

Mahalo WTL Committee!

Seven DAR Administrative bills passed in 2021 session

- Act 43 – Commercial Marine Vessel Licenses
- Act 44 – Crustaceans
- Act 45 – Lay Net Permit
- Act 46 – Ocean Stewardship Special Fund; User Fee
- Act 49 – Natural Resource Rules; Adaptive Management
- Act 48 – Nonresident Recreational Marine Fishing License
- Act 145 – Aquatic Life and Wildlife Advisory Committees (repealed)

Several key positions created:

- Creation of (5) District Biologist positions
- Creation of a Biostatistician
- Program Specialist V

Infrastructure Funding:

- Sea Urchin Hatchery Roof Replacement



DAR's Mission:

To work with the people of Hawai'i to manage, conserve and restore the state's unique aquatic resources and ecosystems for present and future generations



DAR Organization: Three Programs

Fisheries Management



David Sakoda

Environmental Protection




Ryan Okano

District Management

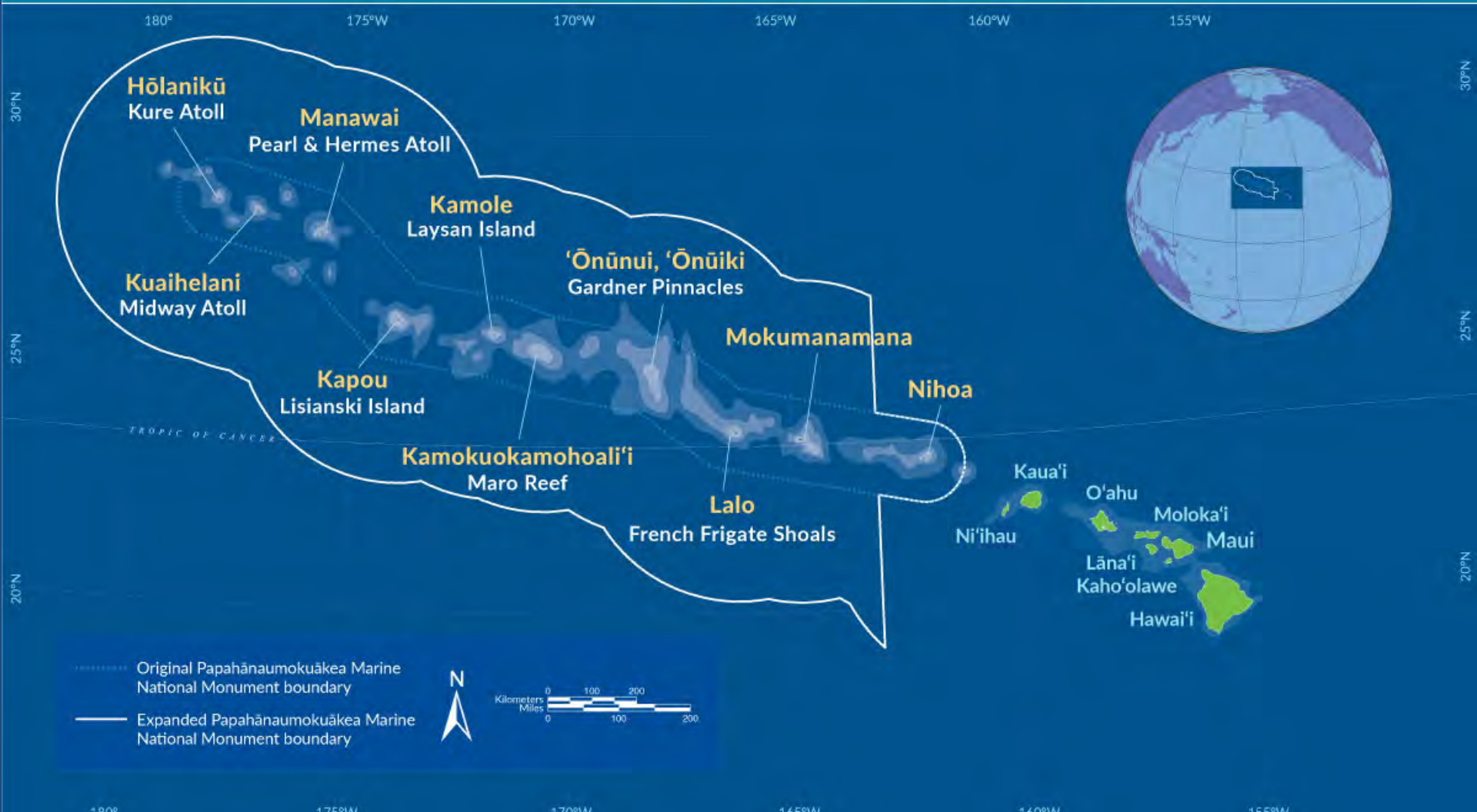


Brian Kanenaka



- 
- **DAR's Kuleana**
 - **State waters (3-miles)**
 - **Over 2-million acres of ocean**
 - **Over 1,400-miles of shoreline**
 - **440,000 miles of stream**
 - **>400 Estuaries**

» Ko Hawai'i Pae 'Āina - Hawaiian Archipelago





Making Hawai`i a Great Place to Live!

Department of Land and Natural Resources

AQUATIC RESOURCES (DAR)

BOATING AND OCEAN RECREATION (DOBOR)

BUREAU OF CONVEYANCES (BOC)

CONSERVATION AND COASTAL LANDS (OCCL)

CONSERVATION AND RESOURCES ENFORCEMENT (DOCARE)

ENGINEERING DIVISION (ENG)

FORESTRY AND WILDLIFE (DOFAW)

HISTORIC PRESERVATION DIVISION (SHPD)

LAND DIVISION (LAND)

STATE PARKS (SP)



Key Challenges and Threats



THREATS TO CORAL REEFS CLIMATE CHANGE

Increased greenhouse gases from human activities result in climate change and ocean acidification.

