## Methods

Over the course of 4 tagging seasons, 79 pop-up satellite archival tags were deployed by researchers, commercial fishermen and fishery observers. The tags were programmed to release after a set period (between 150–500 days after deployment), after a prolonged period (4–8 days) at a constant depth or reaching a maximum depth threshold of 1700 meters. A range of Wildlife Computing PAT, SPLASH 323-B and MinPAT tags were used (Table 1).

	2011	2012	2014	2015
MinPAT	0	0	0	20
PAT	1	36	2	2
SPLASH 323-B	0	0	17	1

Table 1: The types of tags deployed over the 4 tagging seasons

Tag data was downloaded from Wildlife Computers and processed using WC-DAP v3.0.369. These data were then analyzed using R v3.3.2.

Tags often transmitted for a long period after releasing from turtles and the start of transmission could be delayed from the time of release. To infer the final time that the tag was clearly on the turtle, data was censored back from the first time the tag indicated release (or last transmission for lost tags) to the last time point where the maximum depth exceeded 10 m. Based on these dates, the tagging data provide 9,417 turtle-days of tracking (Figure 3, Table S1).

Turtle fate was determined based on the tag release condition. Tags released due to extreme depth or constant depth were counted as mortalities and all other releases counted as a turtle which was alive at the time of release. A limitation with all such data is that there is little opportunity to identify a sudden mortality event, e.g. a large shark bite or propeller strike, which both kills the turtle and releases the tag. We believe that most premature releases and tag losses are due to tag or attachment failure as exemplified in a particularly loss-prone batch of PAT tags in 2012 and release-prone SPLASH tags in 2014 (Table 2).

	2011	2012	2014	2015
Broken	0	4	0	1
ConstantDepth	0	2	0	0
Float	0	4	18	5
Lost	1	14	0	3
Scheduled	0	8	1	12
TooDeep	0	2	0	2
Unknown	0	2	0	0

Table 2: Inferred fate of tags deployed over the 4 tagging seasons

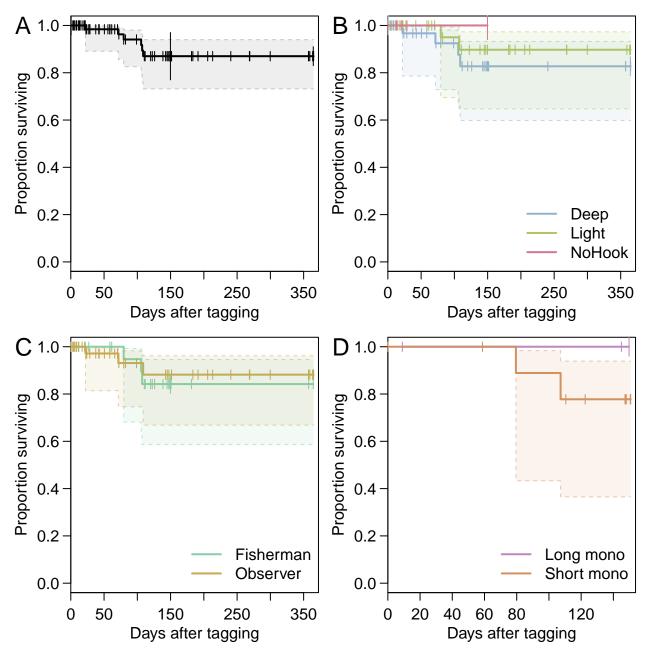


Figure 1: Kaplan-Meier curves showing the estimated proportion of turtles surviving over time for all turtles (A), deep, light or no hook turtles (B), observer or fisherman tagged turtles (C) and turtles with long (> 30 cm) or short pieces of monofilament left attached to hooks (D). Shaded regions indicate 95% confidence intervals. Lost tags, scheduled releases and tags prematurely released without dives to maximum depth or a period of constant depth are counted as censored observations (vertical dashes, scaled by the number of tags censored on that day).

