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Marine Turtle Strandings in the Hawaiian Islands January – December 2014^a

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

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The Turtle Research Program* (TRP) documented 221 green turtle (*Chelonia mydas*), 8 hawksbill (*Eretmochelys imbricata*), 1 olive ridley (*Lepidochelys olivacea*), 1 loggerhead (*Caretta caretta*), and 1 unknown sea turtle species stranding in the main Hawaiian Islands and Northwestern Hawaiian Islands from January 1 to December 31, 2014. Of the 221 green turtle strandings, 84 (38%) stranded alive and 137 (62%) stranded dead. Of the 84 live stranded green turtles, 39 (47%) were successfully treated and released, 13 (15%) returned to the water prior to TRP arrival, 31 (37%) died, and 1(1%) was of unknown dead or alive end status. Eight green turtles stranded in the Northwestern Hawaiian Islands, 6 of which were rescued and released. On January 31, 2014, five turtles were found entangled in a single lobster net offshore of Kaaawa, Oahu. The State of Hawaii's Division of Conservation and Resources Enforcement (DOCARE) cut free and released 4 of the turtles which were alive, but the fifth was found dead. A dead turtle was found on May 18, 2014, at Hilo (Wailoa Sampan Basin and Boat Harbor), Hawaii, with fishing line wrapped around both front flippers, the right hind flipper, entering into the mouth and extending down into the digestive tract and exiting the cloaca. This was the most severe case of fishing line entanglement encountered by the TRP in 2014. On May 23 and 24, 2014, a member of the National Oceanic and Atmospheric Administration's (NOAA's) Hawaiian Monk Seal Research Program found and disentangled 2 adult turtles on the beach at Tern Island, French Frigate Shoals (FFS), one with nylon rope wrapped around its neck, and the other tangled in a fishing net. On May 25 and 26, 2014, a dead adult female was found on both Tern and East Islands. One had several traumatic impacts to its carapace, and the other was found with fishing line entangling its neck. On August 7, 2014, TRP staff Joe Spring found and disentangled a hatchling stuck in fishing line on East Island, FFS. Three green turtles were cut free from netting by NOAA's Coral Reef

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*Formerly known as the Marine Turtle Research Program (MTRP)

Ecosystem Division near Pearl and Hermes Atoll. On October 12, 2014, an adult female was found dead due to a shark attack at Kualoa (Sugar Mill Beach), Oahu, but also had cuts to its flippers indicative of a knife. The necropsy of this turtle revealed partially developed eggs in its oviducts. Figure 1 shows the trend of total green turtle strandings in the Hawaiian Islands by year since 1982 (excluding 25 cases pending necropsy results in 2014), and Figure 2 shows a breakdown of green turtle strandings by month in 2014. Since the late 1990s, there has been a leveling off in the annual number of green turtle strandings reported in Hawaii. 2014 was the lowest year on record since 1995.

Of the 8 hawksbill strandings, 5 (63%) stranded dead and 3 (37%) stranded alive. On March 18, 2014, a hawksbill was found dead at Waianae (Pililaa Army Recreation Center), Oahu. The cause of stranding could not be determined following a necropsy. Another hawksbill was found dead on July 8, 2014, at Wailua, Kauai due to internal bleeding and cardiac failure. A hawksbill hatchling was found dead on July 26, 2014, at Kaneohe Marine Corps Base Hawaii (Fort Hase Beach), Oahu with no signs of injury. A fourth dead hawksbill was found on October 1, 2014, at Makapuu Beach Park, Oahu with no obvious injuries and the cause of stranding could not be determined from a necropsy. The stranding cause of the fifth dead hawksbill hatchling is pending a necropsy by Dr. Thierry Work, USGS. It was found on December 16, 2014 at Waimanalo Beach, Oahu next to a crab hole. Of the 3 live hawksbill strandings, 2 were hatchlings found on the beach [one on August 15, 2014, at Waimanalo (Bellows Beach), Oahu, and the other on October 24, 2014, at Kailua (Kalama Beach Park), Oahu], both of which died in captivity. The other live stranding occurred on August 24, 2014, at Kau (Humuhumu Point), Hawaii, where the hawksbill was found alive in a deep crevice by the Hawaii Volcanoes National Park staff. The staff was able to safely extract the turtle and release it uninjured on scene. Figure 3 shows a breakdown of hawksbill strandings by month in 2014.

In regards to the other species, the olive ridley stranded alive on March 19, 2014 at Kawaaloo Bay, Molokai entangled in a trawl net. Members of the Molokai Land Trust cut free and released the turtle, but it was later found dead on the beach on March 25, 2014. The loggerhead, a post-hatchling, was found dead in an advanced decomposed state by the crew of NOAA's Hiialakai vessel at Kure Atoll. On December 6, 2014, the skeletal remains of an unidentified species was found and disposed of in the ocean at Kaneohe Bay (Kahaluu), Oahu, by a member of the public.

A cause of stranding is assigned by TRP to all reports of stranded turtles (Figure 4). Some cases have multiple causes of stranding (e.g., boat impact and shark attack) and we use the best scientific judgment to determine which event was likely the primary cause of stranding, as shown in Figure 4. For the purpose of this report, we used the causes of stranding identified in Chaloupka et al. (2008), with the addition of human take, to summarize all stranding events from January through December 2014. This enables comparison to historical records (Figure 5) and consistency through time. The seven

categories are: fibropapillomatosis (FP); hook and line; net and gillnet entanglement; boat impact; shark attack; miscellaneous (including human take); and unknown.

Fibropapillomatosis cases (Table 1) include all stranded turtles with moderate or severe FP, defined as turtles with tumor severity scores of 2 and 3. It should be noted that the seven other categories may also include turtles with less severe cases of FP, but since FP was not the primary reason the turtle stranded, another more applicable cause of stranding was assigned.

Hook and/or line cases (Table 2) include all turtles that strand as a result of interactions with fish hooks and/or fishing line. These include turtles that were hooked externally, ingested hooks, entangled in fishing line, or exhibited intestinal intussusceptions due to line ingestion.

Net and/or gillnet entanglement cases (Table 3) include cargo nets, trawl nets, lobster nets, monofilament gillnets, and unidentified nearshore and pelagic nets.

Boat impact cases (Table 4) include traumatic injury judged to be caused by a boat, usually involving propeller strike. If the injury cannot clearly be determined to be caused by a boat, it is simply listed as trauma and considered to be a miscellaneous cause of stranding.

Shark attack cases (Table 5) are identified by missing or lacerated appendages and large crescent shaped bites out of the carapace and plastron. It is often difficult to determine if the shark attack occurred before or after death. However, because we conduct a thorough necropsy to rule out other potential causes of stranding, we are reasonably confident that cases identified as shark attack are those that resulted from a predation event as opposed to a scavenging event.

Miscellaneous cases (Table 6) include but are not limited to turtles with various pathologies, excessive buoyancy, other sorts of trauma, and turtles stuck in crevices or trapped in items that are not fishing net or line related.

Human take cases include all strandings that result from direct human take including turtles that were speared, knifed, or shot with a firearm. State and Federal enforcement agencies are notified for all human take cases. There were no strandings with human take as the primary cause in 2014.

Unknown cases (Table 7) include strandings where no obvious cause can be discerned.

Twenty-eight turtles are still pending a necropsy report (Table 8) and have not yet been assigned a cause of stranding. These reports will be retrospectively documented in the 2015 annual stranding report.

Turtles from 2013 that were previously pending a necropsy report to determine cause of stranding have now been assigned a stranding cause and are reported in Table 9.

