



Northeast Fisheries Science Center Reference Document 23-11

Serious injury determinations for small cetaceans and pinnipeds caught in commercial fisheries off the northeast U.S. coast, 2017-2021

October 2023



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TABLE OF CONTENTS

INTRODUCTION.....	1
METHODS.....	1
RESULTS AND DISCUSSION	2
Small Cetaceans.....	2
Pinnipeds	3
ACKNOWLEDGEMENTS	4
REFERENCES CITED	5
TABLES AND FIGURES	6
APPENDIX. TABLES 2 AND 3 FROM NMFS PROCEDURE MANUAL.....	29

INTRODUCTION

The Marine Mammal Protection Act (MMPA) requires the National Marine Fisheries Service (NMFS) to estimate annual levels of human-caused mortality and serious injury to marine mammal stocks (section 117) and to categorize commercial fisheries based on their level of incidental mortality and serious injury of marine mammals (section 118). Serious injury (SI) determinations were addressed at NMFS-convened workshops in 1997 and 2007 (Angliss and DeMaster 1998; Andersen et al. 2008), and in January 2012, the agency published new national guidelines for distinguishing serious from non-serious injuries of marine mammals (NMFS 2012). A major goal of the new guidelines was to establish national consistency and transparency in SI determinations. To implement the new guidelines, Science Center SI determination staff (SID) are required to annually review the observer (OBS) and at-sea monitor (ASM) records on all incidentally caught marine mammals that were released alive. Determinations made on these fishery interactions are independently reviewed by another center's SID (e.g., Northeast Fisheries Science Center [NEFSC] determinations were sent to Southwest Fisheries Science Center [SWFSC]), the Greater Atlantic Regional Fisheries Office (GARFO), and the Atlantic Scientific Review Group (ASRG) before final determinations are published in this document.

METHODS

Electronic records of all small cetacean and pinniped bycatch that were coded as “alive” or “condition unknown” for the 5-year period (2017-2021) were extracted from the Northeast Fisheries Observer Program (NEFOP) database. A principal component of these records included OBS/ASM notes that provided information on entanglement characteristics (e.g., animal in codend), crew handling (e.g., rope tied animal, animals lifted overboard), animal condition (e.g., cut on dorsal flank, some blood), and state of released animal (e.g., swam away quickly, swimming sluggishly at surface, immediately sank). These data were independently compared to small cetacean (S) and pinniped (P) criteria contained in the SI guidance document by 2 marine mammal researchers in the NEFSC Protected Species Branch. The 2 evaluators compared their determinations, and all differences were discussed to obtain agreement. Final injury determinations and mortality events were tabulated annually to estimate the proportion of observed SI animals relative to the other observed determinations (e.g., nonserious injury [NSI], uninjured [UI], and Dead [D]) by gear type and species (Table 4). Proportions are used in stock assessment reports to partition the expanded bycatch estimate into SI vs. Mortality (see Waring et al. 2016). Determinations for 2015-2019 have been previously published (Josephson et al. 2022). No report was published for 2016-2020 as there were no new cases to review in 2020. Cases where a determination could not be made (CBD) were treated conservatively and included with the dead animals and hence represented in the final mortality and SI estimates reported in the annual stock assessment reports (Hayes et al. 2022). Offshore, migratory, and estuarine coastal bottlenose dolphin (*Tursiops truncatus truncatus*) SI determinations were analyzed and reported by the NOAA Fisheries Southeast Fisheries Science Center (Maze-Foley et al. 2019).

Species codes and gear codes used in this report are contained, respectively, in Tables 1 and 2. The statistical area designations are presented in Figure 1.

RESULTS AND DISCUSSION

Small Cetaceans

In 2017, there were 16 small cetacean records reviewed, plus 1 that was identified as an unknown marine mammal. Three Risso's dolphins (*Grampus griseus*) had interactions with bottom trawl gear, 2 of which were determined to be serious injuries because they were brought on deck, and the third was put into the "dead" category. This last animal was noticed floating ventral side up behind the vessel during net retrieval and therefore put into the "dead" category. A harbor porpoise (*Phocoena phocoena*) interaction with gillnet gear was designated as SI. While not brought on board, it remained at the surface with little movement after being freed from entangling wraps and was still at the surface when last seen. A white-sided dolphin (*Lagenorhynchus acutus*.) caught in bottom trawl gear was brought on board in the belly of the net and dumped on deck. While the animal seemed vigorous after release, it may have retained a line around its tailstock that the crew had used to get it overboard. This dolphin was designated as SI because it was on deck. A common dolphin (*Delphinus delphis*) released alive from gillnet gear was designated as SI under criteria S7b – entangled in gear but released gear-free. The dolphin was responsive and alert upon release, but not very active. Nine common dolphins (7 in the same haul) were coded by the observer as "status unknown" but were designated by the serious injury reviewers as dead. An unidentified dolphin taken in gillnet was also determined to be dead. The unidentified marine mammal was taken in trawl gear and designated as CBD as the animal was seen only briefly during haul back. While it seemed to free itself by making a large hole in the net, it was unknown whether there were any injuries or remaining entanglement. A 2017 bottlenose dolphin interaction previously reported here has been removed from this report and is now included in the SEFSC Serious Injury report (Maze-Foley et al. 2019).

In 2018, 2 small cetacean records were reviewed for SI determination. A common dolphin was recorded in the observer database as alive in bottom trawl gear. Few details were available for this animal, but as it was entrapped in the net before being cut out and released, and was exhibiting unusual behavior such as opening and closing its mouth, it was classified as SI. In addition, an unidentified dolphin was observed in gillnet gear. This animal was also classified as SI, as it was hauled out of the water by the roller and no movement was observed post-release.

In 2019, the NEFSC reviewed 9 small cetacean records for SI determination. Seven of these were common dolphins with bottom trawl gear interactions, 4 of them on the same trip. Upon review of observer descriptions and photos, 2 of the common dolphins were classified as dead and 2 as SI, with the remaining 3 meriting CBD status due to lack of information collected.

The remaining 2 cetaceans reviewed in 2019 were recorded as an unidentified whale and unidentified dolphin. The "whale" was an animal brought on deck in the catch pile, probably in the codend, described as being approximately 8 ft. in length, but the observer had only a quick view before the animal was hoisted overboard with a rope around the tailstock. The animal sank out of view when the line was cut, so it was most likely dead, but the species remains unknown. Two other bycatch mortalities on the same trip were harbor porpoises. The unidentified dolphin was perhaps a Risso's dolphin or pilot whale (*Globicephala sp.*) that had its flukes entangled in the tripper rope. After a line was cut the animal was able to swim away, gear-free, apparently unharmed. However, since details were scant and species unknown, this record was classified as CBD.

In 2020 and 2021, observer coverage was greatly reduced due to COVID-19 restrictions. There were no takes recorded in the observer database as alive or condition unknown in 2020. In 2021, we reviewed 1 common dolphin, 1 white-sided dolphin, 1 unidentified pilot whale, and 1 unidentified dolphin for injury determination. The common dolphin and the white-sided dolphin were

both determined to be SI as they were brought on deck. The pilot whale did not move while observed in the net but was cut from the net, and the captain of the vessel said it swam away. There was not enough information to make an injury determination. The unidentified dolphin, while not brought on board the vessel, fell onto the ramp when the net came out of the water, so it was also classified as SI under category S9 (body trauma).

