



**MARINE INSTITUTE**  
MAUI OCEAN CENTER

# Sea Turtle Conservation Program

## 2020 Annual Report



### **Our Mission**

To inspire lifelong environmental stewardship and ensure the survival of coral reefs and sea turtles in Hawai'i through science-based conservation efforts, education, and outreach.

### **Partnership with NOAA NMFS**

Sea turtle stranding response activities operate under the direction and authority of NMFS Pacific Islands Regional Office (PIRO) and the Pacific Islands Fishery Science Center (PIFSC). MOC Marine Institute is an authorized agent of the National Marine Fisheries Service (NMFS) for the purposes of responding to stranded sea turtles: 50 CFR 222.310; 50 CFR 223.206; 50 CFR 17.21; and 50 CFR 17.31.

### **Sea Turtle Stranding Data**

This report contains information on documented injured, sick, distressed, or expired sea turtles on the island of Maui from 1 January to 31 December 2020. The data source is MOC Marine Institute's database. The data presented throughout this report is preliminary and based on field assessment, not necropsy.

### **For more information, please contact:**

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# Sea Turtle Conservation Program

## 2020 Annual Report

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### Sea Turtle Conservation Team

#### MOC Marine Institute Staff Members (April 2021)

Tommy Cutt, Executive Director  
Dustin Paradis, Conservation Coordinator  
Chanel Browne, Sea Turtle Technician  
Mikaela Dibble-Kahn, Sea Turtle Technician  
Sanoma Boynton, Sea Turtle Dispatch

#### Veterinarian

Dr. Paul McCurdy

#### Volunteer Lead Responders

Alan Espiritu, Cheryl King, Don McLeish, Bruce Weyermann

#### Volunteer Responders

George Allen, Tara Branham, Meryl Cohen, Shawn Caley, Miranda Camp, Dereck DeCrausauz, Kristen DeCrausauz, Greg Helton, Peyton Hoge, Maria Norman, Carol Riccio, Ron Riccio, Darby Ryan, Bonnie Slater, Karolle Wall, Anita Wintner

#### 2020 Conservation Interns

Erin Adams, Keolani Hill, Sabrina Medina, Teje Roy, Devyn Taht, Marla Tomorrow, Ash Wisco



**Figure 1.** Volunteer Lead Responders, Alan Espiritu and Bruce Weyermann release a sea turtle patient back into the ocean. Po‘olenalena Beach Park, Maui, HI.

## Sea Turtle Stranding Response

This report contains information on documented sick, injured, distressed, or otherwise compromised sea turtles on the island of Maui, Hawai‘i from 1 January to 31 December 2020. The data source is MOC Marine Institute's database.

**Table 1.** Common name equivalents to scientific names and abbreviations given throughout this report.

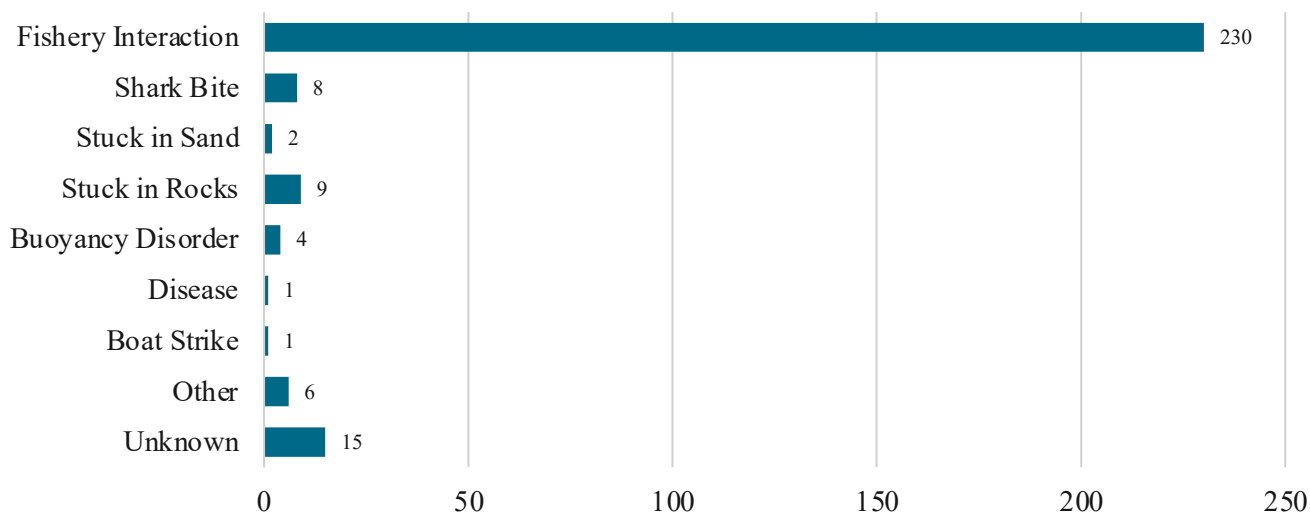
Scientific Name	Abbreviation	Common Name
<i>Chelonia mydas</i>	Cm	Green sea turtle

