

HI Shallow-Set (Swordfish Target) Longline/Set Line Fishery

Fishing gear type: Longline/set line

Current category: Category II*

Basis current for classification on the LOF: The total annual mortality and serious injury of humpback whales (Central North Pacific stock) in this fishery is greater than 1% and less than 50% of the stock's Potential Biological Removal (PBR) level.

Current list of marine mammal species/stocks injured/killed (a ⁽¹⁾ indicates those stocks driving the fishery's classification): Blainville's beaked whale, HI; Bottlenose dolphin, HI Pelagic; False killer whale, HI Pelagic⁽¹⁾; Humpback whale, Central North Pacific; Kogia sp. whale (pygmy or dwarf sperm whale), HI; Risso's dolphin, HI; Short-finned pilot whale, HI; Striped dolphin, HI.

Estimated number of current participants: 20

Take Reduction Teams/Plans that affect this fishery: False Killer Whale Take Reduction Team (FKWTRT). This fishery is subject to the Take Reduction Plan from November 2012.

Year added to the LOF: 1996

Category when originally listed: Category III

Basis for original classification on the LOF: Observer data indicated that interactions occur with various marine mammal stocks (for example, there was an interaction with a humpback whale in 1991); however, estimates of PBR levels and annual mortality and serious injury for many stocks were not available. Therefore the fishery was placed in Category III.

Estimated number of participants when originally listed: 140

Past names, if any: HI swordfish, tuna, billfish, mahi mahi, wahoo, oceanic sharks longline/set line (until 2009).

Gear description/method for fishing: This fishery uses longline gear. Shallow-set longline gear typically consists of a continuous mainline set near the surface and supported in the water column horizontally by floats with branch lines connected at intervals to the mainline. Mainline is made of 3.2-4.0mm diameter monofilament and stored on large hydraulic reels. Bait is set at depths of 30-90m. The portion of the mainline with branch lines attached is suspended between floats at about 20-75 m depth, and the branch lines hang off the mainline another 10-15m. Only 4-5 branch lines are clipped to the mainline between floats, and a typical set for swordfish uses between 700-1,000 hooks. Shallow swordfish sets are required to use size 18/0 circle hooks with a 10 degree offset and mackerel bait (the use of squid bait prohibited). Seabird mitigation regulations require gear to be set at night, which also coincides with the swordfish nocturnal feeding behaviors, and hauls during the day.

Target species: Swordfish.

Spatial/temporal distribution of effort: The most productive swordfish areas for Hawaii-based longline vessels are north of Hawaii outside the U.S. EEZ on the high seas, and this fishery operates almost entirely north of Hawaii (north of approximately 20° N). In some years, when influenced by seawater temperature, this fishery may operate mostly north of 30° N. The fishery operates year-round, with effort highest in winter and spring months and dropping off substantially during the rest of the year.

Levels of observer coverage each year[†]: Observer coverage in the shallow-set fishery has been 100% since 2004.

* The fishery is classified based on mortalities and serious injuries of a marine mammal stock greater than 1% and less than 50% (Category II) of the stock's Potential Biological Removal (PBR) level.

Management and regulations: This fishery is a Federal limited access program and is managed by the Western Pacific Fishery Management Council under the Fishery Ecosystem Plan for Pelagic Fisheries of the Western Pacific Region, and is subject to Federal regulation. Measures that are currently applicable to the fishery include, but are not limited to, limited access (permit requirement), vessel and gear marking requirements, vessel length restrictions, Federal catch and effort logbooks, large longline restricted areas around the Hawaiian Archipelago, vessel monitoring system (VMS), annual protected species workshops, and the possession and use of sea turtle and seabird mitigation gear and safe handling techniques. The vessel operator must notify NMFS prior to departure whether the vessel is undertaking a shallow-set or a deep-set trip. Once the trip type is declared, the type cannot be changed during the trip. NMFS places a contract observer aboard all shallow-set trips. If any marine mammal interaction (hooking or entanglement) resulting in injury or mortality occurs, the vessel operator must complete and mail a pre-addressed, postage paid form to NOAA Fisheries within 48 hours of the end of the trip. More information on all applicable regulations is available at http://www.fpir.noaa.gov/SFD/SFD_regs_2.html. This fishery is subject to the FKWTRT. The Team is currently developing the Take Reduction Plan and, potentially, associated regulations.