In summary, 31 records of small cetaceans from 2017-2021 were reviewed for injury determination. Of these, 12 were designated as SI, 5 as CBD, and 14 as dead. Four common dolphins, 1 white-sided dolphin, 1 unidentified dolphin, and 2 Risso's dolphins were seriously injured as a result of interacting with bottom trawl gear. One dolphin of unknown species, 1 common dolphin, 1 white-sided dolphin, and 1 harbor porpoise sustained serious injury in sink gillnet gear. One unidentified marine mammal was classified as CBD in its interaction with trawl gear.

Pinnipeds

In 2017, 15 records of seals were reviewed for injury determination. One of these, a harbor seal (*Phoca vitulina*) interaction with bottom trawl gear, was determined to be NSI. Even though the seal was brought on board in the codend of the net, probably causing stress trauma to some extent, it was active and alert and showed no signs of injury. It dove into the water off the stern ramp. Ten gray seals (*Halichoerus grypus*) in sink gillnet gear and 1 gray seal in bottom trawl gear were determined to be mortalities. Three unidentified seals, 2 in gillnets and 1 in a trawl, were also determined to be dead.

In 2018, 6 records of seals were reviewed for injury determination. One of these, an unidentified seal interaction with sink gillnet gear, was determined to be SI. Lack of movement noticed after release, combined with observation of bulging eye, led reviewers to classify that take as seriously injured, if not dead. Three gray seals, 1 of them in herring purse seine gear and the other 2 in bottom trawl gear, were determined to be NSI. One gray seal and 1 unidentified seal interaction with sink gillnet gear did not have enough information to make a determination. Those cases were coded as CBD.

In 2019, 3 unidentified seals and 2 gray seals were reviewed for injury determination. The unidentified seals were reported on gillnet trips. None had enough information to make injury determinations or species identifications. A gray seal was cleared from gillnet gear while still in the water and determined to be NSI, although it is unknown if any gear remained on the animal. Another gray seal was an interaction with handline fishing. The handline fisherman lost multiple hooks and a significant amount of monofilament during the interaction. The animal was hooked on the dorsal side but broke free and disappeared. This interaction was classified as CBD because, while SI was possible due to the quantity of line lost, NSI could not be ruled out.

In 2020 and 2021, observer coverage was greatly reduced due to COVID-19 restrictions. There were no takes recorded in the observer database as alive or condition unknown in 2020. In 2021, 1 harbor seal was recorded as being captured in a trawl net. The seal was first seen in the catch pile on deck but returned to the water with a slight prod and dove immediately. No blood or fresh wounds were seen. This animal was classified as NSI as while no wounds were visible, stress trauma is likely.

In summary, from 2017-2021, 1 unidentified seal was seriously injured from observed bycatch in sink gillnet gear (Table 4), though quite a few records initially recorded by the observer as unknown condition were determined to have been mortalities, and several records were classified as either NSI or CBD.

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TABLES AND FIGURES

Table 1. List of marine mammal codes, common names, and scientific names.

Code	Common Name	Scientific name
CODO	Common dolphin	<i>Delphinus delphis delphis</i>
HAPO	Harbor porpoise	<i>Phocoena phocoena phocoena</i>
UNPW	Long-finned or short-finned pilot whale	<i>Globicephala</i> spp.
PPDO	Harbor porpoise or dolphin	
RIDO	Risso's dolphin	<i>Grampus griseus</i>
WSDO	Atlantic white-sided dolphin	<i>Lagenorhynchus acutus</i>
UNDO	Unidentified dolphin	
GRSE	Gray seal	<i>Halichoerus grypus atlantica</i>
HASE	Harbor seal	<i>Phoca vitulina vitulina</i>
HPSE	Harp seal	<i>Pagophilus groenlandicus</i>
UNCE	Unidentified cetacean	
UNSE	Unidentified seal	
UNMM	Unidentified marine mammal	
UNWH	Unidentified whale	

Table 2. Northeast region commercial fishery gear codes.

Gear code	Gear description
HND	Hand Line
OTB	Otter trawl bottom
OTM	Midwater Otter trawl
OTR	Otter Ruhle trawl
OTH	Otter trawl haddock separator
PSH	Purse seine
SGN	Sink gillnet

Table 3. Comparison of fishery observer or at-sea monitor animal condition codes and Protected Species Branch (PSB) injury determinations (SI = serious injury, NSI = nonserious injury, UI = uninjured, CBD = cannot be determined) for the 5-year period 2017–2021. Determinations are based on observer notes and small cetacean and pinniped criteria in the National Marine Fisheries Service Determination Directive (NMFS 2012). Northeast Gear codes are listed in Table 2, statistical areas are shown in Figure 1, and species codes are listed in Table 1.

NEGEAR	Statistical Area	Take Date	Species Code	Recorded Animal Condition	Revised Animal Condition	PSB Determination	NMFS 2012 SI Determination Directive	PSB comments regarding determination
OTB	514	02-Jan-2017	HASE	alive		NSI	P4	Observer first saw it in the codend as the net was coming on board. Was sitting on top of catch right side up, active, alert. No signs of injury. Approx. 6 min. after coming on deck, it dove into water off stern ramp. Did not resurface.
OTB	616	28-Mar-2017	RIDO	alive		SI	S4	On deck for approx. 5 min. 2" cut around throat. Blood between pecs and around peduncle. Released by crew by tying rope around fluke and towing off stern with drum reel. Crew said release left no gear on animal, went in head first, did not resurface. Videos taken.
SGN	636	26-Mar-2017	CODO	alive		SI	S7b	Dolphin alive with fluke and peduncle wrapped in net. Dolphin pulled alongside and disentangled by capt. Responsive and alert – eyes and mouth moving – but not very active. No visible wounds. Swam away when lowered into water. No gear left on animal.
SGN	526	26-Mar-2017	GRSE	unknown	dead	DEAD		Take fell out of the net before reaching the hauler. No details available on condition. No photos taken. Sank immediately at release.
SGN	526	26-Mar-2017	GRSE	unknown	dead	DEAD		Take fell out of the net before reaching the hauler. No details available on condition. No photos taken. Sank immediately at release.
SGN	526	26-Mar-2017	GRSE	unknown	dead	DEAD		Take fell out of the net before reaching the hauler. No details available on condition. No photos taken. Sank immediately at release.