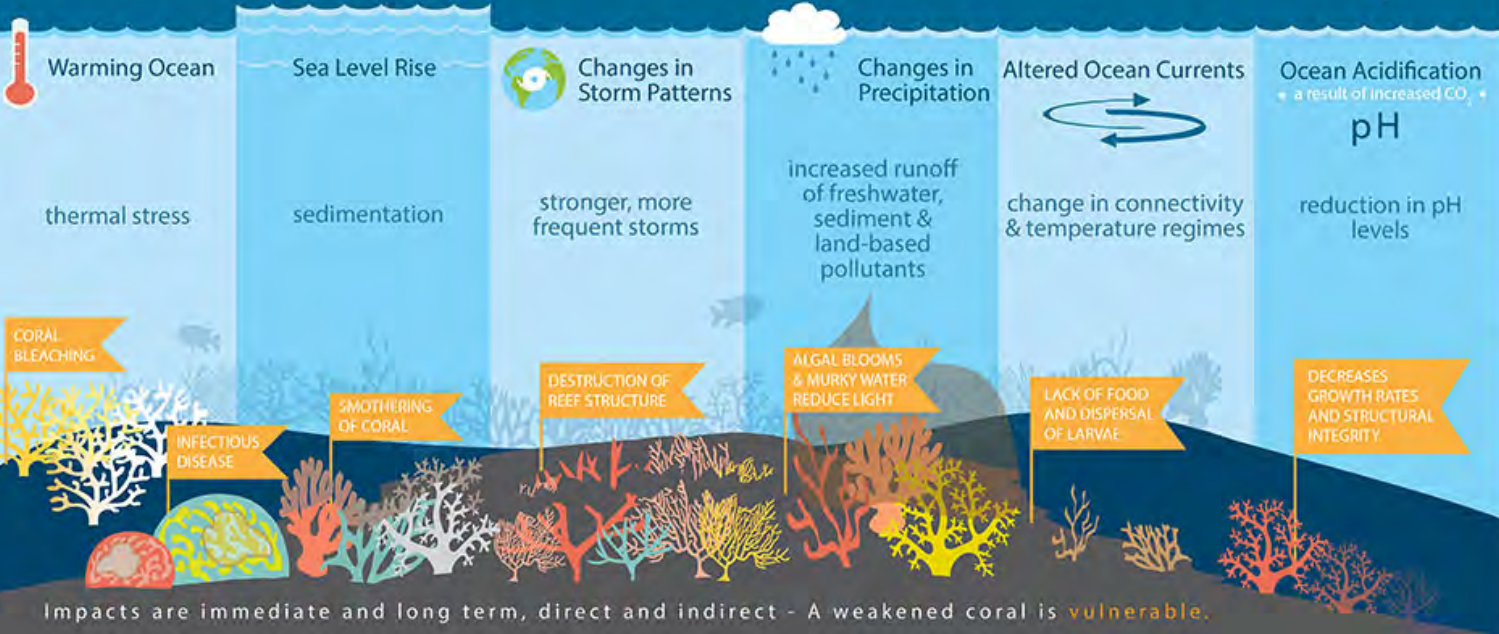
CLIMATE CHANGE = OCEAN CHANGE



CO₂

The world's ocean is a massive sink that absorbs carbon dioxide (CO₂). Although this has slowed global warming, it is also changing ocean chemistry.

CLIMATE CHANGE dramatically affects CORAL REEF ECOSYSTEMS



Impacts are immediate and long term, direct and indirect - A weakened coral is **vulnerable**.

HOW YOU CAN HELP

Shrink your carbon footprint to reduce greenhouse gases.

- Drive less.
- Reduce, reuse or recycle.
- Purchase energy-efficient appliances and lightbulbs.
- Print less. Download more. Use less water.

Do your part to help improve overall coral reef condition.

- Reduce the use of lawn and garden chemicals.
- DO NOT dump household chemicals in storm drains.
- Choose sustainable seafood. www.FishWatch.gov
- Learn about good reef etiquette and practice it when in the water.
- Volunteer for beach and waterway clean ups.



Streams

- Invasive species
- Water quality and quantity
- Passage barriers
- Drought





Estuaries

- Invasive species
- Freshwater availability
- Coastal development
- Land-based source pollution





Anchialine Pools

- Invasive species
- Sea level rise
- Water quality
- Coastal development



CORAL REEFS

- Coral bleaching
- Ocean acidification
- Depleted fisheries
- Habitat loss
- Pollution/cesspools
- Invasive species
- Marine debris
- Carrying Capacity



Benefits:

- Coral Reefs valued at \$360 million/yr
- Nearshore Fisheries: \$10-16 million/yr
- Local Food Production: 7 million meals/yr
- Shoreline Protection: \$835 million/yr

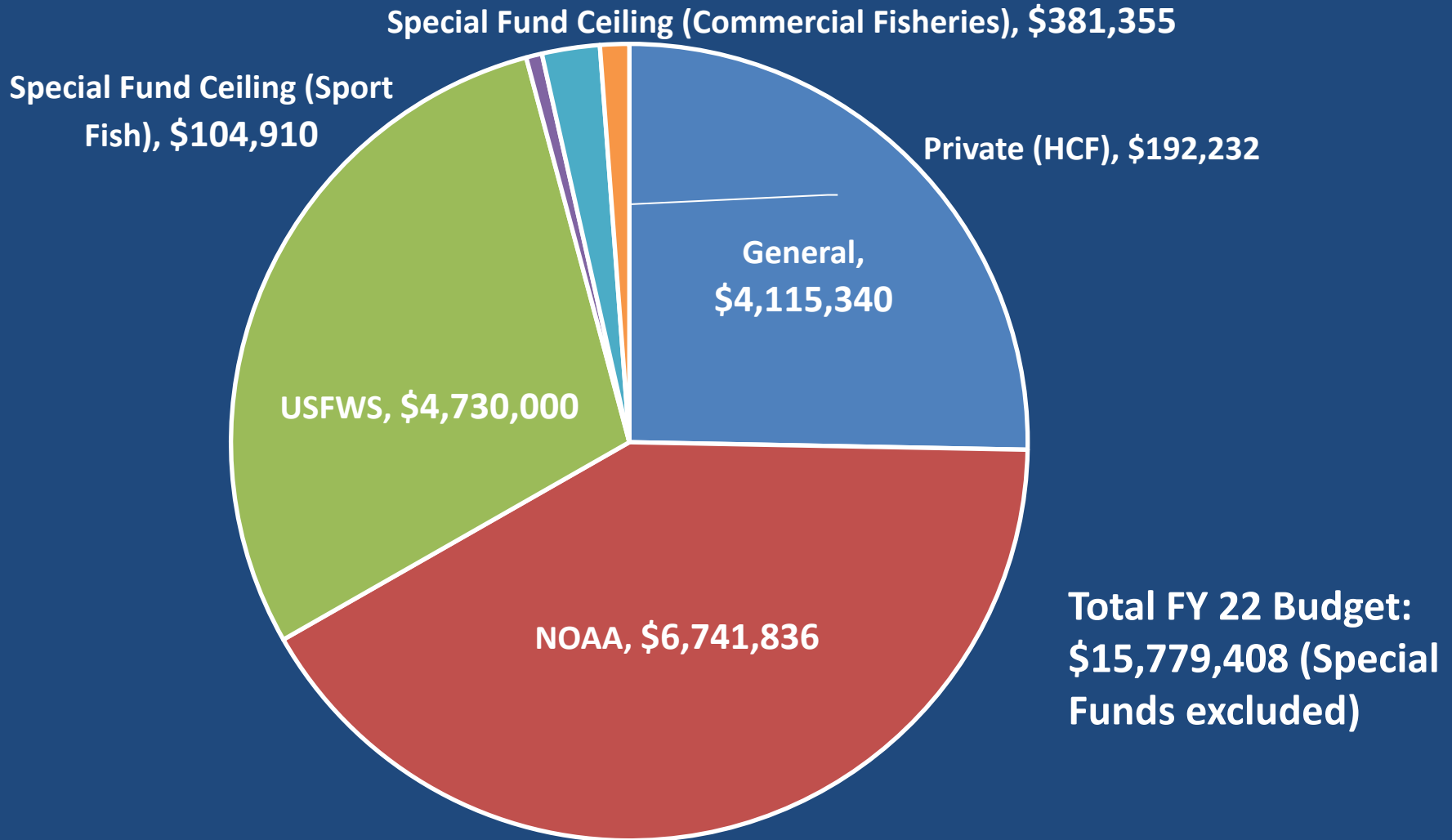


Benefits:

