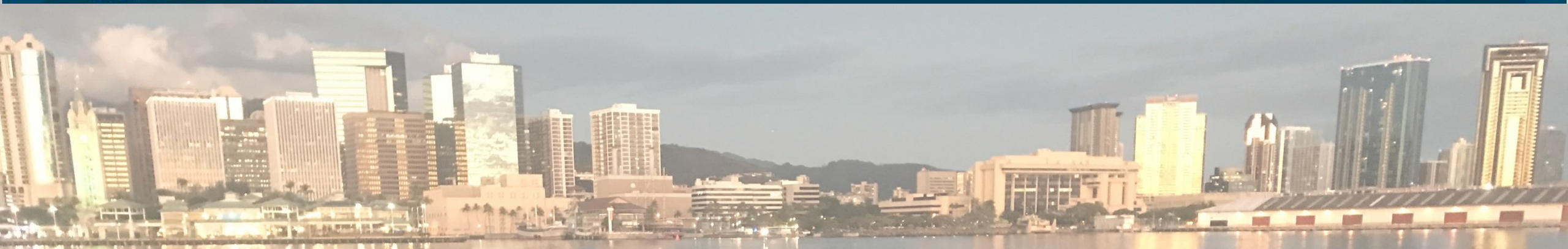


Hawaii Ballast Water and Biofouling Program Update

Jules Kuo

Department of Land and Natural Resources, Division of Aquatic Resources

April 2nd, 2019

Division of Aquatic Resources
Department of Land & Natural Resources

HOUSE OF REPRESENTATIVES
THIRTIETH LEGISLATURE, 2019
STATE OF HAWAII

H.B. NO. 750

A BILL FOR AN ACT

RELATING TO AQUATIC BIOSECURITY.

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

SECTION 1. The legislature finds that the introduction and spread of alien aquatic organisms poses an unprecedented th to Hawaii's marine ecosystems, harbors, recreational activ

HOUSE OF REPRESENTATIVES
THIRTIETH LEGISLATURE, 2019
STATE OF HAWAII

H.B. NO. 746

A BILL FOR AN ACT

RELATING TO AQUATIC BIOSECURITY.

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

The legislature finds that the introduction and

THE SENATE
THIRTIETH LEGISLATURE, 2019
STATE OF HAWAII

S.B. NO. 1162

JAN 24 2019

A BILL FOR AN ACT

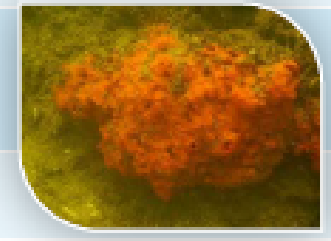
RELATING TO BIOSECURITY.