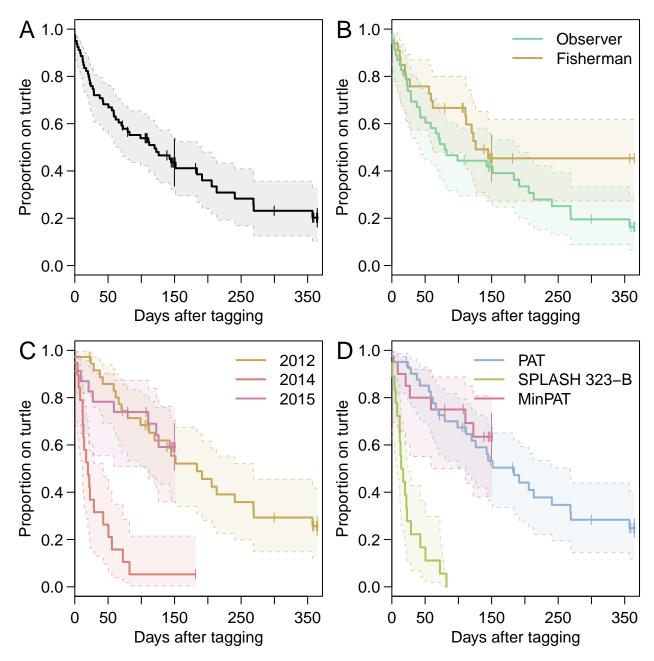


Figure 2: Kaplan-Meier curves showing the estimated proportion of tags remaining on turtles for all turtles (A), turtles split by tagging by an observer/researcher or a fisherman (B), turtles split by tagging year (C) and turtles split by tag type (D). Note that tagging year and tag type are highly correlated (Table 1. A single tag deployed in 2011 is not shown in (C). Maximum depth, constant depth and scheduled released are counted as censored observations (vertical dashes, scaled by the number of tags censored on that day).

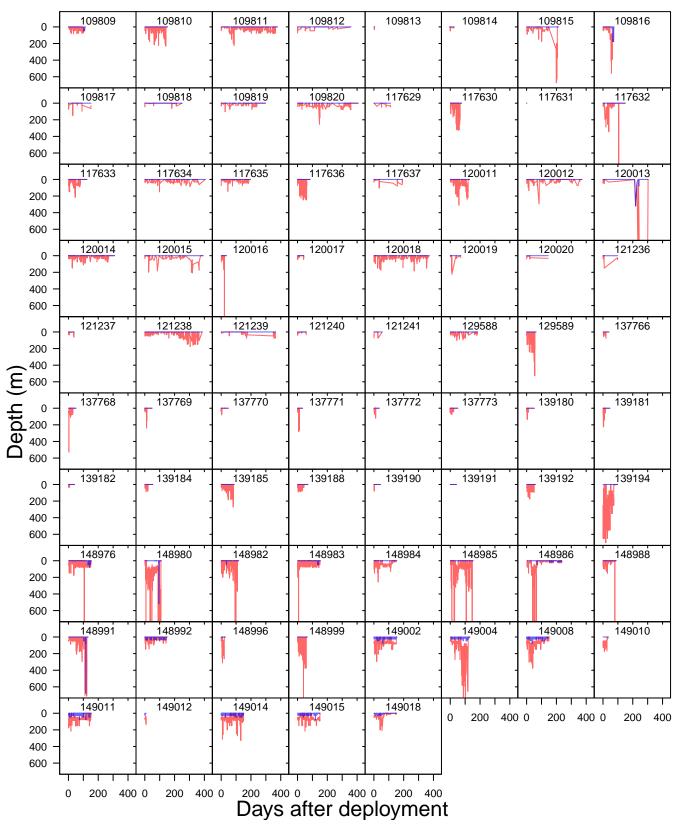


Figure 3: Minimum (blue) and maximum (red) depth reports extracted from all available tag sensors for all turtles with any records in the study.

