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# A BILL FOR AN ACT

RELATING TO AQUACULTURE DEVELOPMENT.

**BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:**

1 SECTION 1. The legislature finds that the State's  
2 aquaculture industry has experienced significant decline over  
3 the past decade. Recent statistics reflect that the aquaculture  
4 industry's value decreased seventeen per cent from 2018 to 2023  
5 and a stagnant number of aquaculture farms have been operating  
6 over the past decade. Further, exports of specific  
7 pathogen-free shrimp broodstock, a globally significant Hawaii  
8 product, has shown a significant decline since 2015. The  
9 legislature further finds that this decline has occurred despite  
10 the State having comparative advantages in tropical aquaculture,  
11 including pristine water resources, established research  
12 infrastructure such as the Natural Energy Laboratory of Hawaii  
13 Authority and the university of Hawaii, and proximity to premium  
14 markets.

15 The legislature recognizes that Act 96, Session Laws of  
16 Hawaii 2025 (Act 96), increased the transient accommodations  
17 tax, colloquially termed a "green fee", to generate revenues for



1 environmental stewardship, climate and hazard resilience, and  
2 sustainable tourism purposes. The legislature finds that  
3 aquaculture development, particularly restorative aquaculture  
4 emphasizing ecosystem services, directly advances all three  
5 purposes intended for the funds generated via Act 96, with  
6 documented benefits including: water quality improvement through  
7 bivalve filtration and seaweed nutrient uptake; carbon  
8 sequestration through seaweed cultivation; ocean acidification  
9 buffering through localized pH elevation during seaweed  
10 photosynthesis; habitat provision through oyster reef and  
11 fishpond structures; support for native species including  
12 'ama'ama (mullet), awa (milkfish), and indigenous limu varieties;  
13 and support for local food systems that reduce environmental  
14 impacts from food transportation while enhancing visitor  
15 experiences through authentic agricultural tourism.

16 The legislature further finds that sustainable aquaculture  
17 expansion simultaneously addresses multiple state policy  
18 priorities, including: food security by reducing the State's  
19 ninety per cent food import dependency; climate resilience by  
20 providing nature-based coastal protection and adaptive food  
21 production systems less vulnerable to terrestrial climate



1 impacts; rural economic development by creating employment  
2 opportunities in underserved communities; workforce development  
3 by establishing career pathways in emerging blue economy  
4 sectors; and environmental justice by supporting community-based  
5 resource management and subsistence practices.

6 Accordingly, the purpose of this Act is to require the  
7 department of agriculture and biosecurity to:

8 (1) Establish a four-year restorative aquaculture  
9 development program to reduce aquaculture permit  
10 processing time, support restorative aquaculture  
11 infrastructure expansion, increase aquaculture  
12 education and its workforce, and pursue federal  
13 aquaculture grants;

14 (2) Establish three pilot demonstration sites for  
15 restorative aquaculture; and

16 (3) Convene a restorative aquaculture advisory council.

17 SECTION 2. (a) The department of agriculture and  
18 biosecurity shall establish and implement a restorative  
19 aquaculture development program. The program shall prioritize:

20 (1) Restorative aquaculture operations over non-  
21 restorative commercial aquaculture;



1 (2) Native species and traditional Native Hawaiian  
2 systems, including loko i'a, indigenous limu varieties,  
3 and endemic Native Hawaiian aquatic species;

4 (3) Equitable participation and benefit-sharing with  
5 Native Hawaiian practitioners, small-scale producers,  
6 and underrepresented communities; and

7 (4) Public-private partnerships that leverage federal  
8 funds, foundation support, and private investment.

