



Northeast Fisheries Science Center Reference Document 22-13

Serious Injury and Mortality Determinations for Baleen Whale Stocks along the Gulf of Mexico, United States East Coast, and Atlantic Canadian Provinces, 2016-2020

August 2022



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ABSTRACT

Opportunistic reports were used to calculate rates of human-caused serious injury and mortality to baleen whale stocks along the Gulf of Mexico, United States East Coast, and Atlantic Canadian provinces from 2016 through 2020. All available information for reported whale injury and mortality events was evaluated using established criteria to assign injury severity and cause of injury or death for each event. The average annual rate of detected human-caused serious injury and mortality during the period was 8.1 for North Atlantic right whales (*Eubalaena glacialis*), 16.6 for Gulf of Maine humpback whales (*Megaptera novaeangliae*), 1.95 for western North Atlantic fin whales (*Balaenoptera physalus*), 9.45 for Canadian East Coast minke whales (*B. acutorostrata*), 0.6 for Nova Scotian sei whales (*B. borealis*), and 0 for western North Atlantic blue whales (*B. musculus*) and northern Gulf of Mexico Bryde's whales (*B. edeni*). The number of serious injuries and mortalities not reported is unknown, and actual levels may be much higher.

INTRODUCTION

The Marine Mammal Protection Act (MMPA) requires the National Marine Fisheries Service (NMFS) to estimate annual levels of human-caused serious injury and mortality to marine mammal stocks (MMPA 1972 [Sect. 117]) and to categorize commercial fisheries based on their frequency of incidental serious injury and mortality of marine mammals (MMPA 1972 [Sect. 118]). Criteria for 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 national guidelines for distinguishing serious from non-serious injuries (NSI) of marine mammals¹. There are currently no national guidelines for determining cause of death, but Northeast Fisheries Science Center (NEFSC) staff have used a set of criteria to evaluate reports of human-caused mortality to baleen whales since 2005 (Cole et al. 2005; Henry et al. 2014). This report presents the results of applying the national SI criteria and the NEFSC mortality criteria to all reported baleen whale events along the Gulf of Mexico, United States East Coast, and Atlantic Canadian provinces from 2016 through 2020. Affected stocks include the North Atlantic right whale (*Eubalaena glacialis*), Gulf of Maine humpback whale (*Megaptera novaeangliae*), western North Atlantic fin whale (*Balaenoptera physalus*), Canadian East Coast minke whale (*B. acutorostrata*), Nova Scotian sei whale (*B. borealis*), western North Atlantic blue whale (*B. musculus*), and northern Gulf of Mexico Bryde's whale (*B. edeni*).

METHODS

Opportunistic reports of baleen whale injuries and mortalities were provided by members of the U.S. and Canadian regional stranding networks, whale survey and disentanglement teams, the U.S. and Canadian coast guards, and the general public. With the exception of minke whales, the incidental takes of baleen whales recorded by fisheries observer programs are also included here as opportunistic reports because the numbers of takes witnessed by fisheries observers were not sufficient to calculate bycatch rate estimates. Minke whale bycatch rates were estimated from fisheries observer program data and are reported separately in stock assessment reports. Reports from the Gulf of St. Lawrence, Newfoundland, and Labrador involving confirmed transboundary stocks (i.e., stocks that enter U.S. waters during part of the year) were also included. However, humpback whale reports from these regions were not included in tallies

¹ See “Guidelines for Distinguishing Serious from Non-Serious Injury of Marine Mammals Pursuant to the Marine Mammal Protection Act” (<https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act-policies-guidance-and-regulations#distinguishing-serious-from-non-serious-injury-of-marine-mammals>)

because the Gulf of St. Lawrence, Newfoundland, and Labrador humpback feeding stocks are distinct from the Gulf of Maine stock inhabiting U.S. waters (Palsbøll et al. 2001). Carcasses unidentifiable to species but confirmed to be balaenopterids or balaenidae are included unless there is a possibility that they could be from a stock not covered in this report.

Reports of significant entanglement injuries known to have occurred within a year, based on individual sighting history or raw appearance of wounds, were included even if no gear was present. Whales temporarily entrapped by encircling fishing gear, such as weirs and seines, are also listed in this report even if there was no gear attached to the whale. Observations of small entanglement scars, however, were not included but instead are accounted for by population monitoring studies (e.g., Hamilton et al. 2019; Knowlton et al. 2012; Robbins 2010).

All available information for each reported injury or mortality was collected by the NMFS Greater Atlantic Regional Fisheries Office (GARFO), Southeast Regional Office (SERO), and the NEFSC. Confirmed reports were designated as “events,” and for each event, the species involved was verified, duplicate records identified, and relevant information from each source consolidated into a single record. Information from additional sightings of a previously documented event was added to the existing record. If an identified whale was involved in a second interaction, a new event record was created. Demographic and subsequent sighting information for injured whales was obtained from population monitoring studies where available.

NEFSC staff reviewed each injury or mortality event and assigned the appropriate criteria from Tables 1 and 2 using all available information. Serious injury and mortality values, determined by which criteria were met, were either 0 (NSI), 1 (SI or mortality), or prorated (PR). For injury events to which several Table 1 categories (L1-L12) applied, the injury category with the highest level of severity (highest SI value) was assigned. Criteria L10 through L12 accommodated events that lacked details necessary for assignment to a more specific category. Any injury leading to a significant health decline (e.g., skin discoloration, lesions near the nares, fat loss, increased cyamid loads) was classified as a serious injury, and the SI value for the case was set to 1.

More detailed injury information on or extended observation of an individual case/whale often justified a determination differing from the guidance of Table 1. A determination differed from the guidance defaults if an injury which the guidance identifies as NSI results in a visible health decline (and therefore SI). Conversely, SI determinations may be changed to a less severe injury or NSI if a whale is disentangled, sheds all entangling gear, or is resighted with healed wounds or a healthy appearance sometime after the injury.

If a whale was rescued from entangling gear and there was documentation that all gear was removed, the SI value was set to 0. If the entanglement configuration prior to disentanglement would have warranted an SI value greater than 0, the event was still identified for the List of Fisheries (LOF) assessment of U.S. commercial fisheries’ incidental mortality and serious injury of marine mammals. All entanglement events with an SI value greater than 0 where gear is photographed or recovered were identified for potential LOF classification with the exception of events known to have occurred in Canadian gear. The subsequent LOF classification of U.S. commercial fisheries for regulation is beyond the scope of this report².

Injury or mortality events were assigned to either U.S. or Canadian waters if circumstances indicated on which side of the Hague Line the event likely took place. Such circumstances included identification of entangling gear by specialists, entanglements that anchored a whale, a chronology of sightings indicating an individual was well within a country’s waters around the time of the event, or witnessed vessel strikes. Because vessel collision mortalities are more likely to be instantaneous (Kraus 1990; Moore et al. 2004), country was assigned according to the location of the carcass. If there was a reasonable chance that the event may have occurred in either country’s waters or elsewhere, the country assignment was listed as unknown. Events in this category were typically injuries or mortalities first detected near the U.S./Canadian border, injuries whose healing or deterioration indicated that the event

² See NOAA Fisheries Office of Protected Species List of Fisheries (<https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act-list-fisheries>)

occurred a substantial time before the first detection and therefore the whale may have traveled across a border since the injury was sustained, or mortalities involving severely decomposed carcasses that potentially drifted across jurisdictions.

The NEFSC determinations were reviewed by experts from other regional science centers, and differences were reconciled. The determinations were also provided to the regional Scientific Review Group (SRG) for review prior to final reporting of determinations. Final determinations and the associated SI and mortality values were assigned to the date of the first detection of the injury or mortality.

RESULTS AND DISCUSSION

Table 3 summarizes the total number of reported injury events and the number of events assigned an SI value. Table 4 summarizes the total number of reported mortality events for the baleen whale stocks along the Gulf of Mexico, United States East Coast, and Atlantic Canadian provinces from 2016 through 2020. The average annual human-interaction values by stock presented in Table 5 are a combination of confirmed human-caused SI, a prorating of poorly documented injury events based on observed ratios of mortality to survival by injury type, and confirmed human-caused mortalities. The values are presented by stock, country of origin, and type of human interaction.

Appendix A provides details for each injury event listed chronologically by stock with location, individual identification (if known), assessment of whether the injury occurred in U.S. or Canadian waters, description of injury, and the assigned SI category and value. For events where the final SI value conflicts with the value guidance provided by the national SI procedural directive, the SI value change provides the rationale for the discrepancy. The header row for each stock in Appendix A includes the stock's total number of reported injury events over the 5-year period, the total of the resulting SI values for the stock, and the number of events whose SI values were changed from those prescribed by the national guidelines. Appendix B provides details by stock of each confirmed human-interaction event that resulted in mortality. Both appendices indicate which records should be considered for the LOF, should the fishery be identified. Most entanglement events could not be assigned to a fishery or country of origin because of the inability to identify the entangling gear or a lack of circumstantial evidence for country identification. Gear type (not necessarily fishery) was identified in 148 of 281 entanglement cases, 37 of which were monofilament line or hooks. Two animals were entangled in unidentified debris and 2 in boat anchoring systems. Of the 155 entanglements for which the country of origin could be assigned with confidence, 106 were identified as from the United States and 49 from Canada. Included in these entanglement totals are 7 reported entrapments in Canadian weirs and 4 entrapments in U.S. seines. Of the 70 vessel strikes, 49 either occurred or likely occurred in U.S. waters, and 10 occurred in Canadian waters. For specific fishery information involved in baleen whale entanglements, see GARFO'S Atlantic Large Whale Take Reduction Plan Entanglement Reports³.

The national SI criteria and the NEFSC mortality criteria attempt to encompass all event scenarios and provide guidance for assessing the severity of whale injuries and assigning mortalities to natural or human causes appropriately based on the information available. Although the results of this analysis may improve our understanding of the potential magnitude of human impacts to whale stocks, we examined only reported events and do not provide an estimate of the actual level of anthropogenic serious injury and mortality. The number of serious injuries and mortalities not reported is unknown, and actual levels may be much higher (Kraus et al. 2005; Williams et al. 2011; Wells et al. 2014; Pace et al. 2021).

³ Atlantic Large Whale Take Reduction Plan Entanglement Reports (<https://www.fisheries.noaa.gov/new-england-mid-atlantic/marine-mammal-protection/atlantic-large-whale-take-reduction-plan>)

Species Accounts

North Atlantic right whale

The average annual human-caused serious injury and mortality value for right whales from 2016-2020 increased 6% from the value for the 2015-2019 period (to 8.1 from 7.65). There were 54 confirmed injury events and 37 mortalities observed from 2016-2020. Twenty of the injury events were determined to be SI, 19 from entanglement and 1 from vessel strike. Entanglements and vessel strikes each accounted for 11 of the mortalities. Of the remaining mortality events, 1 was from natural causes and 14 were from undetermined causes: 6 carcasses could not be examined, 5 were partially examined, and 3 were too decomposed.

Thirty-four of the 54 injury events were determined to be NSI. Twenty-one of these events were assigned to the L2 or L10 injury categories because of evidence of constricting or extensive entanglement, but the whales were seen again, gear-free and healing from the injuries. In 6 events, the whale was disentangled from constricting gear. Conversely, 6 entanglement events assigned to NSI or prorated injury categories were ultimately given an SI value of 1 because of significant health decline. Four individual animals were involved in multiple injury events. Each injury event is tallied separately in Table 3 with the greater injury value utilized in calculating injury rates in Table 5. Four additional animals were sighted in severe health decline, but the cause of injury could not be determined.

An Unusual Mortality Event (UME) was declared for right whales beginning in June 2017 because of documentation of elevated mortalities⁴. Seventeen confirmed carcasses were detected in 2017 (12 in Canada; 5 in the United States), 3 in 2018 (U.S. waters), 10 in 2019 (Canadian waters), and 3 in 2020 (U.S. waters). In 2020, serious injury events were included in the UME tallies. Two serious injuries were detected in 2017 (1 in Canada; 1 in the United States), 5 in 2018 (2 in Canada; 3 in the United States), 2 in 2019 (1 in Canada; 1 in the United States), and 4 in 2020 (U.S. waters). SI event details are included in Appendix A. Details on cause of death (where determined) are included in Appendix B. The right whale UME remains active at time of publication of this report, and details on additional events will be included in future reports.

Humpback whale

The average annual rate of humpback whale serious injury and mortality increased 2% from the 2015-2019 period (to 16.6 from 16.25). From 2016-2020, there were 143 confirmed injury events and 156 mortality events. Fifty-one of the injury events were determined to be SI. Forty-five of the SI events and 13 of the mortalities were caused by entanglement. Six SI events and 28 mortality events were attributed to vessel strikes. Another 11 mortality events were from natural causes. The remaining 104 mortalities had undetermined causes of death: 64 carcasses were not examined, 15 had partial examinations, and 25 were too decomposed. One animal was involved in separate vessel strike and entanglement events in 2019, both of which were determined to be non-serious. It died later that year from natural causes. This animal is tallied as 2 separate non-serious injury events in Table 3 and as a confirmed natural mortality in Table 4. Ten additional individual animals were involved in multiple injury events. Each injury event is tallied separately in Table 3 with the greater injury value utilized in calculating injury rates in Table 5. Sixty-three of the 143 injury events were determined to be NSI as a result of post-injury sighting information and/or human intervention. Thirty-five of these were type L2 or L10 injuries whose SI values were adjusted to 0 when the whales were resighted healing and free of gear. Another 22 SI values were reduced because disentanglement teams improved the whale's prognosis by removing some or all of the entangling gear. There were 3 events where an animal was released from a weir and 2 events where an animal was released from a seine. The SI value for 1 deep chop wound event (L5a) was also reduced to 0 because healing of the injuries was apparent. Conversely, 6 whales showed signs of health decline, and the SI value for each of these events was increased to 1. Three of these events were categorized as L10, and 3 were categorized as L3 (loose wrap or draped gear). Another 9 whales exhibited severe health decline, but the source of decline could not be determined.

⁴ <https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2020-north-atlantic-right-whale-unusual-mortality-event>

A UME was declared for humpback whales in U.S. waters beginning in January 2016 because of documentation of elevated mortalities⁵. Twenty-six confirmed carcasses were detected in 2016, 34 in 2017, 25 in 2018, 27 in 2019, and 33 in 2020. Details on cause of death (where determined) is included in Appendix B. The humpback UME remains active at time of publication of this report, and details on additional events will be included in future reports.

Fin whale

The average annual fin whale SI and mortality increased 5% from the previous period's value (to 1.95 from 1.85). There were 10 confirmed injury and 32 confirmed mortality events. Five injury events were determined to be SI, and all were attributed to entanglement. Four mortalities were caused by entanglement and 2 by vessel strike. One of the mortality events was from natural causes, and the cause of the remaining 25 could not be determined. Twenty-three carcasses were unexamined, 1 was partially examined, and 1 was too decomposed. Of the 11 injury events, the SI values of 2 were reduced to 0. One animal was entangled in an unknown configuration (L10) but was subsequently seen gear-free and healthy, and 1 animal self-released from a weir entrapment.

