai'i to set up shop***, at the expense of local fishermen and the local fish and octopus populations.*** It would **not** prevent the sale of wild caught octopus nor would it impose any restrictions on the fishing or consumption of octopus. In fact, it would protect local fisherman by stopping largely foreign interests from polluting Hawai'i's waters and harming local octopus populations. The legislation also **does not** prohibit the breeding or keeping of octopuses for research purposes.

Octopus farming is inhumane
Octopuses have inspired people for centuries due to their unique appearance and expectation defying abilities. Scientists are continuously learning more about them and new discoveries are changing the way the public thinks about these impressive creatures. Beyond their color changing ability, octopuses also have

[1] *Public Funding of Octopus*, Compassion in World Farming (September 2024), available at https://www.ciwf.org/media/7458920/ciwf-research_octopus-farming-global-public-funding-briefing.pdf?_gl=1*1exkopr*_ga*MTU5Njc4Mjk2NC4xNzM5MTMxMzg0*_ga_RMC05PGGT7*MTczOTEzMTM4My4xLjAuMTczOTEzMTM4OS41Ni4wLjA.*_gcl_au*MTc1NjM0MjY4NS4xNzM5MTMxMzg2.

significant cognitive ability. They can learn new skills, can navigate complex mazes, are known escape artists, and even use tools.[2] Octopuses are so remarkable that the United Kingdom has legally recognized them as sentient beings, those capable of reasoning and experiencing emotions, deserving of enhanced legal protection.[3] Because of their complex mental ability, octopuses have high enrichment needs that simply cannot be met in farming environments. Keeping octopus in this manner would subject them to intense boredom and mental stress.

Adding to this stress is the number of animals that are forced together in aquatic farm settings. In nature, the octopus is a solitary creature, viewing other octopuses as threats. Thus, cramming a large number of them into small pools together would be cruel and cause significant stress. It could likely also result in aggression and fighting among the animals, putting their lives in danger before they even reach slaughter. Potential injuries and poor water quality from the high-stocking density within farm systems also puts them at an increased risk for the spread of disease and parasites. Finally, there is currently no accepted humane method of slaughter for octopuses, which would leave them vulnerable to unnecessarily cruel slaughter practices.

Octopus farming has significant environmental risks associated with it

Octopus farming is not the sustainable practice its proponents claim that it is. As is the case with the intensive farming of other aquatic species, octopus farming could harm the surrounding ecosystems and marine life by spreading pollution and changing water temperatures. Runoff from octopus farms contains high levels of nitrogen and phosphorous, which produces toxins that are harmful to both humans and marine life of all kinds.

There is also a significant risk of farmed octopuses escaping their enclosures, as they are notorious for doing, and impacting local populations. This has been seen in salmon farms with escaped salmon spreading pathogens, creating genetic abnormalities, and increasing competition with local populations.[4] Further, the wild harvesting of octopuses for the purpose of farming is a major threat to the sustainability of local populations. Octopuses are also carnivorous, feeding primarily on crustaceans, and require large amounts of feed in confined environments. This would require further devastation to already declining local marine populations by commercially harvesting crabs and other animals to use as feed. Hawai'i's local populations of octopus and other marine life, including the day octopus, should not be put at such a significant risk particularly when so many people rely on ***wild*** populations for food.

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[2] Peter Godfrey-Smith, *The Mind of an Octopus*, Scientific American (Jan. 1, 2017), available at https://www.scientificamerican.com/article/the-mind-of-an-octopus/.

[3] *Lobsters, octopus and crabs recognised as sentient beings*, UK Department for Environment, Food & Rural Affairs (November 19, 2021), available at https://www.gov.uk/government/news/lobsters-octopus-and-crabs-recognised-as-sentient-beings.

[4] Jennifer S Ford and Ransom A Myers, *A Global Assessment of Salmon Aquaculture Impacts on Wild Salmonids*, PLOS Biology (Feb. 12, 2008), available at https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.0060033.; *see also* Courtney Flatt and John Ryan, *'Environmental Nightmare' After Thousands Of Atlantic Salmon Escape Fish Farm*, National Public Radio (Aug. 24, 2017), available at https://www.npr.org/sections/thesalt/2017/08/24/545619525/environmental-nightmare-after-thousands-of-atlantic-salmon-escape-fish-farm.