## Sea Turtle Stranding Response: 2020 Overview

The data presented throughout this report is preliminary and based on field assessment, not necropsy.

Two hundred seventy-six (276) sea turtles were documented stranded on the island of Maui by MOC Marine Institute’s (MOCMI’s) Sea Turtle Stranding Response Program from 1 January to 31 December 2020. 250 of the 276 were located alive.

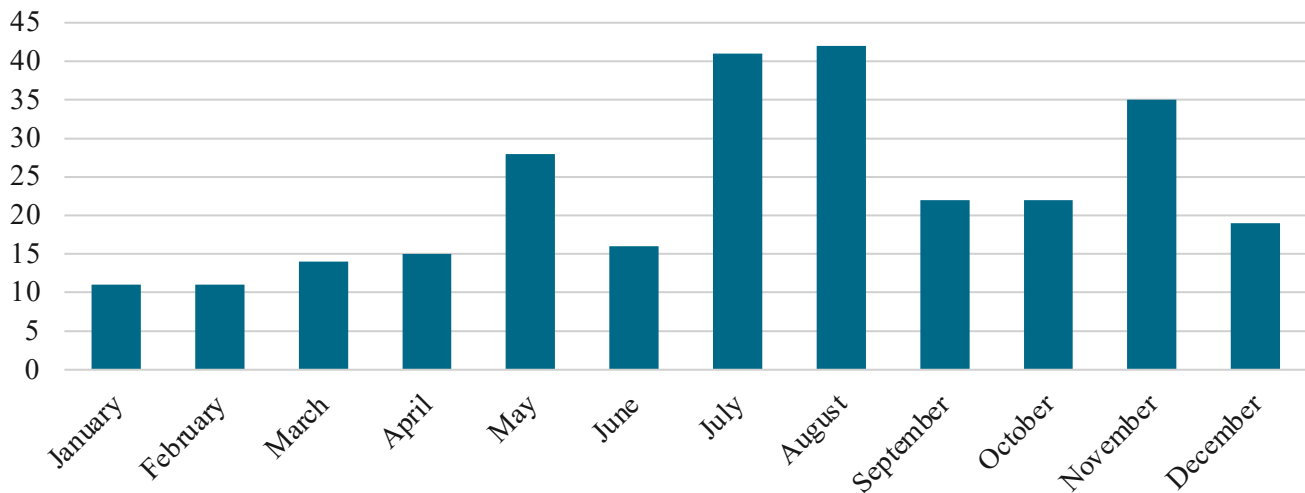
All 276 sea turtles that stranded in 2020 were greens (*Chelonia mydas*). Stranding causes included fishery interactions (n=230), lodged in shoreline rocks (n=9), stuck in the sand (n=2), buoyancy disorder (n=4), shark bite (n=8), disease (n=1), boat strike (n=1), other causes (n=6), and unknown causes (n=15).