9 (b) The program shall establish measurable performance  
10 objectives to be achieved no later than June 30, 2030,  
11 including:  
12 (1) Reduction of average aquaculture permit processing  
13 time to a target range of twelve to fifteen months,  
14 provided that the procedures shall comply with section  
15 91-13.5, Hawaii Revised Statutes;  
16 (2) Pursuing at least \$10,000,000 in federal competitive  
17 grants for aquaculture development from the following  
18 sources:  
19 (A) National Oceanic and Atmospheric Administration  
20 (NOAA) coastal partnership grants;  
21 (B) NOAA aquaculture research competitive grants;



1 (C) United States Department of Agriculture (USDA)  
2 Natural Resources Conservation Service programs;  
3 (D) USDA Rural Energy for America program;  
4 (E) United States National Science Foundation and  
5 Department of Energy programs supporting  
6 sustainable marine systems and climate  
7 resilience; and  
8 (F) Other federal programs supporting fisheries  
9 restoration, watershed management, and blue  
10 carbon research;  
11 provided that the department of agriculture and  
12 biosecurity shall coordinate with the university of  
13 Hawaii and private sector partners to develop  
14 competitive grant proposals and manage federal funding  
15 partnerships;

16 (3) Development of not less than twenty-five new or  
17 significantly expanded restorative aquaculture  
18 operations, including:  
19 (A) Planning, design, and construction of shared-use  
20 hatchery facilities for native and restorative  
21 aquaculture species, with priority for



1                   small-scale producers and indigenous Native  
2                   Hawaiian species including limu, 'ama'ama, awa,  
3                   and 'o'opu;

4                   (B) Development of shared-use processing,  
5                   aggregation, and cold storage facilities  
6                   accessible to small-scale producers;

7                   (C) Establishment and support of aquaculture  
8                   development zones with coordinated permitting and  
9                   shared infrastructure;

10                  (D) Development of infrastructure to establish or  
11                  restore not less than fifteen traditional Native  
12                  Hawaiian fishponds statewide, integrating  
13                  subsistence, cultural, and controlled aquaculture  
14                  production and support for their operations,  
15                  including water control structures, sluice gates,  
16                  and educational facilities; and

17                  (E) Capital improvements at existing state  
18                  facilities, including the Natural Energy  
19                  Laboratory of Hawaii Authority, to accommodate  
20                  additional aquaculture tenants;



1 (4) Facilitating the creation of not less than two hundred  
2 fifty direct jobs in aquaculture and related  
3 value-chain sectors, especially in rural communities,  
4 including:

5 (A) Development and delivery of aquaculture training  
6 programs and youth engagement, including  
7 curriculum for secondary schools and community  
8 colleges;

9 (B) Apprenticeship programs connecting students with  
10 commercial operations, including utilization of  
11 the farmer apprentice mentoring program under  
12 section 141-15, Hawaii Revised Statutes, with an  
13 emphasis on native species, biosecurity, and  
14 restoration techniques;

15 (C) Technical assistance for small-scale and Native  
16 Hawaiian practitioners, including business  
17 planning, production techniques, regulatory  
18 compliance, and market development;

19 (D) Scholarships and stipends for students pursuing  
20 aquaculture education, with priority for Native



**1** Hawaiian or economically disadvantaged students;

2 and

3 (E) Support for traditional knowledge transmission  
4 through mentorship programs pairing experienced  
5 traditional Native Hawaiian fishpond  
6 practitioners with new practitioners;

7 (5) Achieving measurable environmental benefits including:

11 (B) Deployment of restorative aquaculture systems  
12 demonstrating water quality improvement in not  
13 less than three embayments;

14 (C) Documentation of carbon sequestration through  
15 seaweed cultivation totaling not less than two  
16 thousand five hundred tons of carbon dioxide  
17 annually by 2030; and

18 (D) Establishment of baseline monitoring protocols  
19 for long-term assessment of aquaculture ecosystem  
20 services; and



5 (c) The department of agriculture and biosecurity shall  
6 submit a report to the legislature no later than twenty days  
7 prior to the convening of the regular sessions of 2027, 2028,  
8 2029, and 2030 on:

9 (1) Progress toward achieving the performance objectives  
10 specified in subsection (b), with disaggregated data  
11 by island and operation type;