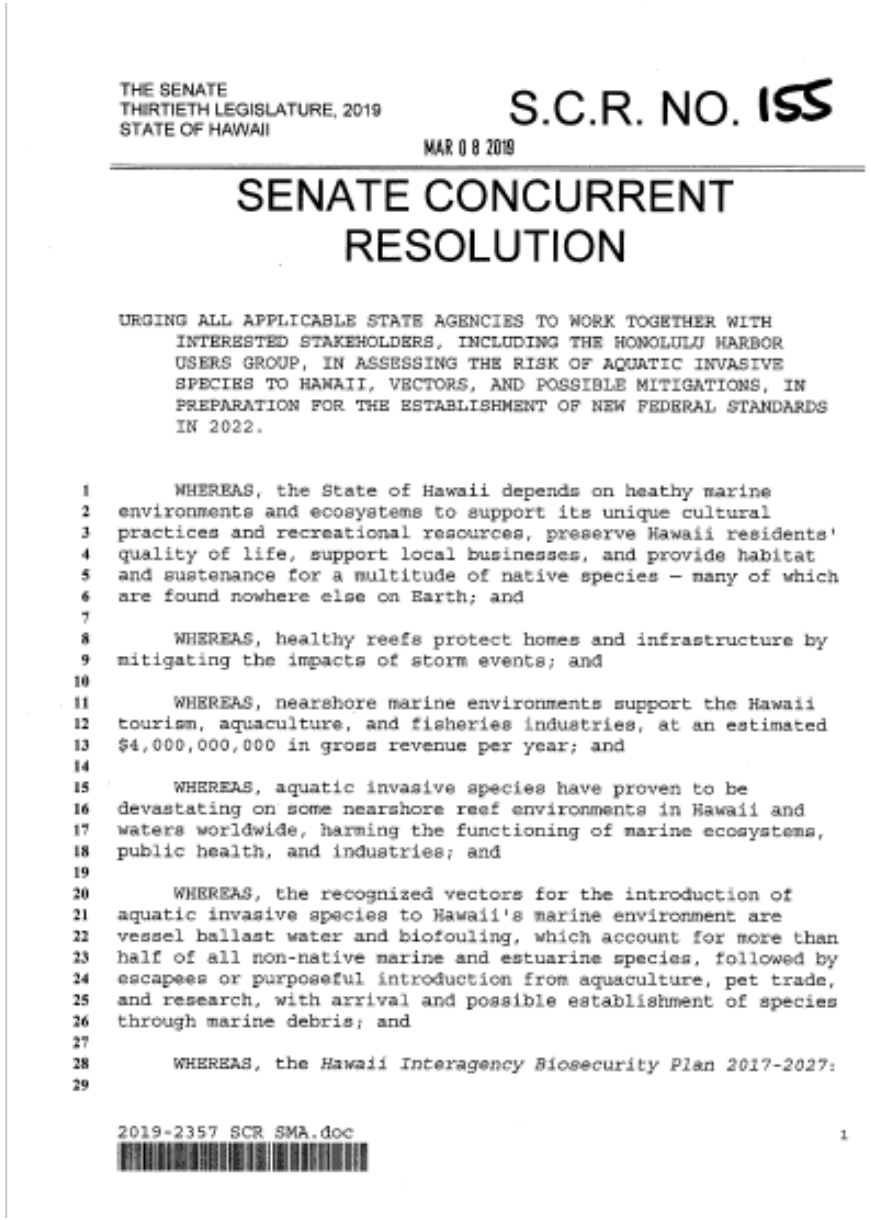
BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

SECTION 1. The legislature finds that the introduction and

Legislation | Research| Outreach| Administrative|

Aquatic Biosecurity Services — BW- ballast water, BF- biofouling	2019	2020	2021	2022
1) Host Alien Aquatic Organism Stakeholder customer service meetings	X	X	X	X
2) Validate BW rapid assessment tools to assist ships in monitoring their BW management system's efficacy	X	X		
3) Monitor for species introductions to inform rapid response plans	X	X	X	X
4) Efficacy testing of vessel in-water cleaning systems	X	X	X	X
5) Conduct primary BW & BF biosecurity risk survey on 100% of qualifying vessels using reporting form data analysis processes	X	X	X	X
6) Conduct secondary BW & BF biosecurity risk survey on 25% of qualifying vessels - *board vessel to verify BW and BF logs*		X	X	X
7) Perform tertiary BW & BF biosecurity risk survey on 10% of qualifying vessels - survey BW & quantify BF			X	X
8) Review Hawaii's BW & BF Program performance for improvements	X	X	X	X
Budget Requirements	**$460K**	**$700K**	**$855K**	**$904K**
Anticipated staff recruits (cumulative total recruits)	**5 (5)**	**4 (9)**	**2 (11)**	**0 (11)**





THE SENATE
THIRTIETH LEGISLATURE, 2019
STATE OF HAWAII

S.C.R. NO. 155

MAR 0 8 2019

SENATE CONCURRENT RESOLUTION

URGING ALL APPLICABLE STATE AGENCIES TO WORK TOGETHER WITH INTERESTED STAKEHOLDERS, INCLUDING THE HONOLULU HARBOR USERS GROUP, IN ASSESSING THE RISK OF AQUATIC INVASIVE SPECIES TO HAWAII, VECTORS, AND POSSIBLE MITIGATIONS, IN PREPARATION FOR THE ESTABLISHMENT OF NEW FEDERAL STANDARDS IN 2022.