- Culture and Way of Life



DAR Budget FY 2022



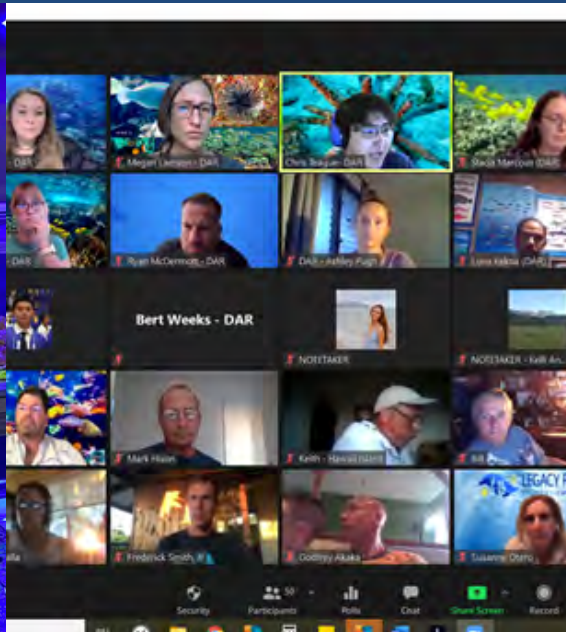
Staffing:

- 75 civil service staff
- 22 Vacancies (7 are Federal positions)
- ~50 contract staff (RCUH)
- Re-organization underway



DAR Response to COVID-19

- March 16th first Stay at Home Order
- Shifted 102 staff to telework
- Developed protocols to continue essential operations
- Shifted field survey types and effort
- Telework hybrid in-place

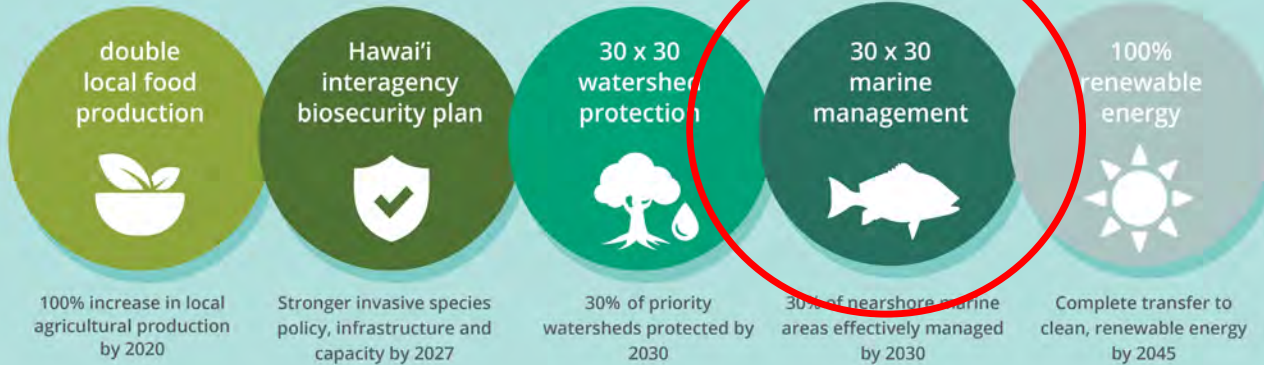


DAR Programs and Initiatives



SUSTAINABLE HAWAI'I INITIATIVE

Strengthening our waters, land and food for Hawaii's communities



Aloha+ CHALLENGE





The goal of 30x30



AN INITIATIVE TO ESTABLISH
THIRTY PERCENT OF
NEARSHORE MARINE
WATERS AS MARINE
MANAGEMENT AREAS BY
2030



Holomua: Marine 30x30



Protection & Restoration



Place-based Planning



Monitoring



Pono Practices





Place-Based Planning

- Expand Marine Managed Areas to 30%
- MMA's = FMA's, FRA, MLCD's, CBSFA
- Currently working on (4) new areas:
 - Mo'omomi CBSFA
 - Miloli'i CBSFA
 - Kīpahulu CBSFA
 - Maunalua Bay FMA

Pono Practices

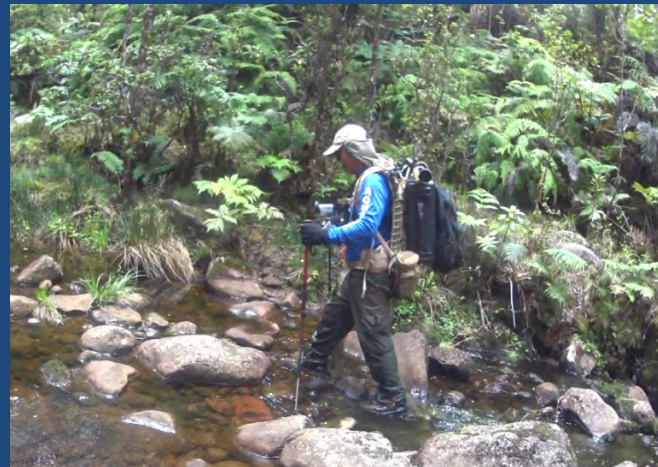
- Outreach and Education
- Regulations (Lay net permit, bag limits)
- Enforcement





Monitoring

- Ecosystem
- Community
- Socioeconomic
- Enforcement





Protection and Restoration

- Aquatic Invasive Species Prevention and Control
- Ecosystem Restoration



Fisheries Management Program:

- Commercial Fisheries
- Recreational Fisheries
- Protected Species
- Rulemaking
- Administrative Enforcement



Commercial Fisheries

- Licensing Section – Issue Commercial Marine Licenses, etc.
- Statistical and Database Section – collect commercial fishing reports, process and analyze data, respond to data requests, data exchange with NOAA
 - ~\$300K/yr NOAA grants to maintain database and process data
 - 5 civil service positions – 3 retired (1 eliminated, **2 vacant**)
- Fisheries section – Kona crab surveys, management recommendations



Recreational Fisheries

- FWS Sportfish Restoration Program
 - Rainbow trout fishing in Kōkeʻe
 - Bass restocking in Wahiawa Reservoir
 - FAD Deployment
 - Life History study of uouoa mullet
 - Weke and moi tagging
- Hawaii Marine Recreational Fishing Survey (SFR & NOAA MRIP)
- NOAA grant – Life History of munu, moano kea, and nenuē
- 3 biologist positions (FW, **anchialine pools**, **sport fish***)



Sport Fish Restoration

Current Projects

- Freshwater Fisheries Development
- Artificial Reefs
- Fish Aggregation Devices (FADS)
- Program Coordination/Administration
- Freshwater Fisheries Research and Restoration
- Freshwater/Marine Technical Guidance
- Survey Fish and Habitat
- Hawaii Marine Rec Surveys
- Investigation Hawaiian Estuaries
- Aquatic Resources Database
- Life Histories of Marine Fisheries
- Aquatic Resources Education



Protected Species

Collaborate with federal and NGO partners to recover populations of threatened and endangered marine species.