The 232 total strandings as detailed by cause in Tables 1–8 from January through December 2014 were: 55 fibropapillomatosis (24%), 38 hook and/or line (17%), 15 net and/or gillnet entanglement (6%), 9 boat impact (4%), 12 shark attack (5%), 0 human take (0%), 17 miscellaneous (7%), 58 unknown (25%), and 28 turtles pending necropsy reports (12%).

Acknowledgments

Marine turtle stranding research in the Hawaiian Islands consists of a close partnership of many agencies, organizations, and individuals. We are grateful to the following for their vital and harmonious contributions in the Spirit of Aloha: State of Hawaii Division of Aquatic Resources (DAR), Department of Land and Natural Resources (DLNR), and DOCARE; City and County of Honolulu; Counties of Maui, Kauai, and Hawaii; other Federal and Defense Department Agencies; the University of Hawaii Joint Institute for Marine and Atmospheric Research (JIMAR); Marine Option Program of the University of Hawaii at Manoa, Hilo, and Maui College; Hawaii Preparatory Academy; and an array of conservation organizations and private businesses, residents, and tourists of the Hawaiian Islands.

References

Chaloupka M, Work TM, Balazs GH, Murakawa SKK, Morris R.
2008. Cause-specific temporal and spatial trends in green sea turtle strandings in the Hawaiian Archipelago (1982-2003). *Marine Biology* 154(5): 887-898.

Table 1. Marine turtle strandings in the Hawaiian Islands caused by fibropapillomatosis (N=55), January – December 2014.

DATE	ISLAND	LOCATION	SPECIES	SEX	SCL (cm)	TUMORS	CAUSE OF STRANDING	NECROPSY	END STATUS
22-Jan-14	OAHU	Pearl Harbor (Ford Island)	CM	U	70.1	Y	FP	Y	Dead
2-Feb-14	MAUI	Kihei (Sugar Beach)	CM	F	79.2	Y	FP/Shark attack	Y	Dead
3-Feb-14	OAHU	Kahala Beach Park	CM	U	-	Y	FP	N	Alive
11-Feb-14	OAHU	Kahana Bay Beach Park	CM	U	61.5	Y	FP	N	Dead
11-Feb-14	OAHU	Mokuleia (Crozier Drive)	CM	F	61.9	Y	FP	Y	Dead
12-Feb-14	OAHU	Punaluu	CM	F	52.8	Y	FP/Vascular fluke infection	Y	Dead
18-Feb-14	MAUI	Paia Bay	CM	F	47	Y	FP	Y	Dead
25-Feb-14	MAUI	Paia (Hookipa Beach Park)	CM	U	-	Y	FP	N	Alive
3-Mar-14	MOLO	Unknown	CM	U	-	Y	FP	N	Dead
13-Mar-14	OAHU	Kaneohe Bay (Mikiola Drive)	CM	U	-	Y	FP	N	Dead
26-Mar-14	MAUI	Maalaea (Maalaea Condos)	CM	U	-	Y	FP	N	Alive
26-Mar-14	OAHU	Pearl Harbor (West Loch)	CM	U	70.3	Y	FP/Line ingestion	Y	Dead
30-Mar-14	OAHU	Barbers Point (White Plains Beach)	CM	F	47.7	Y	FP	Y	Dead
31-Mar-14	OAHU	Kaneohe Bay	CM	M	49.5	Y	FP	Y	Dead
5-Apr-14	OAHU	Waialua (Puuiki Beach Park)	CM	U	-	Y	FP	N	Alive
6-Apr-14	OAHU	Kaaawa	CM	M	72.4	Y	FP	Y	Dead
9-Apr-14	OAHU	Kaneohe Bay (Mikiola Drive)	CM	F	-	Y	FP	Y	Dead
11-Apr-14	OAHU	Honolulu International Airport (Reef Runway)	CM	U	-	Y	FP	N	Alive
15-Apr-14	OAHU	Mokuleia (Crozier Drive)	CM	F	50.1	Y	FP	Y	Dead
16-Apr-14	OAHU	Kaneohe Bay (Waikane)	CM	F	49.4	Y	FP	Y	Dead
18-Apr-14	OAHU	Kahana Bay Beach Park	CM	M	52	Y	FP	Y	Dead
19-Apr-14	OAHU	Kaneohe Bay (Waikane)	CM	M	-	Y	FP	Y	Dead
29-Apr-14	OAHU	Kaneohe Bay (Kahaluu)	CM	U	-	Y	FP	N	Alive
7-May-14	OAHU	Maunalua Bay (Portlock)	CM	M	66.7	Y	FP	Y	Dead
20-May-14	OAHU	Kailua (Lanikai Beach)	CM	M	54.1	Y	FP	Y	Dead

Table 1 Cont. Marine turtle strandings in the Hawaiian Islands caused by fibropapillomatosis (N=55), January – December 2014.

DATE	ISLAND	LOCATION	SPECIES	SEX	SCL (cm)	TUMORS	CAUSE OF STRANDING	NECROPSY	END STATUS
25-May-14	OAHU	Kawela Bay	CM	U	64.4	Y	FP	N	Alive
9-Jun-14	OAHU	Kaneohe Bay (Kahaluu)	CM	F	48.8	Y	FP/Vascular fluke infection	Y	Dead
12-Jun-14	OAHU	Haleiwa (Puaena Point)	CM	U	-	Y	FP/Line entanglement	N	Alive
21-Jun-14	HAWA	Hilo Bay (Coconut Island)	CM	F	57.7	Y	FP	Y	Dead
25-Jun-14	OAHU	Kaneohe Bay (Lihikai Drive)	CM	F	55.1	Y	FP	Y	Dead
25-Jun-14	OAHU	Kualoa (Secret Island)	CM	U	-	Y	FP	N	Dead
26-Jun-14	OAHU	Kaneohe Bay (Kahaluu)	CM	M	78	Y	FP	Y	Dead
28-Jun-14	OAHU	Kaneohe Bay (Waikane)	CM	F	53.3	Y	FP	Y	Dead
2-Jul-14	MAUI	Kaanapali (Airport Beach)	CM	M	80.2	Y	FP	Y	Dead
6-Jul-14	OAHU	Haleiwa (Laniakea)	CM	U	45.8	Y	FP	Y	Dead
7-Jul-14	OAHU	Laie	CM	F	53.4	Y	FP/Vascular fluke infection	Y	Dead
8-Jul-14	MAUI	Kihei (Menehune Shores Condominium)	CM	M	66	Y	FP	Y	Dead
11-Aug-14	OAHU	Aina Haina	CM	F	-	Y	FP	Y	Dead
12-Aug-14	MAUI	Unknown	CM	F	74.5	Y	FP	Y	Dead
21-Aug-14	MAUI	Kihei (Kalepolepo Fishpond)	CM	U	-	Y	FP	N	Alive
22-Aug-14	OAHU	Iroquois Point	CM	M	82.7	Y	FP	Y	Dead
1-Sep-14	OAHU	Kualoa Regional Park	CM	U	60.5	Y	FP/Emaciation	Y	Dead
8-Sep-14	OAHU	Kaneohe Bay (Coconut Island)	CM	F	52.3	Y	FP	Y	Dead
9-Sep-14	KAUA	Poipu (Koloa Landing)	CM	F	-	Y	FP/Net entanglement	N	Alive
18-Sep-14	KAUA	Poipu Beach Park	CM	F	70.8	Y	FP	Y	Dead
16-Oct-14	OAHU	Kaneohe Bay (Lihikai Drive)	CM	F	-	Y	FP	Y	Dead
17-Oct-14	OAHU	Waianae (Boat Harbor)	CM	M	42.4	Y	FP	Y	Dead
18-Oct-14	OAHU	Kualoa (Secret Island)	CM	M	-	Y	FP	Y	Dead
19-Oct-14	OAHU	Mokuleia (Crozier Drive)	CM	M	67.4	Y	FP	Y	Dead

Table 1 Cont. Marine turtle strandings in the Hawaiian Islands caused by fibropapillomatosis (N=55), January – December 2014.