Minke whale

The average annual minke whale SI and mortality value decreased 9% (to 9.45 from 10.35) compared to 2015-2019. Minke whales had the highest number of confirmed mortalities: 187 events. Thirty-four deaths were confirmed entanglements, 3 were caused by vessel strike, 36 were from natural causes, and the remaining 114 were of undetermined cause. Ninety-four of these carcasses were not examined, 10 were partially examined, and 10 were too decomposed. Of the 25 reported injuries, all were from entanglements, and 13 were determined to be SI. The SI values of 8 events are 0 because the whales were disentangled. The 3 weir entrapments were released by the fisher and determined to be NSI. One animal live stranded in extremely poor condition but refloated with the tide and was not resighted. The source of injury was undetermined.

A UME was declared for minke whales beginning in January 2017 because of documentation of elevated mortalities⁶. Twenty-seven confirmed carcasses were detected in 2017, 30 in 2018, 22 in 2019, and 24 in 2020. Details on cause of death (where determined) is included in Appendix B. The minke UME remains active at time of publication of this report, and details on additional events will be included in future reports.

Sei whale

The average annual SI and mortality value for sei whales remains 0.6. There was 1 serious injury and 1 non-serious injury from entanglement. Of the 9 mortality events, 1 was the result of entanglement, 1 of vessel strike, 2 of natural causes, and for the remaining 5, the cause of death could not be determined. Two of these were not examined, and 3 were partially examined.

Blue whale

There were no changes in the SI and mortality values for blue whales between the 2015-2019 and 2016-2020 periods. The SI and mortality value remains 0. Two mortality events were from natural causes, 3 events were mortalities of undetermined origin because they were not examined, and 1 carcass was too decomposed. A free-swimming emaciated animal was documented, but no external signs of injury source were noted.

⁵ <https://www.fisheries.noaa.gov/national/marine-life-distress/2016-2020-humpback-whale-unusual-mortality-event-along-atlantic-coast>

⁶ <https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2020-minke-whale-unusual-mortality-event-along-atlantic-coast>

Gulf of Mexico Bryde's whale

The Bryde's whale SI and mortality value remains 0. There were no reported injuries and 1 mortality from natural causes during the time period.

Unidentified whales

In 9 injury events (4%) and 39 mortality events (8%), we could not verify the species of whale involved. Though we could not identify species, we could confirm that there were 5 entanglement SI and 3 vessel strike SI.

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Table 1. Baleen whale human-caused injury categories and criteria established by the National Marine Fisheries Service (NMFS) Instruction 02-038-01.

Instructions: Each large cetacean injury event is recorded to the appropriate injury/information category by using all available information and scientific judgment, as described in the Procedural Directive. Criteria L10-L12 accommodate events that lack details necessary for assignment to a more specific category. 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. An animal that is fully disentangled would generally be considered not seriously injured, unless there is additional evidence of a serious injury. Any injury leading to apparent significant health decline (e.g., skin discoloration, lesions near the nares, fat loss, increased cyamid loads) is a serious injury.

Category	Injury/ Information	Injury Determination	Criteria
L1	Ingested gear ¹ or hook(s)	SI ²	Swallowed, not simply draped through mouth.
L2	Constricting wrap	SI	Tightly wrapped line anywhere on body that indents the skin or does not shift with whale's movement, or line that is likely to become constricting as the whale grows. Indication that a whale that is heavily weighted, anchored, or has a discolored appendage is sufficient evidence of constricting gear.
L3	Loose wrap, bridled, or draped gear	NSI ³	Loosely wrapped gear that moves or shifts freely with whale's movement. Absence of constricting gear must be confirmed.
L4	External hook	NSI	Fishing hook of any size on any part of the body (i.e., not ingested).
L5a	Deep laceration ⁴	SI	Laceration with the potential to affect major artery (e.g., laceration or severing at insertion of flipper/fluke), penetrating body cavity, or cutting bone.
L5b	Superficial laceration	NSI	Laceration not deeper than blubber layer, does not affect major artery or cut bone.
L6a	Vessel ≥65' and >10 knots	SI	Struck by vessel equal to or greater than 65' and traveling greater than 10 knots.
L6b	Vessel <65' and >10 knots	Prorate: 0.20	Struck by vessel smaller than 65' and traveling greater than 10 knots.
L6c	Vessel any size ≤10 knots	NSI	Struck by vessel of any size traveling at equal to or less than 10 knots.
L7a	Vessel ≥65' and speed unknown	Prorate: 0.56	Struck by vessel equal to or greater than 65' and traveling at unknown speed.
L7b	Vessel <65' and speed unknown	Prorate: 0.14	Struck by vessel smaller than 65' and traveling at unknown speed.
L8	Dependent ⁵	SI	Dependent calf of a dead or seriously injured mother.
L9	Brought on deck	SI	Whale removed from water and brought on deck.
L10	Evidence of entanglement	Prorate: 0.75	Confirmed entanglement but insufficient information available to place in any of the L1-L4 criteria with a high degree of certainty.
L11	Ship strike laceration	Prorate: 0.52	Whale confirmed with non-entanglement related laceration but lacking details to place in either criteria L5a or L5b with a high degree of certainty. Includes observation of blood in water.
L12	Ship strike observed	Prorate: 0.36	Confirmed ship strike report where there is insufficient detail to assign event to criteria L6a-L7b with a high degree of certainty.

1. For the purposes of this table, "gear" is defined as any portion of fishing gear excluding the hook, which is considered separately.
2. SI = Serious Injury.
3. NSI = Non-Serious Injury.
4. For the purposes of this table, "laceration" is defined as a ragged incision or a tearing of the skin. Lacerations are caused by trauma that results in stretching, tearing, crushing, shearing, or avulsion of the tissue. "Trauma," including blunt and sharp force trauma, includes a wound or bodily harm caused by an extrinsic agent.
5. "Dependent" for a large cetacean means a non-weaned calf. Weaned calves and juvenile large cetaceans are no longer dependent on their mothers.

Table 2. Baleen whale human-caused mortality criteria established by the Northeast Fisheries Science Center (NEFSC).

Events were categorized as human-caused mortalities if 1 or more of the following indications were confirmed to be present on a whale carcass:

Entanglement Mortality	<ol style="list-style-type: none"> 1. Fishing line constricted any body part with subdermal hemorrhaging or extensive necrosis present at point of attachment. 2. An extensive entanglement was evident. 3. An entanglement likely prevented feeding. 4. A code 2 (fresh dead) whale was pulled up during fishing operations.
Vessel Strike Mortality	<ol style="list-style-type: none"> 1. Large linear laceration(s) present anywhere on body, as opposed to just dorsally as in Kraus (1990). 2. Large area(s) of subdermal hemorrhaging, hematoma, or edema was evident. 3. Major skeletal fracturing was evident. 4. A code 2 (fresh dead) carcass was found on the bow of a ship.

Table 3. Numbers of confirmed baleen whale injury events reported along the Gulf of Mexico, U.S. East Coast, and Atlantic Canadian provinces, 2016-2020.

Parentheses contain the numbers for each year during the period.

	Western North Atlantic right whale (<i>Eubalaena glacialis</i>)	Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)	Western North Atlantic fin whale (<i>Balaenoptera physalus</i>)	Canadian East Coast minke whale (<i>B. acutorostrata</i>)	Nova Scotian sei whale (<i>B. borealis</i>)	Western North Atlantic blue whale (<i>B. musculus</i>)	Northern Gulf of Mexico Bryde's whale (<i>B. edeni</i>)	Unidentified whale spp.	Totals
Total confirmed injury events	54 (13, 11, 13, 6, 11)	143 (37, 24, 39, 27, 16)	10 (6, 1, 0, 1, 2)	25 (3, 5, 7, 8, 2)	2 (1, 1, 0, 0, 0)	0	0	9 (3, 2, 2, 1, 1)	243
Confirmed entanglement non-serious injuries	30 (5, 9, 6, 5, 5)	83 (22, 15, 24, 17, 5)	4 (3, 1, 0, 0, 0)	12 (1, 3, 4, 3, 1)	1 (1, 0, 0, 0, 0)	0	0	0	130
Confirmed entanglement serious injuries ^a	19 (8, 2, 5, 1, 3)	45 (10, 8, 11, 7, 9)	5 (3, 0, 0, 0, 2)	13 (2, 2, 3, 5, 1)	1 (0, 1, 0, 0, 0)	0	0	5 (1, 2, 0, 1, 1)	88
Confirmed vessel strike non-serious injuries	4 (0, 0, 2, 0, 2)	9 (3, 0, 2, 2, 2)	1 (0, 0, 0, 1, 0)	0	0	0	0	1 (1, 0, 0, 0, 0)	15
Confirmed vessel strike serious injuries ^a	1 (0, 0, 0, 0, 1)	6 (2, 1, 2, 1, 0)	0	0	0	0	0	3 (1, 0, 2, 0, 0)	10

^a Serious and prorated injuries are tallied as number of events. See Appendix A for assigned serious injury values.

Table 4. Summary of all unique baleen whale mortalities observed along the Gulf of Mexico, U.S. East Coast, and Atlantic Canadian provinces, 2016-2020.

Parentheses contain the numbers for each year during the period.

	Western North Atlantic right whale (<i>Eubalaena glacialis</i>)	Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)	Western North Atlantic fin whale (<i>Balaenoptera physalus</i>)	Canadian East Coast minke whale (<i>B. acutorostrata</i>)	Nova Scotian sei whale (<i>B. borealis</i>)	Western North Atlantic blue whale (<i>B. musculus</i>)	Northern Gulf of Mexico Bryde's whale (<i>B. edeni</i>)	Unidentified whale spp.	Totals
Total confirmed mortalities	37 (4, 17, 3, 10, 3)	156 (28, 35, 30, 28, 35)	32 (1, 9, 12, 7, 3)	187 (27, 38, 56, 34, 32)	9 (2, 2, 1, 4, 0)	6 (0, 2, 0, 4, 0)	1 (0, 0, 0, 1, 0)	39 (8, 12, 9, 7, 3)	467
Confirmed entanglement mortalities	11 (2, 4, 3, 1, 1)	13 (3, 2, 3, 1, 4)	4 (0, 1, 1, 2, 0)	34 (3, 12, 11, 3, 5)	1 (0, 0, 1, 0, 0)	0	0	0	63
Confirmed vessel strike mortalities	11 (1, 5, 0, 4, 1)	28 (5, 8, 7, 5, 3)	2 (0, 1, 1, 0, 0)	3 (0, 2, 1, 0, 0)	1 (1, 0, 0, 0, 0)	0	0	0	45
Confirmed mortalities, NOT vessel strike or entanglement	1 (0, 0, 0, 0, 1)	11 (4, 4, 0, 2, 1)	1 (0, 1, 0, 0, 0)	36 (1, 11, 10, 7, 7)	2 (0, 0, 0, 2, 0)	2 (0, 1, 0, 1, 0)	1 (0, 0, 0, 1, 0)	0	54
Confirmed mortalities, IITD ^a	14 (1, 8, 0, 5, 0)	104 (16, 21, 20, 20, 27)	25 (1, 6, 10, 5, 3)	114 (23, 13, 34, 24, 20)	5 (1, 2, 0, 2, 0)	4 (0, 1, 0, 3, 0)	0	39 (8, 12, 9, 7, 3)	305

^a IITD = insufficient information to determine cause of death.

Table 5. Average annual rate of confirmed human-caused injury and mortality by country of origin for baleen whale stocks along the Gulf of Mexico, U.S. East Coast, and Atlantic Canadian provinces, 2016-2020.

Event Location	Event Type	Western North Atlantic right whale (<i>Eubalaena glacialis</i>)	Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)	Western North Atlantic fin whale (<i>Balaenoptera physalus</i>)	Canadian East Coast minke whale (<i>B. acutorostrata</i>)	Nova Scotian sei whale (<i>B. borealis</i>)	Western North Atlantic blue whale (<i>B. musculus</i>)	Northern Gulf of Mexico Bryde's whale (<i>B. edeni</i>)	Unidentified whale spp.
U.S. waters	Entanglement	0	2.7	0	3.55	0	0	0	0
	Vessel strike	0.8	5.9	0.4	0.4	0.2	0	0	0.12
Canadian waters	Entanglement	2.15	0.45	0.8	2.25	0	0	0	0
	Vessel strike	1.6	0	0	0.2	0	0	0	0
Unassigned waters	Entanglement	3.55	6.75	0.75	3.05	0.4	0	0	0.75
	Vessel strike	0	0.8	0	0	0	0	0	0
Total Annual Human-Caused Injury Rate		8.1	16.6	1.95	9.45	0.6	0	0	0.87

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APPENDIX A. DETAILS OF REPORTED BALEEN WHALE INJURY EVENTS ALONG THE GULF OF MEXICO, U.S. EAST COAST, AND ATLANTIC CANADIAN PROVINCES, 2016-2020.

Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by the National Marine Fisheries Service (NMFS) Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Western North Atlantic right whale (<i>Eubalaena glacialis</i>)							# events/sums:		54	18.5	32	11
29-Jan-16	1968/ Quatro	off Jupiter Inlet, FL	Entangled	Unknown; First seen USA	-	Unknown	No gear present, but evidence of recent entanglement of unknown configuration. Significant health decline—emaciated, heavy cyamid coverage, damaged baleen. Resighted in April 2017, still in poor condition. No further sightings.	L10	L10	1	Health decline	-
01-Mar-16	4140/ Casper	Cape Cod Bay, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present, but evidence of recent, extensive, constricting entanglement. Resights indicate injuries healing.	L2	L2	0	Healing	-
08-Mar-16	3229	Cape Cod Bay, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present, but evidence of recent, extensive, constricting entanglement. Resights indicate injuries healing.	L2	L2	0	Healing	-
19-May-16	3791/ Truffula	20.2 nm E of Chatham, MA	Entangled	Unknown; First seen USA	-	Unknown	New entanglement injuries on peduncle. Left pectoral appears compromised. No gear seen. Significant health decline—emaciated with heavy cyamid coverage. No resights post-August 2016.	L2	L2	1	-	Yes
26-Jul-16	1427	Gulf of St. Lawrence, QC	Entangled	Unknown; First seen Canada	-	Unknown	No gear present, but new entanglement injuries on peduncle and fluke insertions. Resights show subsequent health decline—gray skin, rake marks, cyamids. No resights post-July 2017.	L10	L10	1	Health decline	-
01-Aug-16	2608	Bay of Fundy, NS	Entangled	Unknown; First seen Canada	-	Unknown	New, severe entanglement injuries on peduncle and flukes. No gear seen. Resighted carrying gear (see 28-Aug-2016 event).	L10	L10	0	Healing	-
01-Aug-16	3323	Bay of Fundy, NS	Entangled	Unknown; First seen Canada	-	Unknown	No gear present, but new, severe entanglement injuries on peduncle, fluke insertions, and leading edges of flukes. Significant health decline—emaciated, cyamids patches, peeling skin. No resights.	L10	L10	1	Health decline	-

a. Consider for List of Fisheries Inclusion; gear either retrieved or documented for possible identification of U.S. fishery.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Western North Atlantic right whale (<i>Eubalaena glacialis</i>)												
13-Aug-16	4057/ FDR	Bay of Fundy, NS	Entangled	Canada	Gear identified	Pot/trap	Free-swimming with extensive entanglement. Two heavy lines through mouth, multiple loose body wraps, multiple constricting wraps on both pectorals with lines across the chest, jumble of gear by left shoulder. Partially disentangled—left with line through mouth and loose wraps at right flipper that are expected to shed. Significant health decline—extensive cyamid coverage. Current entanglement appears to have exacerbated injuries from previous entanglement. No resights.	L2	L3	1	Health decline	-
16-Aug-16	1152/ Necklace	2.0 nm S of Baccaro, NS	Entangled	Unknown; First seen Canada	-	Unknown	Free-swimming with line and buoy trailing from unknown attachment point(s). Full configuration unknown. No resights.	L10	L10	0.75	-	Yes
28-Aug-16	2608	5.2 nm N of Brier Island, NS	Entangled	Unknown; First seen Canada	-	Unknown	Free-swimming with constricting wraps around rostrum and right pectoral. Line trails 50 ft. aft of flukes. Significant health decline—heavy cyamid coverage and indication of fluke deformity. No resights.	L2	L2	1	-	Yes
22-Sep-16	3823/ Sundog	6.5 nm N of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Free-swimming with rostrum wrap leading to heavy gear below. Trailing buoys 150 ft. aft of flukes. Partially disentangled—trailing line shortened, telemetry gear attached, cut made to rostrum wrap. Resights confirm shed remaining gear and injuries healing.	L2	L10	0	Rescued, Gear-free	Yes
04-Dec-16	3405/ Fuse	3.5 nm E of Sandy Hook, NJ	Entangled	Unknown; First seen USA	-	Net	Lactating female. Free-swimming with netting crossing over blowholes and 1 line over back. Full configuration unknown. Calf not present, possibly already weaned. No resights. Previously reported as gear unknown.	L10	L10	0.75	-	Yes
20-Dec-16	2760	Massachusetts Bay, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present, but new entanglement injuries on head, lip, peduncle, and fluke insertion consistent with constricting gear. Resights indicate healing.	L2	L2	0	Healing	-
05-Jan-17	3530/ Ruffian	17.6 nm E of Cumberland Island, GA	Entangled	Canada	Gear identified	Pot/trap	Free-swimming with weighted lines exiting both sides of mouth, forming an open bridle, with remaining line trailing 450 ft. to a single trap. Disentangled. Resights indicate healing.	L2	n/a	0	Rescue	-

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Western North Atlantic right whale (<i>Eubalaena glacialis</i>)												
23-Apr-17	4146	2.9 nm W of Truro, MA	Entangled	USA	Fresh injury or known location	Unknown	Free-swimming with line exiting from left mouthline and trailing 50 ft. aft of flukes. No wraps. Resights confirmed gear-free and healing.	L3	L3	0	-	-
27-Jun-17	1820/ Cello	46.0 nm SE of Sainte-Marie-Saint-Raphaël, NB	Entangled	Unknown; First seen Canada	-	Unknown	No gear present, but new injuries on head and peduncle consistent with constricting gear. Resights indicate healing.	L2	L2	0	Healing	-
04-Jul-17	3139/ Diablo	1.5 nm S of Nantucket, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present, but new extensive injuries on head and body consistent with constricting gear. Severe wounds on leading edge and insertion of flukes. Significant health decline. No resights post-10-Jul-2017.	L2	L2	1	-	-
05-Jul-17	4510/ Shelagh	37.9 nm SE of Sainte-Marie-Saint-Raphaël, NB	Entangled	Canada	Gear identified	Pot/trap	Anchored with line exiting out right side of mouth. Disentangled. Resights indicate healing.	L2	n/a	0	Rescue	-
08-Jul-17	1317/ Ergo	22.3 nm E of Sainte-Marie-Saint-Raphaël, NB	Entangled	Canada	Gear identified	Pot/trap	Line through mouth and over rostrum, but configuration shifted throughout observation. Unclear if anchored or free-swimming. Confirmed gear-free, and resights indicate healing.	L3	L3	0	-	-
09-Jul-17	4123	22.5 nm E of Sainte-Marie-Saint-Raphaël, NB	Entangled	Canada	Gear identified	Pot/trap	Multiple body, head, and flipper wraps descending to weighted gear. Disentangled. Resights indicate healing.	L2	n/a	0	Rescue	-
19-Jul-17	4094/ Mayport	26.5 nm SE of Sainte-Marie-Saint-Raphaël, NB	Entangled	Canada	Gear identified	Pot/trap	Free-swimming with line exiting right side of mouth, crossing over back, and leading to buoys aft of flukes. Extensive severe injuries consistent with constricting gear. In poor condition. No resights.	L2	L3	1	Health decline	-
24-Jul-17	G048	14.9 nm E of Sainte-Marie-Saint-Raphaël, NB	Entangled	Unknown; First seen Canada	-	Unknown	No gear present, but new injuries from right mouthline, over back, and on peduncle consistent with constricting entanglement. Resighted on 26-Jul-2017. Health condition fair. No additional sightings.	L2	L2	0	Healing	-

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Western North Atlantic right whale (<i>Eubalaena glacialis</i>)												
29-Jul-17	1971/ Nantucket	22.2 nm E of Sainte-Marie- Saint-Raphaël, NB	Entangled	Unknown; First seen Canada	-	Unknown	No gear present, but new injuries on head, peduncle, and flukes consistent with constricting entanglement. Resights indicate healing.	L2	L2	0	Healing	-
28-Aug-17	3245/ Zion	37.7 nm SE of Gaspé, QC	Entangled	Canada	Fresh injury or known location	Unknown	Hogtied and anchored in gear. Resights indicate gear-free and healing.	L2	L2	0	Gear-free	-
13-Feb-18	1817/ Silt	Cape Cod Bay, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present, but extensive new injuries consistent with constricting gear to head, right lip, peduncle, and leading fluke edges. Resights indicate healing.	L2	L2	0	Healing	-
15-Feb-18	3296	33 nm E of Jekyll Island, GA	Entangled	Unknown; First seen USA	-	Unknown	No gear present, but extensive recent injuries consistent with constricting gear on right flipper, peduncle, and leading fluke edges. Large portion of right lip missing. Extremely poor condition—emaciated with heavy cyamid load. No resights.	L2	L2	1	-	-
24-Feb-18	3823/ Sundog	Cape Cod Bay, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present, but new extensive injuries consistent with constricting gear on rostrum, peduncle, and leading fluke edges. Resights indicate healing.	L2	L2	0	Healing	-
01-Mar-18	4145	Cape Cod Bay, MA	Vessel strike	Unknown; First seen USA	-	-	New, minor, healed lacerations on left body and left dorsal fluke. Resights indicate healing.	L5b	L5b	0	-	-
12-May-18	4091/ Quill	53.7 nm SE of Chatham, MA	Entangled	USA	Fresh injury or known location	Unknown	Free-swimming with line trailing from right mouthline, at least 1 pectoral wrap, and trailing 50 ft. Buoy pinned close to flipper, but full configuration unclear. Resights confirm shed gear and healing.	L10	L10	0	Gear-free	-
11-Jul-18	4612	33.5 nm E of Miscou Island, NB	Vessel Strike	Unknown; First seen Canada	-	-	New, minor, healed propeller lacerations behind blowholes. Gray, sloughing skin with patchy cyamids. Resights indicate improved health.	L5b	L5b	0	-	-
13-Jul-18	3312	25.6 nm E of Miscou Island, NB	Entangled	Canada	Fresh injury or known location	Unknown	Free swimming with line through mouth and trailing both sides. Full configuration unknown—unable to confirm extent of flipper involvement. No resights.	L10	L10	0.75	-	-

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Western North Atlantic right whale (<i>Eubalaena glacialis</i>)												
21-Jul-18	4601/ Gully	25.2 nm E of Miscou Island, NB	Entangled	Unknown; First seen Canada	-	Unknown	No gear present, but extensive new and healing injuries on rostrum, body, flippers, and flukes consistent with constricting gear. Deep injury to rostrum, and right blowhole not functioning properly. Resights indicate healing and functioning blowhole.	L2	L2	0	Healing	-
30-Jul-18	3843	13 nm E of Grand Manan, NB	Entangled	Unknown; First seen Canada	-	Unknown	Free-swimming with buoy trailing 70 ft. aft whale. Attachment point(s) unknown. Severe, raw injuries on peduncle and head. Partial disentanglement. Resighted with line exiting left mouth and no trailing gear. Possible rostrum and left pectoral wraps, but unable to confirm. Improved health; final configuration unclear. No additional resights.	L10	L10	0.75	-	Yes
20-Aug-18	3960	43.1 nm ESE of Chandler, QC	Entangled	Canada	Fresh injury or known location	Unknown	Free-swimming with multiple rostrum wraps and damaged baleen, configuration shifting throughout observation. No visible trailing line. Resights confirm gear shed and healing. Previously reported as "Unknown; First seen Canada."	L10	L10	0	Gear-free	-
01-Dec-18	3208	30.8 nm S of Nantucket, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present. Evidence of new, healed, constricting body wrap. Health decline evident—gray, lesions, thin. No resights post-02-Feb-2019. Previously reported as 24-Dec-2018.	L2	L2	1	-	-
20-Dec-18	2310	28.5 nm SE of Nantucket, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with open bridle through mouth. Resight in April 2019 shows configuration changed, but unable to determine full configuration. Health appears stable. No additional resights	L3	L10	0.75	-	Yes
27-Dec-18	3950	16.3 nm S of Nantucket, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present. Evidence of new, healed entanglement injuries on lips, peduncle, and flukes. Resights indicate healing.	L10	L10	0	Gear-free	-
20-Feb-19	4615	Cape Cod Bay, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present. Evidence of new, constricting rostrum wraps and peduncle injuries. Resights indicate healing until subsequent entanglement event in July 2020.	L2	L2	0	Healing	-

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Western North Atlantic right whale (<i>Eubalaena glacialis</i>)												
25-Apr-19	4423/ Nebula	25.4 nm E of Orleans, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with closed bridle through mouth, lines trailing 1 body length, and evidence of health decline. Partially disentangled. Confirmed gear-free in October 2019. Resights show improved health.	L3	L3	0	Rescue	Yes
07-Jun-19	3510/ Twister	67.8 nm ESE of Perce, QC	Entangled	Unknown; First seen Canada	-	Unknown	No gear present. Evidence of new, extensive raw and healing injuries on peduncle and leading fluke edges. Resights indicate healing.	L10	L10	0	Healing	-
29-Jun-19	4440/ Avalanche	24.2 nm E of Miscou Island, NB	Entangled	Unknown; First seen Canada	-	Unknown	Free-swimming with line through mouth trailing back to constricting fluke insertion wraps. Partially disentangled, line between mouth and fluke cut, shed remaining gear. Resights indicate healing.	L2	L2	0	Rescue, Gear-free	Yes
04-Jul-19	3125	35.2 nm E of Perce, QC	Entangled	Canada	Gear identified	Pot/trap	Free-swimming with extensive entanglement involving embedded head wraps, flipper wraps, and trailing gear. Baleen damaged and protruding from mouth. Partially disentangled: 200-300 ft. of line removed. Embedded rostrum and blowhole wraps remain, but now able to open mouth. Significant health decline. No resights.	L2	L2	1	-	-
21-Dec-19	3466	20.3 nm S of Nantucket, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with 2-3 lines exiting both sides of the mouth, joining in a jumble of line approximately 1 body length aft of whale and trailing. Loose wraps only. Resights confirm shed gear and injuries healing.	L3	L3	0	-	-
08-Jan-20	2020 Calf of 2360	7 nm E of Altamaha Sound, GA	Vessel strike	USA	Fresh injury or known location	-	Dependent calf with deep lacerations to head and lips, exposing bone. No resights post-15-Jan-2020.	L5a	L5a	1	-	-
22-Jan-20	3301/ Neptune	Cape Cod Bay	Entangled	Unknown; First seen USA	-	Unknown	No gear present but evidence of constricting entanglement across rostrum and on peduncle and fluke insertion. Resights indicate healing.	L2	L2	0	Healing	-

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Western North Atlantic right whale (<i>Eubalaena glacialis</i>)												
31-Jan-20	4091/ Quill	23.3 nm SSE of Nantucket, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present but evidence of constricting entanglement across rostrum and on peduncle and fluke insertion. Resights indicate healing.	L2	L2	0	Healing	-
09-Feb-20	1701/ Aphrodite	Race Point Beach, Provincetown, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present but new, extensive entanglement injuries to peduncle and leading edge of fluke. Resights indicate healing.	L10	L10	0	Healing	-
24-Feb-20	3180/ Dragon	38.2 nm SE of Nantucket, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with bullet buoy lodged in right mouthline, far forward. Line seen exiting left gape. No trailing gear visible. Full configuration unknown, but in poor condition—emaciated with heavy cyamid load. No resights.	L10	L10	1	Health decline	Yes
29-Feb-20	1017/ Batman	Cape Cod Bay	Vessel strike	Unknown; First seen USA	-	-	At least 25 new, minor, healing lacerations along right flank. Resights indicate healing.	L5b	L5b	0	-	-
16-Mar-20	-	Georges Bank	Entangled	Unknown First seen USA	-	Unknown	Free-swimming with 2 polyballs trailing 30 ft. aft of flukes. Attachment point(s) and full configuration unknown. No resights.	L10	L10	0.75	-	-
05-Apr-20	4539	Cape Cod Bay	Vessel strike	Unknown; First seen USA	-	-	New, healing abrasion to right blowhole with new, minor, healed lacerations running aft along back. Resights indicate healing.	L5b	L5b	0	-	-
16-Jul-20	2020 Calf of 3101	26.3 nm E of Shippagan, NB	Entangled	Unknown; First seen Canada	-	Unknown	No gear present. Dependent calf with new, healing injuries consistent with constricting body wrap. Resights indicate healing.	L2	L2	0	Healing	-
23-Jul-20	4615	Gulf of St. Lawrence	Entangled	Unknown; First seen Canada	-	Unknown	No gear present. New, extensive injuries to peduncle and leading edges of flukes consistent with entanglement. Resights indicate healing until subsequent entanglement in 2021.	L10	L10	0	Healing	-
11-Oct-20	4680	2.7 nm E of Sea Bright, NJ	Entangled	Unknown First seen USA	-	Unknown	Free-swimming with 2 lines embedded in rostrum, remaining configuration unknown. Extremely poor condition—emaciated, gray skin, large open lesion on left side of head. No resights.	L2	L2	1	-	Yes

