2.7 MARINE PLANNING

2.7.1 Introduction

Marine planning is a science-based management tool being utilized regionally, nationally, and globally to identify and address issues of multiple human uses, ecosystem health, and cumulative impacts in the coastal and ocean environment. Efforts by the Western Pacific Regional Fishery Management Council (the Council) to formalize incorporation of marine planning in its actions began in response to Executive Order (EO) 13547, *Stewardship of the Ocean, Our Coasts, and the Great Lakes*. EO 13158, *Marine Protected Areas*, proposes that agencies strengthen the management, protection, and conservation of existing marine protected areas (MPAs), develop a national system of MPAs representing diverse ecosystems, and avoid causing harm to MPAs through federal activities. MPAs, or marine managed areas (MMAs), are one tool used in fisheries management and marine planning.

At its 165th meeting in March 2016, in Honolulu, Hawaii, the Council approved the following objective for the FEPs: To consider the implications of spatial management arrangements in Council decision-making. The following sub-objectives apply:

- Identify and prioritize research that examines the positive and negative consequences of areas that restrict or prohibit fishing to fisheries, fishery ecosystems, and fishermen, such as the Bottomfish Restricted Fishing Areas (BRFAs), military installations, NWHI restrictions, and Marine Life Conservation Districts (MLCDs).
- Establish effective spatially based fishing zones.
- Consider modifying or removing spatial-based fishing restrictions that are no longer necessary or effective in meeting their management objectives.
- As needed, periodically evaluate the management effectiveness of existing spatial-based fishing zones in Federal waters.

To monitor implementation of this objective, this annual report includes the Council's spatially based fishing restrictions and MMAs, the goals associated with those, and the most recent evaluation. Council research needs are not tracked in this report.

To meet the EFH and National Environmental Policy Act (NEPA) mandates, this annual report tracks activities that occur in the ocean that are of interest to the Council and incidents and facilities that may contribute to cumulative impact. The National Marine Fisheries Service (NMFS) is responsible for NEPA compliance, and the Council must assess the environmental effects of ocean activities for the EFH cumulative impacts section of the FEP.

2.7.2 Response to Previous Council Recommendations

There are no standing Council recommendations indicating review deadlines for Hawaii MMAs.

2.7.3 Marine Managed Areas Established Under FEPs

Council-established MMAs were compiled in Table 1 from 50 CFR § 665, Western Pacific Fisheries, the Federal Register, and Council amendment documents. Regulated fishing areas of Hawaii, including the Papahānaumokuākea Marine National Monument, are shown in Figure 1.