- Outreach and education, monitoring, and response
- Monitor False Killer Whales off SE Oahu / Penguin Banks
- Engage boat-based fishers to report sightings and interactions
- Develop Conservation Plan for Monk Seals and Turtles
- Update Humpback Whale Sanctuary Management Plan



Administrative Rulemaking

Review and update existing rules and establish new rules to more effectively manage fisheries resources

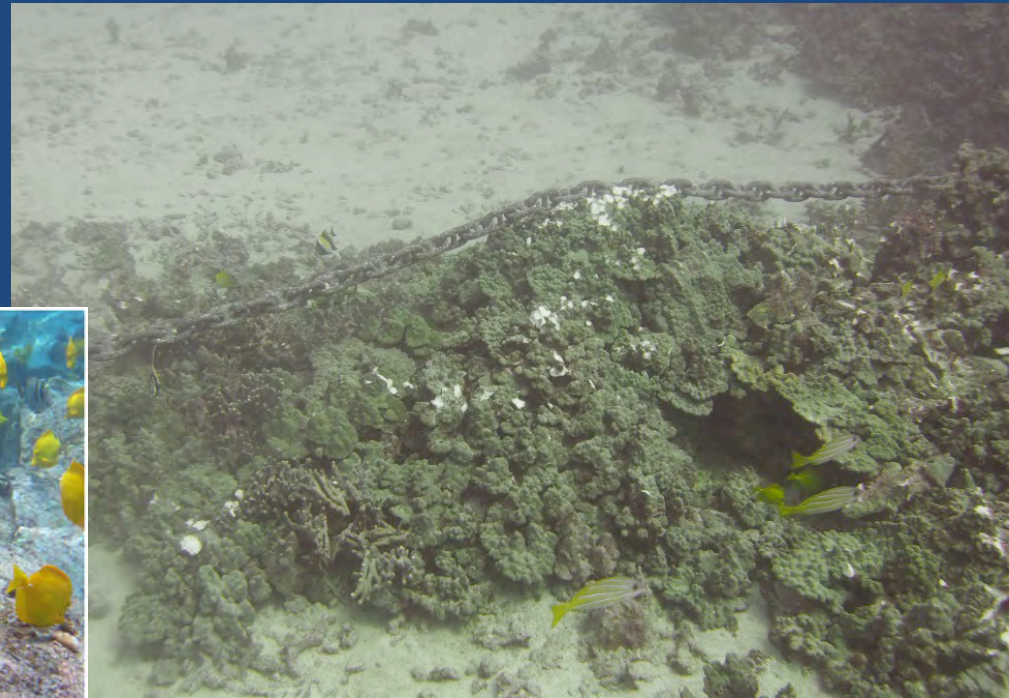
- Bag limits, size limits, closed seasons, gear restrictions, marine managed areas, licenses & permits
 - Herbivore rules (uhu & kala), Kona crab and lobster regulations
 - Maunalua Bay FMA, Kipahulu & Miloli'i CBSFAs
 - Commercial marine vessel license, nonresident recreational marine fishing license, lay net permit



Administrative Enforcement

Pursue administrative enforcement of aquatic resource violations

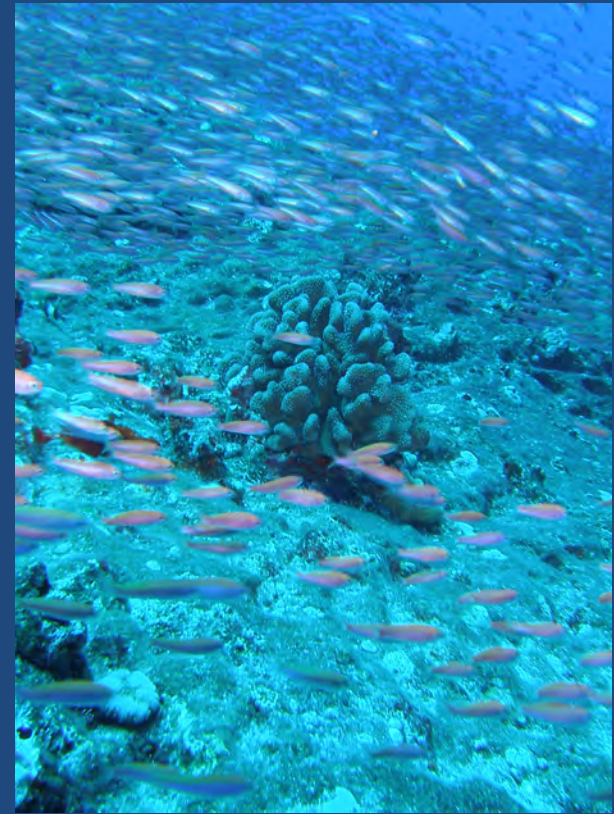
- Coral & live rock damage from vessel groundings and illegal anchoring
- Illegal aquarium collection activity – 3 recent cases
- Stream poisoning incident in Pahe'ehe'e Stream - \$633,640 fine



Ecosystem Protection Program:



- Coral Reef Conservation Program (NOAA)
- Restoration
 - Watershed
 - Coral
 - Limu
- Aquatic Invasive Species
- Urchin Hatchery
- Streams and Estuaries
- Special Activity Permits



Coral Reef Conservation Program

- 750k annually, Supports:
- Holomua: Marine 30x30 Initiative
- Hawaii Island monitoring
- Legal Fellows
- Makai watch
- Watershed restoration
- Coral restoration
- USCRTF meeting, Kona



Watershed Restoration

- Partnership Sites
 - West Maui
 - South Kohala
 - Honouliuli
 - He'eia



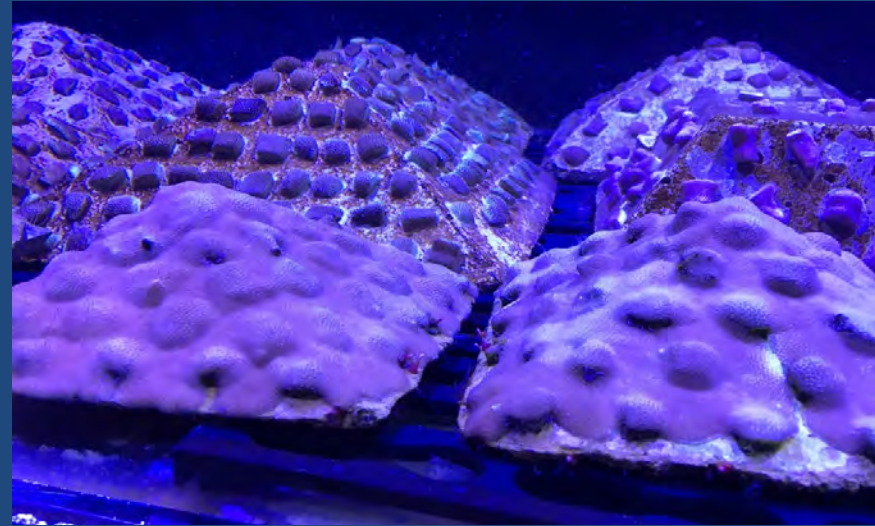
© Wireframe



Navigation controls including a compass with 'N', 'E', 'S', 'W' directions, a 'TOP' button, and a 'WCS' button.