**Figure 2.** Cause of stranding. 1 January – 31 December, 2020. Maui, HI.

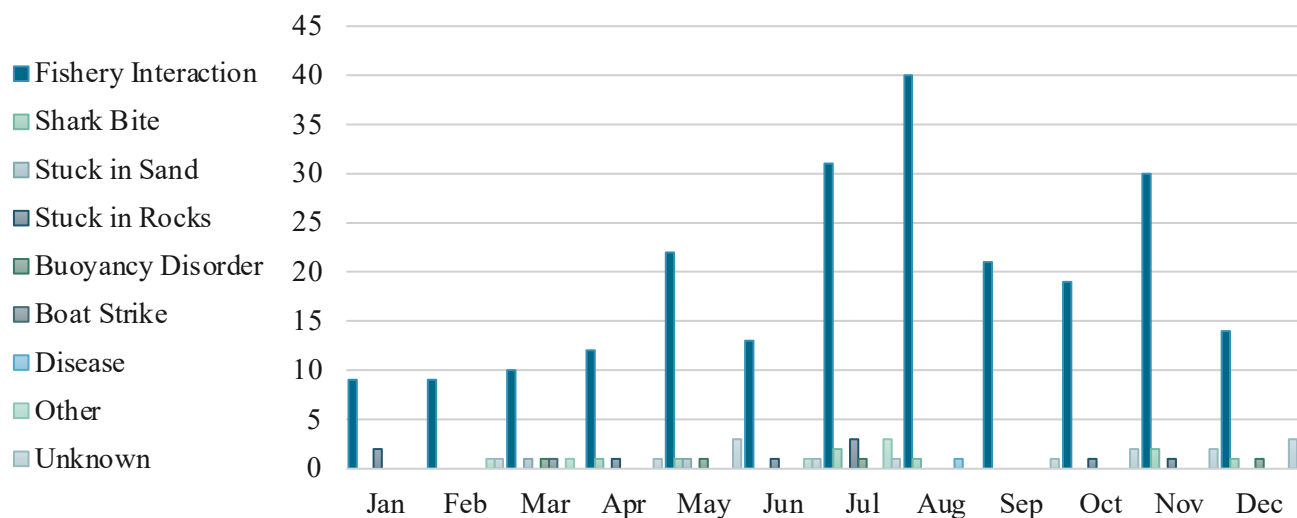
### Sea Turtle Stranding Response: Strandings by Month

Among the 276 sea turtles that stranded in 2020, most were documented in August (n=42), followed by July (n=41), November (n=35), May (n=28), September (n=22), October (n=22), December (n=19), June (n=16), April (n=15), March (n=14), January (n=11), and February (n=11).



**Figure 3.** Sea turtle strandings by month, 1 January – 31 December, 2020. Maui, HI.

### Sea Turtle Stranding Response: Stranding Type by Month



**Figure 4.** Sea turtle stranding type by month, 1 January – 31 December, 2020. Maui, HI.

**Table 2.** Stranding cause by region and age class, 1 January – 31 December, 2020. Maui, HI

Region	Stranding Cause	Juvenile	Sub-adult	Adult	Unknown
South	Buoyancy Disorder	2	1	0	0
	Disease	0	0	0	0
	Fishery Interaction	57	67	39	1
	Shark Bite	1	1	2	0
	Stuck in Rocks/Sand	5	2	3	0
	Other	0	1	0	0
	Unknown	5	1	0	2

**Table 3.** Stranding cause by region and age class, 1 January – 31 December, 2020. Maui, HI

Region	Stranding Cause	Juvenile	Sub-adult	Adult	Unknown
West	Buoyancy Disorder	1	0	0	0
	Disease	0	0	0	0
	Fishery Interaction	17	22	8	2
	Shark Bite	0	0	2	0
	Stuck in Rocks/Sand	0	0	0	0
	Other	0	0	2	1
	Unknown	3	0	1	0

**Table 4.** Stranding cause by region and age class, 1 January – 31 December, 2020. Maui, HI.

Region	Stranding Cause	Juvenile	Sub-adult	Adult	Unknown
North	Buoyancy Disorder	0	0	0	0
	Disease	0	0	0	0
	Fishery Interaction	0	0	10	0
	Shark Bite	0	0	0	1
	Stuck in Rocks/Sand	0	0	1	0
	Other	0	0	3	0
	Unknown	0	0	0	0