Table 1. MMAs established under FEP from 50 CFR § 665

Name	FEP	Island	50 CFR/FR/ Amendment Reference	Marine Area (km^2)	Fishing Restriction	Goals	Most Recent Evaluation	Review Deadline
Pelagic Restrictions								
NWHI Longline Protected Species Zone	Pelagic (Hawaii)	NWHI	665.806(a)(1) 56 FR 52214 76 FR 37288 Pelagic FMP Am. 3	351,514.0	Longline fishing prohibited	Prevent longline interaction with monk seals	1991	-
MHI Longline Prohibited Area	Pelagic (Hawaii)	MHI	665.806(a)(2) 57 FR 7661 77 FR 71286 Pelagic FMP Am. 5	248,682.4	Longline fishing prohibited	Prevent gear conflicts between longline vessels and troll/handline vessels	1992	-
Bottomfish Restrictions								
Hancock Seamounts Ecosystem Management Area (HSEMA)	Hawaii Archipelago	NW of Midway Island	HSEMA: 665.209 75 FR 52921 84 FR 2772 Moratorium: 51 FR 27413 Bottomfish FMP	60,826.8	Moratorium	The intent of the continued moratorium is to facilitate rebuilding of the armorhead stock, and the intent of the ecosystem management area is to facilitate research on armorhead and other seamount groundfish	2010	-
Precious Coral Permit Areas								
Keahole Point	Hawaii Archipelago	Hawaii Island	665.261(2)(i) 73 FR 47098 84 FR 2773 Precious Corals FMP Am. 7	2.7	Fishing by permit only	Manage harvest	2008	-
Kaena Point	Hawaii Archipelago	Oahu	665.261(2)(ii) 73 FR 47098 84 FR 2773 Precious Corals FMP Am. 7	2.7	Fishing by permit only	Manage harvest	2008	-
Makapuu	Hawaii Archipelago	Oahu	665.261(1)(i) 73 FR 47098 84 FR 2773 Precious Corals FMP Am. 7	43.15	Fishing by permit only	Manage harvest	2008	-
Brooks Bank	Hawaii Archipelago	NWHI	665.261(2)(iii) 73 FR 47098 84 FR 2773 Precious Corals FMP Am. 7	43.15	Fishing by permit only	Manage harvest	2008	-
180 Fathom Bank	Hawaii Archipelago	NWHI	665.261(2)(iv) 73 FR 47098 84 FR 2773 Precious Corals FMP Am. 7	43.15	Fishing by permit only	Manage harvest	2008	-
Westpac Bed	Hawaii Archipelago	NWHI	665.261(3) 73 FR 47098 84 FR 2773 Precious Corals FMP Am. 7	43.15	Fishing prohibited	Manage harvest	2008	-
Auau Channel	Hawaii Archipelago	Maui Nui	665.261(1)(ii) 73 FR 47098 84 FR 2773 Precious Corals FMP Am. 7	728.42	Fishing by permit only	Harvest quota for black coral of 5,000 kg every two years for federal and state waters	2008	-