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)							# events/sums:		143	42.27	70	52
14-Jan-16	-	1.0 nm NE of Fort Story, VA	Entangled	USA	Gear identified	Gillnet	Not anchored, but movement restricted by weight. Line over head, through mouth, and around tail. Buoy and polyballs attached by responders which were recovered with buoy line the following day. Fisher hauled remaining gear and determined all gear recovered confirming animal shed gear. No resights.	L2	n/a	0	Rescue	Yes
16-Jan-16	MAHWC-250	2.3 nm NE of Fort Story, VA	Vessel strike	USA	Fresh injury or known location	-	2 parallel lacerations across distal end of right fluke blade. No resights.	L5b	L5b	0	-	-
03-Mar-16	MAHWC-251	off Virginia Beach, VA	Vessel strike	USA	Fresh injury or known location	-	Deep laceration on left fluke blade, near insertion. Fluke blade necrotic. No resights.	L5a	L5a	1	-	-
21-Apr-16	-	off Shackleford Banks, NC	Entangled	Unknown; First seen USA	-	Unknown	No gear present, but evidence of constricting body and peduncle wraps. Injuries appear to be healing. No resights.	L2	L2	0	Healing	-
24-Apr-16	-	1 nm SE of Race Point, Provincetown, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with 2 buoys—submerged orange at 5 ft. and white bullet at 10 ft.—trailing behind flukes. Line appears to wrap flukes. Subsequent sighting only reported white buoy, but only 1 surfacing and no photos. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes
14-May-16	GOM-1609	0.5 nm SW of Wood End, Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Anchored with line through mouth and buoy near right pectoral. Partially disentangled—all gear removed except short line through mouth expected to shed. No resights. Carcass found in 2017, no COD ^b determined	L2	L3	0	Rescue	Yes

^bCause of death

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
18-May-16	Foggy	7.6 nm NE of Gloucester, MA	Entangled	Unknown; First seen USA	-	Unknown	Anchored with lines through mouth and 2 embedded body wraps with large float alongside by right body. Entangling gear fouled in 2 other sets of gear. Animal is emaciated. Partial disentanglement—left with an open bridle of 2 lines through the mouth. Subsequent sightings show lines had rejoined into a closed bridle and health continued to decline. No resights post-July 2016.	L2	L3	1	Health decline	Yes
21-May-16	-	0.4 nm E of Mantoloking, NJ	Entangled	Unknown; First seen USA	-	Gillnet	Full configuration unknown, but minimally wrapped in gear from head to dorsal. Unknown amount of gear removed by public. Unable to confirm if gear-free. No resights.	L2	L10	0.75	-	Yes
26-May-16	GOM-1552	1.5 nm SE of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Free-swimming with constricting line around base of flukes and both fluke blades. Line trailing 100 ft. Animal swimming with flippers. Disentangled. No resights.	L2	n/a	0	Rescue	Yes
16-Jun-16	Freckles	3.4 nm E of Wellfleet, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with buoy 60 ft. aft of flukes. Attachment point(s) and configuration unknown. Poor condition—emaciated and pale. Resights confirm gear-free and injuries healing.	L10	L10	0	Gear-free	-
25-Jun-16	GOM-1689	0.4 nm E of Monomoy, MA	Vessel strike	USA	Fresh injury or known location	-	Strike witnessed. 35-40 ft. vessel at approximately 25 kn. Blood in water seen. Resights indicate wounds have healed.	L6b, L11	L6b, L11	0	Healing	-
02-Jul-16	2016 Calf of Twine	9.9 nm NE of Race Point, Provincetown, MA	Entangled	Unknown; First seen USA	-	Hook/monofilament	Red monofilament hook lure on belly. No resights post-03-Jul-2016.	L4	L4	0	-	-
05-Jul-16	-	2.4 nm SE of Chatham, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with embedded wraps at base of flukes and buoy trailing 50 ft. Partially disentangled. Peduncle wraps loosened and expected to shed. Prognosis poor—flukes compromised and deteriorating. Animal swimming with flippers. No resights.	L2	L3	1	Health decline	Yes

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
26-Jul-16	Scratch	9.9 nm NE of Race Point, Provincetown, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with line over back. Attachment point(s) and configuration unclear. Resights indicate gear-free and injuries healing.	L10	L10	0	Gear-free	-
08-Aug-16	-	5.0 nm NE of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Unknown	Anchored with line through mouth, exiting left mouth to weight at depth and exiting right mouth and trailing to pectoral. Partially disentangled—left with short line through mouth expected to shed. No resights.	L2	L3	0	Rescue	Yes
14-Aug-16	Storm	10.1 nm N of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Lactating female. Free-swimming with line through mouth—exiting right mouth and ending at pectoral, left mouth trailing 90 ft. Disentangled. Healthy resights until subsequent entanglement (see 19-Oct-2016 event).	L3	L3	0	-	-
15-Aug-16	Victim	21.5 nm SSW of Grand Manan Island, NB	Entangled	Canada	Gear identified	Pot/trap	Lactating female anchored in gear. Line through mouth, twisting together, and leading to depth. Disentangled. Resights indicate injuries healing.	L2	n/a	0	Rescue	-
16-Aug-16	A+	30.0 nm E of Nantucket, MA	Entangled	USA	Gear identified	Monofilament	Entanglement witnessed. Free-swimming with monofilament draped across rostrum. Attachment point(s) and configuration unknown. Resights confirm gear-free and injuries healing.	L10	L10	0	Gear-free	-
02-Sep-16	-	14.9 nm SE of Gloucester, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming and trailing red buoy. No photos. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	-
09-Sep-16	GOM-1602	off Race Point, Provincetown, MA	Vessel strike	USA	Fresh injury or known location	-	Raw superficial lacerations on distal end of left dorsal fluke. Resight indicates healing.	L5b	L5b	0	-	-
15-Sep-16	Echo	5.9 nm N of Race Point, Provincetown, MA	Entangled	USA	-	Pot/trap	Lactating female. Free-swimming with line through mouth. Buoys trail along both sides, no trailing line visible, unclear if weight present on line exiting right mouth. Resights confirm gear-free and injuries healing. Previously reported as first seen in U.S. waters in unknown gear.	L10	L10	0	Gear-free	-

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
16-Sep-16	-	3.6 nm NE of Chatham, MA	Entangled	USA	Gear identified	Pot/trap	Anchored with line through mouth and buoy 60 ft. aft of flukes. Disentangled. No resights.	L2	n/a	0	Rescue	Yes
16-Sep-16	Tear	6.6 nm N of Race Point, Provincetown, MA	Entangled	Unknown; First seen USA	-	Monofilament	Free-swimming with monofilament trailing from flukes. Attachment point(s) and configuration unknown. Resights confirm gear-free and injuries healing.	L10	L10	0	Gear-free	-
17-Sep-16	Crisscross	9.1 nm NE of Race Point, Provincetown, MA	Entangled	Unknown; First seen USA	-	Monofilament	Free-swimming with monofilament trailing from flukes. Attachment point(s) and configuration unknown. Resights confirm gear-free and injuries healing.	L10	L10	0	Gear-free	-
27-Sep-16	GOM-1626	off Bliss Island, NB	Entrapped	Canada	Gear identified	Weir	Entrapped in weir for approximately 1 day. Released. Sighted entangled and subsequently found dead (see 16-Oct-2016 event in Appendix 2).	L10	n/a	0	Release	-
08-Oct-16	Aswan	9.5 nm N of Race Point, Provincetown, MA	Entangled	Unknown; First seen USA	-	Monofilament	Free-swimming with 2 strands of monofilament trailing from right fluke. Attachment point(s) and configuration unknown. Resights confirm gear-free and injuries healing.	L10	L10	0	Gear-free	-
19-Oct-16	Storm	0.5 nm N of Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Lactating female. Free-swimming with line through mouth and both ends trailing 50-60 ft. aft of flukes. Disentangled. Resights confirm gear-free and injuries healing.	L3	L3	0	-	-
25-Oct-16	SEUS-1606	3.9 nm SW of Beaufort, NC	Entangled	USA	Gear identified	Gillnet	Initial configuration unknown—possibly anchored but unable to confirm. Final configuration is an open bridle at fluke. No resights.	L10	L3	0	-	-
13-Nov-16	NYC0052	off Belmar, NJ	Entangled	Unknown; First seen USA	-	Monofilament	Free-swimming with monofilament over peduncle and trailing from flukes. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes
14-Nov-16	-	4.7 nm E of Stone Harbor, NJ	Entangled	USA	Gear identified	Pot/trap	Free-swimming with line wrapping left flipper and flukes and trailing. Full configuration unclear. No resights. Previously reported as first seen in U.S. waters in unknown gear.	L10	L10	0.75	-	Yes

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
04-Dec-16	-	1.1 nm S of Quogue, NY	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with high flyer near flukes. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes
08-Dec-16	GOM-1636	3.8 nm NE of Hull, MA	Entangled	USA	Gear identified	Pot/trap	Anchored by 2 wraps around the peduncle. Disentangled. No resights.	L2	n/a	0	Rescue	Yes
19-Dec-16	-	0.1 nm E of Tiverton, NS	Entangled	Unknown; First seen Canada	-	Unknown	Free-swimming with line around tail and buoy trailing. No photos. Full configuration unknown. No resights.	L10	L10	0.75	-	-
20-Dec-16	GOM-1633	1.2 nm S of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Entanglement witnessed. Initially mouth, peduncle, and flukes involved in unknown configuration. Entanglement resolved to line through mouth, over back, with 2 lines and buoy trailing 150 ft. Disentangled. No resights.	L10	L3	0	-	-
05-Jan-17	-	6.2 nm E of Virginia Beach, VA	Entangled	USA	Gear identified	Gillnet	Bullet buoy, high flyer, and netting on head. Full configuration unknown. Disentangled by fisher. Gear inspected—no significant portion missing or damaged. No photos taken to determine ID or sighting history.	L10	n/a	0	Rescue	-
14-Feb-17	-	off Virginia Beach, VA	Vessel strike	USA	Fresh injury or known location	-	2 new, deep lacerations fore and aft of dorsal fin. No resights.	L5a	L5a	1	-	-
15-Jul-17	2016 Calf of Thumper	6.3 nm NW of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Hook/monofilament	Free-swimming with hook and monofilament trailing from right fluke blade. Attachment point(s) unknown. Resighted on 28-Jul-2017 but unable to confirm gear-free. No additional resights.	L10	L10	0.75	-	Yes
18-Jul-17	2017 Calf of Firefly	3.7 nm NE of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Hook/monofilament	Dependent calf. Free-swimming with green lure and monofilament on left fluke blade. Attachment point(s) unknown. Resights confirm gear-free and injuries healing.	L10	L10	0	Gear-free	-

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
20-Jul-17	Firefly	8.5 nm N of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Monofilament	Lactating female. Free-swimming with monofilament on tip of left fluke blade. Attachment point(s) unknown. Resights confirm gear-free and injuries healing.	L10	L10	0	Gear-free	-
26-Jul-17	Sprinkles	8.2 nm NW of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Monofilament	Free-swimming with monofilament trailing from left fluke blade. Attachment point(s) unknown. Resights confirm gear-free and injuries healing.	L10	L10	0	Gear-free	-
10-Aug-17	2017 Calf of Hancock	5.2 nm NNE of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Entanglement event witnessed. Dependent calf with line looped over right pectoral and buoy trailing 75 ft. aft of flukes. Resights confirm gear-free and healthy until subsequent entanglement on 18-Aug-2017.	L3	L3	0	-	-
14-Aug-17	2014 Calf of Echo	4.7 nm NE of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Monofilament	Free-swimming with monofilament trailing down both sides of body and off the flukes. Attachment point(s) unknown. Resights confirm gear-free and injuries healing.	L10	L10	0	Gear-free	-
14-Aug-17	Perseid	4.5 nm NE of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Monofilament	Free-swimming with monofilament trailing from trailing edge of right fluke. No wraps. Resights confirm gear-free and injuries healing.	L3	L3	0	-	-
18-Aug-17	2017 Calf of Hancock	Southern Stellwagen Bank	Entangled	USA	Fresh injury or known location	Monofilament	Dependent calf. Free-swimming with monofilament draped over dorsal fin. Attachment point(s) unknown. Line shifting during observation. Resights confirm gear-free and injuries healing.	L10	L10	0	Gear-free	-
19-Aug-17	-	0.5 nm off of Smith Point County Park, Long Island, NY	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with buoy trailing 10 ft. aft of flukes. Resighted on 11-Sep-2017 with buoy 30-50 ft. aft. Full configuration unknown. No additional sightings.	L10	L10	0.75	-	Yes
28-Aug-17	Drifter	10.2 nm SE of Frenchboro, ME	Entangled	Unknown; First seen USA	-	Unknown	Single line wrapping peduncle and left fluke blade leading to weighted gear. Disentangled. No resights. Previously reported as U.S. event.	L2	n/a	0	Rescue	Yes

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
12-Sep-17	2016 Calf of Sanchal	1.1 nm E of Truro, MA	Entangled	USA	Gear identified	Pot/trap	Anchored in 3 sets of gear. Disentangled. Resights indicate injuries healing.	L2	n/a	0	Rescue	Yes
18-Sep-17	-	29.3 nm SE of Jonesport, ME	Entangled	Canada	Gear identified	Pot/trap	Anchored in gear. Fisher responded and animal not relocated. Hauled gear—10 pots and buoy line missing from 30 pot trawl. No resights.	L2	L10	0.75	-	-
24-Sep-17	GOM-1744	7.7 nm NNW of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Pot/trap	Free-swimming with constricting wrap around left pectoral that trailed under body and over right fluke blade. One line ending at a buoy and one ending at a trap. Partially disentangled. Left with 60 ft. of line draped over pectoral expected to shed. Resighted 18-Oct-2017, unable to confirm gear-free. No additional sightings.	L2	L3	0	-	Yes
01-Oct-17	2017 Calf of Gumdrop	7.4 nm NW of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Unknown	Dependent calf. Free-swimming with line through mouth that twisted together in a bridle under the jaw. Likely to become constricting as the animal grew. Lines trailing to buoys. Resights confirm gear-free and injuries healing.	L2	L2	0	Gear-free	-
03-Oct-17	GOM-1747	6.4 nm NW of Race Point, Provincetown, MA	Entangled	Unknown; First seen USA	-	Monofilament	Free-swimming with monofilament looped over and trailing from left fluke tip. Sighted with subsequent entanglement on 21-Oct-2017. Unable to confirm monofilament had been shed at that point.	L3	L3	0	-	-
06-Oct-17	2015 Calf of Xylem	3.9 nm NE of Chatham, MA	Entangled	Unknown; First seen USA	-	Gillnet	Free-swimming with portion of gillnet panel through mouth and tightly wrapping head and rostrum. Resighted in 2018 with same configuration. Partially disentangled—rostrum wrap cut, bitter ends trailing from both mouthlines. Resights confirmed gear-free and injuries healing.	L2	L3	0	Rescue	Yes
10-Oct-17	-	3.0 nm NE of Gloucester, MA	Entangled	USA	Gear identified	Pot/trap	Anchored in gear. Partially disentangled by harbormaster. Unable to confirm gear-free. No resights.	L2	L10	0.75	-	Yes

