

Data Report

Hawai'i Longline Fishery 2022 Seabird and Sea Turtle Bycatch for the Entire Fishing Grounds, Within the IATTC Convention Area, and Seabird Bycatch to the North of 23° N and 23 °N–30° S

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The tables in this report include information on sea turtle and seabird bycatch requested by the (1) Pacific Islands Regional Office (PIRO) for their annual review of seabird interactions, (2) West Coast Regional Office (WCRO) for use in preparing their submission to the Inter-American Tropical Tuna Commission (IATTC), and (3) Pacific Islands Fisheries Science Center (PIFSC) for use in preparing their submission to the Western and Central Pacific Fisheries Commission (WCPFC).

Tables 1 through 4 provide the bycatch estimates for seabirds and sea turtles requested by the PIRO and WCRO. Table 5 provides the bycatch estimates for seabirds to the north of 23° N and 23° N–30° S requested by the PIFSC. Tables 6 and 7 provide the requested information about fishing effort. The estimates and measures of effort are for all longline trips landed in 2022.

When computing effort within the IATTC Convention Area for Tables 6 and 7, 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 multiplied by the proportion 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 multiplied by 2/4 to estimate 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 estimators of bycatch are described in McCracken (2019).

Table 1. Estimates of the number of incidental interactions of sea turtles for the Hawai‘i deep-set longline fishery in 2022. Estimates are provided for all species with an observed interaction in 2022 and species of concern because of their endangered status and history of previous interactions. Estimates are given for the entire fishing grounds and for waters within the IATTC Convention Area.

Species of Sea Turtle	Observed Takes	Point Estimates	Standard Error
Total Fishing Grounds			
Loggerhead	3	19	9.8
Leatherback	5	24	9.8
Olive Ridley	10	48	13.7
Green	1	6	5.6
Within IATTC Convention Area			
Loggerhead	2	14	9.0
Leatherback	0	0	2.8
Olive Ridley	0	0	3.4
Green	0	0	1.6

Table 2. Estimates of the number of incidental interactions of seabirds for the Hawai‘i deep-set longline fishery in 2022. Estimates are provided for all species with an observed interaction in 2022. Estimates are given for the entire fishing grounds and for waters within the IATTC Convention Area.

Species of Seabird	Observed Takes	Point Estimates	Standard Error
Total Fishing Grounds			
Albatross, Laysan	56	366	235.3
Albatross, Black-footed	47	269	109.5
Booby, Brown	1	6	5.4
Within IATTC Convention Area			
Albatross, Laysan	1	7	5.9
Albatross, Black-footed	5	23	13.5
Booby, Brown	0	0	1.6

Table 3. Number of observed incidental interactions of sea turtles for the Hawai‘i shallow-set longline fishery in 2022 where the fishery had 100% observer coverage. Counts are provided for all species with an observed interaction in 2022 and species of concern because of their endangered 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	Observed Takes
Total Fishing Grounds	
Loggerhead	23
Leatherback	8
Olive Ridley	2
Green	0
Within IATTC Convention Area	
Loggerhead	6
Leatherback	0
Olive Ridley	0
Green	0

Table 4. Number of observed incidental interactions of seabirds for the Hawai‘i shallow-set longline fishery in 2022 where the fishery had 100% observer coverage. Counts are provided for all species with an observed interaction in 2022. Counts are given for the entire fishing grounds and for waters within the IATTC Convention Area.

Species of Seabird	Observed Takes
Total Fishing Grounds	
Albatross, Laysan	36
Albatross, Black-footed	69
Within IATTC Convention Area	
Albatross, Laysan	1
Albatross, Black-footed	11

Table 5. Observed and estimated number of bycatch events of seabirds for the Hawai‘i longline fisheries, deep-set and shallow-set combined. Estimates are provided for all species with an observed bycatch event from 2022. Estimates are given for the entire fishing grounds (total), to the north of 23° N, and 23° N–30° S.

Species of Seabird	Observed Bycatch			Estimated Bycatch		
	>23°N	23°N–30°S	Total	>23°N	23°N–30°S	Total
Albatross, Laysan	90	2	92	394	8	402
Albatross, Black-footed	111	5	116	315	22	338
Booby, Brown	0	1	1	0	6	6

Table 6. Number of trips, sets, and hooks recorded in the vessel logbook database (Pacific Islands Science Center, 2023) and Longline Observer Data System (Pacific Islands Regional Office, 2023) for the Hawai‘i deep-set longline fishery in 2022. Total counts are given for the entire fishing grounds and for waters within the IATTC Convention Area.

Source of Counts	Trips	Sets	Hooks
Total fishing grounds			
Number recorded in logbooks	1,442	20,828	61,950,662
Number recorded in LODS	294	4,314	12,473,293
Within IATTC Convention Area			
Number recorded in logbooks	269	2,581	7,579,846
Number recorded in LODS	69	643	1,831,158

Table 7. Number of trips, sets, and hooks recorded in the Longline Observer Data System (Pacific Islands Regional Office, 2023) for the Hawai‘i shallow-set longline fishery in 2022; the fishery had 100% observer coverage. Total counts are given for the entire fishing grounds and for waters within the IATTC Convention Area.

Source of Counts	Trips	Sets	Hooks
Total fishing grounds			
Number recorded in LODS	62	945	1,219,202
Within IATTC Convention Area			
Number recorded in LODS	10	155	218,743

References

Pacific Islands Fisheries Science Center, 2023: Hawaii Longline Logbook,
<https://www.fisheries.noaa.gov/inport/item/2721>.

Pacific Islands Regional Office, 2023: Longline Observer Data System,
<https://www.fisheries.noaa.gov/inport/item/9027>.

McCracken ML. 2019. Sampling the Hawaii deep-set longline fishery and point estimators of bycatch. U.S. Dept. of Commerce, NOAA Technical Memorandum NOAA-TM-NMFS-PIFSC-89, 22 p. <https://doi.org/10.25923/2psa-7s55>.