WHEREAS, the State of Hawaii depends on heathy marine environments and ecosystems to support its unique cultural practices and recreational resources, preserve Hawaii residents' quality of life, support local businesses, and provide habitat and sustenance for a multitude of native species – many of which are found nowhere else on Earth; and

WHEREAS, healthy reefs protect homes and infrastructure by mitigating the impacts of storm events; and

WHEREAS, nearshore marine environments support the Hawaii tourism, aquaculture, and fisheries industries, at an estimated $4,000,000,000 in gross revenue per year; and

WHEREAS, aquatic invasive species have proven to be devastating on some nearshore reef environments in Hawaii and waters worldwide, harming the functioning of marine ecosystems, public health, and industries; and

WHEREAS, the recognized vectors for the introduction of aquatic invasive species to Hawaii's marine environment are vessel ballast water and biofouling, which account for more than half of all non-native marine and estuarine species, followed by escapees or purposeful introduction from aquaculture, pet trade, and research, with arrival and possible establishment of species through marine debris; and

WHEREAS, the *Hawaii Interagency Biosecurity Plan 2017-2027*:

2019-2357 SCR SMA.doc 1

Hawaii Aquatic Biosecurity Resolution (2019)

Legislation | Research| Outreach| Administrative|

Vessel Incidental Discharge Act (VIDA)

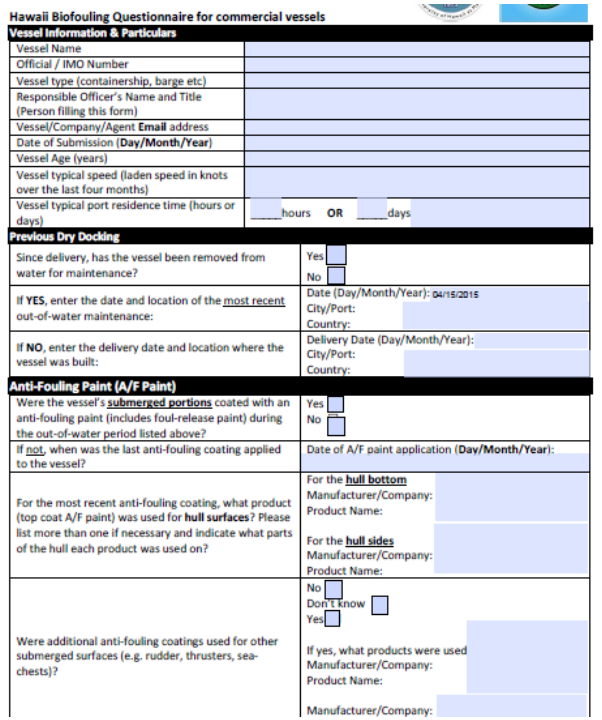
- Continue to decipher VIDA
  - VIDA affect biofouling rules?
  - Protections for Hawaii inter-county BW management

Vessel Incidental Discharge Act (VIDA)

- Continue to decipher VIDA
  - VIDA affect biofouling rules?
  - Protections for Hawaii inter-county BW management
- States to provide consultation to EPA and USCG
  - Individual or multi-state or both?
  - Next 4 years, perform BW and BF risk surveys

Vessel Incidental Discharge Act (VIDA)