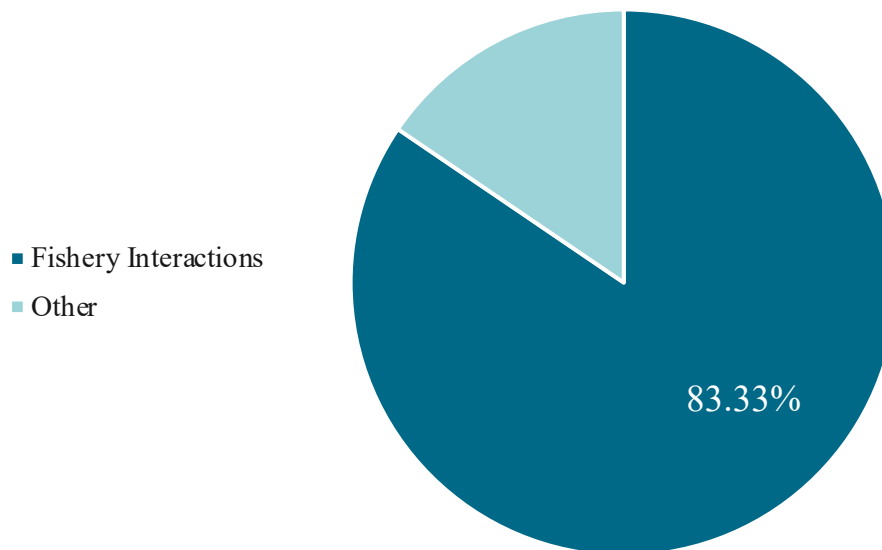
**Table 5.** Stranding cause by region and age class, 1 January – 31 December, 2020. Maui, HI.

Region	Stranding Cause	Juvenile	Sub-adult	Adult	Unknown
Central	Buoyancy Disorder	0	0	0	0
	Disease	1	0	0	0
	Fishery Interaction	4	0	3	0
	Shark Bite	0	0	1	0
	Stuck in Rocks/Sand	0	0	0	0
	Other	0	0	0	0
	Unknown	1	1	1	0

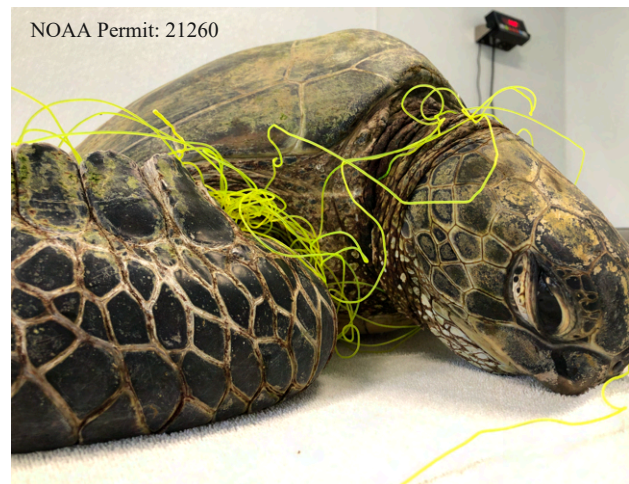


## Sea Turtle Stranding Data: Fishery Interactions

Interactions in nearshore coastal fisheries are a primary threat to sea turtles in the main Hawaiian Islands. Between 1 January and 31 December 2020, 83.33% (n=230) of the documented sea turtle strandings on Maui were a result of interactions with fishing gear.