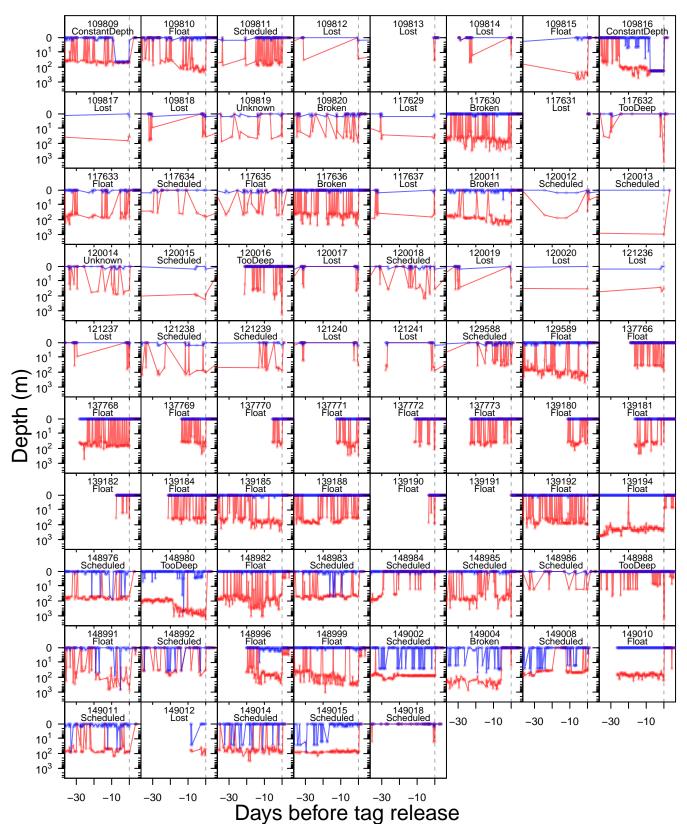


Figure 4: Minimum (blue) and maximum (red) depth reports extracted from all available tag sensors for all turtles with any records in the study in the month prior to release. Dashed line indicates inferred release time. The inferred fate for each turtle based on its tag's communications and depth profiles is indicated for each subplot. Note the log scaling on the y-axis.

## Results

## Conclusions

## Supplementary

PTT	Hook	Deploy date	Deployer	Deploy length	Fate
109813	Light	2011-08-27	Observer/researcher	3.00	Lost
109810	Deep	2012-05-01	Observer/researcher	142.50	Float
109817	Deep	2012-05-01	Observer/researcher	151.50	Lost
109820	Deep	2012-05-01	Observer/researcher	357.25	Broken
109809	Deep	2012-05-02	Observer/researcher	108.75	Constant Depth
109818	Light	2012-05-02	Observer/researcher	213.25	Lost
109819	Deep	2012-05-04	Observer/researcher	240.50	Unknown
109814	Deep	2012-05-07	Observer/researcher	24.00	Lost
109811	Light	2012-05-08	Observer/researcher	364.75	Scheduled
109812	Light	2012-05-08	Observer/researcher	268.50	Lost
120011	Deep	2012-06-14	Fisherman	120.00	Broken
117631	Deep	2012-06-14	Fisherman	0.50	Lost
120012	Deep	2012-06-14	Fisherman	357.50	Scheduled
117637	Light	2012-06-24	Observer/researcher	191.25	Lost
117636	Light	2012-07-09	Fisherman	61.50	Broken
109816	Deep	2012-07-25	Observer/researcher	71.50	Constant Depth
109815	Light	2012-07-27	Observer/researcher	205.75	Float
120015	Deep	2012-07-30	Observer/researcher	365.00	Scheduled
117630	Light	2012-08-01	Observer/researcher	66.00	Broken
117633	Deep	2012-08-01	Observer/researcher	79.50	Float
120020	Deep	2012-08-09	Fisherman	144.75	Lost
117635	Light	2012-08-09	Observer/researcher	183.50	Float
117629	Deep	2012-08-10	Fisherman	111.75	Lost
120017	Light	2012-08-20	Observer/researcher	42.00	Lost
120019	Light	2012-08-21	Observer/researcher	70.25	Lost
120018	Light	2012-08-21	Observer/researcher	359.25	Scheduled
120013	Light	2012-08-21	Observer/researcher	299.75	Scheduled
117632	Deep	2012-08-22	Fisherman	105.75	Too Deep
120014	Light	2012-08-22	Observer/researcher	269.00	Unknown
120016	Deep	2012-08-22	Observer/researcher	22.00	Too Deep
117634	Deep	2012-08-23	Fisherman	364.50	Scheduled
121237	Deep	2012-08-24	Observer/researcher	37.50	Lost
121236	Deep	2012-08-24	Observer/researcher	98.75	Lost
121240	Deep	2012-10-04	Observer/researcher	58.50	Lost
121241	Deep	2012-10-04	Observer/researcher	28.50	Lost
121238	Deep	2012-10-06	Observer/researcher	364.50	Scheduled
121239	Light	2012-10-06	Observer/researcher	363.50	Scheduled