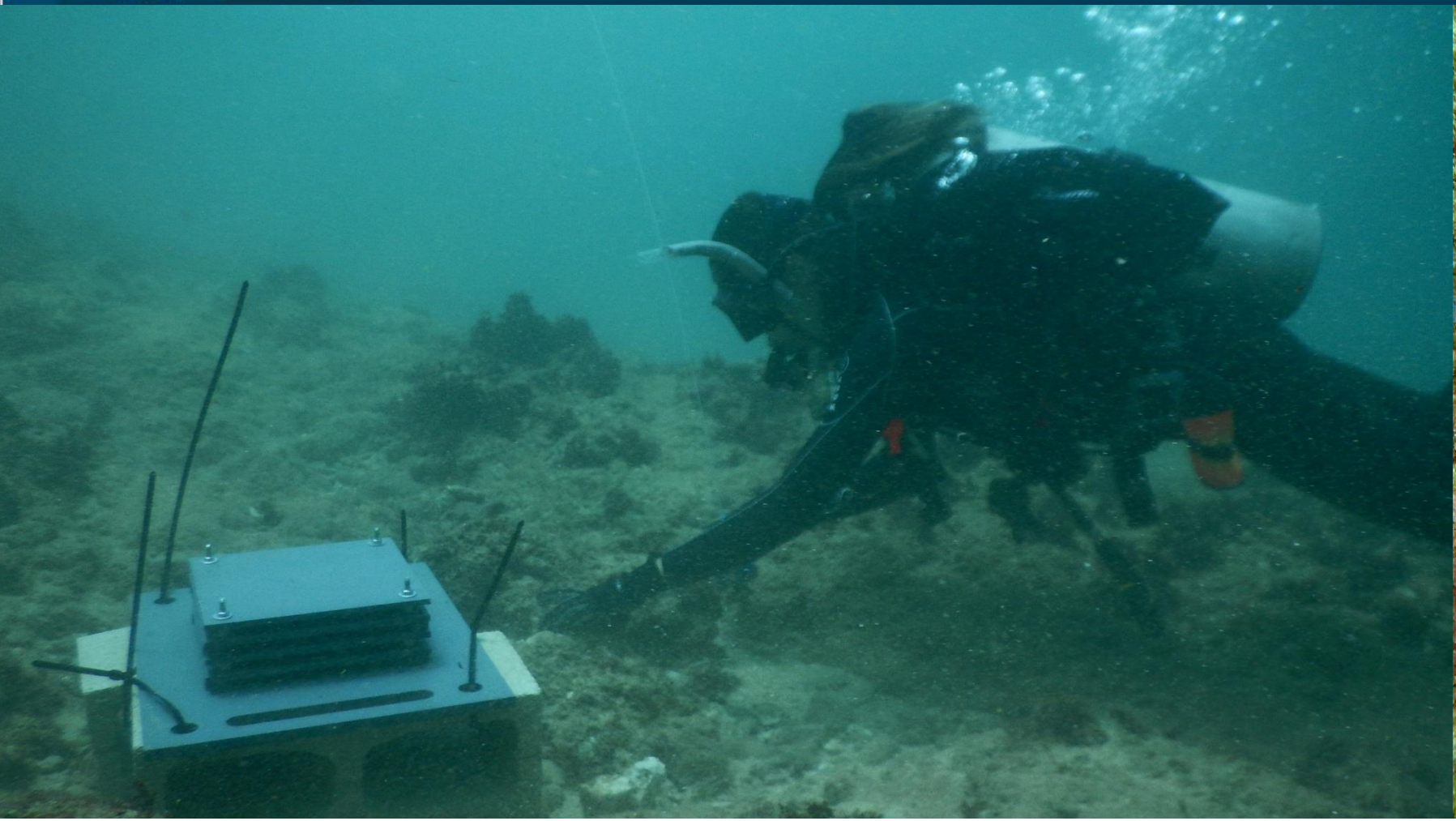
- Continue to decipher VIDA
  - VIDA affect biofouling rules?
  - Protections for Hawaii inter-county BW management
- States to provide consultation to EPA and USCG
  - Individual or multi-state or both?
  - Next 2-4 years, perform BW and BF risk surveys
- National Ballast Information Clearinghouse
  - Working group and 2-day workshop around August
  - Develop hull husbandry reporting form
  - Real-time access for States to BW (and BF reporting forms)