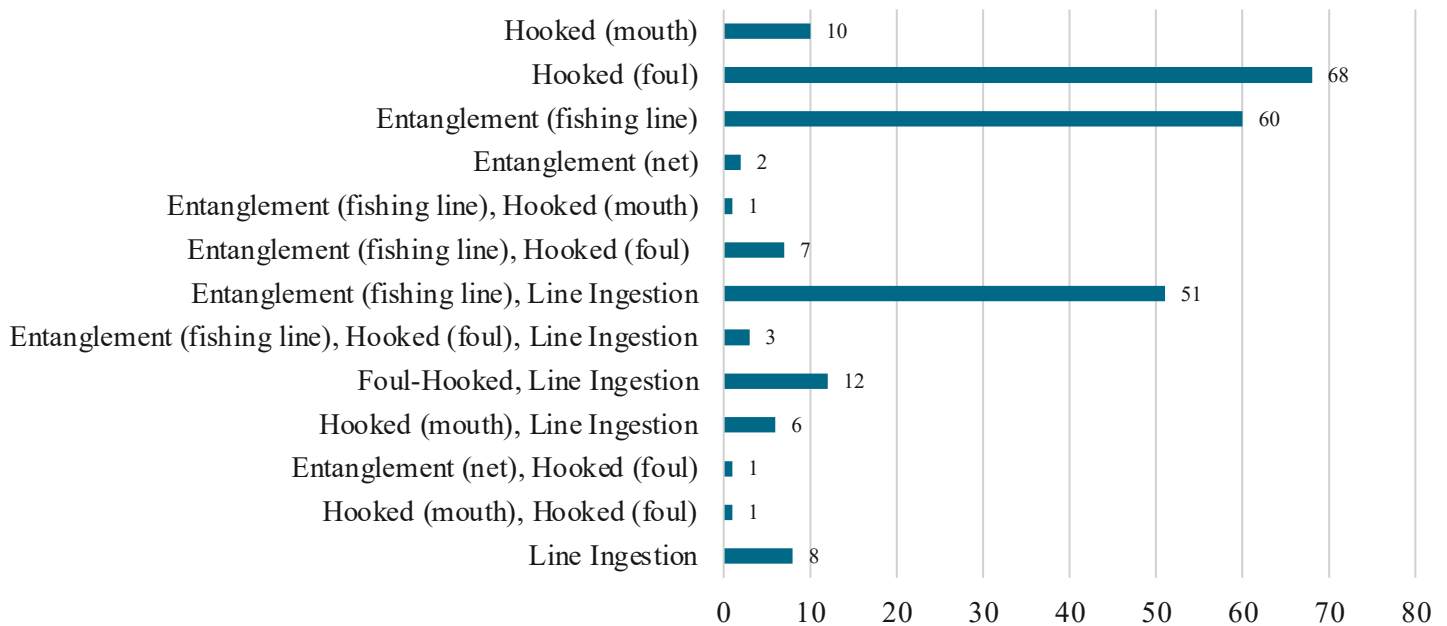
**Figure 5.** 83.33% of documented strandings on Maui in 2020 were due to fishery interactions. 1 January – 31 December, Maui, HI, 2020.



**Figure 6.** (Left) Adult male green turtle (*Chelonia mydas*) with circle hook pierced through its left eyelid. Makena Landing, Makena. (Right) Juvenile green turtle (*Chelonia mydas*) with monofilament fishing line entangled around neck and both front flippers. MOC Marine Institute, Ma‘alaea, HI.

## Sea Turtle Stranding Data: Fishery Interactions

Among the documented fishery interactions in 2020, the majority were due to turtles that were entangled in fishing line (n=124).



**Figure 7.** Fishery interactions by type of interaction. 1 January – 31 December 2021. Maui, HI.



**Figure 8.** (Left) Juvenile green turtle (*Chelonia mydas*) with large circle hook pierced through the left front flipper. (Right) Juvenile green turtle (*Chelonia mydas*) entangled in green braided fishing line.