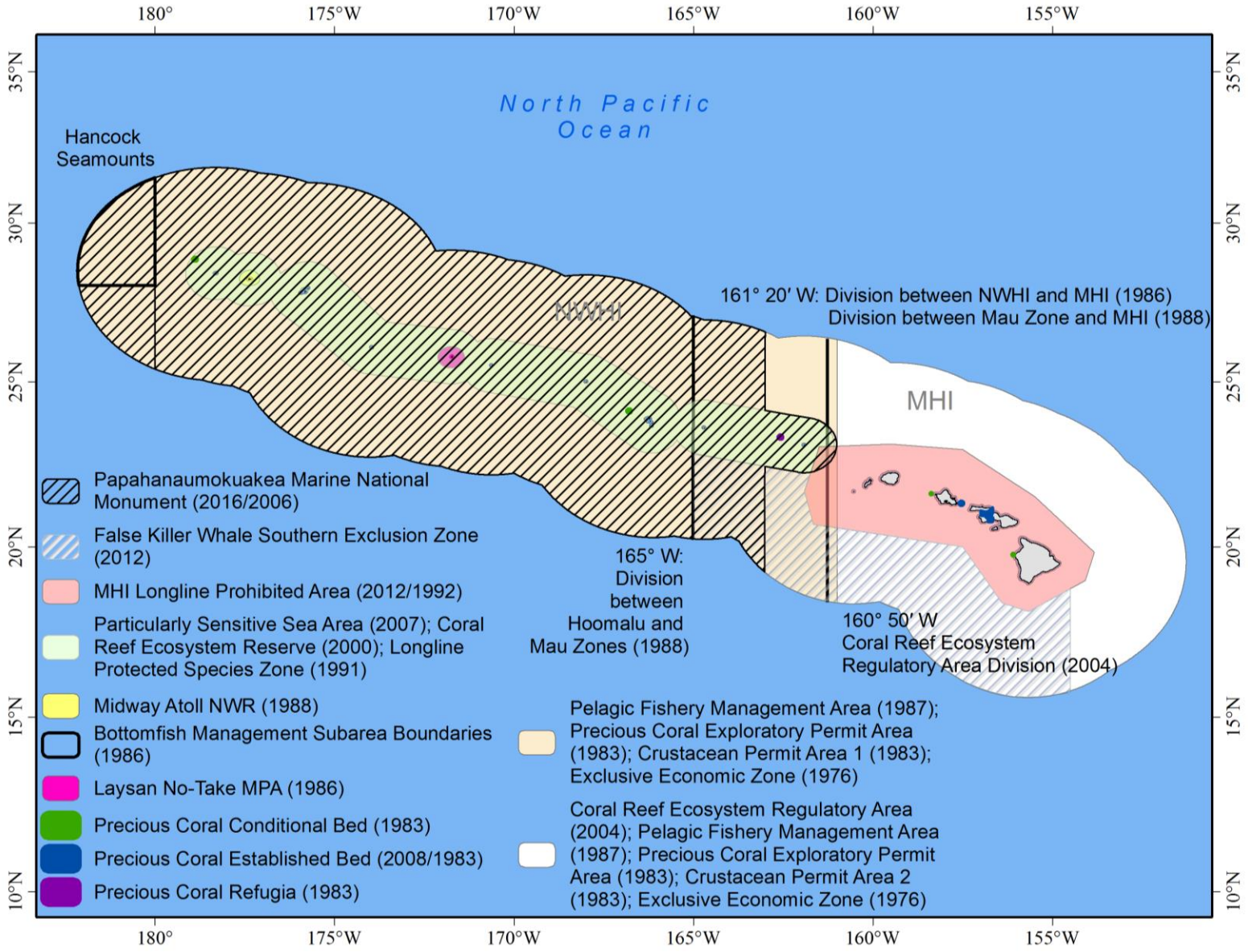

Figure 1. Regulated fishing areas of the Hawaii Archipelago

2.7.4 Fishing Activities and Facilities

2.7.4.1 Aquaculture Facilities

Hawaii has operational offshore aquaculture facility operating in Federal waters that was owned by Ocean Era (formerly Kampachi Farms), but the associated Special Coral Reef Ecosystem Fishing Permit (SCREFP) been transferred to Forever Oceans (see Table 2). A new nearshore aquaculture operation by Ocean Era is current in the pre-consultation stage, with a preliminary environmental review being circulated to resource management agencies for review. The aquaculture farm will be situated off of Ewa Beach, Oahu, and will aim to cultivate nenue (*Kyphosus vaigiensis*), moi (*Polydactylus sexifilis*), ogo (*Gracilari* sp.), *Sargassum*, and sea grapes (*Caulerpa* sp.).

Table 2. Offshore aquaculture facilities in Hawaii

Name	Size	Location	Species	Status
Forever Oceans, transferred from Ocean Era (formerly Kampachi Farms)	Shape: Cylindrical Height: 33 ft. Diameter: 39 ft. Volume: 36,600 ft^3	5.5 nautical miles (nm) west of Keauhou Bay and 7 nm south-southwest of Kailua Bay, off the west coast of Hawaii Island 19° 33’ N, 156° 04’ W. Mooring scope is 10,400-foot radius.	*Seriola rivoliana*	On July 6, 2016, NMFS authorized SCREFP for culture and harvest of 30,000 kampachi over two years on July 6, 2016. Array broke loose from mooring and net pen sank in 12,000 feet of water on Dec. 12, 2016. The mooring was redeployed under guidance from the U.S. Army Corps of Engineers (USACE) in late 2018 and stocked with a cohort of 10,000 fish in early 2019. On March 30, 2017. NMFS authorized transfer of the two-year SCREFP from Ocean Era to Forever Oceans. Forever Oceans recently renewed the SCREFP under the same terms and conditions through June 30, 2021, which allowed the harvest of two cohorts of fish. The permit renewal process is currently ongoing.

2.7.5 Non-Fishing Activities and Facilities

The following section includes activities or facilities associated with known uses and predicted future uses. The Plan Team will update this section as new facilities are proposed and/or built. Due to the sheer volume of ocean activities and the annual frequency of this report, only major activities on multi-year planning cycles are tracked. Activities which are no longer reasonably foreseeable or have been replaced with another planning activity are removed from the report, though may occur in previous reports.