Coral Restoration

- Coral nursery at AFRC
 - Micro-fragmenting fast growth technique
- Plans for Kona coral restoration
- NOAA/TNC coral restoration planning



Limu Restoration

- *Restore culturally significant limu, and habitat for aquatic resources*
- Community driven, strong cultural component
- Limited science
- Upgrading limu tanks



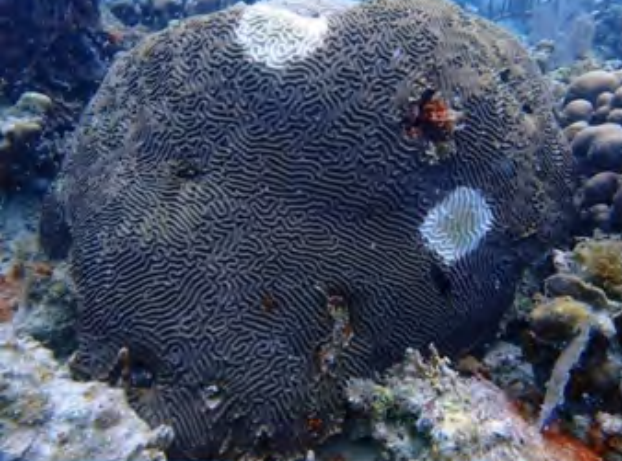
Aquatic Invasive Species

Prevent the introduction and manage existing aquatic invasive species

- Wailoa tilapia tournament
- Corallimorph at Ala Wai Small Boat Harbor
- Alien coral in Kauai and Kaneohe Bay
- Water hyacinth removal Kauai
- Ballast water and hull fouling (VIDA)
- Stony coral tissue loss disease



February 1, 2019



February 12, 2019



February 21, 2019



March 3, 2019



Image Credit: Sonora Meiling (University of the Virgin Islands)

Sea Urchin Hatchery

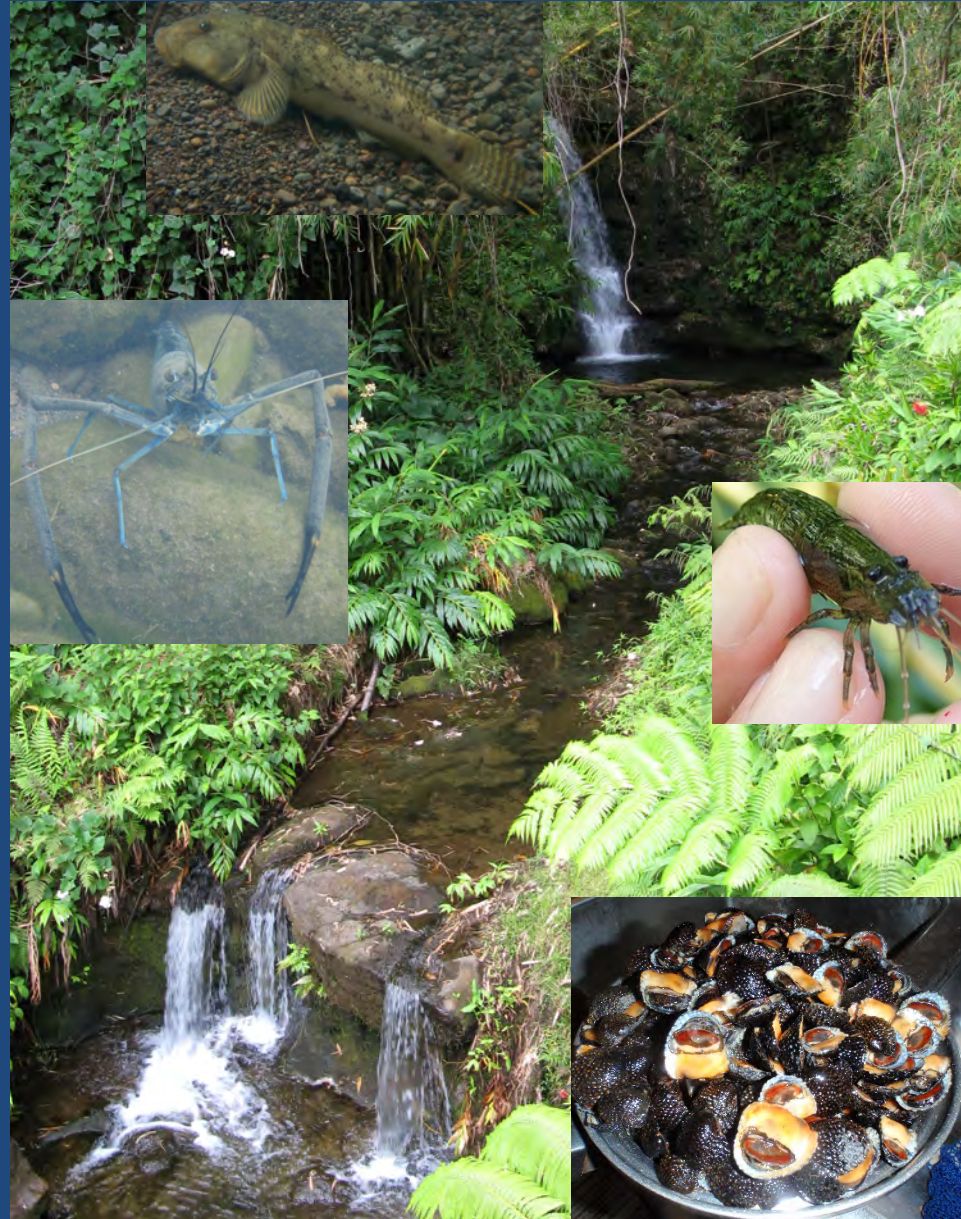
Sea Urchin Biocontrol for Invasive Seaweed

- Produces native collector sea urchins
- Sites
 - Kaneohe Bay
 - Waikiki
 - -Maunalua Bay (test)
- Initiated in 2010
- Released 830,000 sea urchins
- Pilot projects in association with coral restoration (HIMB)



Streams and Estuaries

- Statewide stream and estuary monitoring program
- eDNA monitoring
- East Maui monitoring project with CWRM
- East Hawaii stream poisoning