139184         Deep         2014-07-09         Observer/researcher         21.75         Float           139182         Deep         2014-07-10         Observer/researcher         8.00         Float           139194         Deep         2014-07-12         Observer/researcher         72.25         Float           139180         Deep         2014-07-13         Observer/researcher         11.75         Float           139191         Deep         2014-07-13         Observer/researcher         0.50         Float           139188         Deep         2014-07-14         Observer/researcher         42.75         Float           137768         No Hook         2014-07-15         Observer/researcher         28.75         Float           137773         Light         2014-07-16         Observer/researcher         22.75         Float           139185         Light         2014-07-17         Observer/researcher         14.00         Float           139190         Deep         2014-07-19         Observer/researcher         4.00         Float           139191         Deep         2014-07-20         Observer/researcher         50.50         Float           139191         Deep         2014-07-20         Observer/re
139194         Deep         2014-07-12         Observer/researcher         72.25         Float           139180         Deep         2014-07-13         Observer/researcher         11.75         Float           139191         Deep         2014-07-13         Observer/researcher         0.50         Float           139188         Deep         2014-07-14         Observer/researcher         42.75         Float           137768         No Hook         2014-07-15         Observer/researcher         28.75         Float           137773         Light         2014-07-16         Observer/researcher         22.75         Float           137769         No Hook         2014-07-17         Observer/researcher         14.00         Float           139185         Light         2014-07-17         Observer/researcher         82.25         Float           137770         Deep         2014-07-18         Observer/researcher         4.00         Float           139181         Light         2014-07-19         Observer/researcher         17.00         Float           139192         Deep         2014-07-20         Observer/researcher         50.50         Float           137771         No Hook         2014-08-01         Fis
139180         Deep         2014-07-13         Observer/researcher         11.75         Float           139191         Deep         2014-07-13         Observer/researcher         0.50         Float           139188         Deep         2014-07-14         Observer/researcher         42.75         Float           137768         No Hook         2014-07-15         Observer/researcher         28.75         Float           137773         Light         2014-07-16         Observer/researcher         22.75         Float           137769         No Hook         2014-07-17         Observer/researcher         14.00         Float           139185         Light         2014-07-17         Observer/researcher         5.75         Float           139770         Deep         2014-07-18         Observer/researcher         4.00         Float           139181         Light         2014-07-19         Observer/researcher         17.00         Float           139192         Deep         2014-07-20         Observer/researcher         50.50         Float           137771         No Hook         2014-08-01         Fisherman         13.00         Float           137772         Deep         2014-08-08         Fisherman
139191         Deep         2014-07-13         Observer/researcher         0.50         Float           139188         Deep         2014-07-14         Observer/researcher         42.75         Float           137768         No Hook         2014-07-15         Observer/researcher         28.75         Float           137773         Light         2014-07-16         Observer/researcher         22.75         Float           137769         No Hook         2014-07-17         Observer/researcher         14.00         Float           139185         Light         2014-07-17         Observer/researcher         82.25         Float           139770         Deep         2014-07-18         Observer/researcher         5.75         Float           139190         Deep         2014-07-19         Observer/researcher         4.00         Float           139181         Light         2014-07-19         Observer/researcher         17.00         Float           139192         Deep         2014-07-20         Observer/researcher         50.50         Float           137771         No Hook         2014-08-01         Fisherman         13.00         Float           137772         Deep         2014-08-08         Fisherman
139188         Deep         2014-07-14         Observer/researcher         42.75         Float           137768         No Hook         2014-07-15         Observer/researcher         28.75         Float           137773         Light         2014-07-16         Observer/researcher         22.75         Float           137769         No Hook         2014-07-17         Observer/researcher         14.00         Float           139185         Light         2014-07-17         Observer/researcher         82.25         Float           137770         Deep         2014-07-18         Observer/researcher         5.75         Float           139190         Deep         2014-07-19         Observer/researcher         17.00         Float           139191         Light         2014-07-19         Observer/researcher         50.50         Float           137771         No Hook         2014-08-01         Fisherman         13.00         Float           137772         Deep         2014-08-03         Fisherman         12.00         Float           137772         Deep         2014-08-08         Fisherman         12.00         Float