2.7.5.1 Alternative Energy Facilities

Hawaii previously had four proposed wind energy facilities of commercial interest nominated by the Bureau of Ocean Energy Management (BOEM) in its Call Areas northwest and south of Oahu, all of which were in the area identification and environmental assessment stage of the leasing process (Progression Energy, 2015), but these projects were disengaged around 2018

(BOEM Hawaii Activities). In December 2020, BOEM put out a new call for recommendations on environmental studies regarding offshore wind facilities, and the Hawaii State Energy Office is facilitating and providing input on studies that could be conducted to mitigate impacts on various resources, including aquatic. There are several alternative energy projects also being tracked in this report).

Table **3**).

Table 3. Alternative energy facilities and development offshore of Hawaii

Name	Type	Location	Impact to Fisheries	Stage of Development	Source
Makai Ocean Engineering, Inc., Natural Energy Laboratory of Hawaii Authority (NELHA)	120 kW Ocean Thermal Energy Conversion (OTEC) Test Site/ 1 MW OTEC Test Site	Keʻahole, North Kona, West Hawaii	Intake	120 kW OTEC operational; Final EA for 1 MW OTEC Site using existing infrastructure submitted July 2012 and finalizing lease negotiations currently; HEPA Exemption List memo Dec. 27, 2016.	NELHA Energy Projects Final Environmental Assessment, NELHA, July 2012
Honolulu Sea Water Air Conditioning (SWAC)	SWAC	4 miles S of Kakaʻako, Oahu	Benthic impacts; intake	USACE Record of Decision (ROD) signed in 2015. In 2018, HSWAC and the State of Hawaii finalized an agreement to provide seawater air conditioning for eight state buildings. Construction was planned to start in late 2019 or, but the operation was shut down in late 2020 due to increasing costs.	Honolulu SWAC Press Room Final Environmental Assessment, June 2014 West Hawaii Today
Marine Corps Base Hawaii Wave Energy Test Site (WETS)	Shallow- and Deep-Water Wave Energy	1, 2 and 2.5 km N of Mokapu, Oahu	Hazard to navigation	Shallow and deep water wave energy units operational in mid-2015. A buoy that was planned to be connected in early 2020 was delayed due to COVID-19. An autonomous offshore power system began tests in late 2020.	Final Environmental Assessment, NAVFAC PAC, January 2014 E&E News Hawaii Natural Energy Institute Tethys The Maritime Executive

2.7.5.2 Military Training and Testing Activities and Impacts

The Department of Defense major planning activities in the region are summarized in Table 4.

Table 4. Military training and testing activities offshore of Hawaii

Action	Description	Phase	Impacts
Rim of the Pacific (RIMPAC) Exercise	Multinational, sea control/power projection fleet exercise that has been performed biennially for currently headquartered in Pearl Harbor, Hawaii. RIMPAC exercise locations are present throughout the State of Hawaii.	RIMPAC Programmatic EA developed in 2002 and a Supplemental Programmatic EA was finalized in 2006 (71 FR 31170). Biennial exercises continue through the present, with the most recent being in August 2020 around the Hawaiian Islands.	Programmatic Environmental Assessment, June 2002
Hawaii-Southern California Training and Testing (HSTT)	Increased naval testing and training activities, including the use of active sonar and explosives	Record of Decision (ROD) available in December 2018 to conduct training and testing activities as identified in Alternative 1 of the HSTT Final Environmental Impact Statement (EIS)/Overseas EIS (OEIS) published in October 2018 (83 FR 66255).	The 2018 HSTT EIS/OEIS predicts impacts to access and habitat impact similar to previous analysis in the 2013 HSTT EIS/OEIS.
Long Range Strike Weapon Systems Evaluation Program (WSEP)	Conduct operational evaluations of Long-Range Strike weapons and other munitions as part of Long-Range Strike WSEP operations at the Pacific Missile Range Facility at Kauai, Hawaii.	Comment period closed Feb. 6, 2017, and final rule on Aug. 22, 2017, for NMFS authorization to take marine mammals incidental to conducting munitions testing for their Long-Range Strike Weapons Systems Evaluation Program (LRS WSEP) over the course of five years, from August 21, 2017 through August 22, 2022 (82 FR 1702; 82 FR 39684).	Access – closures during training. Final Environmental Assessment, October 2016 NMFS Biological Opinion, August 2017
Naval Special Operations Training in the State of Hawaii	Small-unit maritime training activities for naval special operations personnel.	Public comment period through Dec. 10, 2018 was extended to Jan. 7, 2019.	Access. Draft Environmental Assessment, 2018

