



**U.S. DEPARTMENT OF COMMERCE  
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## **1990–2011 Summary of Live Marine Turtle Strandings Caused by Boat Impact Trauma<sup>1</sup>**

**Marine Turtle Research Program – Protected Species Division  
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This report reviews the results for live marine turtle strandings due to boat impact trauma in the Hawaiian Islands from 1990 to 2011. Boat impact trauma is defined as evidence of trauma due to propeller slashes or collision to the body caused by a boat. In cases of live marine turtles that strand ashore or are brought to shore, medical care is provided to assist the victims of boat impact. In some cases, injury due to boat impact was only one of multiple causes for stranding.

From 1982 to 2011 there were 6,198 total documented strandings by the Marine Turtle Research Program (MTRP) and 209 cases were due to boat impact trauma. More comprehensive consistent veterinary services were available to MTRP starting in 1990. This was coupled with greater resources made available to provide rehabilitation. Therefore, the 1990–2011 data summarized in this report were taken from the 5,614 stranding records from that time period.

During 1990–2011, there were 196 reported cases of stranding caused by boat impact trauma (see attached table), 3% of recorded strandings. Of the 196 cases, 32 turtles were found alive, while 164 were found dead (see attached figure). Marine turtle species included 194 green turtles (*Chelonia mydas*), 1 hawksbill (*Eretmochelys imbricata*) and 1 olive ridley (*Lepidochelys olivacea*). Of the 32 live stranded turtles documented with boat impact trauma, only 18 of these cases were actually seen by MTRP at some point throughout the case.

Of the 32 live strandings reported, 11 turtles were released before a veterinarian could see them. Eight died in transit to the veterinarian. Thirteen were seen by NOAA contract veterinarian, Dr. Robert Morris for assessment and possible treatment. Of those 13 turtles, treatment was provided to four. Two turtles were able to be rehabilitated and released. One turtle was assessed, but deemed that it did not need treatment due to the injury being old and already healing. The turtle was subsequently released. Six were immediately euthanized due to a poor prognosis and one was later euthanized after

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<sup>1</sup> PIFSC Internal Report IR-12-044  
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showing little to no improvement after treatment. Comprehensive necropsies were completed on all 10 turtles that did not survive.

Of the 32 live turtles with boat impact trauma, 25 stranded with new injuries sustained within the prior 24 hours. Seven turtles were found when their injuries were more than 24 hours old.

The Kewalo Research Facility (KRF) at Kewalo Basin, Oahu was utilized from 0-2 days (average of <1 day) by MTRP for rehabilitation efforts of turtles with boat impact trauma. Time spent at KRF was determined on a case by case basis as advised by the veterinarian.

Most injuries from boat impact trauma occurred to the carapace (22 of the 32 cases). Two cases involved turtles with only head injuries. Flipper, carapace/flipper, head/flipper, and head/carapace trauma occurred in one case each. There were four cases where the location of the injury was unknown, due to insufficient data from the contact reporting the stranding.

X-rays were used as a diagnostic tool in one of the boat impact trauma cases. In this case the X-ray results revealed the animal was beyond hope for survival and the turtle was humanely euthanized.

Treatments varied with each individual case due to the severity and location of the injury. Some cases involved many different treatment types. The summaries below include each case in which a specific treatment was used, regardless of whether alternative methods were also utilized. Therefore, many cases are included multiple times.

Antibiotics, including Amikacin and Baytril, are known to fight off bacterial infections. They were prescribed and administered to three turtles that were treated by our veterinarian after stranding live due to boat impact trauma. Two of the three turtles treated with antibiotics were rehabilitated and released. Topical antibiotics were used in one case to further protect a wound from infection. This turtle survived and was released.

Intraperitoneal (IP) fluids of various compositions are administered to animals sustaining blood loss to maintain appropriate blood pressure and to replace body nutrients. One turtle with boat impact trauma was administered IP fluids, but did not recover from its head and flipper injuries.

Based on these data, only 44% (14 out of 32 cases) of marine turtles that stranded live due to boat impact trauma survived. In deciding on a course of action for each turtle, use was made of medical information about the types of injuries sustained where a turtle is most likely to recover. For those turtles thought unlikely to recover, humane euthanasia was decided to be the best option. In cases where providing medical treatment was deemed a viable option, 50% of turtles (two out of four cases) were rehabilitated and released.

## 1990-2011 Summary for Marine Turtle Strandings due to Boat Impact

<u>Time Period</u>	<u># Turtles Stranded</u>		
	<u>Total</u>	<u>Live</u>	<u>Dead</u>
1982-2011	209	34	175
1990-2011	196	32	164

### Details for Time Period 1990-2011

<u>Final Outcome</u>	<u># Turtles</u>	<u>Turtles Rehabilitated At Kewalo Facility</u>	<u># Turtles</u>	<u># Days in Rehabilitation</u>	
				<u>Range</u>	<u>Mean</u>
Released	14	Total	6	0-2	<1
Died/Euthanasia Death	182	Live	4	0-2	<1
		Fatal	2	0-1	<1
<u>Veterinary Treatment</u>	<u># Turtles</u>	<u>Treatments</u>	<u># Turtles Treated</u>	<u># Turtles Lived</u>	<u>% Survival</u>
Seen by a Veterinarian	13	Antibiotics	3	2	67%
Treated by Veterinarian	4	Topical Antibiotic	1	1	100%
Treated by Veterinarian and released	2	Dental Epoxy/Acrylic Filler	2	2	100%
		Wiring Carapace	1	1	100%
<u>Freshness of Injury</u>	<u># Turtles</u>	<u>Cleanse Wound</u>	<u># Turtles Treated</u>	<u># Turtles Lived</u>	<u>% Survival</u>
Old Injury	7	Bandage Wound	4	2	50%
New Injury (past 24 hours)	25	IP Fluids	1	0	0%
			<u># Turtles Treated</u>	<u># Turtles Lived</u>	<u>% Survival</u>
<u>Area of Injury</u>	<u># Turtles</u>	<u>Diagnostics</u>			
Carapace	22	Xrays	1	0	0%
Head	2				
Flipper	1				
Carapace/Flipper	1				
Head/Flipper	1				
Head/Carapace	1				
Unknown injury area	4				

# 1990-2011 Marine Turtle Strandings Due to Boat Impact Trauma