Octopus farming poses a risk to public health

Octopus farming has the potential to become a significant public health risk. Industrial aquaculture farms are breeding grounds for pathogens, and octopus have been found to be hosts of multiple pathogens and zoonotic diseases that can spread to humans, such as cholera.[5] The use of antibiotics, many of which are used to treat humans as well, to combat these pathogens has the potential for the creation of multi-drug resistant bacteria. The United Nations has labelled antibiotic resistance as a leading threat to human health globally.[6] There is simply no reason to bring these risks to Hawai'i.

Washington became the first state in the world to ban the farming of octopus in 2024, and California quickly followed suit. Oregon is also considering a bill this session to prohibit the practice. The passage of this bill here in Hawai'i would be a strong step toward protecting the Pacific Ocean and its precious ecosystems from unnecessary harm.

For the above welfare, environmental, and public health reasons, the Animal Legal Defense Fund strongly urges the committee to vote yes on this bill. Mahalo nui loa for your time and consideration.

Sincerely,

Lindsay Vierheilig
Legislative Affairs Manager
Animal Legal Defense Fund
lvierheilig@aldf.org

[5] John W. Forsythe, *A Synopsis of Cephalopod Pathology in Captivity*, National Resource Center for Cephalopods, available at https://www.vin.com/apputil/content/defaultadv1.aspx?pId=11104&id=3981710&print=1.
[6] *Environmental Dimensions of Antimicrobial Resistance, Summary for Policy Makers*, UN Environment Programme (2022), available at https://wedocs.unep.org/bitstream/handle/20.500.11822/38373/antimicrobial_R.pdf.

HB-365
Submitted on: 2/11/2025 8:10:52 AM
Testimony for AGR on 2/12/2025 9:30:00 AM

Submitted By	Organization	Testifier Position	Testify
AMANDA FOX	Animal Rights Initiative	Support	Remotely Via Zoom

Comments:

Good Morning Chair Kahaloa, Vice chair and members of the committee. My name is Amanda Fox, and I live in Waikiki. Mahalo for the chance to speak in favor of House bill 365.

Octopus farms would pose a compound threat to Kona crabs and other marine populations. It takes 3 to 5 pounds of crabs and fish to produce a single pound of octopus. This would require the diversion of millions of crustaceans and fish to be used as feed.

Thousands of tons of waste generated from such a resource intensive diet would serve as fertilizer for toxic algae. Bacteria releases heat while metabolizing and absorbing sunlight, which creates a feedback loop of prime conditions for toxins to rapidly proliferate.

Hawaii's crustacean landings have drastically declined since 1997, with Kona crabs dropping from 30,000 pounds to a mere 5000 last year. Lobsters from 170,000 pounds, down to a shocking 3000 pounds now.

We can not simultaneously intensify crabbing while also rapidly accelerating predation, harmful toxin deposits, and warming waters. These exact conditions led to the collapse of a New England Shrimp Fishery, and we run the risk of creating the same conditions here.

Please vote yes. Mahalo.

HB-365
Submitted on: 2/10/2025 10:43:18 PM
Testimony for AGR on 2/12/2025 9:30:00 AM

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

Comments:

Hawaii Reef and Ocean Coalition **SUPPORTS** this bill.

February 11, 2025

Rep. Kirstin Kahaloa, Chair
Rep. Matthias Kusch, Vice Chair
Committee on Agriculture and Food Systems

RE: HB 365 Prohibiting Certain Octopus Culture

The Honorable Chair Kahaloa and Vice Chair Kusch:

The National Aquaculture Association[1] respectfully requests HB 365 intended to prohibit octopus farming be voted down within the Committee on Agriculture and Food Systems.

Animal rights activists are working to prohibit octopus farming nationally in the United States through federal and state legislation. They have been falsely alarmed by statements made by a Nueva Pescanova, a wild and farmed seafood business based in Spain, claiming a large, indoor octopus farm will be built at the Port of Las Palmas on Gran Canaria Island.