12 (2) Federal grant applications submitted and awards  
13 received, including funding amounts and project  
14 descriptions;

15 (3) Infrastructure development projects completed or in  
16 progress, including location, capacity, and  
17 utilization rates;

18 (4) Number of new commercial aquaculture operations  
19 supported, categorized by scale and type;

20 (5) Jobs created, including number of positions, wage  
21 ranges, and demographic characteristics;



- 1 (6) Environmental benefits documented, including:
  - 2 (A) Water quality improvements measured through
  - 3 nitrogen, phosphorus, and turbidity reductions;
  - 4 (B) Carbon sequestration quantified through biomass
  - 5 production data;
  - 6 (C) Habitat restoration acreage by location and
  - 7 habitat type; and
  - 8 (D) Native species production volumes;
- 9 (7) Support provided to Native Hawaiian practitioners and
- 10 traditional aquaculture systems, including number of
- 11 traditional Native Hawaiian fishponds supported,
- 12 technical assistance provided, and funding allocated;
- 13 (8) Workforce development activities including training
- 14 programs delivered, participants served, and
- 15 employment outcomes;
- 16 (9) Stakeholder engagement activities including advisory
- 17 council meetings, community consultations, and
- 18 feedback received; and
- 19 (10) Challenges encountered and strategies for addressing
- 20 those challenges.



6 (1) Assess progress toward performance objectives with  
7 analysis of factors contributing to success or  
8 hindering achievement;

9 (2) Assess return on investment for infrastructure  
10 development, including utilization rates and economic  
11 impact;

12 (3) Evaluate federal funding leverage achieved and  
13 competitive positioning relative to other states;

14 (4) Validate environmental benefits through scientific  
15 monitoring and third-party verification;

16 (5) Assess economic impact including jobs created,  
17 industry value growth, and multiplier effects;

18 (6) Evaluate equity outcomes including support for  
19 small-scale and Native Hawaiian practitioners;

20 (7) Identify best practices and derive insights to inform  
21 future practices; and



3 The findings of the evaluation shall be submitted to the  
4 legislature no later than twenty days prior to the convening of  
5 the regular session of 2028.

6 SECTION 3. The department of agriculture and biosecurity  
7 shall establish three pilot demonstration sites for restorative  
8 aquaculture with verified carbon and ecosystem service  
9 monitoring protocols. The monitoring protocols shall measure:

10 (1) Net ecosystem production and carbon burial rates using  
11 accepted field protocols;

## 12 (2) Water quality improvements;

**13** (3) Habitat provision and biodiversity benefits; and

#### 14 (4) Community economic and food security outcomes.

**15** Monitoring data shall be made publicly available and used to

16 support carbon tax credit applications, federal funding

17 proposals, and adaptive management decisions. Baseline data

18 collected shall inform long-term climate finance opportunities

19 and blue carbon market participation.

**20** SECTION 4. (a) The department of agriculture and

**21** biosecurity shall convene a restorative aquaculture advisory



1 council. The advisory council shall consist of the following  
2 members:

3 (1) The chairperson of the board of agriculture and  
4 biosecurity, who shall serve as the chairperson of the  
5 advisory council;

6 (2) representatives from relevant state agencies,  
7 including the department of land and natural  
8 resources, department of health, and office of  
9 planning and sustainable development;

10 (3) representatives from each county planning  
11 department;

12 (4) One member of the house of representatives, to  
13 appointed by the speaker of the house;

14 (5) One member of the senate, to appointed by the  
15 president of the senate;

16 (6) representatives from the university of Hawaii  
17 with aquaculture research expertise;

18 (7) representatives from commercial aquaculture  
19 operations, including at least one representative from  
20 each county, to be invited by the chairperson;





3 SECTION 5. As used in this Act, "restorative aquaculture"  
4 means aquaculture operations that demonstrably improve  
5 environmental conditions or provide measurable ecosystem  
6 services, including:

7 (1) Water quality improvement through bivalve filtration  
8 or nutrient reduction via macroalgae cultivation;

9 (2) Carbon sequestration or cycling through seaweed and  
10 macroalgae systems:

11 (3) Habitat restoration and creation through oyster reef  
12 structures or macroalgae bed or traditional fishpond  
13 systems;

14 (4) Native species recovery, including indigenous limu  
15 varieties, 'ama'ama (mullet), awa (milkfish), 'o'opu, and  
16 other Native Hawaiian species; and

17 (5) Climate resilience infrastructure providing coastal  
18 wave attenuation, acidification buffering, or adaptive  
19 food production systems;



1 as a primary or co-equal production objective, as determined by  
2 the department of agriculture and biosecurity in consultation  
3 with the department of land and natural resources.

4 SECTION 6. There is appropriated out of the general  
5 revenues of the State of Hawaii the sum of \$4,500,000 or so much  
6 thereof as may be necessary for fiscal year 2026-2027 to be  
7 expended as follows:

8 (1) \$2,000,000 for aquaculture infrastructure development;  
9 provided that twenty-five per cent of funds shall be  
10 directed to support Native Hawaiian practitioners and  
11 traditional aquaculture systems;

12 (2) \$600,000 for aquaculture workforce development and  
13 technical assistance; provided that twenty-five per  
14 cent of funds shall be directed to support Native  
15 Hawaiian practitioners and traditional aquaculture  
16 systems;

17 (3) \$1,000,000 for the pursuit of federal grants,  
18 including:

19 (A) Staffing for federal grant identification,  
20 development, and management;



1 (B) Matching funds for competitive federal grants  
2 that may be awarded under the proposed Marine  
3 Aquaculture Research for America Act or related  
4 programs;

5 (C) Consultant services for grant proposal  
6 development;

7 (D) Partnership development with the university of  
8 Hawaii, federal agencies, and private sector  
9 entities; and

10 (E) Compliance with federal grant reporting and  
11 performance requirements;

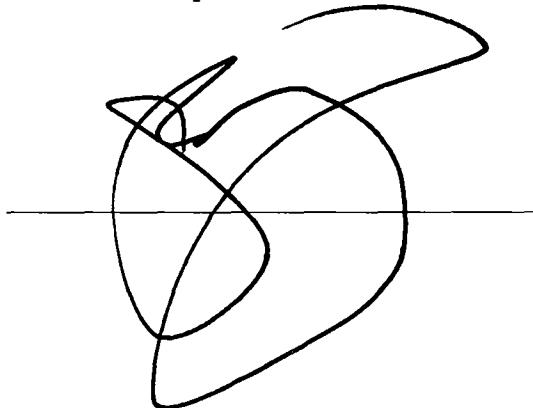
12 (4) \$500,000 for the establishment, operation, and  
13 monitoring of restorative aquaculture pilot  
14 demonstration sites; and

15 (5) \$400,000 for the establishment and administration of  
16 the restorative aquaculture development program,  
17 including but not limited to:  
18 (A) Program coordination activities;  
19 (B) Aquaculture advisory council support;  
20 (C) Program technical assistance;  
21 (D) Program performance reporting; and



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INTRODUCED BY:



# S.B. NO. 2349

**Report Title:**

DAB; Restorative Aquaculture Development Program; Workforce Development; Restorative Aquaculture Advisory Council; Appropriation; Reports

**Description:**

Requires the Department of Agriculture and Biosecurity to: (1) Establish a four-year Restorative Aquaculture Development Program to reduce aquaculture permit processing time, support aquaculture infrastructure expansion, increase the aquaculture workforce, and pursue federal aquaculture grants; (2) Establish three pilot demonstration sites for restorative aquaculture; and (3) Convene a Restorative Aquaculture Advisory Council. Requires reports to the Legislature. Appropriates funds.

*The summary description of legislation appearing on this page is for informational purposes only and is not legislation or evidence of legislative intent.*