History of Changes on the LOF

2014 LOF: Added Blainville's beaked whale (HI).

2013 LOF:

- Added short-finned pilot whale (HI) to the list of species/stocks killed/injured based on serious injury of a blackfish on the high seas in 2008.
- Removed Bryde's whale (HI) from the list of species/stocks killed/injured. No deaths or injuries have been documented in this fishery in the past five years.
- Added a superscript "1" after false killer whale (HI pelagic). Across all fisheries the average annual mortality and serious injury rate was 151.6% of PBR. The fishery-specific Tier-2 analysis was 2.2% of PBR.
- Removed superscript "1" from bottlenose dolphin (HI pelagic). The average annual mortality and serious injury for this stock across all fisheries (0.4) is less than 10% of PBR (18).
- Estimated number of participants updated from 28 to 20.

2011 LOF:

- Added striped dolphin (HI) and Kogia sp. whale (HI) to the list of species/stocks killed/injured. One striped dolphin was observed seriously injured and one Kogia spp. whale was observed non-seriously injured in 2008 in waters outside of U.S. EEZs. The 2010 SAR clarifies that these stocks includes animals found both within the Hawaiian Islands EEZ and in adjacent international waters.
- Added false killer whale (HI Pelagic stock) to the list of species/stocks killed/injured. One false killer whale (HI Pelagic stock) was non-seriously injured in 2008 within the range of the HI Pelagic stock inside the Hawaiian Islands EEZ.
- Changed stock names of bottlenose dolphins from "unknown" to "HI," Bryde's whale from "unknown" to "HI" and Risso's dolphin from "unknown" to "HI." The stock structures were revised in the 2010 SARs.
- Added a superscript "1" after bottlenose dolphin (HI Pelagic stock). From 2004-2008, three serious injuries of this stock were documented outside of U.S. EEZs, resulting in an average serious injury and mortality rate of 0.6 bottlenose dolphins per year. During the same time period, one bottlenose dolphin was observed seriously injured within the Hawaiian Islands EEZ, resulting in an average serious injury and mortality rate of 0.2 bottlenose dolphins per year, or 1.1% of the stock's PBR of 18.
- Removed the superscript "1" after humpback whale (Central North Pacific stock). There was one serious injury and one non-serious injury of humpback whales observed in this fishery from 2004-2008, with 100 percent observer coverage. The PBR for this stock was updated in the 2010 SAR. The one serious injury results in an average serious injury and mortality rate of 0.2 humpback whales per year, or 0.33 percent of the stock's PBR of 61.2. This is less than one percent of the stock's PBR: therefore, serious injury and mortality of this stock is no longer driving the Category II classification of this fishery.

† Observer coverage levels include the latest information reported in the most current final Stock Assessment Reports (SAR).

- Removed sperm whale (stock unknown) from the list of species/stocks killed/injured. There have been no documented takes of sperm whales in this fishery in the last 5 years, under 100 percent observer coverage.

2010 LOF:

- Removed Pantropical spotted dolphin (stock unknown) from the list of species/stocks killed/injured in this fishery. There were no observed interactions in the past 5 years and observer coverage was 100%.

2009 LOF:

- Listed as a separate Category II fishery on the LOF. Listed by splitting the Category I “HI swordfish, tuna, billfish, mahi mahi, wahoo, oceanic sharks longline/set line” fishery into this Category II shallow-set (swordfish target) fishery and the Category I deep-set (tuna target) fishery based on different target species, operating patterns, management regimes, and marine mammal interaction rates. This fishery was recategorized as a Category II because the level serious injury and mortality of humpback whales (Central North Pacific stock) in this fishery is more than 1% and less than 50% of PBR.
- Added or retained the following species to the list of species/stocks injured or killed in this fishery:
 - Added humpback whale (Central North Pacific stock): There was one serious injury in 2006, resulting in a mean annual mortality and serious injury of 0.25 animals/year, or 1.94% of PBR (PBR=12.9). A superscript “1” listed after this stock to indicate that takes of this stock are driving the classification of the fishery.
 - Added Risso’s dolphin (stock unknown): There was one serious injury in 2005, and one serious injury and one mortality in 2006. These interactions occurred outside of U.S. waters, therefore there is no PBR[‡] upon which to conduct a tier analysis.
 - Added bottlenose dolphin (stock unknown): There was one serious injury in 2006, and three serious injuries in 2007. These interactions occurred outside of U.S. waters, therefore there is no PBR upon which to conduct a tier analysis.
 - Added Byrdes’ whale (stock unknown): There was one interaction (that did not result in a serious injury or mortality) in 2005. These interactions occurred outside of U.S. waters, therefore there is no PBR upon which to conduct a tier analysis.
 - Retained pantropical spotted dolphin (stock unknown): There was one mortality in 2001.[§]
 - Retained sperm whale (stock unknown): There was one non-serious injury of a sperm whale in 1999.