NEGEAR	Statistical Area	Take Date	Species Code	Recorded Animal Condition	Revised Animal Condition	PSB Determination	NMFS 2012 SI Determination Directive	PSB comments regarding determination
SGN	526	26-Mar-2017	GRSE	unknown	dead	DEAD		Take fell out of the net before reaching the hauler. No details available on condition. No photos taken. Sank immediately at release.
SGN	526	26-Mar-2017	GRSE	unknown	dead	DEAD		Take fell out of the net before reaching the hauler. No details available on condition. No photos taken. Sank immediately at release.
SGN	526	26-Mar-2017	GRSE	unknown	dead	DEAD		Take fell out of the net before reaching the hauler. No details available on condition. No photos taken. Sank immediately at release.
SGN	526	26-Mar-2017	GRSE	unknown	dead	DEAD		Take fell out of the net before reaching the hauler. No details available on condition. No photos taken. Sank immediately at release.
SGN	526	26-Mar-2017	GRSE	unknown	dead	DEAD		Take fell out of the net before reaching the hauler. No details available on condition. No photos taken. Sank immediately at release.
SGN	526	26-Mar-2017	GRSE	unknown	dead	DEAD		Take fell out of the net before reaching the hauler. No details available on condition. No photos taken. Sank immediately at release.
SGN	526	26-Mar-2017	GRSE	unknown	dead	DEAD		Take fell out of the net before reaching the hauler. No details available on condition. No photos taken. Sank immediately at release.
SGN	526	26-Mar-2017	GRSE	unknown	dead	DEAD		Take fell out of the net before reaching the hauler. No details available on condition. No photos taken. Sank immediately at release.
SGN	515	02-Apr-2017	HAP0	alive		SI	S7b	When net was being brought up, animal began to thrash around and freed itself. No wounds seen. Once free from net, stayed at surface with little fin movement. Bubbles could be seen coming from blowhole when waves washed over. Last seen still floating at surface after approx. 1-2 minutes.

NEGEAR	Statistical Area	Take Date	Species Code	Recorded Animal Condition	Revised Animal Condition	PSB Determination	NMFS 2012 SI Determination Directive	PSB comments regarding determination
OTB	626	12-Apr-2017	RIDO	alive		SI	S4	Once the animal was around the net drum, it ripped through the net and landed on its side on deck; let out a "croaking" noise. Animal was alive but not active or responsive to touch. Bubbles were seen coming from blow hole. Rope was tied around tail stock, animal was lifted, and then rope (knot still around tail) was cut releasing animal back into water. Dolphin floated sluggishly at surface with head out of water but was then surrounded by other dolphins and obs lost sight.
OTB	616	14-Apr-2017	RIDO	unknown	dead	DEAD		Dolphin observed floating ventral side up 120-150 feet behind vessel. No visible injuries.
OTB	515	31-Jun-2017	UNMM	unknown		CBD		Take seen in net when hauling gear on board. Net was lowered from deck to water to shake catch into codend, and when it was pulled back up, the mammal was gone. A large hole was seen in the belly of the net.
OTB	537	08-Jul-2017	UNSE	unknown	dead	DEAD		Take was seen in the mouth of the net. Crew member said the animal had a very strong odor, was bloated, and organs were protruding from the body. Since observer was unable to see take for more than a few seconds, determined animal condition to be unknown, although likely dead, severe decomposition.

NEGEAR	Statistical Area	Take Date	Species Code	Recorded Animal Condition	Revised Animal Condition	PSB Determination	NMFS 2012 SI Determination Directive	PSB comments regarding determination
OTB	562	08-Jul-2017	WSDO	alive		SI	S4	Animal on top of the fish pile when dumped on deck. Moving tail around. No wounds, marks, scars seen. Rope tied around tail stock to put overboard, rope possibly was still attached to the dolphin once in the water. Dolphin was seen in water after release and dove straight under.
SGN	521	03-Aug-2017	UNSE	unknown	dead	DEAD		Animal fell out of gear as it was being hauled. Unknown if sank/float at release. No photos/samples taken.
SGN	512	09-Aug-2017	UNSE	unknown	dead	DEAD		Only a glimpse of take in net. Unknown if sank/float at release. No photos/samples taken.
OTB	537	27-Aug-2017	GRSE	unknown	dead	DEAD		Animal on top of pile after net was tripped into checker pen. Unknown if alive or dead. Eyes were intact and lifelike, no fur sloughing off, no odor, warm to touch. Some liquid coming from nose, but no noticeable injuries. Take was moved overboard by wrapping a rope around the rear flippers and pushing it down ramp. Take sank immediately upon release.
OTB	537	05-Aug-2017	CODO	unknown	dead	DEAD		Take on deck. Unknown animal condition. No odor noticed, skin not flaking off, eyes dark, clear, and intact. Moved off vessel with rope around tail. Unknown if sank/floated upon release or if any gear was left on.
OTB	537	05-Aug-2017	CODO	unknown	dead	DEAD		Take on deck. Unknown animal condition. No odor noticed, skin not flaking off, eyes dark, clear, and intact. Moved off vessel with rope around tail. Unknown if sank/floated upon release or if any gear was left on.

NEGEAR	Statistical Area	Take Date	Species Code	Recorded Animal Condition	Revised Animal Condition	PSB Determination	NMFS 2012 SI Determination Directive	PSB comments regarding determination
OTB	537	05-Aug-2017	CODO	unknown	dead	DEAD		Take on deck. Unknown animal condition. No odor noticed, skin not flaking off, eyes dark, clear, and intact. Moved off vessel with rope around tail. Unknown if sank/floated upon release or if any gear was left on.
OTB	537	05-Aug-2017	CODO	unknown	dead	DEAD		Take on deck. Unknown animal condition. No odor noticed, skin not flaking off, eyes dark, clear, and intact. Moved off vessel with rope around tail. Unknown if sank/floated upon release or if any gear was left on.
OTB	537	05-Aug-2017	CODO	unknown	dead	DEAD		Take on deck. Unknown animal condition. No odor noticed, skin not flaking off, eyes dark, clear, and intact. Moved off vessel with rope around tail. Unknown if sank/floated upon release or if any gear was left on.
OTB	537	05-Aug-2017	CODO	unknown	dead	DEAD		Take on deck. Unknown animal condition. No odor noticed, skin not flaking off, eyes dark, clear, and intact. Moved off vessel with rope around tail. Unknown if sank/floated upon release or if any gear was left on.
OTB	537	05-Aug-2017	CODO	unknown	dead	DEAD		Take on deck. Unknown animal condition. No odor noticed, skin not flaking off, eyes dark, clear, and intact. Moved off vessel with rope around tail. Unknown if sank/floated upon release or if any gear was left on.
SGN	539	20-Oct-2017	UNDO	unknown	dead	DEAD		Take was seen in net with entanglement concentrated around the fluke. Once net around fluke was cut, dolphin went under surface and sank immediately.
OTB	622	21-Oct-2017	CODO	unknown	dead	DEAD		Take first noticed when codend was tripped into checker pen. Unknown animal condition; no odor detected, no movement noted while on deck. Floated upon release.

NEGEAR	Statistical Area	Take Date	Species Code	Recorded Animal Condition	Revised Animal Condition	PSB Determination	NMFS 2012 SI Determination Directive	PSB comments regarding determination
OTB	537	18-Oct-2017	CODO	unknown	dead	DEAD		Take noticed after net was tripped into checker pen and being set for next haul. Condition unknown; no notice of movement. Take was moved off the boat at the stern by rope around caudal peduncle; rope was cut to release. Unknown if sank/float at release.
OTB	537	21-May-2018	GRSE	alive		SI	P4, P7b	Take noticed while codend was emptied into checker pen, unknown where in catch pile take was when net tripped. Alert, erratically whipping head, looking wide-eyed, mouth open, not barking/making noise, eyes intact/clear. Did not attempt to attack/bite crew. No coughing or foam around mouth or nose noted. Quarter sized, pink, not bleeding wound on R pec flipper; no other wounds, marks, or scars noted. Crew member grabbed by hind flippers and slid take down the stern where it immediately dove out of sight, unknown if resurfaced after release. No gear left on.