DATE	ISLAND	LOCATION	SPECIES	SEX	SCL (cm)	TUMORS	CAUSE OF STRANDING	NECROPSY	END STATUS
21-Oct-14	MAUI	Kihei (Waipulani Beach Park)	CM	U	-	Y	FP	N	Alive
21-Oct-14	MAUI	Maalaea	CM	U	-	Y	FP	N	Alive
24-Oct-14	OAHU	Kaneohe Marine Corps Base Hawaii	CM	M	67.6	Y	FP	Y	Dead
1-Nov-14	OAHU	Kualoa (Secret Island)	CM	U	-	Y	FP	N	Alive
1-Nov-14	OAHU	Haleiwa (Anahulu River)	CM	F	80.7	Y	FP	Y	Dead
4-Nov-14	OAHU	Punaluu Beach Park	CM	U	76.6	Y	FP	N	Dead

Table 2. Marine turtle strandings in the Hawaiian Islands caused by hook and/or line (N=38), January – December 2014.

DATE	ISLAND	LOCATION	SPECIES	SEX	SCL (cm)	TUMORS	CAUSE OF STRANDING	NECROPSY	END STATUS
4-Jan-14	MAUI	Paia (Hookipa Beach Park)	CM	U	-	U	Fish hook/Line entanglement	N	Alive
12-Jan-14	OAHU	Kailua Bay (Lanikai)	CM	U	61.7	N	Line entanglement	N	Alive
12-Jan-14	OAHU	Kailua Bay (Lanikai)	CM	U	-	N	Line entanglement	N	Dead
23-Jan-14	HAWA	Hilo (Onekahakaha Beach Park)	CM	U	72.6	Y	Line entanglement	N	Alive
29-Jan-14	OAHU	Campbell Industrial Park	CM	U	-	U	Line entanglement	N	Alive
26-Feb-14	HAWA	Hilo (Richardson's Ocean Park)	CM	U	-	U	Line entanglement	N	Alive
1-Mar-14	OAHU	Barbers Point (White Plains Beach)	CM	M	40.1	N	Line entanglement	Y	Dead
9-Mar-14	OAHU	Waimanalo (Bellows Field Beach Park)	CM	-	43	N	Fishing hook ingestion/Line ingestion	Y	Dead
13-Mar-14	OAHU	Kaneohe Bay (Heeia Pond)	CM	U	-	N	Line entanglement	N	Dead
23-Mar-14	OAHU	Haleiwa (Surf N Sea)	CM	U	64	N	Line entanglement	N	Alive
3-Apr-14	OAHU	Laie (Malaekahana State Recreation Area)	CM	F	44.2	N	Line entanglement	Y	Dead
7-Apr-14	OAHU	Haleiwa (Chun's Reef)	CM	F	47	N	Line entanglement	Y	Dead
14-Apr-14	OAHU	Hanauma Bay Nature Preserve	CM	U	43.3	N	Line entanglement/Fish hook	N	Alive

Table 2 Cont. Marine turtle strandings in the Hawaiian Islands caused by hook and/or line (N=38), January – December 2014.

DATE	ISLAND	LOCATION	SPECIES	SEX	SCL (cm)	TUMORS	CAUSE OF STRANDING	NECROPSY	END STATUS
14-Apr-14	MAUI	Kahului (Wastewater Treatment Plant)	CM	F	-	Y	Line entanglement	N	Alive
21-Apr-14	OAHU	Ko Olina Resort (Lagoon 4)	CM	U	-	N	Fish hook/Line entanglement	N	Alive
28-Apr-14	OAHU	Waimanalo (Kaiona Beach Park)	CM	U	50.5	N	Line entanglement/Line ingestion	N	Alive
30-Apr-14	OAHU	Laie (Malaekahana)	CM	F	42.6	N	Line entanglement	Y	Dead
10-May-14	OAHU	Haleiwa Harbor	CM	F	70.3	N	Intestinal intussusception/Foreign Body Ingestion	Y	Dead
12-May-14	OAHU	Ala Moana Beach Park	CM	U	-	U	Line entanglement	N	Dead
18-May-14	HAWA	Hilo (Wailoa Sampan Basin and Boat Harbor)	CM	F	67.9	Y	Line ingestion/FP	Y	Dead
26-May-14	EAST	Unknown	CM	F	-	N	Line entanglement	N	Dead
28-May-14	OAHU	Diamond Head (Leahi Beach Park)	CM	U	-	U	Line entanglement	N	Alive
31-May-14	OAHU	Waianae (Yokohama Bay/Keawaula Beach)	CM	F	-	N	Fish hook/Line ingestion	Y	Dead
2-Jun-14	HAWA	Punaluu Black Sand Beach Park	CM	U	-	U	Line entanglement	N	Alive
8-Jun-14	OAHU	Kaaawa	CM	U	-	N	Line Entanglement	N	Dead
23-Jun-14	OAHU	Kailua Beach	CM	U	40.3	N	Line entanglement	Y	Dead
27-Jun-14	KAUA	Haena (Kee Beach)	CM	U	-	U	Fish hook	N	Alive
28-Jul-14	OAHU	Kailua (Lanikai Beach)	CM	M	39.9	N	Fish hook	Y	Dead
7-Aug-14	EAST	East Island	CM	U	-	N	Line entanglement	N	Alive
10-Aug-14	OAHU	Haleiwa Alii Beach Park	CM	U	-	N	Line entanglement	N	Alive
15-Sep-14	OAHU	Kailua (Kawainui Canal)	CM	U	63.5	N	Line entanglement	N	Alive
24-Sep-14	OAHU	Laie (Malaekahana State Recreation Area)	CM	U	-	Y	Line entanglement	N	Alive
3-Oct-14	OAHU	Haleiwa Alii Beach Park	CM	U	-	U	Line entanglement	N	Alive
8-Oct-14	KAUA	Wailua	CM	M	69.7	N	Emaciation/Line Ingestion	Y	Dead
14-Oct-14	HAWA	Hilo (Onekahakaha Beach Park)	CM	M	84.7	N	Line entanglement	N	Alive
10-Nov-14	OAHU	Waialua (Puuiki Beach Park)	CM	U	-	N	Line entanglement	N	Alive
11-Nov-14	OAHU	Mokuleia (Aweoweo Beach Park)	CM	U	-	U	Fish hook/Line entanglement	N	Alive

Table 2 Cont. Marine turtle strandings in the Hawaiian Islands caused by hook and/or line (N=38), January – December 2014.

DATE	ISLAND	LOCATION	SPECIES	SEX	SCL (cm)	TUMORS	CAUSE OF STRANDING	NECROPSY	END STATUS
28-Nov-14	OAHU	Haleiwa (Puaena Point)	CM	U	-	N	Fish hook	N	Alive

Table 3. Marine turtle strandings in the Hawaiian Islands caused by net and/or gillnet entanglement (N=15), January – December 2014.