2.7.6 Additional Considerations

2.7.6.1 State of Hawaii Initiatives

The State of Hawaii has several initiatives ongoing, including its 30x30 Initiative and its Ocean Resource Management Plan, which was most recently updated in 2020 (Hawaii Office of Planning 2020). Interested parties are encouraged to provide input to and track the progress of these plans.

2.7.6.2 Bottomfish Restricted Fishing Areas (BRFAs)

In 1997, in response to a Federal stock assessment indicating that certain species of the MHI bottomfish stock complex were in danger of being overfished, DAR developed a bottomfish management plan, which included the creation of 19 bottomfish restricted fishing areas (BRFAs) where bottomfish fishing was prohibited. These BRFAs were enacted in 1998. The MHI BRFAs are situated in both State and Federal waters. Upon review in 2005, it was determined that the BRFA system did not protect an adequate amount of preferred habitat for bottomfish, so a new system was created with 12 BRFAs (Figure 2) with the objective of reducing fishing mortality of MHI bottomfish stocks, rebuilding bottomfish populations on habitats within the BRFAs, and improve bottomfish populations in adjacent fishing areas (Drazen et al. 2014). In 2019, four of the 12 BRFAs were opened: RFA C (Poipu, Kauai), BRFA F (Penguin Banks), BRFA J (Hana, Maui), and BRFA L (Leleiwi, Hawaii Island) (Figure 2).