137768         No Hook         2014-07-15         Observer/researcher         28.75         Float           137773         Light         2014-07-16         Observer/researcher         22.75         Float           137769         No Hook         2014-07-17         Observer/researcher         14.00         Float           139185         Light         2014-07-17         Observer/researcher         82.25         Float           137770         Deep         2014-07-18         Observer/researcher         5.75         Float           139190         Deep         2014-07-19         Observer/researcher         4.00         Float           139181         Light         2014-07-19         Observer/researcher         17.00         Float           139192         Deep         2014-07-20         Observer/researcher         50.50         Float           137771         No Hook         2014-08-01         Fisherman         13.00         Float           137772         Deep         2014-08-08         Fisherman         12.00         Float
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137769         No Hook         2014-07-17         Observer/researcher         14.00         Float           139185         Light         2014-07-17         Observer/researcher         82.25         Float           137770         Deep         2014-07-18         Observer/researcher         5.75         Float           139190         Deep         2014-07-19         Observer/researcher         4.00         Float           139181         Light         2014-07-19         Observer/researcher         17.00         Float           139192         Deep         2014-07-20         Observer/researcher         50.50         Float           137771         No Hook         2014-08-01         Fisherman         13.00         Float           137772         Deep         2014-08-08         Fisherman         12.00         Float
139185         Light         2014-07-17         Observer/researcher         82.25         Float           137770         Deep         2014-07-18         Observer/researcher         5.75         Float           139190         Deep         2014-07-19         Observer/researcher         4.00         Float           139181         Light         2014-07-19         Observer/researcher         17.00         Float           139192         Deep         2014-07-20         Observer/researcher         50.50         Float           137771         No Hook         2014-08-01         Fisherman         13.00         Float           137766         No Hook         2014-08-03         Fisherman         19.75         Float           137772         Deep         2014-08-08         Fisherman         12.00         Float
137770         Deep         2014-07-18         Observer/researcher         5.75         Float           139190         Deep         2014-07-19         Observer/researcher         4.00         Float           139181         Light         2014-07-19         Observer/researcher         17.00         Float           139192         Deep         2014-07-20         Observer/researcher         50.50         Float           137771         No Hook         2014-08-01         Fisherman         13.00         Float           137766         No Hook         2014-08-03         Fisherman         19.75         Float           137772         Deep         2014-08-08         Fisherman         12.00         Float
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137772 Deep 2014-08-08 Fisherman 12.00 Float
1
129588 Light 2014-08-25 Fisherman 181.50 Scheduled
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129589 2014-08-25 Fisherman 55.75 Float
149018 Deep 2015-08-21 Fisherman 148.00 Scheduled
149004 Deep 2015-09-24 Fisherman 126.00 Broken
148992 Light 2015-09-06 Observer/researcher 145.00 Scheduled
148984 Deep 2015-08-08 Observer/researcher 147.50 Scheduled
152567 No Hook   2015-08-09   Observer/researcher   0.00   Lost
148983 Deep 2015-06-26 Fisherman 150.50 Scheduled
148976 Deep 2015-06-25 Fisherman 150.75 Scheduled
148991 Light 2015-06-25 Fisherman 122.50 Float
148986 Light 2015-06-24 Fisherman 138.50 Scheduled
148996 Light 2015-06-24 Fisherman 20.75 Float
148988 Light 2015-06-25 Fisherman 79.50 Too Deep
148999 Light 2015-06-26 Fisherman 58.75 Float
148987 Light 2015-06-26 Fisherman 0.00 Lost
148985 Light 2015-06-25 Fisherman 147.25 Scheduled
148982 Light 2015-06-26 Fisherman 110.50 Float
148980   Light   2015-06-25   Fisherman   107.25   Too Deep
149014   No Hook   2015-08-22   Fisherman   149.75   Scheduled
149012   Light   2015-08-23   Fisherman   9.00   Lost
149010   Light   2015-08-30   Fisherman   27.00   Float
149008   No Hook   2015-08-20   Fisherman   149.75   Scheduled
149002   Light   2015-08-20   Fisherman   149.75   Scheduled
149015   Deep   2015-07-23   Fisherman   149.75   Scheduled
149011     No Hook     2015-08-30     Fisherman     149.75     Scheduled   Table S1: PTT tag IDs, healing location, deployment data, deployment length, and inferred

Table S1: PTT tag IDs, hooking location, deployment date, deployment length and inferred fate for all turtles in the study