NEGEAR	Statistical Area	Take Date	Species Code	Recorded Animal Condition	Revised Animal Condition	PSB Determination	NMFS 2012 SI Determination Directive	PSB comments regarding determination
OTB	538	23-May-2018	GRSE	alive		NSI	P4, P7b	Take noticed in belly of net, net reeled up little by little to shake out, tumbled few feet at a time until it tumbled into checker pen. Gear never rested on top of take. Initially motionless, thought to be dead; after <30 secs. in checker pen, took 2 large breathes before awaking, bearing teeth, and growling. No wounds, marks, scars, indents. No coughing or foam around nose or mouth. Crew member grabbed by hind flippers when take was not looking, released when it whipped around to bite, and repeated when take was not looking. Slid down the stern where it immediately dove out of sight, unknown if resurfaced after release. No gear left on. Whole interaction ~40 secs.
SGN	521	24-Jun-2018	UNSE	unknown		CBD	P7b	Observer saw 1 hind flipper break water surface, tension on net from hauler caused seal to break free from net before any more of the animal could be lifted out of the water. Seal became free from net and went back under water and was not seen again. Unknown which species. Unknown if dead/alive. No blood seen in water.
SGN	521	24-Jun-2018	UNSE	unknown		SI	P9	Seal came up in net, head made it over gunnel before hauler before falling from the gear back into the water as capt. tried to pull the net onboard. No large holes or damage seen in net after, gear nor animal were cut. Obs was able to see face for 2-3 secs., eye seen appeared to be bulging and had visible red veins. No odor. Take occurred during early hours of morning, too dark out to see detail. Seal was not seen in water once if fell from the gear.

NEGEAR	Statistical Area	Take Date	Species Code	Recorded Animal Condition	Revised Animal Condition	PSB Determination	NMFS 2012 SI Determination Directive	PSB comments regarding determination
								Unknown if dead/alive. No blood seen. Unknown if tagged. No photos taken. Take 2 of 3 on this trip.
OTB	537	31-Sep-2018	CODO	alive		SI	S7b	Dolphin was ventral side up vertical in net w/ head facing bow, only first half of face sticking through net, the rest of the body was within the net. Very active, opening and closing mouth like eating fish. Crew member stood on edge of stern and pulled net towards him, cut the net directly below the animal. Take then fell from gear head first into water. Take was not seen in the water after. No damage or blood seen.
HPS	512	02-Sep-2018	GRSE	alive		NSI		Take noticed when floatline of net was raised overhead while catch was being pumped onboard. Alive: initially swam erratically at surface, noticed popping above/below water with help of spot light on deck. Floatline dropped immediately once seal was noticed, did not attempt jumping gear, so it was raised again and pumping of catch continued. Take ~8-10 ft. from pump, did not seem alarmed/concerned of pump, not feeding on catch. No wounds/marks/scars/blood visible. After pumping catch ~15 min., topline was dropped a second time, take swam over floatline, dove immediately, did not resurface.

NEGEAR	Statistical Area	Take Date	Species Code	Recorded Animal Condition	Revised Animal Condition	PSB Determination	NMFS 2012 SI Determination Directive	PSB comments regarding determination
SGN	611	31-Oct-2018	GRSE	alive		CBD	P9	Take seen following vessel for ~2 hauls grabbing striped bass from string. Capt. saw seal approaching vessel and screamed to crew, "He's coming after us!" Crew promptly handed capt. a long stick and capt. leaned over side hauler, stretched out, and swung to hit the seal once. Unk if capt. made contact w/ seal, it dove below water as the stick made contact with surface. Alive: no noticeable injuries/blood/wounds, eyes open and alert. Disappeared beneath water and did not resurface for the rest of trip. No gear seen attached, disappeared beneath water and did not resurface for the rest of trip.
SGN	537	19-Dec-2018	UNDO	unknown		SI	S7b	Take came mostly out of the water; when head came up to roller, it fell out of gear due to force of roller. Unk if any indents from gear or gear left on, obs only saw head and pec flippers. Unk condition: no movement or noises noticed, skin taunt and shiny, R eye clear/black/shiny, no blood/fluids/foam seen. Unk condition of L eye and body posterior to R and L pec flippers. ID: solid gray coloration for head and R and L pec flippers, prominent rostrum. Unk if any wounds/marks/scars, blood present, none visibly seen on head or R or L pec flippers. Release: disappeared under the waves, did not resurface, no thrashing or signs of movement seen.

NEGEAR	Statistical Area	Take Date	Species Code	Recorded Animal Condition	Revised Animal Condition	PSB Determination	NMFS 2012 SI Determination Directive	PSB comments regarding determination
OTB	515	15-Mar-2019	CODO	Unk	DEAD	DEAD		First seen hanging by caudal fin from net approx. 5 ft. from start of codend, rip in net belly caused animal to fall from gear before exiting water. No gear attached when it fell from net. Obs unable to see take once in water, unk if sank or float, take occurred at night. Description is consistent with mortality.
OTB	616	15-Oct-20019	CODO	Alive		SI	S4	Animal on deck, crew had rope around fluke, body hanging vertically and spinning, with crew moving animal towards the stern. Animal was seen moving on its own and was deemed alive but sluggish/lethargic.
OTB	613	19-Nov-2019	CODO	Alive		SI	S4	Animal seen in belly of net, shaken down to codend to release from net. Animal seemed in poor condition and was not very lively while on deck. Once out of gear, animal was on deck for approx. 1-2 min. Crew lifted the animal and moved it to the stern ramp where it was released with no gear attached. Once put down stern ramp, animal seen at surface of water, possibly floating.
OTB	622	02-Jan-2019	CODO	Unk	DEAD	DEAD		Take noticed after codend was tripped, crew believed it was in the center of the catch, no movement visible and bobbing at surface and disappeared into the dark. Photo showed broken/dislocated pectoral flipper, and both jaws appear white with skin loss.

NEGEAR	Statistical Area	Take Date	Species Code	Recorded Animal Condition	Revised Animal Condition	PSB Determination	NMFS 2012 SI Determination Directive	PSB comments regarding determination
OTB	622	02-Jan-2019	CODO	Alive, seen by captain or crew only		CBD		3 dolphins noticed in codend while bag was being pulled in, bag never brought aboard. Capt. and crew noted PSID 02-04 on top of bag/catch, easily visible and moving. Mouth of net was dropped and dipped back into water to allow escape, codend was tripped to discard rest of catch.
OTB	622	02-Jan-2019	CODO	Alive, seen by captain or crew only		CBD		3 dolphins noticed in codend while bag was being pulled in, bag never brought aboard. Capt. and crew noted PSID 02-04 on top of bag/catch, easily visible and moving. Mouth of net was dropped and dipped back into water to allow escape, codend was tripped to discard rest of catch.
OTB	622	02-Jan-2019	CODO	Alive, seen by captain or crew only		CBD		3 dolphins noticed in codend while bag was being pulled in, bag never brought aboard. Capt. and crew noted PSID 02-04 on top of bag/catch, easily visible and moving. Mouth of net was dropped and dipped back into water to allow escape, codend was tripped to discard rest of catch.
OTB	561	07-Mar-2019	UNWH	Unk		CBD (SI or DEAD)	S4	Take was found in catch pile, assumed to have been in codend with catch when dumped. Obs saw dark charcoal colored fluke with light gray pattern on sides, approx. 2 ft. in width. Take was suspended by rope around tail stock hanging over side of boat. Rope was cut, take fell into the water and sank immediately, unk amount of rope attached to animal. No obvious wounds/damage/blood/decomposition seen but dead, unk condition kept due to little amount of time and percent of body seen.