To support an octopus farming prohibition, activists falsely claim dire effects for nutrient pollution, human pathogens, feed type and usage, animal care and sustainability. What are the facts?

Why is there Interest in Farming Octopus?

- Octopuses are an important seafood of global demand which has increased by 59% in the last thirty years from 222,230 t in 1981 to 376,278 t in 2021 (FAO, 2021).
- Current market demand is being satisfied by wild fisheries, and many of these fisheries are poorly regulated with under-reported landings and unsustainable catch rates. (Balguerías et al., 2000; Hernández-García et al., 1998; Martino et al., 2021; Markaida et al., 2015; Noro, 2013; Nottage et al., 2007; Sauer et al., 2021).
- Market demand and value of octopus ($US 16.93 kg^{-1}), combined with poor controls or control enforcement, has led to over-exploitation of wild octopus stocks in the Mediterranean Sea and off the coast of Mauritania (Corten, 2014; FAO, 2021; Quetglas et al., 2015; Vázquez-Rowe et al., 2012) and other octopuses are being over-fished extensively within their respective geographic ranges (El-Ganainy & Riad, 2008; Sauer et al., 2011).

[1] The National Aquaculture Association (NAA) is a U.S. producer-based, non-profit trade association founded in 1991 that supports the establishment of governmental programs that further the common interest of our membership, both as individual producers and as members of the aquaculture community. For over 34 years NAA has been the united voice of the domestic aquaculture sector committed to the continued growth of our industry, working with state and federal governments to create a business climate conducive to our success, and fostering cost-effective environmental stewardship and sustainability.

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Home - National Aquaculture Association

Farming Octopus will Relieve Pressure on Wild Stocks

- Sustainable octopus aquaculture is a potential approach to mitigate fishing pressure (Sauer et al., 2021; Vaz-Pires et al., 2004). Some octopus species are argued to be prime candidates for aquaculture because of their short life spans, high rates of food conversion, rapid growth, tolerance to captive conditions and relatively high fecundity (Forsythe & Hanlon, 1988; Vaz-Pires et al., 2004; Vidal et al., 2014). The life history and the rearing techniques for commercially significant species have been intensively researched describing necessary culture conditions and nutritional requirements (Dan et al., 2018; O'dor et al., 1984; Rosas et al., 2014; Villanueva et al., 2014). Mating of adults and the incubation of egg strings has also been achieved, generating a viable source of early planktonic life stages for subsequent larval rearing (Iglesias et al., 2004; Uriarte et al., 2011; Vidal et al., 2014).

Can Octopus be Farmed?

No. Commercially-viable octopus farming has yet to be achieved:

- There is a lack of success with planktonic early life stage growth and survival, settlement, commercially feasible diet, and early life stage live feed production on larger scales (Carrasco et al., 2003; Iglesias et al., 2007; Uriarte et al., 2011; Villanueva et al., 2014).
- Ideal culture conditions for planktonic life stages (water temperature, light, tank color) are also unknown (Márquez et al., 2007; Tur et al., 2018).

Would Octopus Farms in the United States Create Harm or Risk to…

Biodiversity: U.S. aquaculture farms are regulated by a complex federal and state framework focused on protecting and conserving wild species and their habitat. If octopuses were farmed, they will be housed in indoor tank systems designed to prevent escape, closely monitor animal health and well-being, and capture and treat effluents to avoid surface water pollution.

Wild Fisheries: Commercially farmed aquatic animals are fed compounded, pelleted feed primarily composed of plant protein. If fish or crab meal is required to make pelleted feeds attractive to octopuses, the ingredients will be sourced from managed fisheries or the by-product of current seafood processing.

Harmful algal blooms: U.S. aquaculture farms are categorized as point sources under the Clean Water Act. The U.S. Environmental Protection Agency or delegated state agencies issue National Pollution Discharge Elimination System permits to aquaculture farms to avoid surface water pollution. There are no known or documented cases of any marine aquaculture operations in the United States causing harmful algal blooms due to nutrient discharges nor are aquaculture facilities cited as impairing freshwater or marine surface waters by any constituent of their discharge.