**Figure 9.** Sea turtle strandings caused by interactions with fishing gear. 1 January – 31 December 2020. Maui, HI.

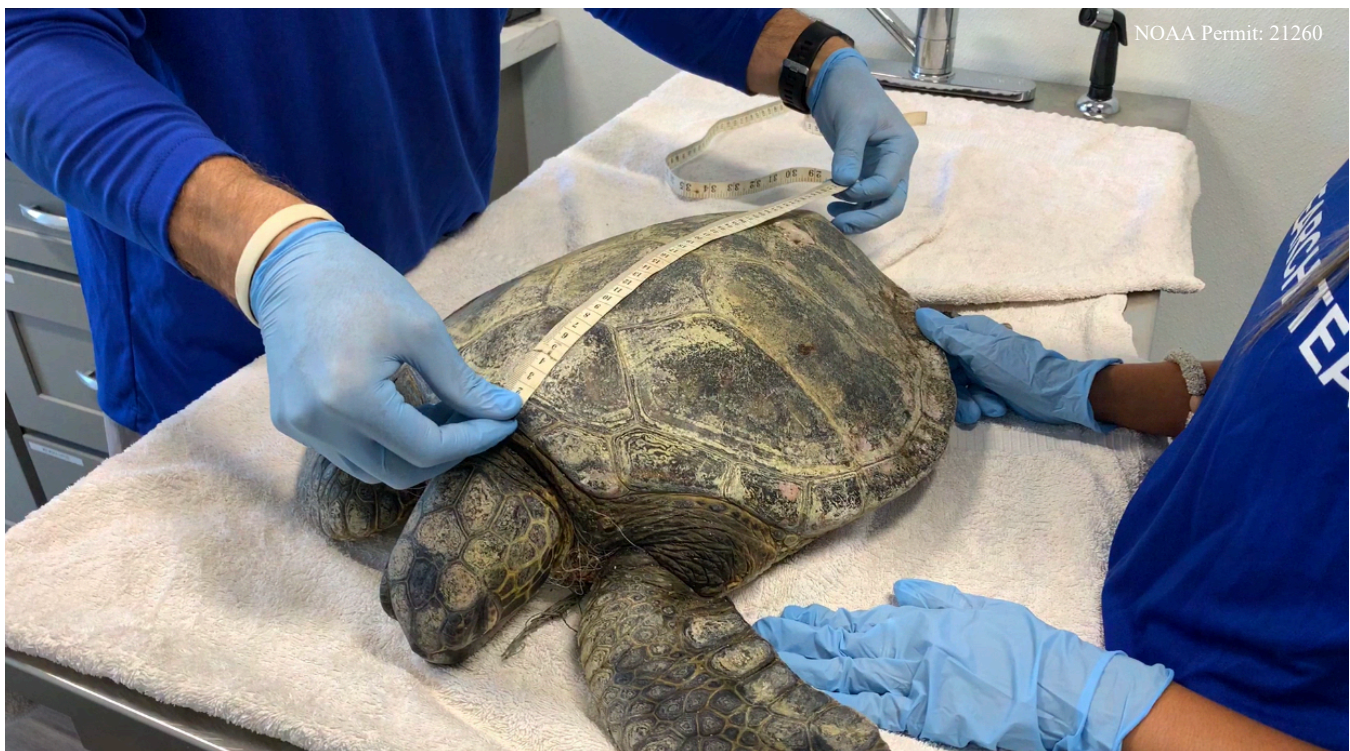


**Figure 10.** Hot spot analysis of sea turtle and fishery interaction locations. 1 January – 31 December 2020. Maui, HI.

## Sea Turtle Stranding Response: Data Collection

MOC Marine Institute collects the below data points for each stranded turtle encountered:

- Date and time of stranding
- Descriptive location and GPS
- Species, age class, and sex
- Stranding cause based on field assessment
- If fishery interaction, description of gear
- Description of injury
- FP presence and severity
- Photos
- Curved Carapace Length (cm)
- Curved Carapace Width (cm)
- Body Condition Score
- Weight (Kg)
- Tags
- Disposition
- Final Disposition



**Figure 11.** MOCMI team members measure a juvenile green turtle (*Chelonia mydas*). Ma‘alaea, HI.

## Sea Turtle Tagging

Before releasing a sea turtle patient, MOCMI staff biologists insert PIT tags into the patient's hind flippers and etch a Mototool tag on the carapace. MOCMI staff tagged 75 sea turtles in 2020.