Hawaii Biofouling Questionnaire for commercial vessels

Vessel Information & Particulars	
Vessel Name	
Official / IMO Number	
Vessel type (containership, barge etc)	
Responsible Officer's Name and Title (Person filling this form)	
Vessel/Company/Agent **Email** address	
Date of Submission (**Day/Month/Year**)	
Vessel Age (years)	
Vessel typical speed (laden speed in knots over the last four months)	
Vessel typical port residence time (hours or days)	____hours **OR** ____days
Previous Dry Docking	
Since delivery, has the vessel been removed from water for maintenance?	Yes ☐ No ☐
If **YES**, enter the date and location of the most recent out-of-water maintenance:	Date (Day/Month/Year): 04/15/2015 City/Port: Country:
If **NO**, enter the delivery date and location where the vessel was built:	Delivery Date (Day/Month/Year): City/Port: Country:
Anti-Fouling Paint (A/F Paint)	
Were the vessel's **submerged portions** coated with an anti-fouling paint (includes foul-release paint) during the out-of-water period listed above?	Yes ☐ No ☐
If not, when was the last anti-fouling coating applied to the vessel?	Date of A/F paint application (**Day/Month/Year**):
For the most recent anti-fouling coating, what product (top coat A/F paint) was used for **hull surfaces**? Please list more than one if necessary and indicate what parts of the hull each product was used on?	For the **hull bottom** Manufacturer/Company: Product Name: For the **hull sides** Manufacturer/Company: Product Name:
Were additional anti-fouling coatings used for other submerged surfaces (e.g. rudder, thrusters, sea-chests)?	No ☐ Don't know ☐ Yes ☐ If yes, what products were used Manufacturer/Company: Product Name: Manufacturer/Company:

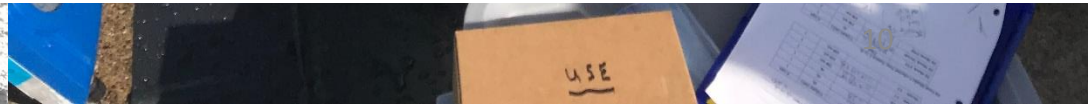
Division of Aquatic Resources
Department of Land & Natural Resources



Legislation | Research| Outreach| Administrative|

Legislation | Research| Outreach| Administrative|

Legislation | Research| Outreach| Administrative|



THE SENATE
TWENTY-NINTH LEGISLATURE, 2018
STATE OF HAWAII

S.C.R. NO. 98

MAR 0 9 2018

SENATE CONCURRENT RESOLUTION

URGING STATE AGENCIES TO EVALUATE, COLLABORATE, AND IMPLEMENT BEST MANAGEMENT PRACTICES, TECHNOLOGIES, AND REGULATIONS TO ADDRESS VESSEL BIOFOULING IN HAWAII HARBORS.

WHEREAS, biofouling, or biological fouling, is the accumulation of microorganisms, plants, algae, or animals on a wetted surface, such as the hull of a shipping vessel; and

WHEREAS, biofouling begins to accumulate on submerged portions of vessels within a few weeks, and this layer of microfouling facilitates the growth of larger fouling organisms that can decrease the efficiency and safe operation of a vessel; and

WHEREAS, studies have shown that biofouling on shipping vessels is an important vector of aquatic invasive species transfer, which, if established in new ecosystems, may pose threats to the environment, human health, property, and resources; and

WHEREAS, the *Hawaii Interagency Biosecurity Plan 2017-2027* recognizes that up to seventy-eight percent of Hawaii's non-native marine algae and invertebrate species can be attributed to vessel biofouling; and

WHEREAS, the *Hawaii Interagency Biosecurity Plan 2017-2027* calls on the Department of Land and Natural Resources, Department of Agriculture, Department of Health, and Department of Transportation to develop hull husbandry practices and proactive hull cleaning standards for nonmilitary vessels to minimize movement of non-native aquatic organisms into Hawaii's ports, harbors, and marinas; and