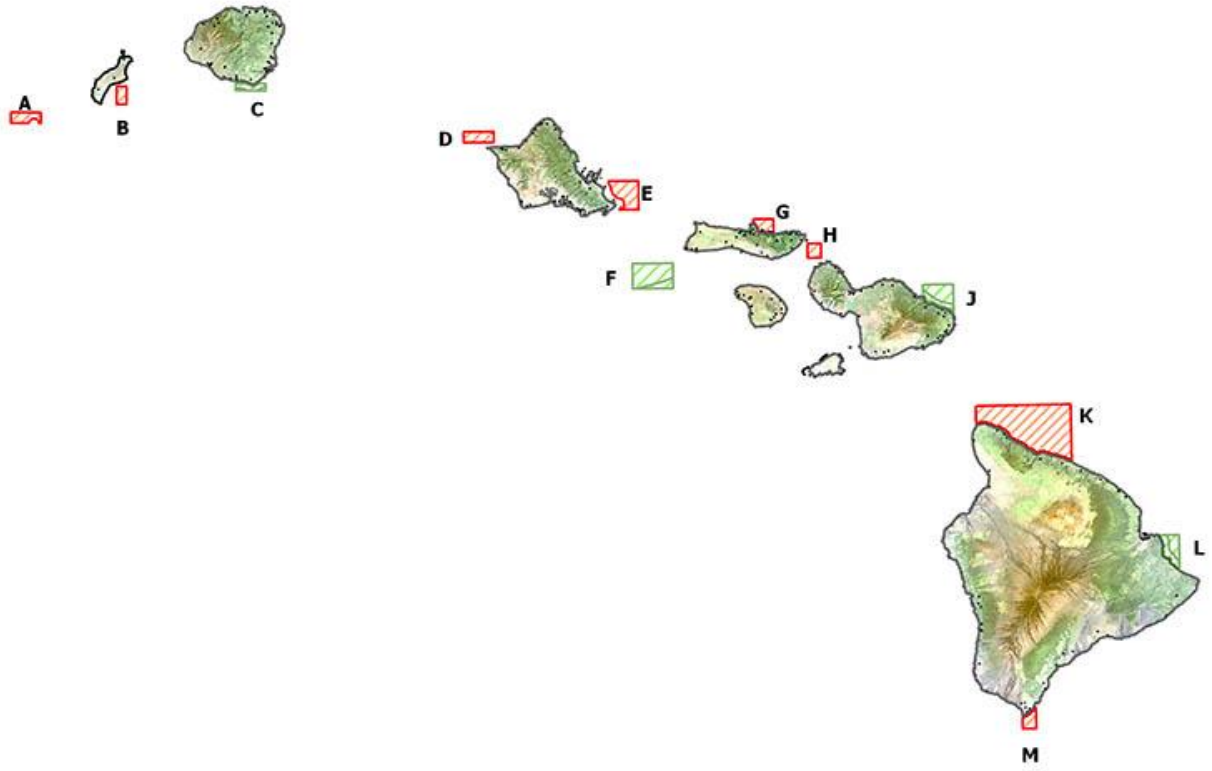

Figure 2. Map of the 12 BRFAs around the MHI; red boxes indicate that the area is closed to bottomfish fishing, and green boxes indicate those areas recently opened to bottomfish fishing (Source: DAR website)

2.7.6.3 Fish Aggregating Devices (FADs)

Fish aggregating devices (FADs) have been placed in the waters around the MHI and is run by the Hawaii Institute of Marine Biology, SOEST, UH, and DAR. FADs attract schools of tuna, mahimahi, ono, billfish, and other pelagic fishes so that fishermen can easily locate and catch these species, as it is known that pelagic fish tend to aggregate around floating objects (Hawaii Sea Grant). The FADS utilized around the MHI are typically surface FADs anchored using a catenary mooring method and have an average life expectancy of 3 to 4 years (Figure 3; Hawaii Sea Grant).

There are currently 54 FADs monitored and maintained throughout the MHI, with 17 around the Big Island (Figure 4), 14 around Maui (Figure 5), 14 around Oahu (Figure 6), and nine around Kauai (Figure 7). Over the course 2020, there were 24 FADs that were confirmed as missing or were recovered, and there were 23 FADs that were replaced. As of March 2, 2021, two of the 17 FADs around the Big Island, six of the 14 FADs around Maui, eight of the 14 FADs around Oahu, and four of the nine FADs around Kauai were not active (Figure 4 through Figure 7). Additionally, there were two FADs, one near Maui and the other near the Big Island, that were discontinued.

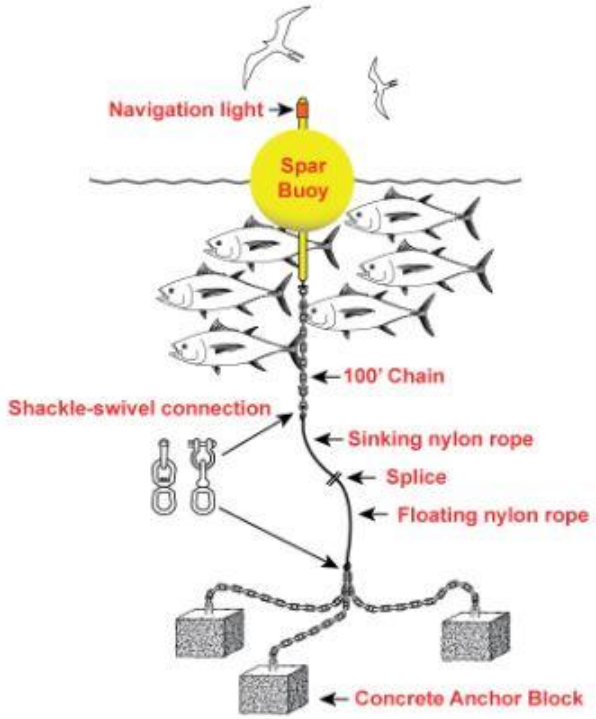

Figure 3. Diagram of the typical arrangement of FADs around the MHI (from Hawaii Sea Grant)