NEGEAR	Statistical Area	Take Date	Species Code	Recorded Animal Condition	Revised Animal Condition	PSB Determination	NMFS 2012 SI Determination Directive	PSB comments regarding determination
OTB	616	08-Nov-2019	UNDO	Alive, seen by captain or crew only		CBD		Capt. told observer a cetacean was entangled by its caudal fin in the tripper rope as trawl gear was hauled in. Capt. cut one tripper rope near animal, dolphin was able to free itself at this point and swam away immediately, no gear remaining on body, appeared unharmed and no damage seen by crew/capt. Obs did not see animal, capt referred to animal as pilot whale but animal photographed in area around same time as a sighting event was IDd as a Risso's dolphin.
SGN	521	26-Jun-2019	UNSE	Unk		CBD		Take came up in unknown orientation, never came aboard
SGN	521	26-Jun-2019	UNSE	Unk		CBD		Seen by capt. in gear while in the net overboard. Capt. let obs know he cut the seal out of the gear because it was too big to bring through hauler safely without damaging gear further. Capt. unable to confirm condition or species. No photos taken.
SGN	513	22-Apr-2019	UNSE	Unk		CBD		Seen by capt. in gear while in the net overboard. Capt. let obs know he cut the seal out of the gear because it was too big to bring through hauler safely without damaging gear further. Capt. unable to confirm condition or species. No photos taken.

NEGEAR	Statistical Area	Take Date	Species Code	Recorded Animal Condition	Revised Animal Condition	PSB Determination	NMFS 2012 SI Determination Directive	PSB comments regarding determination
SGN	521	26-Jun-2019	GRSE	Alive		NSI	P7b	Take noticed first by capt. in gear while hauling string poking head out of water, capt. and crew moved down side of vessel to help seal out of gear but appeared to have freed itself. Unk orientation in gear, unk if solely involved with meshes or if lead/floatline involved. Snorted at crew, did not attempt to bite or growl.
handline	515	01-Mar-2019	GRSE	Alive, gear in or around several body parts		CBD		Take was hooked on dorsal side, unk if in back or R or L sides and unk of gear entangled around any portion of take, unk if more than 1 hook attached; capt. lost 4 hooks during interaction. Capt. continued to fish and bring up gear during interaction, unk amount of monofilament line lost during interaction but noted it was a significant amount of line. Alive: take noted to be swimming at surface intermediately going under water and popping up at surface, not struggling to swim or breathe, no splashing or noises made. Unclear whether P5d (NSI) or P6 (SI).

NEGEAR	Statistical Area	Take Date	Species Code	Recorded Animal Condition	Revised Animal Condition	PSB Determination	NMFS 2012 SI Determination Directive	PSB comments regarding determination
OTB	513	31-Jan-2021	CODO	Unk		SI	S4	Common dolphin caught in codend and dumped into checker pen. Capt. believed animal to still be alive, so quickly got it overboard by tying a rope around the caudal peduncle and using the winch to lift it. When vertical with head facing down, 1 cup clear liquid spilled from mouth. About 4 ft. rope tied around tail, rope slid off animal when cut, no gear remaining on animal. Observer unsure if animal was dead or alive. Dolphin sank immediately after hitting the water, and observer lost sight of it. Unknown if it sank or swam down, as observer was standing in a safe location and did not have a good view. No visible wounds or blood. Video taken.

NEGEAR	Statistical Area	Take Date	Species Code	Recorded Animal Condition	Revised Animal Condition	PSB Determination	NMFS 2012 SI Determination Directive	PSB comments regarding determination
OTB	521	22-May-2021	UNPW	Unk		CBD		Pilot whale, NK seen in belly of net as it was hauled in. Belly cut to remove the animal from gear, cutting not seen, unknown how much of the net was cut. Animal condition unknown. Observer saw the whale in the net and went inside to get incidental take gear. At the time, the whale was not moving, but they were unsure if it was dead or alive. The animal had no associated odor and appeared life-like, but no movement was observed. Capt. said that the animal was alive at the release but did not give any further details. No visible wounds, blood, or other bodily fluids. No photos taken.
OTB	622	1-Jun-2021	UNDO	Alive		SI	S9	Dolphin, NK seen with fluke loosely attached to the net mouth, body hanging out. When the net came out of the water, it hit the stern, causing the animal to fall from the net directly onto the stern ramp and back into the water. Animal still alive; crew members said it was making noise and swam away when it hit the water. Observer watched event from wheelhouse ~100 ft. away, most of the body seen but very briefly from a far distance. Dolphin about 1 meter long with gray, white/cream, and yellow colors seen. No damage or blood seen by observer or crew. No photos taken. SI determination due to potential for internal trauma due to falling onto the stern ramp.

NEGEAR	Statistical Area	Take Date	Species Code	Recorded Animal Condition	Revised Animal Condition	PSB Determination	NMFS 2012 SI Determination Directive	PSB comments regarding determination
OTB	515	13-Mar-2021	WSDO	Alive		SI	S4	Atlantic white-sided dolphin first seen by crew when releasing catch into pile, obs could not confirm what part of gear animal was in, entanglement recorded as unknown. Crew thought animal was dead but saw movement while putting rope around the tail stock. Obs saw dolphin moving fluke up/down and mouth opening, closing slowly. Animal on deck for approx. 5 min. during event. Obs noted large amount of redfish in catch. Body covered in superficial cuts/scratches. No other noticeable wounds/scars. No active bleeding seen, blood on animal believed to be from catch. Rope around tail stock used to lift animal overboard by winch, rope cut, no rope remaining on animal once released. Appeared to swim away, lost sight of animal quickly. Photos taken.

NEGEAR	Statistical Area	Take Date	Species Code	Recorded Animal Condition	Revised Animal Condition	PSB Determination	NMFS 2012 SI Determination Directive	PSB comments regarding determination
OTB	515	03-Feb-2021	HASE	Alive		NSI	P4	Live harbor seal first seen in catch pile by crew member. Crew shook down net as it came on board, able to confirm seal was not in net mouth or belly, assumed to have been in codend before catch was dumped. No wounds/blood seen. Healed scar approx. 6 x 6 in. area seen on dorsal side near left hip. No other noticeable marks or identifying features. Seal laid in catch pile for a few minutes before moving to side of boat, crew let animal move at its own pace. Seal climbed pile of fish, sat looking at water/crew for a few more minutes. Crew member then approached animal from behind and tapped back end near flipper with boot, seal went over railing and into water. Appeared to dive immediately, not seen again. NSI as opposed to UI determination made due to potential for stress effects.