DATE	ISLAND	LOCATION	SPECIES	SEX	SCL (cm)	TUMORS	CAUSE OF STRANDING	NECROPSY	END STATUS
31-Jan-14	OAHU	Kaaawa	CM	U	-	U	Lobster net entanglement	N	Alive
31-Jan-14	OAHU	Kaaawa	CM	U	-	U	Lobster net entanglement	N	Alive
31-Jan-14	OAHU	Kaaawa	CM	U	-	U	Lobster net entanglement	N	Alive
31-Jan-14	OAHU	Kaaawa	CM	U	-	U	Lobster net entanglement	N	Alive
31-Jan-14	OAHU	Kaaawa	CM	U	-	U	Lobster net entanglement	N	Alive
31-Jan-14	OAHU	Kaaawa	CM	M	36.3	N	Lobster net entanglement	Y	Dead
10-Feb-14	OAHU	Barbers Point/Kalaeloa	CM	U	-	U	Suspect drowning/Net entanglement	N	Dead
10-Feb-14	OAHU	Barbers Point/Kalaeloa	CM	U	-	U	Suspect drowning/Net entanglement	N	Dead
4-Mar-14	OAHU	Mokuleia (Polo Field)	CM	F	38.5	N	Net entanglement	Y	Dead
19-Mar-14	MOLO	Kawaaloo Bay	LO	F	55.3	N	Trawl net entanglement	Y	Dead
24-May-14	TERN	Unknown	CM	U	-	N	Net entanglement	N	Alive
4-Jul-14	OAHU	Kaneohe Bay (Coconut Island/Moku o Loe)	CM	U	-	N	Net entanglement	N	Alive
8-Oct-14	PEAR	Offshore	CM	U	-	N	Net entanglement	N	Alive
8-Oct-14	PEAR	Offshore	CM	U	-	N	Net entanglement	N	Alive
14-Oct-14	PEAR	The Maze	CM	U	-	U	Net entanglement	N	Alive

Table 4. Marine turtle strandings in the Hawaiian Islands caused by boat impact (N=9), January – December 2014.

DATE	ISLAND	LOCATION	SPECIES	SEX	SCL (cm)	TUMORS	CAUSE OF STRANDING	NECROPSY	END STATUS
18-Feb-14	OAHU	Kualoa (Ranch)	CM	M	82.5	N	Boat impact	N	Dead
2-Mar-14	OAHU	Pearl Harbor (West Loch)	CM	M	-	N	Boat impact	Y	Dead
6-Mar-14	OAHU	Hickam Air Force Base (Harbor)	CM	U	-	U	Boat impact	N	Dead
20-Mar-14	OAHU	Kaneohe Bay (Heeia)	CM	U	-	N	Boat impact	N	Dead
27-May-14	OAHU	Hawaii Kai (Boat Harbor)	CM	M	88.8	N	Boat impact	N	Dead
6-Jul-14	OAHU	Kaneohe Bay (Laenani Beach Park)	CM	U	-	N	Boat impact	N	Dead
18-Aug-14	OAHU	Haleiwa Alii Beach Park	CM	F	-	Y	Boat impact	Y	Dead
30-Sep-14	OAHU	Makaha Beach Park	CM	M	50.6	N	Boat impact	Y	Dead
3-Oct-14	OAHU	Maunalua Bay (Portlock)	CM	F	76.1	Y	Boat impact	Y	Dead

Table 5. Marine turtle strandings in the Hawaiian Islands caused by shark attack (N=12), January – December 2014.

DATE	ISLAND	LOCATION	SPECIES	SEX	SCL (cm)	TUMORS	CAUSE OF STRANDING	NECROPSY	END STATUS
31-Jan-14	HAWA	Hilo (Naniiloa Hotel)	CM	F	65.2	N	Shark attack	Y	Dead
26-Mar-14	OAHU	Laie (Bikini Beach)	CM	U	-	N	Shark attack	N	Dead
4-Apr-14	OAHU	Ewa Beach (Iroquois Point)	CM	F	81.1	N	Shark attack	Y	Dead
21-Apr-14	MAUI	Kihei (Lipoa Street)	CM	U	-	U	Shark attack	N	Alive
10-May-14	OAHU	Kaneohe Bay (Coconut Island/Moku o Loe)	CM	U	-	N	Shark attack	N	Dead
23-May-14	OAHU	Kualoa	CM	U	-	N	Shark attack	N	Dead
13-Jun-14	HAWA	Kona (Kukio Bay)	CM	M	66	N	Shark Attack	Y	Dead
18-Jun-14	OAHU	Kailua (Kaimalino)	CM	M	83.9	N	Shark Attack	Y	Dead
19-Jun-14	HAWA	Hilo Bay (Coconut Island)	CM	U	76.2	N	Shark attack	Y	Dead
9-Jul-14	KAUA	Moloaa Bay	CM	M	63.1	N	Shark attack	Y	Dead
25-Aug-14	MAUI	Kahului (Power Plant)	CM	U	91.4	U	Shark attack	N	Dead

Table 5 Cont. Marine turtle strandings in the Hawaiian Islands caused by shark attack (**N=12**), January – December 2014.

DATE	ISLAND	LOCATION	SPECIES	SEX	SCL (cm)	TUMORS	CAUSE OF STRANDING	NECROPSY	END STATUS
12-Oct-14	OAHU	Kualoa (Sugar Mill Beach)	CM	F	93.4	N	Shark attack/Human Take	Y	Dead

Table 6. Marine turtle strandings in the Hawaiian Islands caused by miscellaneous causes (**N=17**), January – December 2014.

DATE	ISLAND	LOCATION	SPECIES	SEX	SCL (cm)	TUMORS	CAUSE OF STRANDING	NECROPSY	END STATUS
27-Jan-14	MAUI	Napili Bay	CM	M	-	N	Trauma	Y	Dead
31-Jan-14	OAHU	Pearl Harbor (West Loch)	CM	U	-	N	Trauma	N	Dead
10-Feb-14	OAHU	Waianae (Electric Beach Park)	CM	U	-	N	Trapped in pond	N	Alive
20-Mar-14	HAWA	Hilo (Richardson's Ocean Park)	CM	U	-	N	Trapped in pond	N	Alive
16-Apr-14	OAHU	Kailua Beach Park	CM	F	45.6	N	Trauma	Y	Dead
18-May-14	OAHU	Haleiwa (Papailoa Road)	CM	U	-	N	Stuck in crevice	N	Alive
18-May-14	OAHU	Kaaawa	CM	U	-	N	Rope entanglement	N	Dead
23-May-14	TERN	Unknown	CM	M	-	N	Rope entanglement	N	Alive
25-May-14	TERN	Unknown	CM	F	-	N	Trauma	N	Dead
30-May-14	MAUI	Makena (Ahihi Kinau Natural Area Reserve)	CM	U	66	N	Intestinal aplasia	Y	Dead
19-Jun-14	OAHU	Haleiwa (Anahulu River)	CM	U	-	U	Rope entanglement	N	Alive
8-Jul-14	KAUA	Wailua	EI	F	39.9	N	Internal bleeding, cardiac failure	Y	Dead
24-Jul-14	OAHU	Pearl Harbor (Ford Island)	CM	U	-	U	Trauma	N	Dead
26-Jul-14	OAHU	Kaneohe Marine Corps Base Hawaii (Fort Hase Beach)	EI	U	4	N	Hatchling mortality	Y	Dead
12-Aug-14	OAHU	Unknown	CM	U	-	N	Rope entanglement	N	Alive
24-Aug-14	HAWA	Kau (Humuhumu Point)	EI	F	-	N	Stuck in crevice	N	Alive
19-Sep-14	OAHU	Sandy Beach Park	CM	U	-	N	Hatchling mortality	N	Dead

Table 7. Marine turtle strandings in the Hawaiian Islands caused by unknown causes (N=58), January – December 2014.

