

Data Report
**Hawaii Longline Fishery Seabird and Sea Turtle Bycatch for the Entire Fishing Grounds
and Within the IATTC Convention Area¹**

Marti McCracken
Pacific Islands Fisheries Science Center
National Marine Fisheries Service

The tables in this report include information requested by the NOAA Fisheries Pacific Islands Regional Office for their annual review of seabird interactions and Southwest Regional Office for their submission to the IATTC for use in preparing reports concerning seabird and sea turtle bycatch within the IATTC Convention Area.

Tables 1 through 4 provide the requested bycatch estimates for seabirds and sea turtles. Tables 5 and 6 provide the requested information about fishing effort. The estimates and measures of effort are for all longline trips landing in the specified years, 2017 or 2018. When computing effort within the IATTC Convention Area for Tables 5 and 6, a fishing operation (set) was considered within the region if at least one of the recorded locations (begin set, end set, begin haul, or end haul) was within the region. The total number of trips within the IATTC Convention Area is the number of trips that had at least one fishing operation (set) in the region. The number of hooks hauled on a fishing operation assigned to the IATTC Convention Area was the number of hooks divided by the number of recorded locations within the area. For example, if the end set and begin haul were located within the area and the begin set and end haul were located outside the area, the number of hooks hauled was divided by 2 to derive the number of hooks assigned to the area. The total number of hooks within the IATTC Convention Area is the sum of hooks assigned to the area. The methods used to sample the deep-set fishery and compute the point estimate for the fishery are described in McCracken (in prep.*b*), and methods used to estimate the standard errors are described in McCracken (in prep.*a*).

¹ PIFSC Data Report DR-19-027
Issued 28 June 2019

Table 1. Estimates of the number of incidental interactions of sea turtles for the Hawaii deep-set longline fishery in 2017 and 2018. Estimates are provided for all species with an observed interaction in 2017 or 2018 and species of concern because of their endangered species status and history of past interactions. Estimates are given for the entire fishing grounds and for waters within the IATTC Convention Area.

Species of Sea Turtle	Year	Observed Takes	Point Estimates	Standard Error
Total fishing grounds				
Loggerhead	2018	1	4	3.7
	2017	3	12	6.5
Leatherback	2018	2	12	7.7
	2017	0	0	4.4
Olive Ridley	2018	18	96	23.6
	2017	26	119	21.2
Green	2018	3	17	8.5
	2017	3	18	9.5
Within IATTC Convention Area				
Loggerhead	2018	0	0	2.2
	2017	0	0	3.5
Leatherback	2018	0	0	2.7
	2017	0	0	1.8
Olive Ridley	2018	1	5	4.8
	2017	6	28	10.0
Green	2018	2	11	7.0
	2017	0	0	3.5

Table 2. Estimates of the number of incidental interactions of seabirds for the Hawaii deep-set longline fishery in 2017 and 2018. Estimates are provided for all species with an observed interaction in 2017 or 2018. Estimates are given for the entire fishing grounds and for waters within the IATTC Convention Area.

Species of Seabird	Year	Observed Takes	Point Estimates	Standard Error
Total fishing grounds				
Laysan Albatross	2018	33	157	36.8
	2017	38	226	84.2
Black-footed Albatross	2018	193	931	108.3
	2017	97	471	60.8
Shearwaters	2018	10	40	11.5
	2017	0	0	4.4
Red-footed Booby	2018	1	5	4.7
	2017	0	0	4.4
Brown Booby	2018	1	6	5.4
	2017	0	0	4.4
Gull	2018	0	0	4.3
	2017	1	6	5.2
Within IATTC Convention Area				
Laysan Albatross	2018	0	0	9.1
	2017	0	0	10.6
Black-footed Albatross	2018	18	93	24.7
	2017	21	104	31.3
Shearwaters	2018	3	12	6.4
	2017	0	0	1.8
Red-footed Booby	2018	0	0	2.2
	2017	0	0	1.8
Brown Booby	2018	1	6	5.4
	2017	0	0	1.8
Gull	2018	0	0	1.5
	2017	0	0	2.5

Table 3. Number of observed incidental interactions of sea turtles for the Hawaii shallow-set longline fishery in 2017 and 2018, where the Hawaii shallow-set longline fishery had 100% observer coverage. Counts are provided for all species with an observed interaction in 2017 or 2018 and species of concern because of their endangered species status and history of past interactions. Counts are given for the entire fishing grounds and for waters within the IATTC Convention Area.