Environmental Damage Response

- Response coral damage events
- Wahiawa flood debris response
- Red Hill



Special Activity Permits

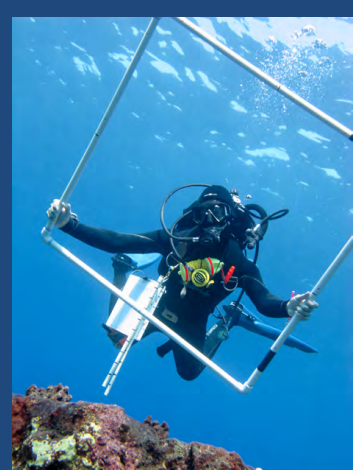
Required for any activity proposing to collect regulated aquatic organisms or resources, use regulated gear, or collect/conduct activities in regulated areas, for research, educational or management purposes

- Research
- Coral Restoration
- Coral restoration permitting framework
- Papahānaumokuākea



DAR FY 2023 Priorities

- Restore funding for unfunded/cut positions
- Restore operating funds
- Position requests
- CIP Requests to upgrade Anuenue Fisheries Research Center
- Funds to support fishpond fingerling production
- Ceiling adjustments for
 - Sport Fish Special Fund (increase for non-resident fish license)
 - Ocean Stewardship Special Fund (establish ceiling)
- Additional request to support FAD program



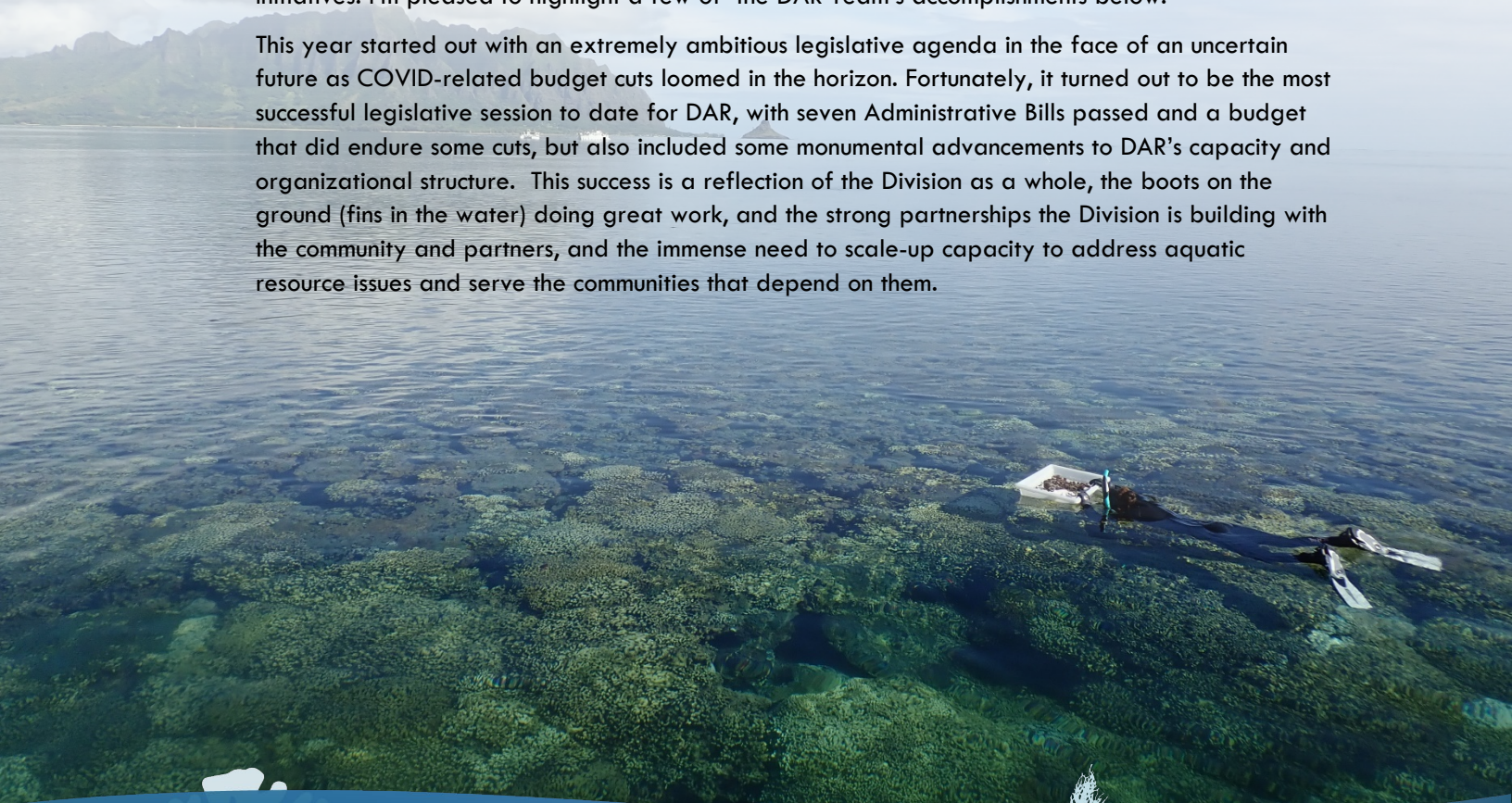
December 23, 2021

Aloha DAR Staff and Partners,

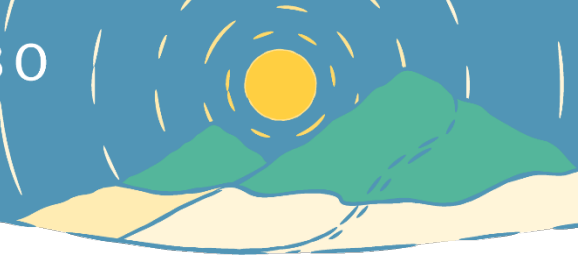
As we close out 2021 it's a good time to reflect on DAR's accomplishments over the past year and also think about where we're headed in 2022. This year continued to be a challenging year with COVID weighing heavily on all aspects of life. If anything, we've become more resilient; unpredictability has become predictable in itself. The last year and a half have provided a chance to adapt and re-think how we do things and begin to shift to a new era in how we define the "workplace". This year also showed signs of hope and a return to some form of "normalness".

Despite challenges, DAR continued to forge ahead with another productive year, in fulfilling our mission. DAR staff worked incredibly hard this year deploying creativity, problem solving, resilience, and perseverance. One aspect of DAR that I continue to see grow is the sense of "team". All of DAR's projects are led and implemented by teams and the reach of our teams seems to be steadily growing, incorporating more and more DAR staff and partners in various projects and initiatives. I'm pleased to highlight a few of the DAR Team's accomplishments below.

This year started out with an extremely ambitious legislative agenda in the face of an uncertain future as COVID-related budget cuts loomed in the horizon. Fortunately, it turned out to be the most successful legislative session to date for DAR, with seven Administrative Bills passed and a budget that did endure some cuts, but also included some monumental advancements to DAR's capacity and organizational structure. This success is a reflection of the Division as a whole, the boots on the ground (fins in the water) doing great work, and the strong partnerships the Division is building with the community and partners, and the immense need to scale-up capacity to address aquatic resource issues and serve the communities that depend on them.