Table 4. Summary of animal conditions (D = dead; DC = decomposed carcass; SI = serious injury; NSI = nonserious injury; UI = uninjured; CBD = could not be determined) by gear type, species, and year. Proportion SI = SI/Total (expressed as a percentage).

Gear Type	Species	Year	Dead		Alive ^[1]				Total Observed Dead + Alive ^[4]	% SI
			<u>D</u> ^[2]	<u>DC</u> ^[3]	SI	NSI	UI	CBD		
Bottom Trawl	Harp Seal (<i>Pagophilus groenlandicus</i>)	2017							0	0.0%
		2018							0	0.0%
		2019	1	1					1	0.0%
		2020							0	0.0%
		2021							0	0.0%
	Common Dolphin (<i>Delphinus delphis delphis</i>)	2017	66	2					66	0.0%
		2018	38	3	1				39	2.6%
		2019	51	1	2			3	53	3.6%
		2020							0	0.0%
		2021	21	1	1				22	4.5%
	Gray Seal (<i>Halichoerus grypus atlantica</i>)	2017	7						7	0.0%
		2018	10		1	1			12	8.3%
		2019	7	2					7	0.0%
		2020							0	0.0%
		2021	2	0					2	0.0%
	Harbor Porpoise (<i>Phocoena phocoena phocoena</i>)	2017							0	0.0%
		2018							0	0.0%
		2019	2	3					2	0.0%
		2020							0	0.0%
		2021	1	1					1	0.0%
	Harbor Seal (<i>Phoca vitulina vitulina</i>)	2017				1			1	0.0%
		2018	1						1	0.0%
		2019	2						2	0.0%
		2020							0	0.0%
		2021					1		1	0.0%
	Pilot Whale (<i>Globicephala</i> spp.)	2017		1					0	0.0%
		2018							0	0.0%
		2019	1	1					1	0.0%
		2020							0	0.0%
		2021	1					1	1	0.0%
	Risso's Dolphin (<i>Grampus griseus</i>)	2017	5		2				7	28.6%
		2018							0	0.0%
		2019							0	0.0%
		2020							0	0.0%
		2021	1						1	0.0%
	White-sided Dolphin (<i>Lagenorhynchus acutus</i>)	2017	1	1	1				2	50.0%
		2018							0	0.0%
		2019	14	8					14	0.0%
		2020							0	0.0%

			Dead		<u>Alive^[1]</u>				
		2021	2		1			3	0.0%

Gear Type	Species	Year	Dead		Alive ^[1]				Total Observed Dead + Alive ^[4]	% SI
			<u>D</u> ^[2]	<u>DC</u> ^[3]	SI	NSI	UI	CBD		
Midwater Trawl	Harbor Seal (<i>Phoca vitulina vitulina</i>)	2017							0	0.0%
		2018							0	0.0%
		2019							0	0.0%
		2020							0	0.0%
		2021							0	0.0%
	Pilot Whale (<i>Globicephala</i> spp.)	2017							0	0.0%
		2018							0	0.0%
		2019							0	0.0%
		2020							0	0.0%
		2021							0	0.0%
Purse Seine	Gray Seal (<i>Halichoerus grypus atlantica</i>)	2017							0	0.0%
		2018				1			1	0.0%
		2019							0	0.0%
		2020							0	0.0%
		2021							0	0.0%
Hand Line	Gray Seal (<i>Halichoerus grypus atlantica</i>)	2017							0	0.0%
		2018							0	0.0%
		2019						1	0	0.0%
		2020							0	0.0%
		2021							0	0.0%

[1] Animals included under the alive category include animals with the following animal conditions: 0 – unknown; 1 – alive; 04 – alive, hook/gear in/around mouth; 05 – alive, hook/gear in/around flipper; 06 – alive, hook/gear in/around another single body part; 07 – alive, hook/gear in/around several body parts; 08 – alive, seen by captain and/or crew only.

[2] Animals included under the dead category include the following animal conditions: 10 – dead, condition unknown; 11 – dead, fresh; 14 – dead, seen by captain/crew only.

[3] Animals included under the decomposed carcass category include the following animal conditions: 12 – dead, moderately decomposed; 13 – dead, severely decomposed.

[4] Decomposed carcass category (DC) values are not included in bottom trawl totals but are in gillnet totals. Could not be determined (CBD) category values are treated conservatively and thus included in the totals as dead (D) animals.

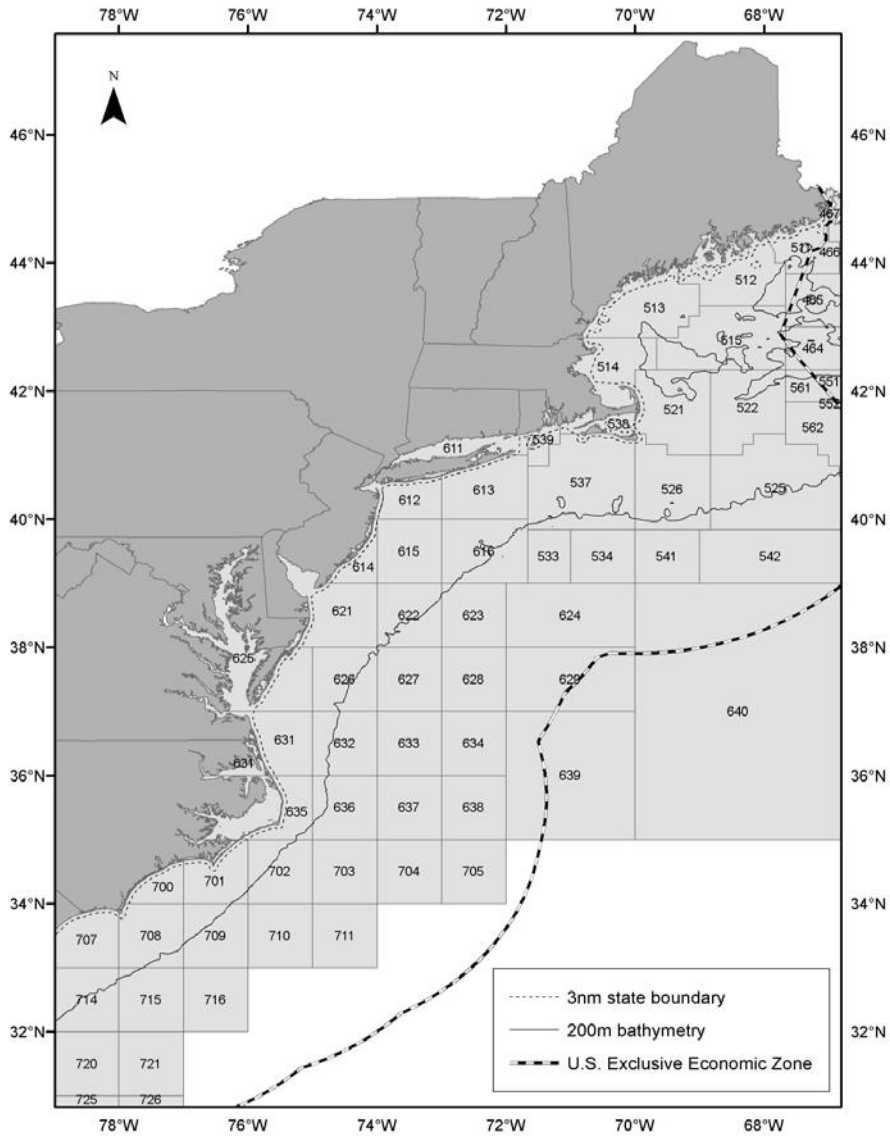


Figure 1. Fishery statistical areas.