SCR LRB 18-1787.doc

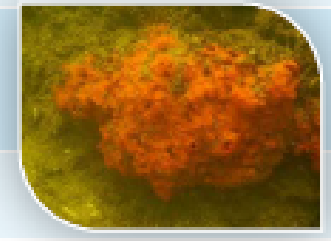
1

Hawaii In-Water Cleaning Resolution (2019)

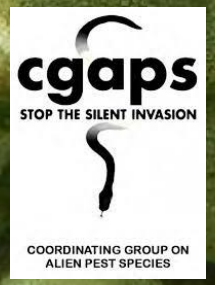
- Workshop for building regionally consistent IWC regulatory framework
- Sorting/processing Autonomous Reef Monitoring Structures (ARMS)
- Commission cost-benefit analysis of investing/not-investing in aquatic biosecurity in Hawaii
- Continue to streamline Hawaii's BW Risk Assessment Matrix
- Continue to build lab

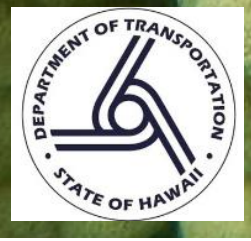
Legislation | Research | Outreach | Administrative |

Aquatic Biosecurity Services — BW- ballast water, BF- biofouling	2019	2020	2021	2022
1) Host Alien Aquatic Organism Stakeholder customer service meetings	X	X	X	X
2) Validate BW rapid assessment tools to assist ships in monitoring their BW management system's efficacy	X	X		
3) Monitor for species introductions to inform rapid response plans	X	X	X	X
4) Efficacy testing of vessel in-water cleaning systems	X	X	X	X
5) Conduct primary BW & BF biosecurity risk survey on 100% of qualifying vessels using reporting form data analysis processes	X	X	X	X
6) Conduct secondary BW & BF biosecurity risk survey on 25% of qualifying vessels - *board vessel to verify BW and BF logs*		X	X	X
7) Perform tertiary BW & BF biosecurity risk survey on 10% of qualifying vessels - survey BW & quantify BF			X	X
8) Review Hawaii's BW & BF Program performance for improvements	X	X	X	X
Budget Requirements	~~$460K~~	~~$700K~~	~~$855K~~	~~$904K~~
Anticipated staff recruits (cumulative total recruits)	~~5 (5)~~	~~4 (9)~~	~~2 (11)~~	~~0 (11)~~



Tackling the Problem through Collaboration





Military, federal, state agency stakeholders, commercial/recreational maritime industry, scientists, vector management system vendors, national/international experts

- Printing biofouling BMP outreach docs
  - Fishing vessels
  - Recreational vessels
  - Mobile marine structure
- Western Governor's Association Biosecurity Workshops
- Attending local, regional, and international meetings

- Personnel
  - Annual 10-month Kupu Intern
  - Will be advertising two FTE HI civil service positions to support HI BW/BF Program (lab/field technician and lab/field ops specialist) early summer with fingers crossed
  - University of Hawaii Manoa and Hawaii Pacific University undergrad and grad students (volunteer)
  - Coordinating Group on Alien Pest Species, NOAA, USFWS, Depart. of Transportation Harbors Division, Depart. Of Health Clean Water Branch

Legislation | Research| Outreach| Administrative|

Funding Sources and Acknowledgements

HAWAII INVASIVE SPECIES COUNCIL
HISC
U.S. FISH & WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR
Department of Land and Natural Resources
State of Hawaii
Pacific Cooperative Studies Unit
PCSU
1973
University of Hawai'i at Mānoa
cgaps
STOP THE SILENT INVASION
KUPU
LEARN · SERVE · RESTORE
Hau'oli Mau Loa
FOUNDATION

Julie.c.kuo@Hawaii.gov – HI Ballast Water and Biofouling Coordinator
(808)348-7025

Hawaii Department of Land and Natural Resources, Division of Aquatic Resources in c/o with RCUH Pacific Cooperative Studies Unit