



**U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE**

Pacific Islands Fisheries Science Center  
2570 Dole St. • Honolulu, Hawaii 96822-2396  
(808) 983-5730 • Fax: (808) 983-2902

## **1990- 2011 Results for Live Marine Turtle Strandings due to Intentional Human-Induced Trauma<sup>1</sup>**

**Marine Turtle Research Program  
Protected Species Division  
NOAA Pacific Islands Fisheries Science Center**

Prepared by Wendy Marks (MTRP) and MTRP Staff

July 2012

This report reviews the results for live marine turtle strandings due to intentional human-induced trauma in the Hawaiian Islands from 1990 to 2011. Human-induced trauma is defined here as any type of instrument used to harm a marine turtle, including firearms, spearguns, arrows, knives or other cutting instruments. All of the turtles affected with human-induced trauma in our database were green turtles.

From 1982 to 2011 there were 6198 documented strandings by the Marine Turtle Research Program (MTRP) and 112 cases were due to human-induced trauma (Table 1). More comprehensive consistent veterinary services were available to MTRP in 1990. This was coupled with the greater resources made available to provide rehabilitation. Therefore, the 1990-2011 data summarized in this report will only be taken from the 5614 stranding records from that time period.

Since 1990, there were 73 (1%) reported cases of human-induced trauma. In the 73 cases, 11 turtles were found alive, while 62 were found dead (Table 1, Figure 1). Of the 11 live stranded turtles documented as human-induced trauma, only nine of these cases were actually seen by MTRP.

Of the 11 live strandings reported, four turtles were released prior to a veterinarian's examination. Two died in transit and five were seen by a veterinarian. Most turtles with human-induced trauma went to NOAA contract veterinarian, Dr. Robert Morris. In addition, one case was seen by a veterinarian on Kauai. Of those five turtles, treatment was attempted on three. Two turtles were successfully rehabilitated and released. Two were immediately euthanized due to a poor prognosis and one was later euthanized after showing no improvements after treatment. Comprehensive necropsies were completed on all five turtles that were alive, but did not survive.

---

<sup>1</sup> PIFSC Internal Report IR-12-032  
Issued 31 July 2012

Nine of the 11 live turtles with human-induced trauma stranded with new injuries sustained within the last 24 hours. Two turtles were found when their injuries were more than 24 hours old.

The Kewalo Research Facility (KRF) at Kewalo Basin, Oahu, was utilized from 0-157 days (average of 20 days) by MTRP for rehabilitation efforts of turtles with human-induced trauma. The number of days required at KRF was determined on a case-by-case basis, as advised by the veterinarian. Live turtles that were released resided in these tanks for an average of 35 days. Turtles that did not survive inhabited the tanks for 0-11 days, averaging two days for each case.

Most injuries from human-induced trauma occurred to the head and neck. Eight out of the 11 live turtles had sustained injuries to this area. Flippers, plastron and flippers/head trauma occurred in one case each.

Radiographs (Xrays), packed cell volume (PCV), blood chemistry and complete blood counts (CBC) were used as diagnostic tools in some of the human-induced trauma cases. The results provided further information for treatment options.

Treatments varied with each individual case due to the severity and location of the injury. Some cases used many different treatment types. The summaries below include each case that 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 effectively address bacterial infections in sea turtles. Amikacin or Baytril intramuscular (IM) were prescribed and administered to all three turtles that were treated by our veterinarian after stranding live due to human induced trauma. Two of 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.

Steroids, including Dexamethasone, are used as an anti-inflammatory and as an immunosuppressant. Dexamethasone IM injections were prescribed and administered to all three turtles that were treated by our veterinarian after stranding live due to human induced trauma. Two of the three turtles treated with steroids were rehabilitated and released.

Subcutaneous (SQ) fluids of various compositions are administered to animals sustaining blood loss to maintain appropriate blood pressure and to replace nutrients into the body. One turtle was administered SQ fluids, but did not recover from its head injury.

Based on these data, only 55% (six out of 11 cases) of marine turtles that stranded live due to human-induced trauma survived. This figure includes humane euthanasia as there is a substantial amount of medical information supporting the types of injuries sustained where a turtle is most likely to recover.

In 2010, there was an unexplainable increase the number of human-induced trauma cases (Figure 1). The first five cases were all reported together at Kiholo Bay, Hawaii, where five carapace remains were found together in an unnatural manner, indicating human take. One sub-adult was found dead via a spear wound to the head by the Ala Wai Yacht Harbor in Oahu. At Wailupe Beach Park, Oahu, a juvenile was found dead in with the plastron cut away from the carapace by a sharp cutting instrument. An adult was found dead in Kihei, Maui, after having been killed due to trauma from a sharp cutting tool that formed a puncture wound to its gular area. A juvenile in Lanikai, Oahu died from speargun shots to the side of the head. At Kaiona Beach Park, Oahu, a juvenile turtle was found dead due to speargun wounds to the top of the head. Three dead turtle remains were found in Kihei, Maui, at Maluaka Beach where there was clear evidence of sharp knife cuts on the remaining plastrons. A juvenile was found dead at Pohoiki Beach Park, Hawaii, that had multiple injuries from a spear gun with the worst injuries on the head. Finally, in Haleiwa, Oahu, at Alii Beach Park, there were reports of a live turtle being hit repeatedly with a machete on the head and flippers before it returned to the water.