APPENDIX. TABLES 2 AND 3 FROM [NMFS PROCEDURE MANUAL](#)

Table 2: Summary of Small Cetacean¹ Injury Categories and Criteria

Instructions: Each small cetacean injury event is recorded to the appropriate injury/information category using all available information and scientific judgment, as described in the Procedural Directive. For a single injury event to which several categories apply, the injury determination with the highest level of severity is assigned. More detailed information or extended observation on an individual case/animal may justify a determination differing from the guidance of this table.

Category	Injury/Information	Injury Determination ²	Additional factors for evaluating whether “case specific” injuries are serious or non-serious (additional factors at end of table) *
S1	A free-swimming animal observed at a date later than its human interaction, exhibiting signs of declining health believed to be resulting from initial injury (e.g., a marked skin discoloration, fat loss)	SI ³	
S2	Ingested gear ⁴ or hook(s)	SI	
S3	Visible blood loss	Case specific ⁵	Amount of blood, location of the bleeding injury, duration of bleeding
S4	Animal brought on vessel deck following entanglement/entrapment (excluding scientific research targeting marine mammals and authorized as such under an NMFS scientific research permit, where the animal is brought on and placed on the vessel deck in a controlled manner)	SI	
S5a	Hook(s) in head (excluding criterion S5b), regardless of the presence of gear	SI	
S5b	Hook(s) confirmed in lip only, external tissue outside of teeth, no trailing gear	Case specific	Prolonged restraint or struggle that could lead to capture myopathy, size of hook, depth of hooking, impairing ability to feed, presence of other injuries
S5c	Hook(s) in any body part, but hook(s) is removed or pulls out	Case specific	Prolonged restraint or struggle that could lead to capture myopathy, depth of hook, hook pulls out cleanly vs. causes further injury during dehooking, method used to remove hook, length of time hooked
S5d	Hook(s) in appendage or body (excluding criterion S5a), without trailing gear or with trailing gear that does not have the potential ⁶ to: 1) become a constricting wrap on animal; 2) be ingested; 3) accumulate drag; or 4) become snagged on something in the environment, anchoring the animal	Case specific	Prolonged restraint or struggle that could lead to capture myopathy, depth and location of hook, type and amount of gear attached

Category	Injury/Information	Injury Determination ²	Additional factors for evaluating whether “case specific” injuries are serious or non-serious (additional factors at end of table) *
S6	Gear attached to free-swimming animal with potential ⁷ to: 1) become a constricting wrap on animal; 2) be ingested; 3) accumulate drag; or 4) become snagged on something in the environment, anchoring the animal	SI	
S7a	Anchored, immobilized, or entrapped and not freed	SI	
S7b	Anchored, immobilized, entangled, or entrapped before being freed without gear attached	Case specific	Duration of entanglement/entrapment, prolonged restraint or struggle that could lead to capture myopathy, gear type, where/how gear is attached to animal, associated injury (i.e., where directly or indirectly caused by initial entanglement), response of individual animal, method used by human to remove gear from animal
S8a	Gear wrapped and constricting on any body part or is likely to become constricting as the animal moves or grows	SI	
S8b	Gear wrapped and loose on any body part	Case specific	Gear type, amount of gear, potential for snag, potential to lead to criterion S8a, animal body size relative to gear (e.g., because of species or age), effect on animal movement, species sensitivity (e.g., frightens easily)
S9	Body trauma ⁸ not covered by any other criteria	Case specific	Location of wound, depth (e.g., superficial or to the bone, penetrating muscle or organs), length, number of lacerations, cleanliness (i.e., compression vs. tearing)
S10	Visible fracture(s), excluding pectoral fins (see criterion S13d for pectoral fin fractures)	SI	
S11	Vertebral transection, including fully severed flukes	SI	
S12	Body cavity penetration ⁹ by foreign object or body cavity exposure	SI	
S13a	Loss or disfigurement of dorsal fin	Case specific	Cleanliness (i.e., compression vs. tearing), nature of injury causing the loss, extent of fin loss (i.e., full or partial), amount and duration of blood loss
S13b	Partially severed flukes, transecting midline	SI	
S13c	Partially severed flukes, not transecting midline	Case specific	Cleanliness (i.e., compression vs. tearing), nature of injury causing the loss, amount and duration of blood loss

Category	Injury/Information	Injury Determination ²	Additional factors for evaluating whether “case specific” injuries are serious or non-serious (additional factors at end of table) *
S13d	Partially or completely severed or fractured pectoral fin(s)	Case specific	Cleanliness (i.e., compression vs. tearing), nature of injury causing the loss, extent of fin loss (i.e., full or partial), amount and duration of blood loss, opened or closed fracture
S14	Social animal separated from group and/or released alone post-interaction (excluding criterion S15)	Case specific	Species (e.g., sensitivity, offshore vs. inshore), location of release (e.g., likelihood of animal locating its conspecifics)
S15	Dependent animal (i.e., calf, juvenile) released alone post-interaction or dependent animal left with a seriously injured or dead mother	SI	
S16	Observed or reported collision with vessel	Case specific	Speed of vessel, size of vessel, hull shape, part of vessel to strike the animal, size of animal compared to size of vessel, behavior of animal after collision, extent and location of wound(s) on animal

¹ For the purposes of this table, small cetaceans include all odontocetes except sperm whales.

² This table includes only those criteria determined to be serious injuries or case specific based on expert opinion at the 2007 Workshop (Andersen et al. 2008) and by small cetacean experts on the NMFS Determination Staff working group. For the purposes of streamlining the information for the reader, criteria determined to be non-serious injuries are not included in this table.

³ SI = serious injury.

⁴ For the purposes of this table, gear is defined as any portion of fishing gear excluding the hook, which is considered separately. Lures are considered gear. Gear also generally refers to any type of debris entangling or attached to the animal.

⁵ Case specific = Could be a serious or non-serious injury, but either 1) there is insufficient information about the impact of a particular injury, or 2) additional factors must be considered on a case-by-case basis to determine the severity.

⁶ For the purposes of this table, “potential” as it relates criterion S5d indicates that the trailing gear is not capable of leading to any of the situations listed.

⁷ For the purposes of this table, potential as it relates criterion S6 indicates that the trailing gear is capable of leading to any of the situations listed.

⁸ For the purposes of this table, “trauma” is defined as a wound or bodily harm caused by an extrinsic agent. Blunt trauma is an injury (abrasion, laceration, contusion or skeletal fracture) produced by a blunt object striking the body or impact of the body against a blunt object or surface. Sharp force trauma is an injury caused by a sharp or pointed object creating a penetrating (stab, chop or incision) wound. Laceration is defined as a ragged incision or a tearing of the skin. Lacerations are caused by blunt trauma that results in stretching, tearing, crushing, shearing, or avulsion of the tissue.