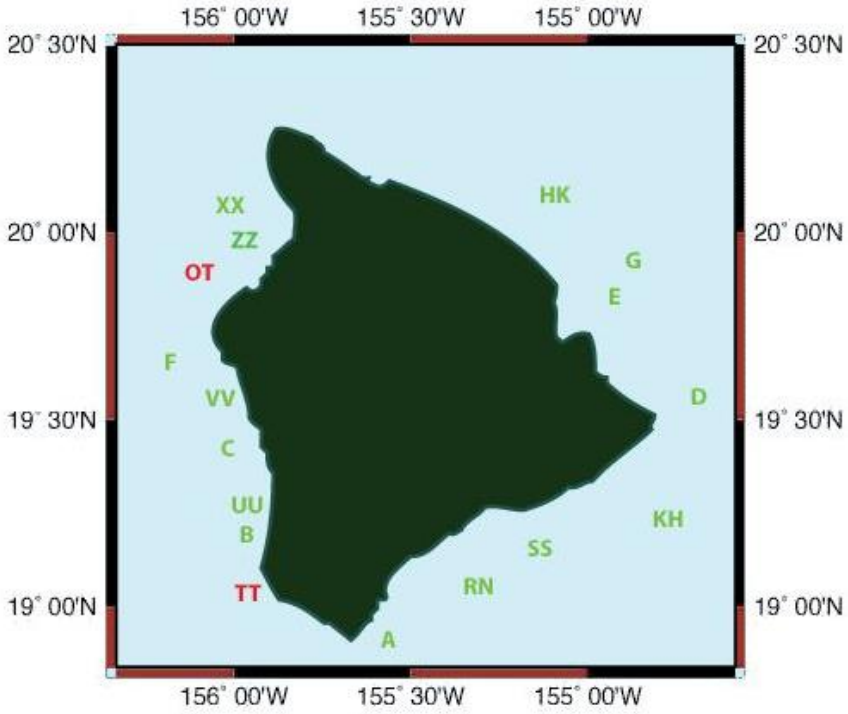

Figure 4. Map of FADs in the waters around the Big Island; red letters indicate a FAD that is known to be missing, and green letters indicate an active FAD that has been recently deployed (from Hawaii Sea Grant)

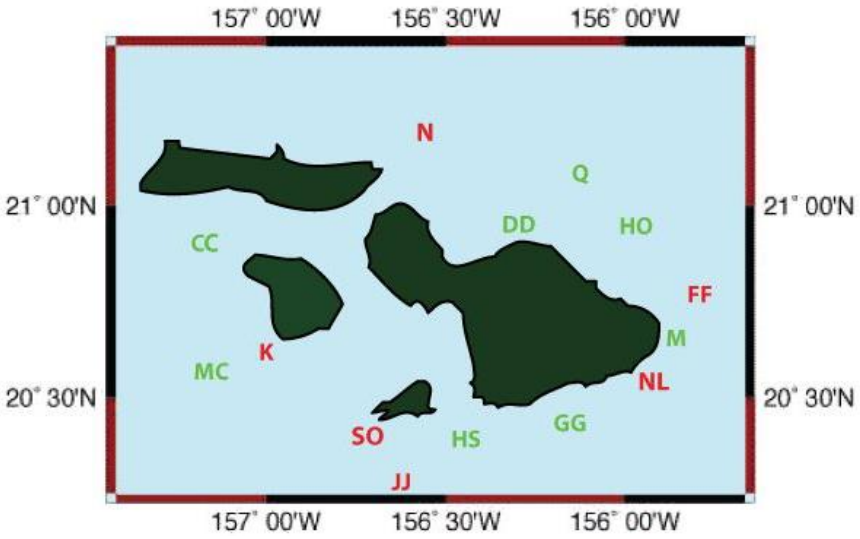

Figure 5. Map of FADs in the waters around Maui; red letters indicate a FAD that is known to be missing, and green letters indicate an active FAD that has been recently deployed (from Hawaii Sea Grant)