Species of Sea Turtle	Year	Observed Takes
Total fishing grounds		
Loggerhead	2018	38
	2017	16
Leatherback	2018	6
	2017	4
Olive Ridley	2018	1
	2017	4
Green	2018	1
	2017	2
Within IATTC Convention Area		
Loggerhead	2018	28
	2017	5
Leatherback	2018	4
	2017	3
Olive Ridley	2018	0
	2017	1
Green	2018	0
	2017	0

Table 4. Number of observed incidental interactions of seabirds for the Hawaii shallow-set longline fishery in 2017 and 2018, where the Hawaii shallow-set longline fishery had 100% observer coverage. Counts are provided for all species with an observed interaction in 2017 or 2018. Counts are given for the entire fishing grounds and for waters within the IATTC Convention Area.

Species of Seabirds	Year	Observed Takes
Total fishing grounds		
Laysan Albatross	2018	2
	2017	6
Black-footed Albatross	2018	9
	2017	51
Gull	2018	0
	2017	1
Within IATTC Convention Area		
Laysan Albatross	2018	1
	2017	1
Black-footed Albatross	2018	3
	2017	8
Gull	2018	0
	2017	0

Table 5. Number of trips, sets, and hooks recorded in the vessel logbook database (Pacific Islands Science Center, 2019) and Longline Observer Data System (Pacific Islands Regional Observer Program, 2019) for the Hawaii deep-set longline fishery in 2017 and 2018. Total counts are given for the entire fishing grounds and for waters within the IATTC Convention Area.

Source of Counts	Year	Trips	Sets	Hooks
Total fishing grounds				
Number recorded in logbooks	2018	1,578	20,811	57,936,049
	2017	1,478	19,578	53,258,093
Number recorded in LODS	2018	326	4,332	11,751,242
	2017	297	3,832	10,148,196
Within IATTC Convention Area				
Number recorded in logbooks	2018	469	4,882	14,190,328
	2017	485	5,606	15,765,164
Number recorded in LODS	2018	86	888	2,508,527
	2017	94	1,009	2,786,877

Table 6. Number of trips, sets, and hooks recorded in the Longline Observer Data System (Pacific Islands Regional Observer Program, 2019) for the Hawaii shallow-set longline fishery (fishery has 100% observer coverage) in 2017 and 2018. Total counts are given for the entire fishing grounds and for waters within the IATTC Convention Area.

Source of Counts	Years	Trips	Sets	Hooks
Total fishing grounds				
Number recorded in LODS	2018	30	476	546,371
	2017	61	973	1,051,426
Within IATTC Convention Area				
Number recorded in LODS	2018	23	331	376,251
	2017	25	378	439,723

References

- Pacific Islands Fisheries Science Center, (2019): Hawaii Longline Logbook, <https://inport.nmfs.noaa.gov/inport/item/2721>.
- Pacific Islands Regional Office (2019), Longline Observer Data System, <https://inport.nmfs.noaa.gov/inport/item/9027>.
- McCracken, M. L. (in prep.*a*), Interval estimation of annual bycatch in the Hawaii deep-set longline fishery, Technical report, PIFSC, NOAA, U.S. Department of Commerce.
- McCracken, M. L. (in prep.*b*), Sampling the Hawaii deep-set longline fishery and point estimators of bycatch, Technical report, PIFSC, NOAA, U.S. Department of Commerce.