### PIT Tags

Passive Integrative Transporter (PIT) tags, similar to the microchips used in dogs or cats, are inserted under the skin of the turtle's hind flippers. PIT tags are about the size of a grain of rice and can be detected by a scanner. The main benefit of PIT tags is that they are nearly permanent; however, one must have the appropriate scanner to read them.

### Mototool Tags

A Dremel to safely etch the shell with the initials of the island and the number of the stranding case (for example, MA for Maui and 05 for the fifth turtle stranding case). The groove is then filled with white paint that is harmless to the turtle but makes it easier for future observers to view the turtle's number without disturbing it. These numbers will typically last up to a year, depending on the turtle's growth rate.

### Reporting

Community members and visitors assist with data collection of sea turtle patients by reporting their sightings of tagged turtles on Maui. Their sightings help us to see how the patient is doing post-release and gain an understanding of green turtle foraging habitats, migration, and distribution.



**Figure 12.** (Left) MOCMI team member, Cristina Ramasco applies a Mototool tag to a juvenile green turtle (*Chelonia mydas*) patient. (Right) Sighting of MA98 reported through online portal.

## Stevens Family Honu Rescue Lab

In 2020, we received funding to build the first dedicated space to treat sick and injured sea turtles on the island of Maui.

Built in a refurbished shipping container, the lab contains waterproof walls and flooring, stainless steel treatment table, controlled drug cabinet, pharmacy cabinet, waterproof veterinary scale, centrifuge, blood chemistry analyzer, sink, and storage space for medical supplies and equipment.



**Figure 13.** (Left) Stevens Family Honu Rescue Lab. (Right - Top) MOCMI Sea Turtle Technician, Chanel Browne administers laser therapy to a juvenile green turtle patient. (Right - Bottom) MOCMI team members provide wound care to a juvenile green turtle patient.

### Sea Turtle Rehabilitation

In 2020, we expanded our sea turtle program to include long-term rehabilitation. MOC Marine Institute works in close collaboration with our partners at NOAA Fisheries; our teams meet weekly to discuss patient progress, treatment plans, and criteria for release.

Our rehabilitation program aims to provide high-quality medical care to sea turtles in need while working to return our patients to the ocean as quickly as possible.

#### Sea Turtle Rehabilitation Committee

Dr. Paul McCurdy, MOC Marine Institute

Tommy Cutt, MOC Marine Institute

Dr. Michelle Barbieri, NOAA Fisheries

Dr. Gregg Levine, NOAA Fisheries

Dr. Ednee Yoshioka, NOAA Fisheries

Dr. Meghan Barrett, NOAA Fisheries

Shandell Brunson, NOAA Fisheries

Claudia Cedillo, NOAA Fisheries



**Figure 14.** Adult male green turtle (*Chelonia mydas*) patient, M504, feeds on fresh, local algae while undergoing rehab at MOC Marine Institute. Ma‘alaea, HI.

## Basking Turtles

MOC Marine Institute received 166 reports of basking turtles over the sea turtle response hotline in 2020. The majority of reports received are from visitors to the island who are unfamiliar with sea turtle basking behavior.

**Table 6.** Green sea turtle (*Chelonia mydas*) basking reports by region and age class, 1 Jan – 31 Dec, 2020. Maui, HI.

Region	Juvenile	Sub-adult	Adult	Unknown
North	1	7	26	0
Central	1	1	9	0
South	3	12	56	2
West	2	10	35	1



**Figure 15.** MOC Marine Institute’s Sea Turtle Response Program received 166 reports of basking green turtles (*Chelonia mydas*) from 1 January – 31 December 2020. Maui, HI.





**Figure 16.** Green turtle (*Chelonia mydas*) basking on the beach on the north shore of Maui.



**Figure 17.** Multiple green turtles (*Chelonia mydas*) bask along the shoreline on Maui's north shore.

## Partner Organizations



MAUI OCEAN CENTER



UNIVERSITY of HAWAII\*  
MAUI COLLEGE



Pūlama Lānaʻi



**Figure 18.** MOC Marine Institute Sea Turtle Technician, Mikaela Dibble-Kahn releases a sea turtle patient back into the ocean. Kihei, HI.