DATE	ISLAND	LOCATION	SPECIES	SEX	SCL (cm)	TUMORS	CAUSE OF STRANDING	NECROPSY	END STATUS
3-Jan-14	KAUA	Kalapaki Beach	CM	U	-	U	Unknown	Y	Dead
8-Jan-14	OAHU	Haleiwa Beach Park	CM	U	-	U	Unknown	N	Dead
8-Jan-14	OAHU	Waialua (Puuiki Cemetery)	CM	U	-	U	Unknown	N	Dead
10-Jan-14	OAHU	Hauula (Kokololio Beach)	CM	U	43.2	N	Unknown	N	Dead
27-Jan-14	KAUA	Lawai	CM	F	68.3	N	Unknown	Y	Dead
8-Feb-14	OAHU	Barbers Point/Kalaeloa	CM	U	-	U	Unknown	N	Dead
10-Feb-14	MAUI	Paia (Hookipa)	CM	M	44.8	N	Unknown	Y	Dead
23-Feb-14	OAHU	Waialua (Puuiki Cemetery)	CM	U	-	U	Unknown	N	Dead
24-Feb-14	OAHU	Ewa Beach (Iroquois Beach)	CM	M	-	U	Unknown	N	Dead
25-Feb-14	OAHU	Kaneohe Bay (Mikiola Drive)	CM	U	-	U	Unknown	N	Dead
27-Feb-14	OAHU	Waianae (Boat Harbor)	CM	U	-	U	Unknown	N	Dead
4-Mar-14	OAHU	Kaneohe Marine Corps Base Hawaii	CM	U	-	U	Unknown	N	Dead
7-Mar-14	OAHU	Pearl Harbor (Middle Loch)	CM	U	-	U	Unknown	N	Dead
10-Mar-14	OAHU	Hickam Air Force Base (Bishop Point)	CM	U	-	U	Unknown	N	Dead
18-Mar-14	OAHU	Waianae (Pililaa Army Recreation Center)	EI	F	39.2	N	Unknown	Y	Dead
30-Mar-14	OAHU	Barbers Point (White Plains Beach)	CM	M	-	N	Unknown	Y	Dead
6-Apr-14	OAHU	Kaneohe Bay	CM	U	-	U	Unknown	N	Dead
9-Apr-14	OAHU	Kaneohe Bay (Kahaluu)	CM	U	-	U	Unknown	N	Dead
10-Apr-14	OAHU	Waialua (Kaiaka Bay Beach Park)	CM	U	-	U	Unknown	N	Dead
13-Apr-14	OAHU	Kaneohe Bay (Kahaluu)	CM	U	-	Y	Unknown	N	Dead
24-Apr-14	OAHU	Waimanalo (Makai Pier)	CM	U	-	U	Unknown	N	Dead
26-Apr-14	OAHU	Kaneohe Bay (Hakipuu)	CM	U	-	U	Unknown	N	Dead
1-May-14	OAHU	Waialua	CM	U	-	N	Unknown	Y	Dead
15-May-14	OAHU	Kaneohe Bay (Waikane)	CM	M	46.7	N	Unknown	Y	Dead

Table 7 Cont. Marine turtle strandings in the Hawaiian Islands caused by unknown causes (N=58), January – December 2014.

DATE	ISLAND	LOCATION	SPECIES	SEX	SCL (cm)	TUMORS	CAUSE OF STRANDING	NECROPSY	END STATUS
19-May-14	OAHU	Haleiwa Beach Park	CM	U	-	U	Unknown	N	Dead
21-May-14	OAHU	Kahana Bay	CM	U	-	Y	Unknown	N	Dead
2-Jun-14	HAWA	Hilo (Carlsmith Beach Park)	CM	U	-	U	Unknown	N	Dead
8-Jun-14	OAHU	Kualoa (Regional Park)	CM	U	-	U	Unknown	N	Dead
23-Jun-14	OAHU	Kailua (Kawainui Canal)	CM	U	77.4	N	Unknown	N	Dead
28-Jun-14	HAWA	Hilo (Nanihoa Hotel)	CM	F	49.5	Y	Unknown	Y	Dead
2-Jul-14	KAUA	Nomilu Fishpond	CM	U	-	U	Unknown	N	Dead
16-Jul-14	KAUA	Anahola River	CM	U	63.4	U	Unknown	N	Dead
20-Jul-14	OAHU	Makaha	CM	U	-	N	Unknown	N	Dead
28-Jul-14	KAUA	Nukolii	CM	M	37.3	N	Unknown	Y	Dead
29-Jul-14	OAHU	Waialua Beach Road	CM	F	75.2	Y	Unknown	Y	Dead
30-Jul-14	OAHU	Kaneohe Bay	CM	U	-	U	Unknown	N	Dead
30-Jul-14	OAHU	Kaneohe Bay (Kahaluu)	CM	U	-	U	Unknown	N	Dead
3-Aug-14	OAHU	Makaha Beach Park	CM	U	-	U	Unknown	N	Dead
4-Aug-14	OAHU	Haleiwa (Alii Beach Park)	CM	M	57.5	Y	Unknown	Y	Dead
12-Aug-14	MAUI	Unknown	CM	U	-	U	Unknown	Y	Dead
18-Aug-14	KAUA	Moloaa	CM	U	-	N	Unknown	Y	Dead
19-Aug-14	OAHU	Laie (Temple Beach)	CM	U	-	U	Unknown	N	Dead
24-Aug-14	OAHU	Laie (Bikini Beach)	CM	M	36.5	N	Unknown	Y	Dead
30-Aug-14	KAUA	Kalapaki Beach	CM	F	41.5	N	Unknown	Y	Dead
10-Sep-14	OAHU	Kahana Bay Beach Park	CM	M	46	Y	Unknown	Y	Dead
14-Sep-14	OAHU	Hauula (Hale Koolau Condos)	CM	U	-	U	Unknown	N	Dead
16-Sep-14	OAHU	Waianae (Kaena Point)	CM	U	-	Y	Unknown	N	Dead
20-Sep-14	KAUA	Ahukini State Recreational Pier	CM	U	-	N	Unknown	Y	Dead
24-Sep-14	OAHU	Kualoa (Regional Park)	CM	U	-	U	Unknown	N	Dead

Table 7 Cont. Marine turtle strandings in the Hawaiian Islands caused by unknown causes (N=58), January – December 2014.

DATE	ISLAND	LOCATION	SPECIES	SEX	SCL (cm)	TUMORS	CAUSE OF STRANDING	NECROPSY	END STATUS
24-Sep-14	OAHU	Kaaawa (Kalaeoio Beach Park)	CM	U	-	U	Unknown	N	Dead
1-Oct-14	OAHU	Makapuu Beach Park	EI	F	51.1	N	Unknown	Y	Dead
10-Oct-14	OAHU	Ko Olina (Paradise Cove)	CM	F	40.6	N	Unknown	Y	Dead
10-Oct-14	OAHU	Kahana Bay	CM	F	84.2	Y	Unknown	Y	Dead
11-Oct-14	OAHU	Kaena Point	CM	U	-	U	Unknown	N	Dead
15-Oct-14	OAHU	Laie (Temple Beach)	CM	M	40.3	N	Unknown	Y	Dead
24-Oct-14	OAHU	Haleiwa (Laniakea)	CM	M	70.3	N	Unknown	Y	Dead
6-Dec-14	OAHU	Kaneohe Bay (Kahaluu)	UK	U	-	U	Unknown	N	Dead
6-Dec-14	OAHU	Waikiki (Kaluahole Beach)	CM	M	-	N	Unknown	Y	Dead

Table 8. Marine turtle strandings in the Hawaiian Islands pending necropsy reports (N=28), January – December 2014.