Human Pathogens: Activists identified anisakid nematodes as a human health risk. Aibinu et. al. (2019) wrote, "Humans are…accidentally infected when [anisakid nematode hosts [crustaceans, cephalopods and fish] are ingested either as raw or inadequately cooked or treated fish/shellfish meals. Hence, the infection has been directly linked to eating habits." Similarly, the Food and Drug Administration (FDA 2020) identifies uncooked or undercooked octopus and other farmed or wild caught seafood as a human health risk.

Captive Octopus Care: Farms do not succeed unless they care for their captive animals. What those challenges may be are unknown given farming octopus at a commercial scale has not been attempted because of early life stage management and nutrition challenges.

Animal Sentience: Farmers and ranchers recognize livestock, chicken, cow, fish, goat, goose, horse, or pig, in their care are aware of the environment and physical threats to well-being. Ascribing human attributes and perception are not founded on science or fact (Browman et al. 2019; Diggles et al. 2024). The National Aquaculture Association adheres to an Aquatic Animal Welfare Policy which states, in part, "Aquaculture husbandry practices demand that animals are held in healthy environments, fed a balanced and complete diet, protected from predators, and monitored throughout their life to insure their general quality and health." To access this Policy and others, click here. Each U.S. state has enacted statutes to punish individuals who engage in cruelty to animals. Click here to access state law.

Concluding Comments

There is little doubt that the detractors, and often well financed critics, of U.S. marine aquaculture have significantly contributed to its lackluster U.S. growth compared to other countries (Tiersch and Hargreaves 2002; Knapp and Rubino 2016). Proponents acknowledge marine aquaculture is not risk free in terms of potential environmental, economic, social and cultural impacts and challenges remain to achieving sustainable production. The good news is these challenges are well known and they are the focus of not only the American science and technology enterprise, but by a global network of scientists from many coastal nations focused on expanding farmed seafood production, restoring at-risk marine species populations (fish and molluscan shellfish). The realities of the current marine aquaculture seascape bode well for a more productive future:

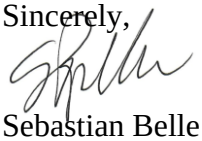
1. There is a clear global imperative to sustainability produce more seafood from capture and culture fisheries to meet constantly growing demand. The U.S. has the marine resources to become a major exporter, if support is provided to solve life cycle and production challenges, not to ban the opportunity to do so.
2. U.S. farmers work within a very complex and effective legal, regulatory, and science-driven environment to anticipate and mitigate potential environmental impacts.
3. Farm level management decisions and federal and state regulatory frameworks are working together to bring about environmentally beneficial siting, operational and production outcomes.

4. Commercial aquaculture advocates in government, universities and the farming community have recognized it is essential to reach out to decision-makers and the public, as well as the critics, with the latest research and empirical results to describe an accurate picture of the risks and rewards to farming the sea.
5. Greater communication and engagement efforts and targeted public research expenditures will enhance the U.S. marine aquaculture track record going forward.
6. Farming aquatic animals is not risk-free. Fortunately, we can and are looking to nations like Canada, Chile, China, Japan, Norway, Panama, Mexico, Ireland, United Kingdom and nations bordering the Mediterranean Sea that are well ahead of the United States in producing farmed seafood to learn from their mistakes and successes.
7. The current federal and state permitting process is thorough, complex, time-consuming and expensive. We believe this is as it should be. As we collectively gain experience, knowledge and environmental data, the time and expense may lessen but the permitting process should always be rigorous. We, as citizens of the United States, are desirous of protecting and conserving the oceans for the next seven generations (Zajicek et al. 2021).

The National Aquaculture Association is indebted to Jeffrey Good, PhD Candidate, Marine Science, Leigh Marine Laboratory, University of Auckland, New Zealand for contributing octopus farming information to this analysis.

If you should have questions or need additional information, please do not hesitate to contact us.

Sincerely,



Sebastian Belle
President

cc: Ronald Weidenbach, President, Hawaii Aquaculture and Aquaponics Associatio

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HB-365
Submitted on: 2/11/2025 9:28:13 AM
Testimony for AGR on 2/12/2025 9:30:00 AM

Submitted By	Organization	Testifier Position	Testify
Ronald Weidenbach	Hawaii Aquaculture and Aquaponics Association	Oppose	Written Testimony Only

Comments:

The Hawaii Aquaculture and Aquaponics Associaion (HAAA) with statewide industry membership and also a member of the National Aquaculture Association (NAA) strongly oppose HB365 which opposes the culture of octopus in Hawaii.