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
14-Oct-17	-	6.0 nm N of Race Point, Provincetown, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with white, fender-type buoy close to right flank. No photos. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	-
21-Oct-17	2016 Calf of Echo	9.1 nm NE of Gloucester, MA	Entangled	USA	Fresh injury or known location	Unknown	Anchored in gear. Disentangled. No resights.	L2	n/a	0	Rescue	Yes
21-Oct-17	GOM-1747	1.0 nm SE of Quogue, Long Island, NY	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with buoy in tow. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes
12-Nov-17	-	1.0 nm S of Atlantic Beach, NY	Entangled	Unknown; First seen USA	-	Monofilament	Free-swimming with monofilament trailing from right fluke. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes
30-Nov-17	-	17 nm S of Grand Manan, NS	Entangled	Canada	Gear identified	Pot/trap	Anchored by tail area in trawl between 2 balloons. Fisher cut lines. Unable to confirm gear-free. No resights.	L2	L10	0.75	-	-
22-Apr-18	Lascaux	7.6 nm SW of Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Free-swimming with line through mouth. Right side leading to 2 buoys and left side leading down to weighted gear. Lines entangled together near the peduncle forming a closed loop. Disentangled. Resights indicate injuries healing.	L3	L3	0	-	-
20-Jun-18	Sutures	3.5 nm NW of Brier Island, NS	Entangled	Unknown; First seen Canada	-	Unknown	Free-swimming with line through mouth and trailing approximately 1 body length beyond flukes, no wraps. Resighted gear-free.	L3	L3	0	-	-
21-Jun-18	Crinkle	12.1 nm SE of Chatham, MA	Entangled	USA	Fresh injury or known location	Monofilament	Free-swimming, trailing monofilament from unknown attachment point(s). Relocated, no gear visible, but unable to confirm gear-free. Additional resights confirm gear-free and injuries healing.	L10	L10	0	Gear-free	-

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
14-Jul-18	2018 Calf of Pierce	3.6 nm N of Brier Island, NS	Entangled	Canada	Fresh injury or known location	Unknown	Free-swimming dependent calf with multiple head wraps likely to become constricting over time. Partially disentangled—short sections of line in baleen likely to shed. Resights confirm gear-free and injuries healing.	L2	L3	0	Rescue	-
14-Jul-18	2017 Calf of Rapier	5.8 nm W of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Free-swimming with deeply embedded line at insertion of flukes with line trailing, buoy pinned near fluke. Partial disentanglement—remaining gear held in place by wounds, hope will shed. Compromised health—widespread cyamids, skin pitting. No resights.	L2	L3	1	Health decline	Yes
14-Jul-18	-	0.5 nm S of Nantucket, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with line crossing over back. Resight showed emaciated with line over back, a bundle of line by right shoulder, and line around peduncle. Suspect attachment points are mouth and/or flippers but unable to confirm. No resights.	L10	L10	1	Health decline	Yes
20-Jul-18	2016 Calf of Sanchal	Stellwagen Bank off MA	Vessel strike	Unknown; First seen USA	-	-	New, healed, superficial lacerations across back. Healthy resights	L5b	L5b	0	-	-
20-Jul-18	Cardhu or Orbit	5 nm N of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Monofilament	Event witnessed. Free-swimming with unknown configuration. Unclear which animal involved, both sighted gear-free from this event. Treating this as a single entanglement event since unlikely both animals made contact with gear.	L10	L10	0	Gear-free	-
20-Jul-18	Milkweed or Mogul	6.7 nm NW of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Monofilament	Event witnessed. Free-swimming with unknown configuration. Unclear which animal involved, both sighted gear-free from this event. Treating this as a single entanglement event since unlikely both animals made contact with gear.	L10	L10	0	Gear-free	-
20-Jul-18	Owl	5.7 nm NW of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Monofilament	Free-swimming with unknown attachment point(s). Resights confirm shed gear and healing.	L10	L10	0	Gear-free	-

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
21-Jul-18	Rhino	7.2 nm E of Hampton Beach, NH	Entangled	USA	Fresh injury or known location	Monofilament	Free-swimming with monofilament trailing from left fluke. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes
23-Jul-18	-	Great Duck Island, Grand Manan, NB	Entangled	Canada	Gear identified	Seine	Entrapped in weir. Became entangled in seine fisher used to remove from weir. Successfully released from both seine and weir. No resights.	L10	n/a	0	Rescue	-
30-Jul-18	NYC0097	1.0 nm SE of Montauk, NY	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with line through mouth exiting right and trailing aft, exiting left and leading to multiple constricting wraps around left pectoral, then trailing 3-4 ft. Partially embedded in flipper, large raw wound. No resights.	L2	L2	1	-	Yes
30-Jul-18	Cardhu	8.2 nm NW of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Anchor system	Free-swimming in anchoring system. Configuration of gear changed throughout event: Open bridle through mouth became closed bridle with multiple peduncle wraps. Partial disentanglement—removed mooring ball, anchor, and jumble of line aft of flukes. Final configuration unknown but included closed bridle trailing to a small jumble of line at flukes. No resights.	L2	L10	0.75	-	Yes
01-Aug-18	Dyad	7.8 nm NW of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Monofilament	Free-swimming lactating female with monofilament draped over left fluke blade and trailing 50 ft., no wraps. Partially disentangled—shortened trailing line to 15 ft. aft of flukes to minimize interference of gear with nursing. Resights confirm gear-free and healing.	L3	L3	0	-	-
03-Aug-18	Sabot	0.6 nm W of Brier Island, NS	Entangled	Canada	Fresh injury or known location	Unknown	Free-swimming lactating female with single line through mouth and trailing 75-100 ft. from each side. No wraps. No resights.	L3	L3	0	-	-
05-Aug-18	-	10 nm E of Long Island, NY	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming, emaciated whale with constricting and embedded wraps at fluke insertion and on left fluke blade. Swimming by use of flippers. No resights.	L2	L2	1	-	Yes

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
06-Aug-18	Komodo	9.2 nm NW of Race Point, Provincetown, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with line through mouth and joining in a small jumble underneath body. Multiple resights indicate entanglement still present through November 2018 but health stable. Confirmed gear-free in August 2019.	L3	L3	0	-	-
07-Aug-18	Samara	6.2 nm NW of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Monofilament	Free-swimming with monofilament line over left fluke with attachment point(s) and configuration unknown. Resights confirm shed gear and injuries healing.	L10	L10	0	Gear-free	-
09-Aug-18	Dross	7.8 nm NW of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Monofilament	Free-swimming lactating female with dependent calf. Monofilament from unknown attachment point(s). Unclear which animal involved but resights confirm both gear-free and injuries healing.	L10	L10	0	Gear-free	-
11-Aug-18	-	Cape May, NJ	Vessel strike	USA	Fresh injury or known location	-	At least 11 deep lacerations starting at dorsal fin and continuing down dorsal ridge toward fluke. Ulcerated lesion on right pectoral with some evidence of healing.	L5a	L5a	1	-	-
15-Aug-18	-	Stellwagen Bank	Vessel strike	USA	Fresh injury or known location	-	130 ft. whale watch vessel at 28 kn. No blood in water.	L6a	L6a	1	-	-
16-Aug-18	Mogul	4.9 nm E of Rockport, MA	Entrapped	USA	Gear identified	Seine	Event witnessed—entrapped in seine. Relocated animal free-swimming with minor abrasions and not carrying any gear. Healthy resights.	L10	L10	0	Gear-free	-
16-Aug-18	Lollipop	14.4 nm E of Rockport, MA	Entrapped	USA	Gear identified	Seine	Event witnessed—entrapped in seine, no contact made with gear. Self-released. Healthy resights.	L10	L10	0	Gear-free	-
17-Aug-18	Samara	8.0 nm NW of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Hook	Event witnessed—gear trawled over whale as it was logging. Hook and lure snagged on back. Resights confirmed shed gear and healing.	L4	L4	0	Gear-free	-

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
27-Aug-18	Patches	6.8 nm E of Rockport, MA	Entangled	Unknown; First seen USA	-	Monofilament	Free-swimming with monofilament trailing from right fluke. Attachment point(s) unknown. Resights confirm gear-free and injuries healing.	L10	L10	0	Gear-free	-
30-Aug-18	Owl	7.3 nm SE of Isles of Shoals, NH	Entrapped	USA	Gear identified	Seine	Event witnessed—made contact with floatline but swam out free of gear after fishers lowered net. Resights indicate healthy.	L10	n/a	0	Release	-
30-Aug-18	Chablis	7.3 nm SE of Isles of Shoals, NH	Entrapped	USA	Gear identified	Seine	Event witnessed—self-released from seine. Resights indicate healthy.	L10	L10	0	Gear-free	-
01-Sep-18	2016 Calf of Sanchal	9.4 nm S of Chatham, MA	Entangled	USA	Gear identified	Pot/trap	Free-swimming with line through mouth, 1 ending in a hog ring eye and the other ending in a surface system including a buoy. Partially disentangled—shortened lines on both sides to trail to just forward of the flukes. Resights confirm gear-free and healing.	L3	L3	0	-	-
02-Sep-18	-	Brier Island, NS	Vessel strike	Canada	Fresh injury or known location	-	Whale watch zodiac hit by peduncle of whale as it dove. Vessel <65 ft. and <10 kn.	L6c	L6c	0	-	-
02-Sep-18	Lollipop	3.9 nm E of Chatham, MA	Entangled	USA	Gear identified	Monofilament	Event witnessed. Monofilament from unknown attachment point(s) trailing over left fluke. Full configuration unknown. Resights confirm gear-free and injuries healing.	L10	L10	0	Gear-free	-
03-Sep-18	Shuffleboard	1.0 nm N of Rockport, MA	Entangled	USA	Gear identified	Monofilament	Free-swimming with monofilament trailing over left fluke from unknown attachment point(s). Full configuration unknown. Resights confirm gear-free and injuries healing.	L10	L10	0	Gear-free	-
08-Sep-18	-	3.1 nm SE of Gloucester, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with line and buoy trailing from unknown attachment point(s). Full configuration unknown. No resights.	L10	L10	0.75	-	Yes

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
14-Sep-18	Dross	6.1 nm NW of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Monofilament	Free-swimming lactating female with dependent calf. Line looped around left fluke tip, no additional attachment points or wraps. Partially disentangled—removed 250 ft. of line to reduce apparent interference with nursing. Resights confirm gear-free and injuries healing.	L3	L3	0	-	-
21-Sep-18	-	20 nm E of Rockport, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with 2-3 buoys trailing 30-40 ft. aft of flukes. Attachment point(s) and full configuration unknown. No resights.	L10	L10	0.75	-	Yes
23-Sep-18	-	10.5 nm SE of Gloucester, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with line on fluke from unknown attachment point(s). Full configuration unknown. No resights.	L10	L10	0.75	-	Yes
23-Sep-18	-	14.1 nm S of Martha's Vineyard, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with buoys trailing from unknown attachment point(s). Full configuration unknown. No resights.	L10	L10	0.75	-	Yes
29-Sep-18	2016 Calf of Ravine	E of Campobello Island, NB	Entangled	Unknown; First seen Canada	-	Unknown	Free-swimming with orange float 40 ft. aft of flukes. Attachment point(s) and full configuration unknown. Resights confirm gear-free and injuries healing.	L10	L10	0	Gear-free	-
13-Dec-18	-	0.7 nm E of Mayport, FL	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with unknown attachment point(s) and configuration. Partly disentangled by public. Final configuration unknown. No resights.	L10	L10	0.75	-	Yes
23-Apr-19	-	0.5 nm S of Cape May, NJ	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with constricting line across back, remaining configuration and attachment point(s) unknown. No resights post 01-Jun-2019.	L2	L2	1	-	Yes
01-May-19	-	Avalon Pier, Kill Devil Hills, NC	Vessel strike	Unknown; First seen USA	-	-	Free-swimming with a large, deep wound on back. Propeller lacerations along edge of wound. Injury healing, and animal appears in good condition. No resights.	L5a	L5a	0	Healing	-

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
02-May-19	-	0.1 nm W of Ocean City, MD	Entangled	USA	Gear identified	Gillnet	Partially disentangled from anchoring gear. Left free-swimming with gear through mouth at minimum. Final configuration unknown. No resights.	L2	L10	0.75	-	Yes
09-Jun-19	Mostaza	11.5 nm N of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Unknown	Free-swimming with thin line over right fluke. Attachment point(s) and configuration unknown. Shed gear during observation. Resights indicate healing.	L10	L10	0	Gear-free	-
24-Jun-19	Krakatoa	11.8 nm E of Chatham, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with constricting line across back. Partial disentanglement, but final configuration unknown. Evidence of significant health decline—thin with moderate cyamid load. No resights.	L2	L10	1	Health decline	Yes
07-Jul-19	-	1 nm off Napeague, NY	Vessel strike	USA	Fresh injury or known location	-	Struck by 48 ft. vessel traveling at 20 kn. Blood seen in water and rudder damaged. No resights.	L6b, L11	L6b, L11	0.52	-	-
11-Jul-19	-	0.05 nm S of Manchester, MA	Entangled	Unknown; First seen USA	-	Net	Caught outside of a set net with netting and floats over the back and dorsal fin, full configuration unknown. Resights confirm gear-free and healing.	L10	L10	0	Gear-free	-
15-Jul-19	-	12 mi NE of Shinnecock Inlet, Long Island, NY	Entangled	USA	Gear identified	Gillnet	Anchored but broke out of gear. All gear recovered. No resights.	L2	L10	0	Gear-free	-
22-Jul-19	-	6.3 nm E of Kingsburg, NS	Entangled	Unknown; First seen Canada	-	Unknown	Free-swimming with line and buoy trailing past flukes. Partial disentanglement by public. Final configuration and attachment point(s) unknown. No resights.	L10	L10	0.75	-	Yes
24-Jul-19	2019 Calf of Pinball	7 nm E of Gloucester, MA	Entangled	USA	Fresh injury or known location	Monofilament	Dependent calf, free-swimming, with monofilament on right flipper. Attachment point(s) and full configuration unknown. Resights indicate shed gear and healing.	L10	L10	0	Gear-free	-
26-Jul-19	-	4.5 nm E of Sea Isle City, NJ	Entangled	USA	Gear identified	Pot/trap	Appeared anchored with line wrapped around body and buoy near flipper. Remaining configuration unknown. Confirmed to have shed gear and healing. No additional resights.	L2	L2	0	Gear-free	-