DATE	ISLAND	LOCATION	SPECIES	SEX	SCL (cm)	TUMORS	CAUSE OF STRANDING	NECROPSY	END STATUS
25-Mar-14	HAWA	Waikoloa (Mauna Lani Bay Hotel)	CM	-	-	-	Pending Necropsy Report	N	Dead
26-Apr-14	HAWA	Waikoloa (Hilton Waikoloa)	CM	-	-	-	Pending Necropsy Report	N	Dead
30-Apr-14	HAWA	Puuhonua O Honaunau National Historical Park	CM	-	-	U	Pending Necropsy Report	N	Dead
5-Jun-14	KURE	Unknown	CC	-	-	N	Pending Necropsy Report	N	Dead
13-Jun-14	MAUI	Kahana	CM	-	-	N	Pending Necropsy Report	N	Dead
24-Jun-14	HAWA	Kiholo Bay (Lagoon)	CM	-	-	U	Pending Necropsy Report	N	Dead
8-Jul-14	HAWA	Waikoloa (Hilton Waikoloa)	CM	-	-	N	Pending Necropsy Report	N	Dead
20-Jul-14	HAWA	Waikoloa (Hilton Waikoloa)	CM	-	-	U	Pending Necropsy Report	N	Dead
29-Jul-14	OAHU	Makaha Beach Park	CM	-	-	N	Pending Necropsy Report	N	Dead
15-Aug-14	OAHU	Waimanalo (Bellows Beach)	EI	-	-	N	Pending Necropsy Report	N	Dead
25-Aug-14	MAUI	Kihei (Waipuilani Beach Park)	CM	-	-	Y	Pending Necropsy Report	N	Dead

Table 8 Cont. Marine turtle strandings in the Hawaiian Islands pending necropsy reports (N=28), January – December 2014.

DATE	ISLAND	LOCATION	SPECIES	SEX	SCL (cm)	TUMORS	CAUSE OF STRANDING	NECROPSY	END STATUS
26-Aug-14	HAWA	Kapoho (Waiopae Tidepool)	CM	-	-	N	Pending Necropsy Report	N	Dead
19-Sep-14	HAWA	Hilo Hawaiian Hotel	CM	-	-	U	Pending Necropsy Report	N	Dead
17-Oct-14	MAUI	Lahaina (Launiupoko Beach Park)	CM	-	-	U	Pending Necropsy Report	Y	Dead
21-Oct-14	MAUI	Kihei (Kalepolepo Beach Park)	CM	-	-	N	Pending Necropsy Report	N	Dead
24-Oct-14	OAHU	Kailua (Kalama Beach Park)	EI	-	-	N	Pending Necropsy Report	N	Dead
30-Oct-14	HAWA	Hilo (Onakahakaha Beach Park)	CM	-	-	Y	Pending Necropsy Report	N	Dead
6-Nov-14	MAUI	Lahaina	CM	-	-	N	Pending Necropsy Report	N	Dead
19-Nov-14	OAHU	Ewa Beach (Iroquois Point)	CM	-	-	N	Pending Necropsy Report	N	Dead
24-Nov-14	OAHU	Makaha Beach Park	CM	-	-	N	Pending Necropsy Report	N	Dead
4-Dec-14	HAWA	Hilo (Leleiwi Point)	CM	F	65.2	Y	Pending Necropsy Report	Y	Dead
6-Dec-14	OAHU	Laie (Pounders Beach)	CM	-	-	N	Pending Necropsy Report	N	Dead
8-Dec-14	OAHU	Mokuleia (Crozier Drive)	CM	-	-	N	Pending Necropsy Report	N	Dead
16-Dec-14	OAHU	Waimanalo Beach	EI	-	-	N	Pending Necropsy Report	N	Dead
20-Dec-14	OAHU	Haleiwa Harbor	CM	-	-	Y	Pending Necropsy Report	N	Dead
23-Dec-14	OAHU	Punaluu	CM	-	-	N	Pending Necropsy Report	N	Dead
26-Dec-14	OAHU	Nanakuli	CM	-	-	N	Pending Necropsy Report	N	Dead
28-Dec-14	HAWA	Kona (Hualalai Resort)	CM	-	-	U	Pending Necropsy Report	N	Dead

Table 9. Marine turtle strandings in the Hawaiian Islands previously pending necropsy reports (N=16), for 2013 that were assigned cause of stranding during 2014.

DATE	ISLAND	LOCATION	SPECIES	SEX	SCL (cm)	TUMORS	CAUSE OF STRANDING	NECROPSY	END STATUS
27-Feb-13	HAWA	Puuhonua O Honaunau	CM	F	50.5	N	Emaciation	Y	Dead
6-Mar-13	HAWA	Puako (144 PBR)	CM	U	38.7	U	Unknown	N	Dead

Table 9 Cont. Marine turtle strandings in the Hawaiian Islands previously pending necropsy reports (**N=16**), for 2013 that were assigned cause of stranding during 2014.

DATE	ISLAND	LOCATION	SPECIES	SEX	SCL (cm)	TUMORS	CAUSE OF STRANDING	NECROPSY	END STATUS
12-Mar-13	HAWA	Fairmont Orchid Hotel	CM	M	54.7	N	Emaciation	Y	Dead
5-May-13	HAWA	Puako (94 PBR)	CM	M	46.9	N	Emaciation	Y	Dead
24-Jul-13	OAHU	Laie Beach Park	EI	U	42.1	N	Unknown	Y	Dead
8-Aug-13	HAWA	Kapoho Beach Lots	CM	U	39.9	U	Unknown	N	Dead
25-Aug-13	KAUA	Princeville (Pali Ke Kua Hotel)	CM	U	62.6	N	Net Entanglement	Y	Dead
7-Sep-13	OAHU	Nanakuli	CM	U	-	U	Unknown	N	Dead
16-Oct-13	OAHU	Pearl Harbor (Iroquois Point)	CM	U	62.9	Y	FP	N	Dead
21-Oct-13	HAWA	Milolii	EI	F	64.7	N	Suspect Drowning	Y	Dead
27-Oct-13	OAHU	Kailua Beach	CM	U	37.7	-	Unknown	N	Dead
8-Nov-13	OAHU	Kaneohe Bay (Chinaman's Hat)	CM	M	74.1	Y	FP/Vascular Fluke Infection	Y	Dead
23-Nov-13	OAHU	Kualoa (Secret Island)	CM	M	66.6	Y	FP	Y	Dead
25-Nov-13	OAHU	Kailua Bay (North Kalaheo Ave)	CM	U	44	N	Line Entanglement	N	Dead
29-Nov-13	OAHU	Kaena Point	CM	U	44.7	N	Fish Hook/Line Entanglement	N	Dead
27-Dec-13	MAUI	Unknown	CM	U	39.1	N	Unknown	N	Dead

Figure 1. Green turtle strandings in the Hawaiian Islands from 1982 – 2014, excluding 25 cases in 2014 pending necropsy results.