The stated justification of this bill as noted in Section 1 is that "Farmed octopuses frequently carry multiple pathogens". However, in reality, there is no current commercial octopus farming in Hawaii, in the U.S., or globally, as noted in the detailed science-based testimony provided by the NAA. At present, octopus in the marketplace are wild caught but with increasing local and global demand, wild stocks will be increasingly subject to overfishing. Aquaculture provides the only potential opportunity to help meet future market demand and reduce the increasing pressures on the wild populations worldwide. At present however, this is not a near-term possibiity due to the complexities of larval octopus production. However, as such R&D potentially moves forward, appropriate biosecurity measures can be employed to safeguard the environment.

We respectfully request that HB365 be opposed or deferred.

NYU ARTS & SCIENCE
Center for Environmental and Animal Protection

NYU WILD ANIMAL WELFARE

February 11, 2025

House Committee on Agriculture and Food Systems
Hawai'i State Legislature
415 South Beretania St.
Honolulu, HI 96813

RE: Support for HB 365

Dear Chair Kahaloa, Vice Chair Kusch, and Members of the Committee:

We appreciate the opportunity to submit this letter[1] in strong support of HB 365, which would prohibit persons in Hawai'i from raising octopuses for human consumption. Octopuses are highly sensitive and intelligent animals with distinct environmental and social needs that are not easily replicable in artificial conditions. In addition to serious concerns about welfare, commercial octopus farming would pose significant and unnecessary threats to wildlife, the environment, and public health in Hawai'i. We applaud Hawai'i's efforts to ban this inhumane, unhealthful, and unsustainable practice, consistent with the State's strong track record of leadership on such issues and commitment to policy making rooted in the best-available science.

Octopuses are highly sensitive and intelligent animals who are capable of experiencing pain, stress, and fear, making them especially unsuitable for intensive farming. There is growing consensus within the scientific community that octopuses are sentient beings. Indeed, a recent government-commissioned independent review of over 300 existing scientific studies found that "there is strong evidence of sentience in octopods" and further concluded that "high-welfare octopus farming is impossible."[2] These findings are consistent with a recent declaration by more than 500 experts across the world that "the empirical evidence indicates at least a realistic possibility of consciousness" in cephalopod mollusks like octopuses, and that "when there is a realistic possibility of conscious experience in an animal, it is irresponsible to ignore that possibility in decisions affecting that animal."[3]

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[1] The views expressed herein are those of the authors and do not purport to represent the views, if any, of the Center for Environmental and Animal Protection, the NYU Wild Animal Welfare Program, New York University, or New York University School of Law. Individual titles and institutional affiliations are provided solely for identification purposes.

[2] Jonathan Birch et al., *Review of the Evidence of Sentience in Cephalopod Molluscs and Decapod Crustaceans*, LSE Consulting, London School of Economics and Political Science (2021), https://www.lse.ac.uk/business/consulting/reports/review-of-the-evidence-of-sentiences-in-cephalopod-molluscs-and-decapod-crustaceans; *see also* Jennifer Mather, *The Case for Octopus Consciousness: Valence*, 3 NEUROSCI 656 (2022), https://doi.org/10.3390/neurosci3040047.

[3] THE NEW YORK DECLARATION ON ANIMAL CONSCIOUSNESS, NEW YORK UNIVERSITY (Apr. 19, 2024), https://sites.google.com/nyu.edu/nydeclaration/declaration.

Their complex environmental and social needs make it impossible for octopuses to be raised humanely in aquacultural settings. Octopuses are highly intelligent and curious animals who have the ability to solve puzzles, use tools, learn skills, and play.[4] As a result, they have high enrichment needs that simply cannot be met in farming environments.[5] Octopuses in captivity regularly exhibit stress-related behaviors as a result of a lack of cognitive stimulation, including repetitive "darting" behaviors and self-harm.[6] Moreover, octopuses are typically solitary by nature and have been known to act aggressively towards other octopuses and even cannibalize each other when confined together.[7] Intensive confinement in barren, crowded spaces—as is typically present in the farming operations contemplated by this bill—would inevitably cause significant suffering among those individuals, raising serious welfare concerns.