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
29-Jul-19	Nike	16.1 nm E of Newburyport, MA	Entangled	USA	Fresh injury or known location	Hook/ monofilament	Free-swimming with hook attached to leading edge of left fluke blade and monofilament trailing. No wraps. Resights confirm shed gear and healing.	L3, L4	L3, L4	0	-	-
31-Jul-19	Komodo	11.4 nm SE of Montauk, NY	Entangled	Unknown; First seen USA	-	Hook	Free-swimming with fishing lure lodged just below the right side of its dorsal fin. No line present. Resights confirm gear-free and healing.	L4	L4	0	-	-
05-Aug-19	Nile	7.4 nm NW of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Monofilament	Free-swimming with monofilament trailing off flukes. Attachment point(s) forward on the body, full configuration unknown. Resights confirm gear-free and healing.	L10	L10	0	Gear-free	-
06-Aug-19	-	Ocean City, MD	Entangled	Unknown; First seen USA	-	Unknown	No gear visible, but evidence of extensive, constricting entanglement with subsequent health decline. No resights post-10-Aug-2019.	L2	L2	1	-	Yes
15-Aug-19	2015 Calf of Jabiru	1.4 nm E of Chatham, MA	Entangled	USA	Gear identified	Pot/trap	Free-swimming with line through the mouth—line exiting right mouthline crossed over the head just aft of blowholes and twisting together with line exiting left mouthline. Unclear if constricting but likely to become so. Left line ended at buoy, right line ended at gangion. Disentangled. Injuries healing until subsequent entanglement (see 03-Jun-2020 event).	L2	n/a	0	Rescue	Yes
26-Aug-19	Zorro	Provincetown Harbor, MA	Entangled	USA	Fresh injury or known location	Unknown	Free-swimming with buoy near left flipper, but full configuration unknown. No resights post-19-Oct-2019.	L10	L10	0.75	-	Yes
03-Sep-19	NYC0159	1.4 nm W of North Truro, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with line over back and buoy close to body. Attachment point(s) and full configuration unknown. Confirmed had shed gear. Carcass found 14-Nov-2019, no COD ^b determined. New vessel strike injury also seen (see 03-Sep-2019 event below).	L10	L10	0	Gear-free	-
03-Sep-19	NYC0159	1.4 nm W of North Truro, MA	Vessel strike	Unknown; First seen USA	-	-	Free-swimming with new, minor, healing propeller lacerations. Also carrying gear (see 03-Sep-2019 event above). Carcass found 14-Nov-2019, no COD ^b determined.	L5b	L5b	0	-	-

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
03-Sep-19	-	13.6 nm SW of Nantucket, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present, but evidence of extensive, recent, constricting entanglement. Healing injuries on head, body, peduncle, and fluke insertion wraps. No resights.	L2	L2	0	Healing	-
10-Sep-19	Nuke	20.3 nm SE of Gloucester, MA	Entangled	USA	Gear identified	Anchor system	Free-swimming with anchoring system through the mouth—buoy line exiting the right mouthline and anchor line out the left. Full configuration unclear. Partial disentanglement—left with clean length of line through mouth or line with anchor portion, either of which likely to shed. Resights confirm gear-free and healing.	L10	L3	0	Rescue	Yes
10-Sep-19	Doric	8.3 nm NW of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Monofilament	Free-swimming with monofilament trailing from right fluke blade. Attachment point(s) and full configuration unknown. Resights confirm gear-free.	L10	L10	0	Gear-free	-
26-Sep-19	-	Nancy Head, Campobello, NB	Entrapped	Canada	Gear identified	Weir	Free-swimming in weir without netting. Released. No resights.	L10	n/a	0	Release	-
04-Oct-19	-	2.2 nm W of North Truro, MA	Entangled	USA	Gear identified	Pot/trap	Free-swimming but dragging gear with a constricting wrap around head/body. Partial disentanglement—left with loose configuration that appears to have shed, but unable to confirm. No resights.	L2	L3	0	Rescue	Yes
07-Oct-19	Diablo	20.5 nm SE of Gloucester, MA	Entangled	Unknown; First seen USA	-	Monofilament	Free-swimming with short length of loose monofilament on right fluke tip. Resights confirm gear-free and healing.	L3	L3	0	-	-
24-Oct-19	-	14.4 nm SE of Ocean City, MD	Entangled	USA	Gear identified	Gillnet	Free-swimming with 2 buoys near flukes and remaining configuration unclear. Partial disentanglement. Final configuration unknown. No resights.	L10	L10	0.75	-	Yes
02-Dec-19	Kansas	6.2 nm N of Brier Island, NS	Entangled	Canada	Gear identified	Pot/trap	Anchored by tail. Partial disentanglement—free-swimming with balloon at left flipper and buoy along right side. Remaining gear later found adrift. No resights.	L2	L10	0	Rescue, Gear-free	-

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
29-May-20	GW-D0060	0.1 nm NE of Highlands, NJ	Vessel strike	USA	Fresh injury or known location	-	Vessel <65 ft. and traveling <10 kn. witnessed striking animal along left flank. No injuries observed. Animal also carrying gear (see 29-May-2020 event below). No resights.	L6c	L6c	0	-	-
29-May-20	GW-D0060	0.1 nm NE of Highlands, NJ	Entangled	Unknown; First seen USA	-	Net	Free-swimming with heavy red netting in mouth. Full configuration unknown. Also struck by a vessel earlier in the day (see 29-May-2020 event above). No resights.	L10	L10	0.75	-	Yes
03-Jun-20	2015 Calf of Jabiru	12.6 nm E of Chatham, MA	Entangled	USA	Gear identified	Pot/trap	Free-swimming with high flyer on rostrum, line through mouth, and over left flipper. Unable to determine full configuration. Partially disentangled. Final configuration unknown. No resights.	L10	L10	0.75	-	Yes
08-Jun-20	-	200 yds off Seaside Park, NJ	Vessel strike	USA	Fresh injury or known location	-	Whale breached and landed on 22 ft. stationary vessel. Significant boat damage. No resights.	L6c	L6c	0	-	-
02-Jul-20	-	5.7 nm E of Chatham, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with line and buoy trailing 75 ft. aft of flukes. Attachment point(s) and full configuration unknown. No resights.	L10	L10	0.75	-	-
12-Jul-20	-	0.5 nm E of North Truro, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with bullet buoy trailing. Attachment point(s) and full configuration unknown. No resights.	L10	L10	0.75	-	-
24-Jul-20	Tripod	6.6 nm NW of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Monofilament	Event witnessed. Lactating female struck monofilament rod and reel. Fisher cut line. Line trailing over right fluke but attachment point(s) and full configuration unknown. Resights indicate shed gear and healing.	L10	L10	0	Gear-free	-
26-Jul-20	Scylla	17.6 nm SE of Gloucester, MA	Entangled	USA	Gear identified	Pot/trap	Free-swimming with constricting wrap on right fluke blade. No forward attachment points. One short trailing line and another descending to depth. Partially disentangled—left with non-constricting loop. Resights confirm shed gear and healing.	L2	L3	0	Rescue	Yes

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
27-Jul-20	2016 Calf of Nile	5.8 nm SE of East Atlantic Beach, NY	Entangled	USA	Gear identified	Net	Anchored by flukes in extremely heavy gear including trawl net and braided 1/2 in steel cable. Gear wrapped both fluke blades and embedding into leading edge. Disentangled. Resights indicate healing.	L2	n/a	0	Rescue	Yes
02-Aug-20	Spell	15.5 nm SE of Gloucester, MA	Entangled	USA	Fresh injury or known location	Hook/monofilament	Free-swimming with hook on leading edge of left fluke blade and monofilament trailing. No wraps. Resights confirm shed gear and healing.	L3, L4	L3, L4	0	-	-
26-Aug-20	-	N of Hospital Island, St. Andrews, NB	Entrapped	Canada	Gear identified	Weir	Entrapped in weir for at least 2 days. Released with no apparent injuries. No resights.	L10	n/a	0	Release	-
31-Aug-20	Slingshot	35.6 nm S of Nantucket, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with line exiting both sides of mouth, 1 loose loop aft of blowholes and evidence of line embedded in blowholes. 2 lines trail along right flank ending in a jumble 15 ft. aft of flukes. Poor condition—emaciated with grey skin. No resights.	L2	L2	1	-	Yes
22-Oct-20	NYC0183	5.4 nm E of Plum Island, NJ	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with constricting wraps at fluke insertion and trailing gear. Full configuration unknown. No resights.	L2	L2	1	-	Yes
05-Nov-20	-	1 nm N of Montauk Inlet, East Hampton, NY	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with line over back and buoy along left flank. Attachment point(s) and full configuration unknown. Animal dove and buoy with 70 ft. of line came to surface. Brief sightings showed no gear trailing from flukes. Likely shed gear but unable to confirm. No resights.	L10	L10	0.75	-	Yes
11-Dec-20	-	12.7 nm ESE of Cape May, NJ	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming trailing buoy aft of flukes. Attachment point(s) and full configuration unknown. Emaciated with cyamids. No resights.	L10	L10	1	Health decline	Yes
20-Dec-20	-	15.3 nm S of Grand Manan, NB	Entangled	Canada	Gear identified	Pot/trap	Anchored by flukes with multiple constricting body wraps. Partial disentanglement—all body wraps cut and anchoring lines cut, but unable to confirm gear-free. No resights.	L2	L10	0.75	-	-

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Western North Atlantic fin whale (<i>Balaenoptera physalus</i>)							<i># events/sums:</i>	10	3.75	2	1	
18-Jun-16	CCS_1308	2.3 nm NE of Truro, MA	Entangled	USA	Gear identified	Pot/trap	Free-swimming towing 400 ft. of line with bullet buoy. Resighted 22-Jun-2016. Bridle through mouth leading to a twist of lines near the dorsal. Two buoys trailed 60 ft. aft of flukes. Partially disentangled—left with short line through mouth that expect to shed. No resights.	L3	L3	0	-	-
06-Jul-16	-	32.5 nm E of Truro, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with line trailing 60-70 ft. aft of flukes. No photos. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	-
08-Jul-16	-	60 nm NE of Virginia Beach, VA	Entangled	Unknown; First seen USA	-	Hook/monofilament	Free-swimming with monofilament and lures in tow along left flipper area. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes
27-Jul-16	-	17 nm N of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Free-swimming with line through mouth and trailing a buoy. Disentangled. No resights.	L3	L3	0	-	-
17-Aug-16	-	Grand Manan, NB	Entrapped	Canada	Gear identified	Weir	Entrapped in weir for less than a day. Self-released. Large hole in bottom twine, but no gear missing. No resights.	L10	L10	0	Gear-free	-
14-Dec-16	-	1.4 nm S of Provincetown, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with buoy trailing 6-8 ft. aft of flukes. No photos. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	-
07-Jul-17	CCS0919	22 nm N of Provincetown, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with line and buoy trailing. Attachment point(s) and configuration unknown. Resights confirm gear-free and injuries healing.	L10	L10	0	Gear-free	-
14-Aug-19	-	S of Bliss Island, NB	Vessel strike	Unknown; First seen Canada	-	-	Superficial lacerations at tip of dorsal fin.	L5b	L5b	0	-	-
07-Jul-20	-	4 nm off of MacKenzie Point, Pleasant Bay, NS	Entangled	Unknown; First seen Canada	-	Unknown	Free-swimming. Line crossing from left mouth/head over back and down right side. Attachment point(s) and full configuration unknown. No resights.	L10	L10	0.75	-	-

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a	
Western North Atlantic fin whale (<i>Balaenoptera physalus</i>)													
09-Aug-20	-	Seal Cove, Conception Bay, NL	Entangled	Unknown; First seen Canada	-	Unknown	Free-swimming with rope through mouth, over head, and large tangle by head/flank. No trailing line. Full configuration unknown. No resights.	L10	L10	0.75	-	-	
Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)									# events/sums:	25	10.25	11	12
21-Jul-16	-	Digby, NS	Entangled	Unknown; First seen Canada	-	Net	Free-swimming with netting deeply embedded in rostrum. Disentangled but significant health decline. Gear type previously reported as unknown.	L2	L2	1	-	Yes	
09-Aug-16	-	4.4 nm S of Matinicus Island, ME	Entangled	USA	Gear identified	Pot/trap	Anchored with line through mouth, crossing over blowholes, and twisting along right side. Disentangled.	L2	n/a	0	Rescue	Yes	
02-Nov-16	-	Bonne Bay, Gros Morne National Park, NL	Entangled	Unknown; First seen Canada	-	Unknown	Free-swimming and towing gear. No photos. Attachment point(s) and configuration unknown. No resights post-06-Nov-2016.	L10	L10	0.75	-	-	
31-May-17	-	Stephenville, NL	Entangled	Canada	Gear identified	Pot/trap	Disentangled from unknown configuration.	L10	n/a	0	Rescue	-	
03-Aug-17	-	6.8 nm SE of Bar Harbor, ME	Entangled	USA	Gear identified	Pot/trap	Anchored in gear with line through mouth and at least 2 loose peduncle wraps. Partially disentangled. Left with open bridle and line trailing aft of fluke, likely to shed.	L2	L3	0	Rescue	Yes	
11-Aug-17	-	3.8 nm SE of York, ME	Entangled	USA	Fresh injury or known location	Unknown	Anchored in gear. Partially disentangled by recreational boater. Final configuration: free-swimming with line and buoys from unknown attachment point(s).	L2	L10	0.75	-	Yes	
26-Sep-17	-	12.6 nm E of Richibucto, NB	Entangled	Canada	Fresh injury or known location	Unknown	Appeared anchored by tail. Animal dove and not resighted. Unable to confirm shed gear.	L2	L10	0.75	-	-	
09-Oct-17	-	5.9 nm E of Portsmouth, NH	Entangled	USA	Fresh injury or known location	Ghost pot/trap	Anchored in 2 sets of gear. Disentangled. Primary gear = ghost pot/trap; secondary gear = U.S. pot/trap.	L2	n/a	0	Rescue	Yes	

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)												
22-Jun-18	-	4.5 nm N of Grand Manan, NB	Entangled	Unknown; First seen Canada	-	Unknown	Full configuration unclear—line across back, 1 buoy under left pectoral and another trailing 30-40 ft. aft. Reported as anchored but unable to confirm. No photos. Response team was not able to relocate.	L10	L10	0.75	-	-
23-Jun-18	-	Back Bay, NB	Entrapped	Canada	Gear identified	Weir	Released from weir entrapment.	L10	n/a	0	Release	-
04-Aug-18	-	1.5 nm E of Peaks Island, ME	Entangled	USA	Gear identified	Pot/trap	Anchored by flukes. Disentangled.	L2	n/a	0	Rescue	Yes
06-Aug-18	-	Fish Cove Point, NL	Entangled	Canada	Gear identified	Net	Free-swimming towing net with float attached. Member of public cut off float. Original and final configuration unknown.	L10	L10	0.75	-	-
29-Aug-18	-	7.5 nm SE of Chatham, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with buoy near flukes, attachment point(s) and full configuration unknown.	L10	L10	0.75	-	Yes
29-Aug-18	-	1.0 nm W of Gloucester, MA	Entangled	USA	Fresh injury or known location	Unknown	Disentangled from anchoring gear.	L2	n/a	0	Rescue	Yes
28-Sep-18	-	Bradford Cove, Grand Manan, NB	Entrapped	Canada	Gear identified	Weir	Released from weir entrapment.	L10	n/a	0	Release	-
11-Jul-19	-	9.4 nm NE of Race Point, Provincetown, MA	Entangled	Unknown; First seen USA	-	Debris	Free-swimming with open bridle of festival bunting through mouth and trailing an unknown distance. No wraps.	L3	L3	0	-	-
01-Aug-19	-	2.2 nm NE of Rockport, MA	Entangled	USA	Gear identified	Pot/trap	Anchored with line through mouth and wrapping peduncle. Disentangled.	L2	n/a	0	Rescue	Yes
04-Aug-19	-	6.0 nm E of Montauk, NY	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with line crossing over back just in front of dorsal fin. Line fouled with growth. Attachment point(s) and full configuration unknown.	L10	L10	0.75	-	Yes