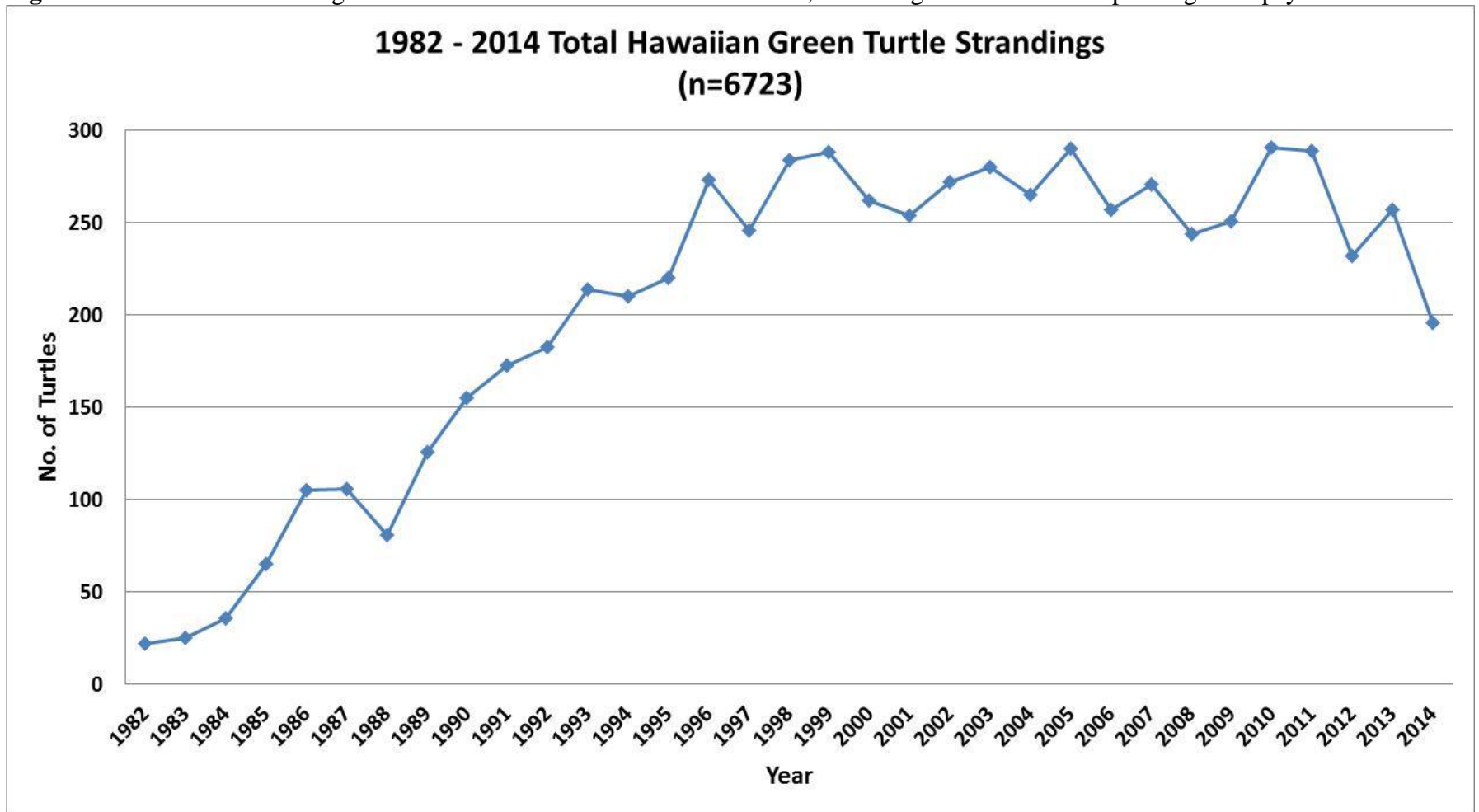


Figure 2. 2014 Hawaiian Islands green turtle strandings by month, January – December.

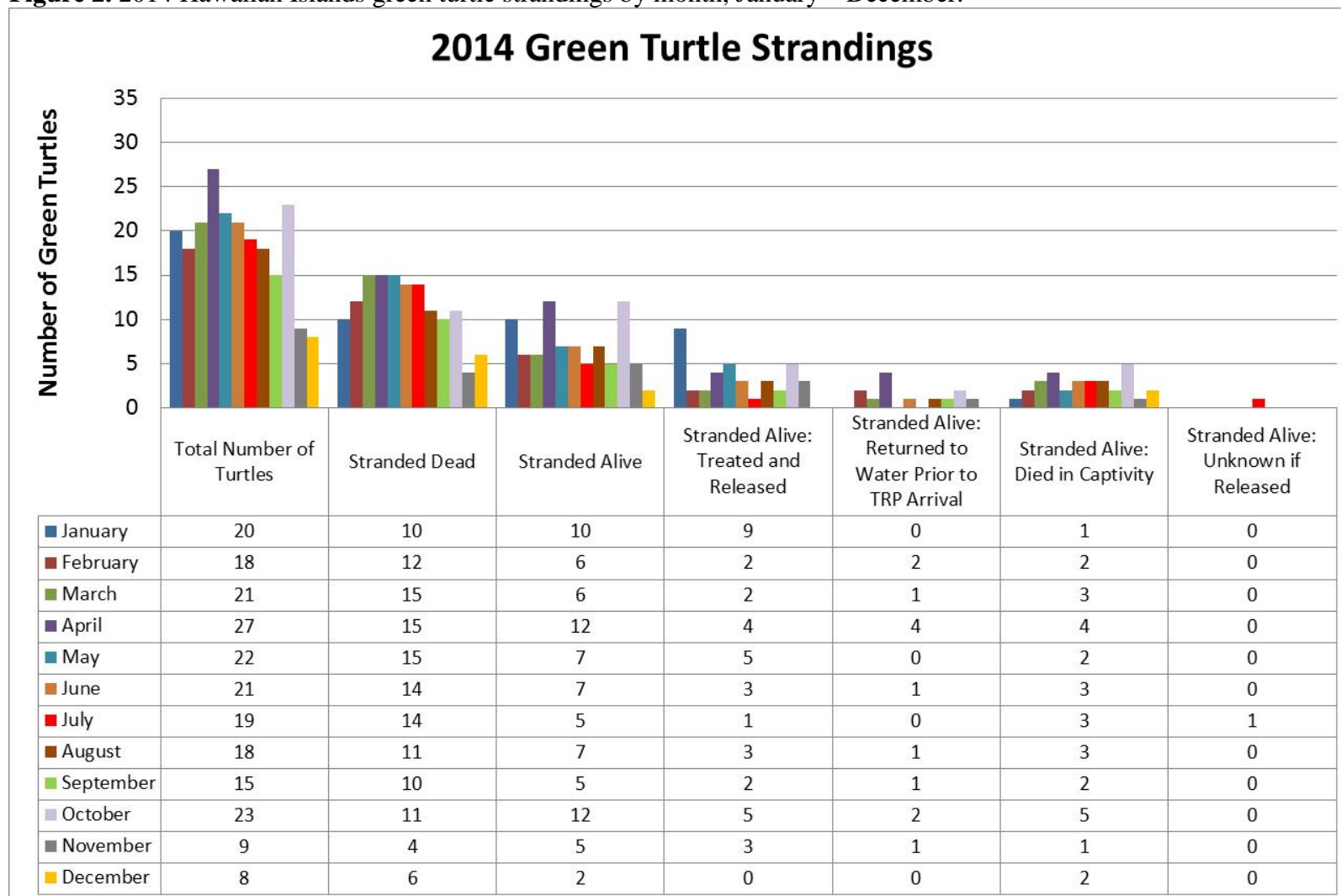


Figure 3. 2014 Hawaiian Islands hawksbill turtle strandings by month, January – December.