Octopus farming is inconsistent with Hawai'i's environmental priorities and would pose a risk to public health. Octopuses are carnivorous apex predators who prey on live animals such as crabs, shrimp, and mollusks, and supplying food to farmed octopuses would only put additional pressure on already overexploited fish populations.[8] Aquaculture is also known to produce large amounts of wastes (e.g. uneaten food, feces, and deceased animals) and nutrient pollution (e.g. carbon, nitrogen, and phosphorus) which poses serious risks to local ecosystems. Commercial aquaculture farms are also breeding grounds for bacteria and parasites that can spread to humans and other animals, and farmed octopuses may be particularly susceptible to disease due to stress, poor water quality, and poor nutrition.[9] Using antibiotics to combat these

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[4] Meghan M. Holst & Tim Miller-Morgan, *The Use of a Species-Specific Health and Welfare Assessment Tool for the Giant Pacific Octopus, Enteroctopusdofleini*, 24(3) J. APPLIED ANIMAL WELFARE SCI. (2020), https://doi.org/10.1080/10888705.2020.1809412; Peter Godfrey-Smith, *The Mind of an Octopus*, SCIENTIFIC AMERICAN (Jan. 1, 2017), https://www.scientificamerican.com/article/the-mind-of-an-octopus.

[5] *See e.g.* Jennifer A Mather & Ludovic Dickel, *Cephalopod complex cognition*, 16 CURRENT OPINION IN BEHAVIORAL SCIENCES 131 (2017), https://doi.org/10.1016/j.cobeha.2017.06.008; Julian K. Finn, Tom Tregenza & Mark D. Norman, *Defensive tool use in a coconut-carrying octopus*, 19(23) CURRENT BIOLOGY R1069 (2009), https://doi.org/10.1016/j.cub.2009.10.052; David Scheel et al., *A second site occupied by Octopus tetricus at high densities, with notes on their ecology and behavior*, 50(4) MARINE & FRESHWATER BEHAVIOUR & PHYSIOLOGY 285 (2017), https://doi.org/10.1080/10236244.2017.1369851; Jacquet et al., *The case against octopus farming*, 35(2) ISSUES IN RSCH. & TECH. 37 (2019), https://issues.org/the-case-against-octopus-farming.

[6] *See* Gavan M. Cooke, Belinda M. Tonkins & Jennifer A. Mather, *Care and enrichment for captive cephalopods*, *in* THE WELFARE OF INVERTEBRATE ANIMALS (Claudio Carere & Jennifer Mather eds. 2019), https://doi.org/10.1007/978-3-030-13947-6; Graziano Fiorito et al., *Guidelines for the Care and Welfare of Cephalopods in Research: A consensus based on an initiative by CephRes, FELASA and the Boyd Group*, 49(2) LABORATORY ANIMALS 1 (2015), https://doi.org/10.1177/00236772155800; Paul L.R. Andrews et al., *The identification and management of pain, suffering and distress in cephalopods, including anaesthesia, analgesia and humane killing*, 447 J. EXPERIMENTAL MARINE BIOLOGY & ECOLOGY 46 (2013), https://doi.org/10.1016/j.jembe.2013.02.010.

[7] Christian M. Ibáñez & Friedemann Keyl, *Cannibalism in cephalopods*, 20 REV. FISH BIOLOGY & FISHERIES, 123 (2010), https://doi.org/10.1007/s11160-009-9129-y; Christopher K. Pham & Eduardo Isidro, *Growth and Mortality of Common Octopus (Octopus vulgaris) Fed a Monospecific Fish Diet*, 28(3) J. SHELLFISH RSCH. 617 (2009), https://doi.org/10.2983/035.028.0326. *See also* Jacquet et al. (2019), *supra* note 5.

[8] Jennifer Jacquet et al., *The octopus mind and the argument against farming it,* 26(19) ANIMAL SENTIENCE 1 (2019), http://dx.doi.org/10.51291/2377-7478.1504.