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a	
Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)													
09-Aug-19	-	Rigolet, Labrador	Entangled	Canada	Gear identified	Net	Anchored with line around rostrum and constricting peduncle wraps. Partially disentangled. Final configuration unknown.	L2	L10	0.75	-	-	
21-Aug-19	-	Mer et Monde, QC	Entangled	Unknown; First seen Canada	-	Unknown	Free-swimming with line over back and possibly through mouth. No photos. Attachment point(s) and full configuration unknown.	L10	L10	0.75	-	-	
01-Sep-19	-	31.3 nm SE of Chatham, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with buoy trailing from fluke area. No photos. Attachment point(s) and full configuration unknown.	L10	L10	0.75	-	-	
10-Sep-19	-	0.1 nm N of Mattinicus Rock, ME	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with full configuration and attachment point(s) unknown.	L10	L10	0.75	-	Yes	
13-Sep-19	-	Spectacle Island, NS	Entrapped	Canada	Gear identified	Weir	Released from weir entrapment.	L10	n/a	0	Release	-	
04-Sep-20	-	1.9 nm W of North Truro, MA	Entangled	Unknown; First seen USA	-	Net	Free-swimming with netting in mouth, embedded in rostrum, and trailing alongside each flank. Poor condition—emaciated, pocked skin, and deep, open wounds. Disentanglement response unsuccessful.	L2	L2	1	-	-	
05-Oct-20	-	4.8 nm E of Isle of Au Haut, ME	Entangled	USA	Gear identified	Pot/trap	Anchored at flukes by multiple constricting wraps. Disentangled.	L2	n/a	0	Rescue	Yes	
Nova Scotian sei whale (<i>Balaenoptera borealis</i>)									#event/sums	2	1	1	1
11-May-16	-	29.6 nm E of Portsmouth, NH	Entangled	Unknown; First seen USA	-	Debris	Free-swimming with plastic strapping around tip of rostrum. Does not appear constricting. Animal is in apparent good health and exhibiting normal behavior. Previously reported as gear unknown.	L3	L3	0	-	-	
11-May-17	-	Cape Lookout Bight, NC	Entangled	Unknown First seen USA	-	Unknown	Free-swimming with large mass of heavily fouled gear containing lines and buoys over back and along left side. Full configuration unknown. Emaciated.	L10	L10	1	Health decline	Yes	

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Unidentified Whale								<i># events/sums:</i>	9	4.35	0	0
14-Feb-16	-	15 mi off Palm Coast, FL	Vessel strike	USA	Fresh injury or known location	-	27 ft sailboat at 5.5 kn at night made contact on port side of vessel, turning vessel 45-60 degrees to starboard. Heard loud exhalation prior to impact, but did not see animal.	L6c	L6c	0	-	-
06-May-16	-	23.1 nm E of Monomoy, MA	Vessel strike	USA	Fresh injury or known location	-	60 ft racing sailboat at 20 kn reported striking a whale. Starboard rudder destroyed. Description indicates probable humpback, but unable to confirm.	L6b	L6b	0.2	-	-
09-May-16	-	0.3 nm NE of Truro, MA	Entangled	Unknown First seen USA	-	Unknown	Free-swimming with small orange buoy aft of flukes. No photos. Insufficient detail provided to determine species or configuration.	L10	L10	0.75	-	-
02-Oct-17	-	7.9 nm E of Atlantic City, NJ	Entangled	Unknown First seen USA	-	Unknown	Free-swimming with multiple lines wrapping peduncle and trailing 2 buoys at unknown distance. No photos. Full configuration unknown. Likely a minke, but unable to confirm species.	L10	L10	0.75	-	-
20-Jul-18	-	Raritan Bay, NJ	Vessel strike	USA	Fresh injury or known location	-	20 ft vessel traveling >10 kn drove over whale which lifted vessel in the air. No contact with the propeller. Whale resurfaced, no mention made of blood, likely humpback, but unable to confirm species.	L6b	L6b	0.2	-	-
03-Sep-18	-	Moriches, NY	Vessel strike	USA	Fresh injury or known location	-	36 ft vessel traveling at 30 kn self-reported striking a whale. Heard impact with port bow, sustained vessel damage. No blood in water witnessed, animal not resighted.	L6b	L6b	0.2	-	-
26-Apr-19	-	74.6 nm SW of Cape Sable Island, NS	Entangled	Unknown First seen Canada	-	Unknown	Free-swimming with gear around tail. No photos. Full configuration and attachment point(s) unknown.	L10	L10	0.75	-	-
18-Jan-20	-	40 nm S of Nantucket, MA	Entangled	Unknown First seen USA	-	Unknown	Free-swimming with netting and line trailing 1-2 body lengths. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	-

APPENDIX B. CONFIRMED HUMAN-CAUSED MORTALITY RECORDS OF BALEEN WHALE STOCKS ALONG THE GULF OF MEXICO, U.S. EAST COAST, AND ATLANTIC CANADIAN PROVINCES, 2016-2020.

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
Western North Atlantic right whale (<i>Eubalaena glacialis</i>)								
03-May-16	4681	Morris Island, MA	Vessel strike	USA	Fresh mortality or known location	-	Fresh carcass with 9 deep ventral lacerations. Multiple shorn and/or fractured vertebral and skull bones. Destabilized thorax. Edema, blood clots, and hemorrhage associated with injuries. Proximate COD: sharp trauma. Ultimate COD: exsanguination.	-
31-Aug-16	4320	Sable Island, NS	Entangled	Canada	Gear identified	Pot/trap	Decomposed carcass with multiple constricting wraps on pectoral with associated bone damage consistent with chronic entanglement.	-
23-Sep-16	3694	6.5 nm SE of Seguin Island, ME	Entangled	Canada	Gear identified	Pot/trap	Fresh, floating carcass with extensive, constricting entanglement. Thin blubber layer and other findings consistent with prolonged stress caused by chronic entanglement. Gear previously reported as unknown.	-
13-Apr-17	4694	1.5 nm NW of Dennis, MA	Vessel strike	USA	Fresh mortality or known location	-	Deep hemorrhage and muscle tearing consistent with blunt trauma.	-
19-Jun-17	1402/ Glacier	28.8 nm NE of Tignish, PEI	Vessel strike	Canada	Fresh mortality or known location	-	Acute internal hemorrhage consistent with blunt trauma.	-
21-Jun-17	3603/ Starboard	50.1 nm SE of Percé, QC	Entangled	Canada	Gear identified	Pot/trap	Fresh carcass anchored in at least 2 sets of gear with extensive, constricting wraps.	-
23-Jun-17	1207	46.1 nm NE of Tignish, PEI	Vessel strike	Canada	Fresh mortality or known location	-	Acute internal hemorrhage consistent with blunt trauma.	-
06-Jul-17	-	30.1 nm W of Îles de la Madeleine, QC	Vessel strike	Canada	Fresh mortality or known location	-	Fractured skull with associated hemorrhaging. Laceration of oral rete with subsequent exsanguination. Injuries consistent with blunt trauma.	-
19-Jul-17	2140/ Peanut	22.9 nm E of Miscou, NB	Vessel strike	Canada	Fresh mortality or known location	-	Acute internal hemorrhage consistent with blunt trauma.	-
06-Aug-17	-	Martha's Vineyard, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present. Evidence of constricting gear with associated hemorrhaging.	-
15-Sep-17	4504	35.7 nm SE of Percé, QC	Entangled	Canada	Gear identified	Pot/trap	Anchored in gear with extensive constricting wraps with associated hemorrhaging.	-
23-Oct-17	-	Nashawena Island, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present. Evidence of extensive, constricting entanglement with associated hemorrhaging.	-

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
Western North Atlantic right whale (<i>Eubalaena glacialis</i>)								
22-Jan-18	3893	55 nm E of Virginia Beach, VA	Entangled	Canada	Gear identified	Pot/trap	Extensive, severe constricting entanglement including partial amputation of right pectoral accompanied by severe proliferative bone growth. COD: chronic entanglement.	-
25-Aug-18	-	Martha's Vineyard, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present. Evidence of constricting pectoral wraps with associated hemorrhaging. COD: acute entanglement.	-
14-Oct-18	3515	134 nm E of Nantucket, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present, but evidence of constricting wraps across ventral surface and at pectorals. COD: acute, severe entanglement.	-
04-Jun-19	4023/ Wolverine	46.4 nm ESE of Percé, QC	Vessel strike	Canada	Fresh mortality or known location	-	Abrasion, blubber hemorrhage, and muscle contusion caudal to blowholes consistent with pre-mortem vessel strike.	-
20-Jun-19	1281/ Punctuation	27.3 nm E of Îles de la Madeleine, QC	Vessel strike	Canada	Fresh mortality or known location	-	Sharp trauma penetrating body cavity consistent with vessel strike. Vessel >65 ft. based on laceration dimensions.	-
25-Jun-19	1514/ Comet	20.3 nm E of Miscou Island, QC	Vessel strike	Canada	Fresh mortality or known location	-	Fractured ear bones, skull hemorrhaging, and jaw contusion consistent with blunt trauma from vessel strike.	-
27-Jun-19	3450/ Clipper	37.4 nm E of Percé, QC	Vessel strike	Canada	Fresh mortality or known location	-	Hemothorax consistent with blunt trauma.	-
06-Aug-19	1226/ Snake Eyes	36.4 nm NW of Îles de la Madeleine, NS	Entangled	Canada	Fresh mortality or known location	Unknown	Constricting rostrum wraps, in anchored or weighted gear. Carcass found with no gear present but evidence of extensive constricting entanglement involving rostrum, gape, both flippers. COD: probable acute entanglement	-
24-Jun-20	5060	Elberon, NJ	Vessel strike	USA	Fresh mortality or known location	-	Dependent calf. 48 ft. vessel traveling at 28 kn. self-reported strike. Animal surfaced aft of vessel bleeding heavily from a large, fresh gash across peduncle. Carcass reported on 25-Jun-2020. Necropsied 28-Jun-2020. 2 separate vessel interactions: lacerations down left side of head chronic but severe and likely debilitating—likely occurred weeks to months earlier. Injuries at peduncle acutely fatal. COD: sharp trauma from vessel strike.	-
19-Oct-20	3920/ Cottontail	10.1 nm S of Nantucket, MA	Entangled	Canada	Gear identified	Pot/trap	Free-swimming with embedded rostrum wrap and trailing gear. Partial disentanglement—removed 100 ft. of trailing line and attached telemetry buoy. Resighted on 18-Feb-2021 off FL. Health deteriorated—emaciated, increased cyamids, sloughing skin. Floating carcass found on 27-Feb-2021 off SC. Heavy, active shark predation prevented towing and necropsy. More gear retrieved from carcass, but rostrum wrap too deeply embedded—potentially into bone—to remove. No necropsy, but COD due to chronic entanglement is most parsimonious.	-

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)								
25-Apr-16	-	Marshfield, MA	Vessel strike	USA	Fresh mortality or known location	-	Bruising deep to muscle and fascia by right pectoral and mandible at the base of the skull. Limited necropsy, but depth and area of bruising consistent with blunt trauma from vessel strike.	-
25-Apr-16	-	Napeague Bay, NY	Vessel strike	USA	Fresh mortality or known location	-	Extensive bruising to ventral thoracic region along with fractured ribs.	-
15-Jun-16	-	20.9 nm E of Fenwick Island, DE	Vessel strike	USA	Fresh mortality or known location	-	Large area of hemorrhaging around neck and head. Organs displaced forward in body cavity. Full stomach.	-
24-Jun-16	-	0.5 nm E off Shinnecock Inlet, NY	Vessel strike	USA	Fresh mortality or known location	-	Extensive bruising to connective tissue and muscles of the left side, back, and right peduncle.	-
26-Jun-16	Snowplow	15 nm NE of Rockport, MA	Vessel strike	USA	Fresh mortality or known location	-	Limited necropsy, but significant evidence of blunt trauma to left head and pectoral consistent with vessel strike.	-
10-Sep-16	-	Jobs Neck Cove, Martha's Vineyard, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present, but evidence of constricting entanglement with associated reactive tissue at fluke insertions. State of decomposition at time of exam precluded COD determination, but injuries and thin blubber layer are consistent with chronic entanglement.	-
16-Oct-16	GOM-1626	2.1 nm E of Ipswich, MA	Entangled	USA	Gear identified	Pot/trap	No necropsy, but extensive entanglement. Line through mouth with constricting wraps on both flippers, body, and peduncle. Entanglement as COD most parsimonious. Confirmed as same individual released from weir on 27-Sep-2016 (see Appendix A).	Yes
16-Dec-16	HDRVA078	2 mi E of Dam Neck, VA	Entangled	USA	Fresh mortality or known location	Unknown	No gear present, but evidence of extensive constricting entanglement. Fresh carcass with digestive system full of fish. COD: dry drowning by entanglement.	-
02-Feb-17	-	Hampton Roads Bridge-Tunnel, Chesapeake Bay, VA	Vessel strike	USA	Fresh mortality or known location	-	4 deep lacerations that penetrated body cavity. Robust condition with full stomach. COD: exsanguination and asphyxia from sharp trauma.	-
05-Feb-17	-	Chesapeake Bay Bridge-Tunnel, Chesapeake Bay, VA	Vessel strike	USA	Fresh mortality or known location	-	Extensive skeletal fracturing with associated hemorrhaging consistent with blunt trauma.	-
11-Feb-17	-	Fort Story, VA	Vessel strike	USA	Fresh mortality or known location	-	3 deep lacerations that penetrated body cavity. Robust condition with full stomach. COD: exsanguination from sharp trauma.	-