⁹ For the purposes of this table, “penetration” is defined as a wound occurring when a foreign object punctures the body. Penetrating wounds can be characterized as one of three types: stab (small external wound that is greater in length into the body than is apparent on the skin surface), incised (clean cuts into the skin which are longer on the skin surface than they are deep), or chop wounds (incised wounds that penetrate deep to the bone, leaving a groove or cut in the bone).

Table 3: Summary of Pinniped¹ Injury Categories and Criteria

Instructions: Each pinniped injury event is recorded to the appropriate injury/information category using all available information and scientific judgment, as described in the Procedural Directive. For a single injury event to which several categories apply, the injury determination with the highest level of severity is assigned. More detailed information or extended observation on an individual case/animal may justify a determination differing from the guidance of this table. Any injury leading to apparent significant health decline (e.g., skin discoloration, fat loss) is a serious injury.

Category	Injury/Information	Injury Determination ²	Additional factors for evaluating whether “case specific” injuries are serious or non-serious (additional factors at end of table)
P1	A free-swimming animal observed at a date later than its human interaction, exhibiting signs of declining health believed to be resulting from initial injury (e.g., a marked change in body condition, tissue necrosis, emaciation, gangrene).	SI ³	
P2	Ingested gear ⁴ or hook(s)	SI	
P3	Visible blood loss	Case specific ⁵	Amount of blood, location of the bleeding injury, duration of bleeding
P4	Animal brought on vessel deck following entanglement/entrapment (excluding scientific research targeting marine mammals and authorized as such under a NMFS scientific research permit, where the animal is brought on and placed on the vessel deck in a controlled manner)	Case specific	Manner in which animal is brought on deck, length of time animal is on deck, environmental conditions (e.g., temperature)
P5a	Hook(s) in mouth (excluding criterion P5b), regardless of the presence of gear	SI	
P5b	Hook(s) confirmed in head (excluding criterion P5a) or in lip only (external tissue outside of teeth), no trailing gear	Case specific	Location on head (e.g., eye), depth of penetration, type of hook, prolonged restraint or struggle that could lead to capture myopathy, size of hook, impairing ability to feed
P5c	Hook(s) in any body part, but hook(s) is removed or pulls out	Case specific	Prolonged restraint or struggle that could lead to capture myopathy, location of hooking on the body, depth of hook, hook pulls out cleanly vs. causes further injury during dehooking, method used to remove hook, length of time hooked
P5d	Hook(s) in appendage or body (excluding criteria P5a-c and P12), without trailing gear or with trailing gear that does not have the potential ⁶ to: 1) become a constricting wrap on animal; 2) be ingested; 3) accumulate drag; or 4) become snagged on something in the environment, anchoring the animal	NSI ⁷	

Category	Injury/Information	Injury Determination ²	Additional factors for evaluating whether “case specific” injuries are serious or non-serious (additional factors at end of table)
P6	Gear attached in any manner to free-swimming animal with potential ⁸ to: 1) become a constricting wrap on animal; 2) be ingested; 3) accumulate drag; or 4) become snagged on something in the environment, anchoring the animal	SI	
P7a	Anchored/immobilized and not freed	SI	
P7b	Anchored, immobilized, or entangled before being freed without gear attached	Case specific	Duration of entanglement, prolonged restraint or struggle that could lead to capture myopathy, type of fishing gear, where/how gear immobilized animal, associated injury (where directly or indirectly caused by initial entanglement), response of individual
P8a	Gear wrapped and constricting any body part or likely to become constricting as the animal moves or grows	SI	
P8b	Gear wrapped loosely on any body part	Case specific	Type and amount of fishing gear, animal body size relative to gear (species, age), effect on movement, species sensitivity
P9	Body trauma ⁹ not covered by any other criteria	Case specific	Location of trauma on body, depth (superficial or to the bone, penetrating muscle or organs), length of laceration(s), number of lacerations, cleanliness (compression vs. tearing), amount and duration of blood loss, risk of infection or disease transmission (e.g., dog bites)
P10	Visible fracture(s), excluding broken appendages (see criterion P13 for broken appendages)	SI	
P11	Vertebral transection or fully severed flipper(s)	SI	
P12	Body cavity penetration ¹⁰ by foreign object or body cavity exposure	SI	
P13	Partially severed or fractured flipper(s)	Case specific	Cleanliness (clean cut vs. tear), nature of injury causing the loss, extent of fin or flipper loss, opened or closed fracture, dislocation, amount/duration of blood loss
P14	Dependent animal (i.e., pup, juvenile) released alone post-interaction or dependent animal left with a seriously injured or dead mother	SI	

Category	Injury/Information	Injury Determination ²	Additional factors for evaluating whether “case specific” injuries are serious or non-serious (additional factors at end of table)
P15	Observed or reported collision with vessel	Case specific	Speed of vessel, size of vessel, hull shape, part of vessel to strike the animal (e.g., propeller, hull), size of animal compared to size of vessel, location of strike on animal’s body, extent and location of wound(s) to animal

¹ For the purposes of this table, pinnipeds include all pinniped species except walrus.

² This table includes only those criteria determined to be serious injuries or case specific based on expert opinion at the 2007 Workshop (Andersen et al., 2008) and by pinniped experts on the NMFS Determination Staff working group. For the purposes of streamlining the information for the reader, criteria determined to be non-serious injuries are not included in this table.

³ SI = serious injury.

⁴ For the purposes of this table, gear is defined as any portion of fishing gear excluding the hook, which is considered separately. Lures are considered gear. Gear also generally refers to any type of debris entangling or attached to the animal.

⁵ Case specific = Could be a serious or non-serious injury, but either 1) there is insufficient information about the impact of a particular injury, or 2) additional factors must be considered on a case-by-case basis to determine the severity.

⁶ For the purposes of this table, potential as it relates to criterion P5d indicates that the trailing gear is not capable of leading to any of the situations listed.

⁷ NSI = nonserious injury.

⁸ For the purposes of this table, potential as it relates to criterion P6 indicates that the trailing gear is capable of leading to any of the situations listed.

⁹ For the purposes of this table, “trauma” is defined as a wound or bodily harm caused by an extrinsic agent. Blunt trauma is an injury (abrasion, laceration, contusion or skeletal fracture) produced by a blunt object striking the body or impact of the body against a blunt object or surface. Sharp force trauma is an injury caused by a sharp or pointed object or a bullet from a gunshot creating a penetrating (stab, chop or incision) wound. Laceration is defined as a ragged incision or a tearing of the skin. Lacerations are caused by blunt trauma that results in stretching, tearing, crushing, shearing, or avulsion of the tissue.

¹⁰ For the purposes of this table, “penetration” is defined as a wound occurring when a foreign object punctures the body, such as a bullet from a gunshot. Penetrating wounds can be characterized as one of three types: stab (small external wound that is greater in length into the body than is apparent on the skin surface), incised (clean cuts into the skin which are longer on the skin surface than they are deep), or chop wounds (incised wounds that penetrate deep to the bone, leaving a groove or cut in the bone)

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