[9] *See e.g.* Ivona Mladineo & Mladen Jozić, *Aggregata infection in the common octopus, Octopus vulgaris (Linnaeus, 1758), Cephalopoda: Octopodidae, reared in a flow-through system*, 46(2) ACTA ADRIATICA 193 (2005), https://acta.izor.hr/ojs/index.php/acta/article/view/118.

pathogens—as is common practice in commercial aquaculture—further exacerbates the risk of multi-drug bacterial resistance.

This ban is unlikely to have adverse effects on the Hawai'i's existing agricultural economy. Because there are no commercial octopus farms currently operating in Hawai'i, a prohibition on such operations is unlikely to harm the State's existing agricultural industry. This ban will thus take a significant step towards protecting animal welfare, public health, and the environment without adverse effects on farmers, workers, or consumers.

Through its leadership on this issue, Hawai'i joins a growing cohort of governments[10] that have acted to ban the raising of octopus for human consumption in response to growing concerns within the scientific community about risks to animal welfare, public health, and the environment.[11] By enacting this bill, Hawai'i would not only improve conditions for its own constituents but also send a strong message to other states who are considering similar legislative action, and to the federal government, where Congress is considering new legislation that would create a nationwide ban on commercial octopus farming and imports of farmed octopus from other countries. Both because this ban would have positive effects for Hawai'i and because it would build momentum toward positive change nationwide, we urge the Committee to vote in favor of this bill.

We thank you again for your leadership and for considering our comments in your deliberations.

Sincerely,

Becca Franks
Assistant Professor of Environmental Studies
Director, WATR-lab
Co-Director, Wild Animal Welfare Program
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Adalene Minelli
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[10] California and Washington have both passed laws banning octopus farming, and similar legislation has been introduced in Oregon. Notably, in addition to prohibiting the raising of octopus for human consumption, Oregon's proposed bill would also ban the sale of octopus that has been raised as food for humans. H.B. 1153, 68th Leg., Reg. Sess. (Wash. 2023); A.B. 3162, 2023-2024 Leg., Reg. Sess. (Cal. 2024); H.B. 2557, 83rd Leg., Reg. Sess. (Or. 2025).

[11] *See* Jacquet et al. (2019), *supra* note 8.

Jeff Sebo

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HB-365
Submitted on: 2/8/2025 12:06:31 PM
Testimony for AGR on 2/12/2025 9:30:00 AM

Submitted By	Organization	Testifier Position	Testify
Linda Leveen	Individual	Oppose	Written Testimony Only

Comments:

Please use your power to protect the right to life for the intelligent, sensitive, engaging octopus capable of developing relationships with you and me. They are our fellow beings.

Please vote an emphatic no on this bill.

Mahalo nui loa.

HB-365
Submitted on: 2/10/2025 9:43:56 AM
Testimony for AGR on 2/12/2025 9:30:00 AM

Submitted By	Organization	Testifier Position	Testify
Jenny Yagodich	Individual	Support	Written Testimony Only

Comments:

In SUPPORT of HB365 to prohibit the farming of octopuses for human consumption.

Micah C. Brodsky, VMD
Individual Testimony

February 10, 2025

RE: HB365 – Oppose

Aloha e Chair Gabbard, Vice-Chair Richards, and Committee members,

Please accept this written testimony in opposition to HB365. Please do not allow the political agenda of corporate special interest groups and radical animal rights activists from outside of Hawai‘i to gain a foothold that would undermine our states current and future food security, agriculture / aquaculture industry, economy, and the cultural connection that our communities have with the ocean and seafood.

For reference, I am submitting this testimony as an individual, but I am a Hawai‘i licensed veterinarian and subject matter expert with more than 20 years of experience in aquatic animal medicine, wildlife and conservation medicine, aquatic animal research, and state and federal regulatory programs for protected aquatic species and for aquaculture.