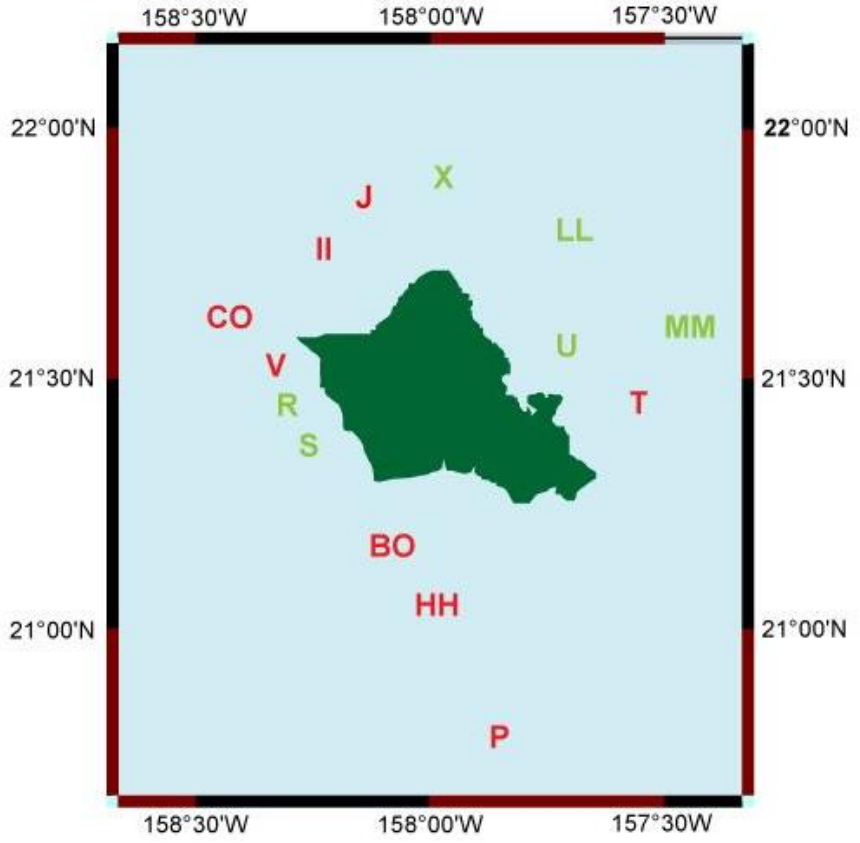

Figure 6. Map of FADs in the waters around Oahu; red letters indicate a FAD that is known to be missing, and green letters indicate an active FAD that has been recently deployed (from Hawaii Sea Grant)

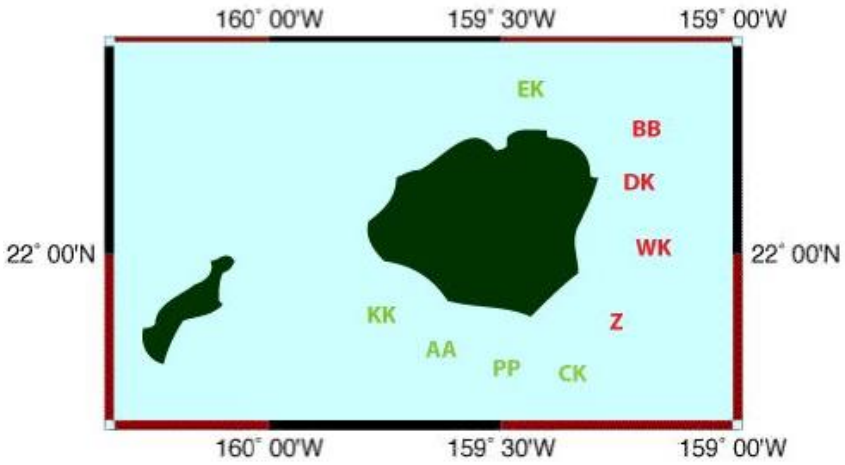

Figure 7. Map of FADs in the waters around Kauai; red letters indicate a FAD that is known to be missing, and green letters indicate an active FAD that has been recently deployed (from Hawaii Sea Grant)