HOLOMUA Pathway to 30x30



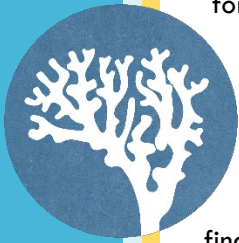
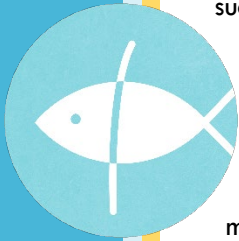
As the Biden Administration announced the America the Beautiful 30x30 Initiative, DAR steadily advanced Hawaii's Holomua: Marine 30x30 Management Goal. DAR in collaboration with our partners hope to set an example for Biden's initiative in terms of community and fisher engagement, incorporation of traditional and local knowledge, stewardship partnerships, and the development of a science-based, culturally informed co-management structure. I believe that Hawaii's approach to marine management will promote community buy-in and partnerships to achieve our collective goal of sustainably managed fisheries and effective resource management.



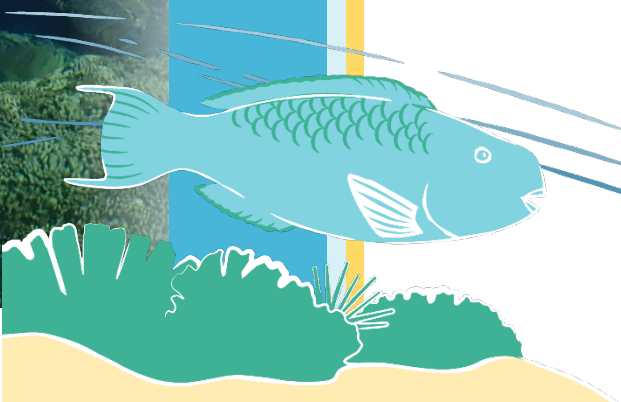
The Holomua: Marine 30x30 initiative encompasses all aspects of DAR's management "tool-box" including place-based planning, the perpetuation of pono fishing practices, ecosystem restoration and protection, and ecosystem monitoring.



In moving forward with the Holomua initiative, DAR has embraced the need to build trust with the fishing community for this plan to be successful. DAR is investing heavily into fisher engagement and set forth the Holoholo Fisher Talk Story Sessions. These are quarterly meetings for fishers to talk about fishing, fisheries management, and everything in-between. These sessions are designed to not only share information, but also build relationships with the fishing community. Staff are also quick to point-out that Zoom meeting may not be the best approach to engage fishers and always looking for opportunities to talk story through education events or while conducting field work.



As we embark on the highly ambitious goal of Holomua: Marine 30x30, we understand this requires investment to build the capacity needed to effectively manage our nearshore waters. With support of our partners, DAR has advanced sustainable financing from State, Federal, philanthropic, and revenue generating opportunities in the last year. Equally important, opportunities to fund partner's conservation work is becoming more and more prevalent, with high hopes for the federal congressionally directed funds, a "Green Fee" to support natural resources, and infrastructure investment routed to Hawaii.



DAR will also say *mahalo* and a *hui hou* to Brian Kanenaka (Program Manager), Skippy Hau (Maui Aquatic Biologist), and Darrell Kuamaoo (Hilo Fishery Technician) all serving over 40-years with the Division. Brian Kanenaka spearheaded a number of projects that still exist today (e.g. anchored FAD array program, artificial reef program), but is better known for being the “money guy” managing DAR’s budget and overseeing all of DAR’s fiscal and administrative operations for years. Brian has officially (and unofficially) filled a key leadership role at DAR through thick and thin and always managed to keep the Division afloat. His mentorship of myself and the leadership team continues to this day.

Skippy Hau established the DAR-Maui District office and is well known within the local community and academia as an expert in stream ecology and turtle conservation with knowledge and experience that can only be gained from years in the field studying these animals, combined with a never-ending curiosity and passion. Skippy has also shown a strong commitment to *kokua* or take care of these animals and ecosystems for years, often spending his weekends rescuing ‘ōpae shrimp from dried-up stream channels or documenting annual turtle nests and hatchlings.

Darrell Kuamaoo, pioneered stream and estuary work in Hawaii and developed some of the first field survey methods incorporating local and indigenous knowledge systems into stream and estuary monitoring protocols. Darrell is considered an expert in Hawaiian freshwater fish and invertebrate species and was the first to document ‘O‘opu (goby fish) post larvae recruitment in Hawaiian streams. Darrell has always been quite tech-savvy, developing the first geodatabase for survey data and continually testing new monitoring technology and techniques.

Brian, Skippy, and Darrell have been incredible mentors and advisors for many of us, and I thank them for sharing their passion and aloha for Hawaii’s aquatic resources; Hawaii is a better place because them.

Lastly, I want to acknowledge the loss of Vince Goo, who passed last week. Vince worked as a DAR Fishery Technician for 16 years as a key member of the stream, estuary, and sea urchin hatchery teams. Conversations with Vince were always interesting; he was a wealth of knowledge on freshwater, estuarine, and marine ecosystems, aquaculture, and limu cultivation. He was a dedicated fisher and always in tune with the various movements and migrations of nearshore juvenile fish. My heart goes out to his ohana, and I’m grateful for the time I had to get to know him and his contribution to Hawaii’s aquatic resources.

I highlight a few of DAR’s major accomplishments of 2021 in the attached document. I’m looking toward a healthy and productive 2022. Mahalo to our DAR staff for their effort and passion and our partners for their support and *kokua* of Hawaii’s aquatic resources and people.

Sincerely

A handwritten signature in dark ink, appearing to read "Brian Neilson". The signature is fluid and cursive, with a long horizontal stroke at the end.

Brian Neilson, DAR Administrator

DAR Accomplishment Highlights for 2021

ADMINISTRATIVE

2021 Legislative Session Highlights

- Creation of (5) new District Biologist positions
- Nonresident Recreational Marine Fishing License (authority to create)
- Ocean Stewardship User Fee (authority to create)
- Ocean Stewardship Special Fund (authority to create)
- Commercial Marine Vessel License (authority to create)
- Crustaceans (authority to modify Administrative crustacean rules)
- Lay Net Permit (authority to create)
- Adaptive Management (authority to expedite Administrative rule-making process)

New Funding Highlights

- Philanthropic support of the Holomua: Marine 30x30 Initiative
- US Fish and Wildlife Service Coastal Wetland Grant for He'eia and West Loch Pearl Harbor Honouliuli Stream
- NOAA Coastal Zone Management Grant – Special Merit Competition
- Four projects prioritized for Congressionally Directed Funds by Hawaii's Congressional delegation
- Revenue generating legislation passed: Non-resident marine recreational fishing license, Ocean Stewardship User Fee and Special Fund.
- Increase in Non-Resident Commercial Fishing License fee
- Developed spend plan to distribute 3.6 million in Round 2 CARES Act relief funds to support Hawaii's fishers