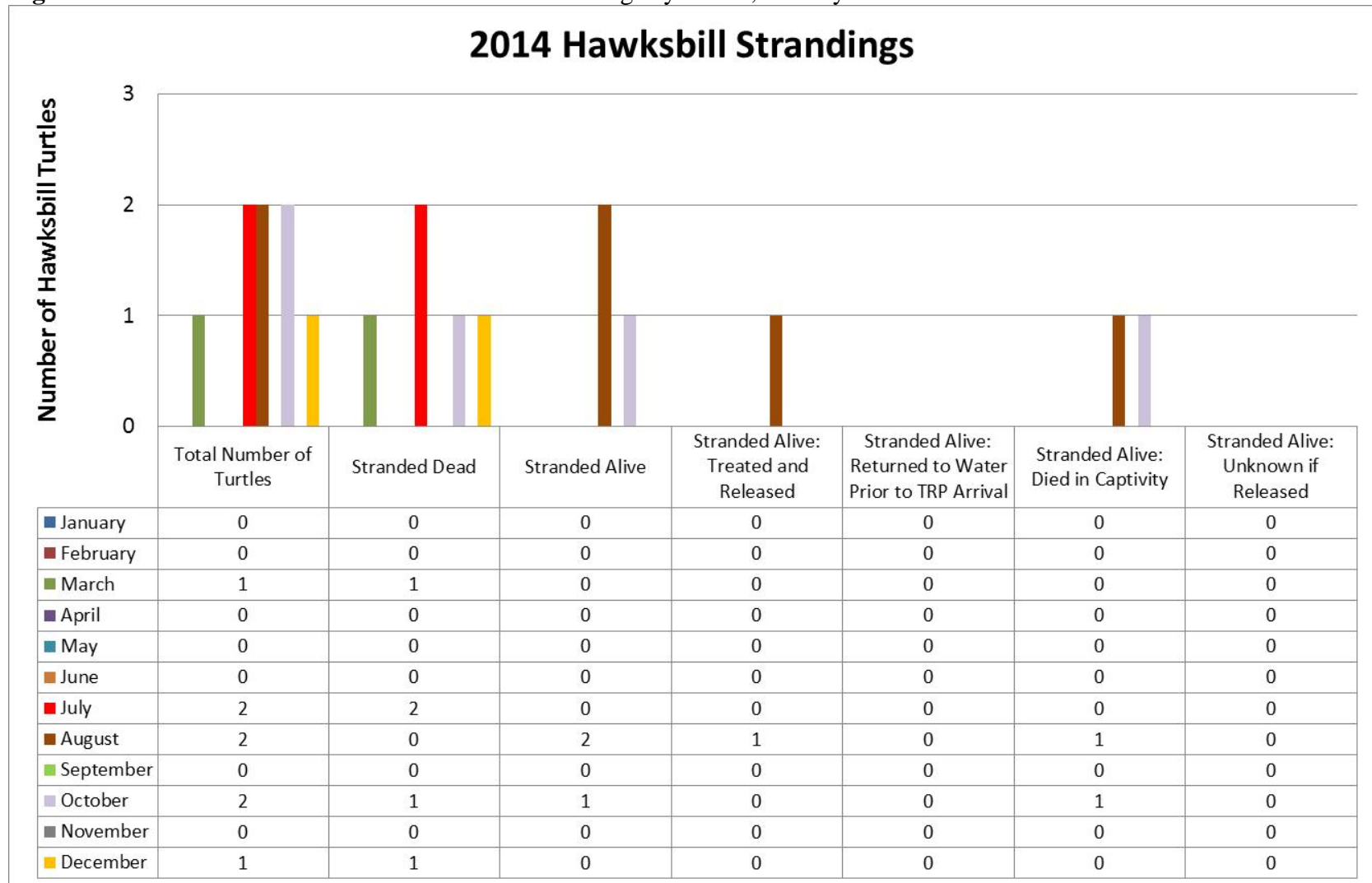


Figure 4. 2014 Green turtle primary stranding causes by month, January – December. Twenty-eight stranding reports with pending necropsy results are not included. There were no strandings in 2014 with Human Take as a primary cause of stranding.

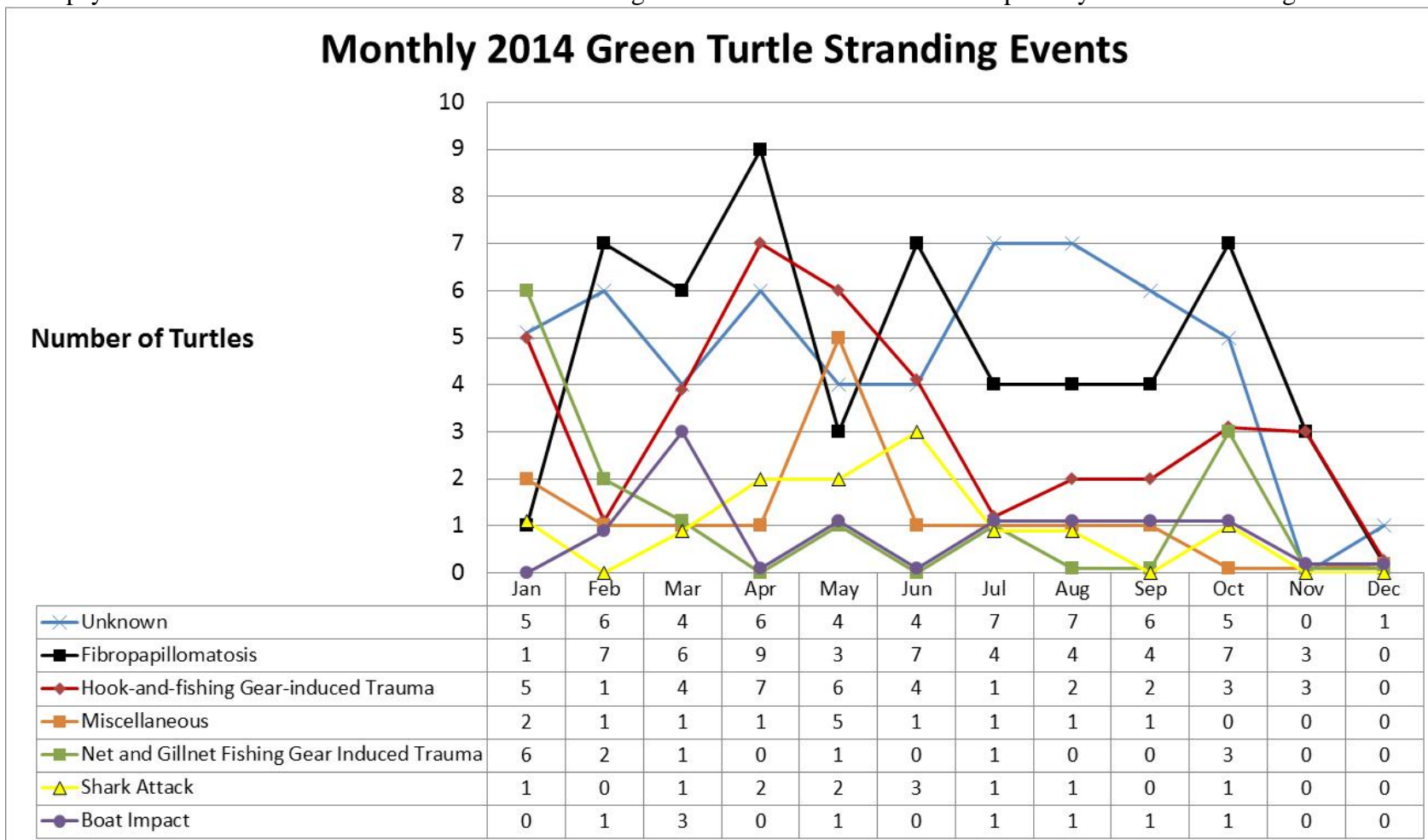


Figure 5. Cause of green turtle strandings from the Main and Northwestern Hawaiian Islands from 1982 through 2014. Miscellaneous cases include strandings classified as Human Take.