The foundation premise of this bill (that “octopus farming poses significant risks for disease transmission to marine environments.”) is false (note that “significant risk” is not defined in the bill). For the record, aquaculture facilities in Hawai‘i are already required to establish and maintain standard operating procedures to address biosecurity, quarantine, and wastewater discharge; specifically for the purpose of protecting Hawaii’s environmental resources, native species, and public health. The specific diseases identified in this bill (“coccidial parasites, ichthyobodo protozoa, vibrio bacterial infections, and dicyemid mesozoans”) are already present in Hawaii’s marine environment and already affect the species that are susceptible to them. *Vibrio species*, for example, are ubiquitous in all freshwater and marine aquatic environments, which means that every nearshore marine ecosystem on the planet already has many species of *Vibrio* bacteria in it. For example, *Vibrio parahaemolyticus* is responsible for a WOAH (formerly OIE) reportable disease of shrimp, however the SPF Shrimp Broodstock Aquaculture industry continues to thrive and operate safely in Hawai‘i, as it has for nearly half a century.

Outlawing octopus culture based on this premise would be like outlawing the farming of cattle, pigs, and chickens because (just like aquatic animals) they are also susceptible to coccidial parasites, protozoal infections, and bacterial infections. While it is true that these disease-causing pathogens can affect these species (and do affect them in both farm and free-ranging wildlife settings), we continue to farm cattle, pigs, and chickens to feed people.

Which brings me to the more concerning big picture implications of this bill. Passing HB365 would set a precedent for outlawing of all aquaculture activities in Hawai‘i, including in Loko I‘a (Hawaiian Fishponds), based on misrepresentation of the science and fearmongering about diseases and environmental impacts. If this ban were to be passed for octopus aquaculture, it would only be a matter of time before there would be a similar push to ban all aquaculture activities, followed by efforts to ban all animal agriculture, in Hawai‘i and across the globe.

Thank you,

Micah C. Brodsky, VMD

HB-365
Submitted on: 2/10/2025 1:54:30 PM
Testimony for AGR on 2/12/2025 9:30:00 AM

Submitted By	Organization	Testifier Position	Testify
Michelle Casey	Individual	Support	Written Testimony Only

Comments:

I strongly urge the committee to support HB365. To preserve the natural biodiversity of Hawai'i, it is in the best interest to support a ban on octopus farming.

Both California and Washington have passed similar bills to protect their environments and the intelligent octopus species.

Please do the same. Thank you.

HB-365
Submitted on: 2/11/2025 11:10:07 AM
Testimony for AGR on 2/12/2025 9:30:00 AM

Submitted By	Organization	Testifier Position	Testify
Bennett Powell	Individual	Support	In Person

Comments:

Good morning Chair Kahaloa, Vice Chair Kusch, and members of the committee. My name is Bennett Powell, I'm from Kane'ohe and am a student at Windward community college, and I'm here today to speak in favor of House Bill 365.

The kai lu he'e is a zone designated in the traditional Hawaiian Ahupua'a as a place before the dark sea in which to catch octopus with lures. Octopus hunting is a sacred tradition held by the Hawaiian people.

Foreign owned artificial concentrations of octopus for the purpose of farming and exporting them is an insult to the Aina, to God, and to Hawaiian way of life.

What is needed is the promotion and restoration of wild octopus in their natural ecosystem. We must support local fisherman and not foreign farmers. A commercial farm for he'e would endanger us all.

I ask that you vote yes on this bill to protect Hawaii's natural beauty, honor, and stability for generations to come.

Mahalo.

HB-365
Submitted on: 2/11/2025 2:14:27 PM
Testimony for AGR on 2/12/2025 9:30:00 AM

Submitted By	Organization	Testifier Position	Testify
Jane E Arnold	Individual	Support	Written Testimony Only

Comments:

Octopuses are very intelligent animals. Their intelligence has evolved via different pathways from our own, and they do not look anything like humans. Therefore it is not as easy to see the similarities between humans and octopuses as, for example, between humans and chimps. However, octopuses have extremely complex mental abilities and a strong need for enrichment that cannot be met in farming environments.

On farms, octopuses are cruelly overcrowded, causing significant stress, aggression, and high mortality. Farming practices also pose serious threats to the environment, local wild octopus populations, and public health.

Please support HB365. Thank you!

Jane E Arnold

1763 Iwi Way, Apt D

Honolulu, HI. 96816