Human-induced trauma on marine turtles is illegal and clearly preventable. Preventing these incidents is always going to be more successful than rehabilitating the turtle after the trauma has occurred.

Table 1.

### 1990-2011 Summary for Marine Turtle Strandings due to Human-Induced Trauma

<u>Human Trauma</u>	<u>Number of Turtles</u>			<u>Category</u>	<u>Number of Days in Rehabilitation</u>		
	<u>Total</u>	<u>Live</u>	<u>Dead</u>		<u>Range</u>	<u>Average</u>	
1982-2011	112	17	95	Total	0-157	20	
1990-2011	73	11	62	Live	0-157	35	
				Fatal	0-11	2	
<u>Final Result</u>				<u>Treatments</u>	<u>Total Treated</u>	<u>Lived</u>	<u>% Survival</u>
Released	6			Antibiotics	3	2	67%
Died/Euthanasia Death	5			SQ Fluids	1	0	0%
				Topical Antibiotic	1	1	100%
				Steroid Injection	3	2	67%
<u>Veterinary Treatment</u>				<u>Diagnostics</u>	<u>Total Diagnosed</u>		
Seen by a Veterinarian	5			PCV	2		
Treated by Veterinarian	3			CBC	1		
Treated by Veterinarian and released	2			Blood Chemistry	1		
				Xrays	1		
<u>Freshness of Injury</u>							
Old Injury	2						
New Injury (prior 24 hours)	9						
<u>Area of Injury</u>							
Head and Neck	8						
Flippers	1						
Plastron	1						
Head and Flippers	1						

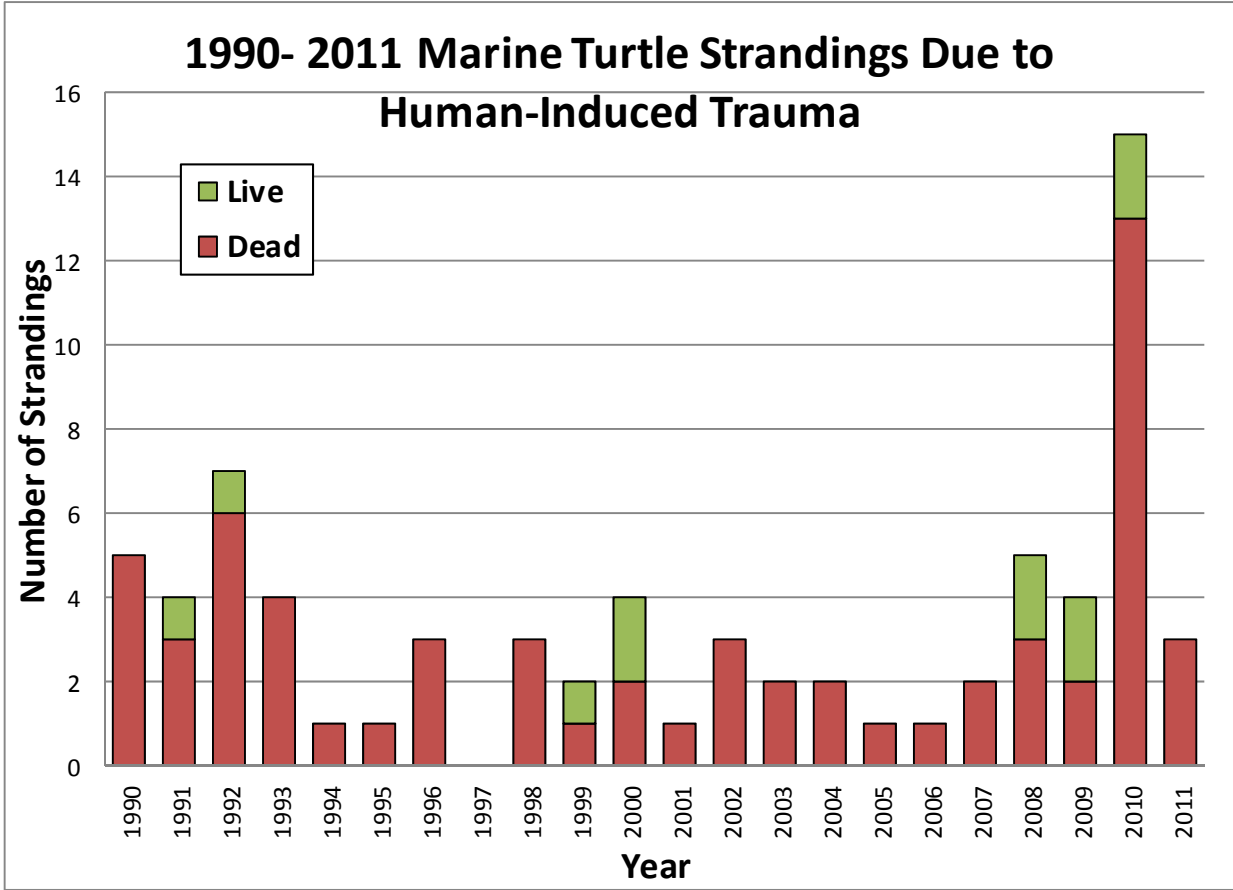


Figure 1.