Changes on the LOF for the “HI swordfish, tuna, billfish, mahi mahi, wahoo, oceanic sharks longline/set line”

2008 LOF: Added Bryde's whale (HI) and striped dolphin (HI) to the list of species/stocks killed/injured in this fishery. A Bryde's whale was observed injured in 2005 and a striped dolphin was observed killed in 2006.

2006 LOF: Added Blaineville's beaked whale (HI) and Pantropical spotted dolphin (HI) to the list of species/stocks killed/injured in this fishery. One Blaineville’s beaked whale was observed killed in 2002 and one Pantropical spotted dolphin was observed killed in 2001.

2004 LOF: Elevated to Category I based on the level of incidental mortality and serious injury and revised PBR levels of false killer whale (HI). Also, NMFS had information of serious injury and mortality of interactions with all other stocks listed under this fishery. As a result of the 2002 NMFS survey of cetacean abundance in waters where the HI longline fishery operated (throughout the HI EEZ in conjunction with 1993-98 aerial survey data conducted within 25 nmi of the main HI Islands), and the 2002 SARs using data from observer coverage, false killer whales were determined to be a strategic stock. The previous PBR for false killer whales was set with 1993-1998 data that did not cover the entire range of the species. Based on extrapolations of available data, the total annual mortality

[‡] Section 117(a) of the Marine Mammal Protection Act requires NMFS to prepare a stock assessment for each marine mammal stock which occurs in waters under the jurisdiction of the United States. Without a stock assessment, NMFS is unable to calculate a PBR level for this stock.

[§] This mortality of a pantropical spotted dolphin actually occurred in the HI deep-set longline fishery, and should have stayed with the deep-set fishery when the fishery was split into the separate deep- and shall-set fisheries. However, the take was inaccurately attributed to the shallow-set fishery in the 2009 LOF. It was removed from the shallow-set fishery in the 2010 LOF.

and serious injury of false killer whales (HI) was 4.4 animals/year, which exceeded 50% of PBR (PBR= 1.2). The continued take of false killer whales and other cetaceans, including endangered humpback (Pacific Islands Observer Program annual reports list one humpback whale released injured from deep-set gear in both 2002 and 2004) and sperm whales, warranted elevation to a Category I. Observer coverage would be high from then on as a result of an ESA B.O. requiring 100% coverage in the shallow-set component of the fishery and 20% coverage in the deep-set component.

2001 LOF:

- NMFS proposed to elevate the fishery to Category II based on 1) observer data indicating that interactions with marine mammal stocks was not a rare occurrence, 2) the diversity of species documented as incidentally killed or seriously injured in this fishery, and 3) by analogy with other longline fisheries in the U.S. that use similar gear and target similar species, which are Category I or II. NMFS did not elevate the fishery at that time because: 1) there were plans to conduct new abundance surveys in 2002 for all marine mammals inhabiting HI waters; 2) changes in the operation of the fishery were predicted as a result of a Biological Opinion (B.O.) under the Endangered Species Act (ESA) on the proposed FMP for Pelagic fisheries in the Western Pacific Region, which provided several Reasonable and Prudent Alternatives to address adverse effects on endangered sea turtles; and 3) the B.O. included terms to continue the observer program at 20% coverage annually. These 3 factors would increase data and knowledge about the level of mortality and serious injury of marine mammals. NMFS indicated that reclassification may be warranted in a future LOF.
- Added sperm whale (HI) and false killer whale (HI) to the list of species/stocks killed/injured in this fishery. Sperm whales added because of an interaction in 1999, and because sperm whales are an ESA listed species. False killer whales added because the species has been documented to interact with the fishery, and this stock was listed as strategic in the 2000 SAR.
- Deleted monk seal (HI) from the list of species/stocks killed/injured in this fishery. A monk seal has not been observed to interact with this fishery since 1991.
- Humpback whale (Central North Pacific) retained on the list of species/stocks incidentally killed even though the last observed interaction was in 1991. NMFS scientists determine the most appropriate date to use on a case-by-case basis. This data was peer reviewed by the Pacific Scientific Review Group.

1999 LOF: Observer coverage was expanded and NMFS began developing expanded take estimates for consideration of reclassification of this fishery in a future LOF.

1998 LOF: Added spinner dolphin (HI) and short-finned pilot whale (HI) added to the list of species/stock killed/injured in this fishery because these stocks have been documented to interact with the fishery.