Photo: Daniel Ramirez, Flickr

PONO PRACTICES

Fisheries Management

- Establishment of a lay net permitting system (began rule-making process)
- Statewide bag and size limits for key herbivorous reef fish (held statewide scoping meetings)
- Sport Fish Restoration Strategic Plan completed
- 'Oama rules for Maui amended (adaptive management)
- Development of the Sustainable Herbivore Management Plan
- West Hawaii and Oahu Aquarium Fishery EIS review and Board Meetings

Enforcement action

- Aquarium fish poaching cases (civil violations action taken to BLNR)
- Stream poisoning case (civil violations action taken to BLNR)

Education/Outreach/Fisher engagement

- Initiated statewide Holoholo fisher talk story sessions
- Printed and distributed fishing regulations
- Installed new signage at the Pūpūkea Marine Life Conservation District
- Updated DAR website and creation of the Holomua: Marine 30x30 Page
- Hosted conservation-focused fishing education classes emphasizing pono fishing practices
- Hosted fishing clinics

Protected Species

- Provided protected species education and outreach
- Conducted protected species monitoring surveys on Niihau, Lanai, and at French Frigate Shoals (Lalo)
- Initiated a new grade-school level education curriculum and lesson plan program for local schools on Oahu, Maui, Molokai, and Hawaii
- Drafted a new State Management Plan for marine protected species
- Piloted a derelict net marine debris removal program on O'ahu

Permitting

- Provide timely support in issuing Special Activity Permits for research and education needs, while protecting and stewarding Hawaii's aquatic resources
- Continued to develop DAR's new permitting portal to streamline Special Activity Permit application and management process
- Established a Coral restoration permitting framework



Photo: Jeff Milisen

PLACE-BASED PLANNING

- Pūpūkea Marine Life Conservation District expanded
- Miloli'i Community Based Subsistence Fishing Area (CBSFA) Scoping meetings and planning
- Kipahulu CBSFA Scoping Meetings and planning
- Maunalua Bay Fisheries Management Area (FMA) Scoping and Planning
- Kahului Harbor FMA rule amendments (adaptive management)

Papahānaumokuākea Marine national Monument

- Engaged in the sanctuary designation process
- Responded to Chondria invasion to protect from spread within the monument and the main Hawaiian Islands
- Governor's proclamation recognizing the 15th Anniversary of Papahānaumokuākea Marine National Monument and UNESCO World Heritage Site
- DAR was elected to chair the Papahānaumokuākea Marine National Monument Management Board for the year 2022

Hawaiian Islands Humpback Whale Sanctuary

- Co-led a successful multi-agency working group revising best boating practices to reduce boat collisions with humpback whales
- Participated in the multi-agency regional marine mammal stranding network, including response lead for large, deceased whales
- supported the Sanctuary science team by assisting with field work and co-mentoring interns
- co-facilitated a multi-agency partnership to establish a science monitoring buoy off of Olowalu (Maui) with ocean acidification and real-time whale acoustic monitoring in conjunction with DAR and NOAA reef surveys

RESTORATION AND PROTECTION

Sea Urchin Hatchery

- Sea urchin hatchery outplanted 250,000 sea urchins (830,000 outplanted to date)

Estuarine Restoration

- Expansion of Honouliuli and He'eia Estuary community restoration projects through a Coastal Wetland Grant
- Makaloa estuarine plant nursery development

Limu Restoration

- Supported community-based partners in planning the “year of the limu, 2022”
- Upgraded and expanded community-based limu cultivation tanks for restoration

Coral Restoration

- Continue to achieve high survival and health of nursery-grown coral modules
- Documentated spawning of nursery-grown *Montipora capitata* (rice coral) modules
- Expansion of coral-nursery grow-out capacity and maintenance of the rare coral ark, which maintains over 60 species of Hawaiian corals
- Rescued 92 dislodged corals from the Honolulu Harbor channel reef damage event
- Developed and tested new coral reef restoration techniques, including polyp bailout, crustose coralline algae primer paint, oyster water quality indicators, asexual planula reaggregation and production, and testing marine epoxies for coral applications
- Co-developed a coral reef restoration plan to “Build capacity to develop, test, and apply restoration methods that enhance the resistance and recovery of coral reefs impacted by bleaching.”
- Led an emergency restoration effort to re-attach over 5,000 damaged coral colonies





Sport Fish Enhancement

- Replaced 13 anchored FADS
- Stocked 25,600 trout for the Kōke'e Public Fishing Area
- Continued to support public fishing at Wahiawa Public Fishing Area (PFA) and Waiākea PFA

Aquatic Invasive Species and Environmental Response

- Responded to multiple environmental damage events including the Honolulu Channel reef damage, Ko Olina reef damage, Kona reef damage, Maui reef damage
- Eradicated introduced coral on Kauai
- Water hyacinth removal project on Kauai
- Provided comments and participated in scoping meetings with EPA on the Vessel Incidental Discharge Act (VIDA)
- Recovered and processed statewide autonomous reef monitoring structures (ARMS) to monitor the presence of non-native species in harbors and adjacent reefs
- ARMS monitoring detected 131 unique species thus far including one new species of crustacean
- Conducted a debris clean-up at the Wahiawa Public Fishing Area following heavy rains

ECOSYSTEM MONITORING

- Conducted statewide stream, estuarine, creel, and reef surveys
- Continued to develop DAR's monitoring database to house survey data
- Produced an East Maui Stream and Estuary Ecosystem report highlighting the use of eDNA to conduct biological monitoring in these ecosystems and assess the effects of stream flow restoration

2022 PRIORITIES

PONO PRACTICES

- Establishment of a nonresident marine recreational fishing license
- Species specific and statewide fisheries planning

PLACE-BASED PLANNING

- Advancing Holomua: Marine 30x30 Initiative
 - Establishment of Island-based multi-disciplinary advisory groups
 - Initiate a community engagement campaign to participate in the designation process of establishing a network of Marine Management Areas
 - Continue scoping process for the Miloli'i CBSFA, Kipahulu CBSFA, Maunalua Bay FMA, and Statewide herbivore rules
 - Build trust with fishing community by facilitating opportunities for DAR staff to talk story with fishers
- Complete HEPA process for Papahānaumokuākea Sanctuary proposal

RESTORATION AND PROTECTION

- Expand Coral Reef and Estuary Restoration efforts
- Development of Coral Restoration Plans for fish habitat enhancement and shoreline protection
- Recuperate the anchored FAD Program
- Implementation of the Sport Fish Restoration strategy
- Support for Loko'i'a fish ponds and limu restoration

ECOSYSTEM MONITORING

- Establishment of an East Hawaii Monitoring Program in coordination with partners

ADMINISTRATIVE

- Rebuilding and growing DAR's budget
- Finalize the DAR re-organization and fill new District Biologist positions and other vacancies
- Modernization of Administrative Processes
- Infrastructure improvements and expansion