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)								
03-Apr-17	-	Rockaway, NY	Vessel strike	USA	Fresh mortality or known location	-	Extensive hemorrhage and edema along back and side consistent with blunt trauma.	-
04-May-17	-	North Shores, Rehoboth Beach, DE	Vessel strike	USA	Fresh mortality or known location	-	Evidence of blunt trauma with associated hemorrhaging. Deep lacerations to ventral peduncle and side, possibly post-mortem.	-
15-Jun-17	-	Jamestown, RI	Vessel strike	USA	Fresh mortality or known location	-	Muscle contusions and associated cranial fractures consistent with blunt trauma.	-
18-Jun-17	GOM-1625	Monomoy, Chatham, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present, but evidence of constricting entanglement with associated hemorrhaging at insertion of pectorals and fluke. Injuries combined with poor body condition makes entanglement the most parsimonious COD.	-
01-Aug-17	2017 Calf of Cajun	21.9 nm SE of Gloucester, MA	Entangled	Unknown; First seen USA	-	Gillnet	Dependent calf with evidence of extensive constricting entanglement. Gillnet exiting right mouth. Evidence of health decline. Carcass documented in February 2018, unable to confirm if gear still present. No necropsy. Proximate COD: entanglement. Ultimate COD: unknown.	Yes
01-Oct-17	-	9 nm S of Narragansett, RI	Vessel strike	Unknown; First seen USA	-	-	Hemorrhaging along dorsal and left side consistent with blunt trauma.	-
26-Dec-17	-	East Atlantic Beach, NY	Vessel strike	USA	Fresh mortality or known location	-	Extensive bruising and edema along both sides of body consistent with blunt trauma.	-
28-Jan-18	-	Peters Point, FL	Vessel strike	USA	Fresh mortality or known location	-	Hemorrhage with associated skeletal fractures consistent with blunt trauma.	-
12-Feb-18	-	Breezy Point, NY	Vessel strike	USA	Fresh mortality or known location	-	Hemorrhage and edema along back and sides consistent with blunt trauma.	-
05-May-18	-	Raritan Bay, NJ	Vessel strike	USA	Fresh mortality or known location	-	Extensive edema in musculature along sides and ventral surface consistent with blunt trauma.	-
18-May-18	-	Long Beach, NY	Vessel strike	USA	Fresh mortality or known location	-	Extensive hemorrhage and edema along dorsal surface consistent with blunt trauma.	-

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)								
27-May-18	-	Fire Island, NY	Vessel strike	Unknown; First seen USA	-	-	Extensive hemorrhage and edema along dorsal surface consistent with blunt trauma.	-
01-Jun-18	-	Breezy Point, NY	Vessel strike	Unknown; First seen USA	-	-	Extensive hemorrhage and edema along dorsal, side, and ventral surfaces consistent with blunt trauma.	-
27-Jul-18	-	Napeague, NY	Entangled	Unknown; First seen USA	-	Unknown	Multiple constricting wraps at fluke insertion, deeply embedded and partially severing flukes.	Yes
29-Aug-18	2016 Calf of Venom	1.5 nm E of Hampton Beach, NH	Entangled	USA	Gear identified	Net	Free-swimming with netting, line, and floats around peduncle—configuration unclear. Disentangled by recreational boaters. Confirmed gear-free on 03-Sep-2018, behaving abnormally. Carcass found on 07-Sep-2018, but no gear present. No necropsy conducted but primary COD from entanglement most parsimonious because of abnormal behavior indicative of health decline. Ultimate COD unknown.	Yes
07-Sep-18	Peajack	off Brier Island, NS	Entangled	Unknown; First seen Canada	-	Pot/trap	Anchored carcass with line through mouth leading to multiple constricting peduncle and fluke wraps. No necropsy, but extensive constricting gear makes COD from entanglement most parsimonious.	Yes
15-Dec-18	2016 Calf of Zeppelin	Cape Henlopen, Lewes, DE	Vessel strike	USA	Fresh mortality or known location	-	Skeletal fracturing with associated hemorrhaging. COD: blunt trauma from vessel strike.	-
17-Feb-19	2017 Calf of Diablo	Corolla, NC	Vessel strike	USA	Fresh mortality or known location	-	Skeletal fractures with associated hemorrhaging consistent with blunt trauma.	-
13-Mar-19	Plateau	5 nm off Virginia Beach, VA	Vessel strike	USA	Fresh mortality or known location	-	Extensive edema and hemorrhaging consistent with blunt trauma.	-
17-Mar-19	-	Corolla, NC	Entangled	Unknown; First seen USA	-	Gillnet	Extensive constricting and embedded entanglement with associated hemorrhaging.	Yes
05-May-19	-	Westhampton Beach, NY	Vessel strike	USA	Fresh mortality or known location	-	Skull fractures with associated hemorrhaging consistent with blunt trauma.	-

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)								
24-Oct-19	2017 Calf of Manhattan	Barnegat Light, NJ	Vessel strike	USA	Fresh mortality or known location	-	Sighted alive with fresh lacerations down back and across dorsal fin. Carcass found on 26-Oct-2019. 19 lacerations along peduncle and back, severing spinal cord and perforating stomach. Right pectoral completely severed, 2 right ribs fractured, both scapulae fractured, hematoma along right side.	-
13-Dec-19	NYC0144	21 nm SE of Newport, RI	Vessel strike	USA	Fresh mortality or known location	-	Bruising along right side consistent with blunt trauma.	-
28-Jan-20	-	10.6 nm SE of Reedville, VA	Entangled	USA	Gear identified	Gillnet	No necropsy conducted, but fresh carcass extensively wrapped in gear.	Yes
08-Feb-20	-	Herring River Gut, Wellfleet, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present but evidence of constricting entanglement through mouth that damaged baleen plates. Severe emaciation indicates entanglement interfered with feeding. Proximate COD: entanglement. Ultimate COD: drowning and cardiovascular collapse.	-
05-Mar-20	-	Dare, Nags Head, NC	Entangled	USA	Fresh mortality or known location	Unknown	No gear present but evidence of extensive constricting head, body, flipper, and peduncle wraps with associated hemorrhaging.	-
22-May-20	-	5 nm off Westhampton Beach, NY	Vessel strike	USA	Fresh mortality or known location	-	Partial necropsy—evidence of blunt trauma to right head and pectoral region. Full stomach and robust body condition supports acute death caused by blunt trauma from vessel strike.	-
30-May-20	NYC0080	3 nm S of Indian Wells Beach, East Hampton, NY	Vessel strike	USA	Fresh mortality or known location	-	Evidence of blunt trauma—extensive discoloration and edema at the left temporal region of the cranium. Robust body condition and full stomach indicate acute injury.	-
18-Jul-20	-	0.5 nm S of Smith Point County Park, Brookhaven, NY	Vessel strike	USA	Fresh mortality or known location	-	Partial necropsy. Evidence of blunt trauma—hematoma, edema, and hemorrhage along right head/scapula region.	-
16-Sep-20	-	1.5 nm SE of Ventnor City, NJ	Entangled	Unknown; First seen USA	-	Unknown	Embedded gear at fluke insertion, heavy cyamid load. COD: chronic entanglement.	Yes

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
Western North Atlantic fin whale (<i>Balaenoptera physalus</i>)								
30-May-17	-	Port Newark, NJ	Vessel strike	USA	Fresh mortality or known location	-	Fresh carcass on bow of 656 ft. vessel. Speed at strike unknown.	-
25-Aug-17	-	38 nm NE of Miscou Island, NB	Entangled	Canada	Gear identified	Pot/trap	Fisher hauled carcass up from depth—configuration unknown, but partway between buoy and trap. Unlikely to have drifted postmortem in midwater column. Entanglement is the most parsimonious COD.	-
22-Jun-18	-	16.5 nm E of Gaspé, QC	Entangled	Canada	Fresh mortality or known location	Unknown	No gear present. Fresh carcass with evidence of constricting entanglement across ventral pleats and peduncle with raw injuries to fluke. Evidence of associated bruising. No necropsy, but COD from entanglement is most parsimonious.	-
14-Oct-18	Ladders	3.5 nm S of Wood End, Provincetown, MA	Vessel strike	USA	Fresh mortality or known location	-	Fractured mandibles and rostrum with associated hemorrhaging. COD: blunt trauma from vessel strike.	-
19-Jun-19	-	20 nm E of Miscou Island, QC	Entangled	Canada	Fresh mortality or known location	Unknown	No gear present and no necropsy, but evidence of extensive constricting entanglement injuries across ventral surface, peduncle and fluke insertion. Entanglement as COD is most parsimonious.	-
18-Jul-19	-	Portugal Cove South, Avalon, NL	Entangled	Canada	Gear identified	Pot/trap	Carcass anchored in gear with line through mouth. No necropsy, but COD from entanglement is most parsimonious.	-
Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)								
03-May-16	-	Biddeford, ME	Entangled	USA	Gear identified	Pot/trap	Line through mouth with evidence of constriction across ventral pleats and at peduncle. Hemorrhaging associated with these lesions.	Yes
15-Aug-16	-	2.0 nm SE of Seguin Island, ME	Entangled	USA	Fresh mortality or known location	Unknown	Line through mouth leading to weighted/anchored gear.	Yes
30-Aug-16	-	3.1 nm SW of Matinicus Island, ME	Entangled	USA	Gear identified	Pot/trap	Fresh carcass anchored in gear with evidence of constricting wraps at peduncle and fluke insertions.	Yes
24-Apr-17	-	Verrazano-Narrows Bridge, Staten Island, NY	Vessel strike	USA	Fresh mortality or known location	-	Evidence of bruising on dorsal and right scapular region. Histopathology results support blunt trauma from vessel strike as most parsimonious.	-
06-Jul-17	-	Manomet Point, MA	Entangled	USA	Gear identified	Pot/trap	Witnessed becoming anchored and drowning in gear.	Yes

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)								
22-Jul-17	-	Piscataqua River, ME	Entangled	USA	Fresh mortality or known location	Unknown	No gear present. Limited necropsy. Evidence of multiple constricting wraps with associated hemorrhaging. Robust body condition and full stomach supports entanglement COD as most parsimonious.	-
09-Aug-17	-	6.2 nm NE of Ellisville, MA	Entangled	USA	Fresh mortality or known location	Unknown	No gear present. Fresh carcass with evidence of extensive constricting entanglement.	-
12-Aug-17	-	0.9 nm W of West Tremont, ME	Entangled	USA	Fresh mortality or known location	Unknown	Fresh, pregnant carcass in unidentified gear. Evidence of constricting wraps with associated hemorrhaging.	Yes
14-Aug-17	-	1.0 nm SE of Narragansett, RI	Entangled	USA	Fresh mortality or known location	Unknown	No gear present. Fresh carcass with evidence of constricting gear with associated hemorrhaging.	-
17-Aug-17	-	Rye, NH	Entangled	USA	Fresh mortality or known location	Unknown	No gear present. Limited necropsy. Evidence of extensive constricting entanglement. Robust condition and evidence of recent feeding suggests acute entanglement as most parsimonious COD.	-
28-Aug-17	-	9.6 nm S of Harpswell, ME	Entangled	USA	Gear identified	Pot/trap	Fresh carcass anchored in gear with extensive, constricting wraps.	Yes
30-Aug-17	-	11.1 nm NE of Tignish, PEI	Entangled	Canada	Fresh mortality or known location	Unknown	Fresh carcass in gear. Full configuration unclear, but unlikely to have drifted into post-mortem.	-
04-Sep-17	-	Saint Carols, Great Northern Peninsula, NL	Entangled	Canada	Gear identified	Net	Seen alive in gear, found dead the next day.	-
06-Sep-17	-	Newport, RI	Vessel strike	USA	Fresh mortality or known location	-	Extensive hemorrhaging behind the blowhole and along left side. Injuries consistent with blunt trauma.	-
17-Sep-17	-	Henry Island, Inverness, NS	Entangled	Canada	Fresh mortality or known location	Unknown	Fresh carcass with gear in mouth, around flukes, and evidence of constricting rostrum wrap. Ventrums heavily scavenged indicating entanglement occurred at depth. Unlikely to have drifted into gear. No necropsy, but COD from entanglement is most parsimonious.	-
10-Oct-17	-	5.0nm E of Rockland, ME	Entangled	USA	Gear identified	Pot/trap	Constricting wrap around lower jaw. Carcass found at depth when hauling gear.	Yes

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)								
09-Feb-18	-	Tiverton, Long Island, NS	Entangled	Unknown; First seen Canada	-	Unknown	No gear present. Evidence of constricting body, flipper, and peduncle wraps. No necropsy conducted, but COD from entanglement is most parsimonious.	-
25-May-18	-	Digby, NS	Vessel strike	Canada	Fresh mortality or known location	-	Fresh carcass in harbor with large area of hemorrhage aft of blowholes. Necropsy did not state COD, but blunt trauma from vessel strike is most parsimonious.	-
11-Jun-18	-	Cape Dauphin, NS	Entangled	Canada	Gear identified	Pot/trap	Fresh, pregnant carcass anchored in gear.	-
19-Jun-18	-	East Point, PEI	Entangled	Canada	Fresh mortality or known location	Unknown	No gear present. Fresh, pregnant carcass with evidence of extensive constricting body and peduncle wraps with associated hemorrhaging.	-
24-Jun-18	-	Wellfleet, MA	Entangled	Unknown; First seen USA	-	Gillnet	Evidence of extensive constricting body and mouth wraps with associated hemorrhaging. Deep lacerations at fluke insertion from constricting gear. COD: peracute underwater entrapment.	Yes
07-Jul-18	-	1.6 nm E of New Castle, NH	Entangled	USA	Gear identified	Pot/trap	Anchored in gear with line through mouth and wrapping around body. Associated bruising at right corner of mouth. COD: peracute underwater entrapment.	Yes
22-Jul-18	-	Cape Neddick, ME	Entangled	Unknown; First seen USA	-	Unknown	No gear present and no necropsy, but evidence of constricting wrap at fluke insertion with associated hemorrhaging. Histopathology confirms pre-mortem human-induced trauma.	-
28-Jul-18	-	Biddeford, ME	Entangled	Unknown; First seen USA	-	Unknown	No gear present, but evidence of constricting gear with associated bruising at mouth, around body, and peduncle.	-
03-Sep-18	-	Nancy Head, Campobello, NB	Entangled	Canada	Gear identified	Weir, seine	Live animal entrapped. Failed attempt by fisher to remove animal with seine. Animal became entangled in seine and drowned.	-
16-Sep-18	-	0.7 nm SSE of Rye, NH	Entangled	USA	Gear identified	Pot/trap	Fresh carcass anchored in gear. Constricting body, jaw, peduncle, and fluke wraps with associated hemorrhaging.	Yes
07-Nov-18	-	Tangier Island, VA	Entangled	Unknown; First seen USA	-	Net	Constricting gear with associated hemorrhaging partly amputating tip of rostrum. Poor body condition. COD: chronic entanglement.	Yes

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF ^a
Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)								
25-Dec-18	-	Yarmouth Bar, NS	Entangled	Unknown; First seen Canada	-	Unknown	No gear present. Evidence of constricting entanglement on head, ventral pleats, peduncle, and flukes. No necropsy, but COD from entanglement is most parsimonious.	-
27-Mar-19	-	Duxbury, MA	Entangled	USA	Fresh mortality or known location	Unknown	Carcass with line through mouth when first documented, but not present at exam. No COD determined, but mouth abrasion with associated hemorrhaging in muscle and staining of bone is consistent with pre-mortem entanglement.	Yes
05-Jun-19	-	Queensland Beach, NS	Entangled	Canada	Fresh mortality or known location	Unknown	No necropsy, but evidence of multiple constricting body and peduncle wraps. Fluke cleanly severed. Likely removed post-mortem. COD from entanglement is most parsimonious.	-
19-Sep-19	-	off Burnt Island, ME	Entangled	USA	Fresh mortality or known location	Unknown	No gear present, but evidence of constricting body, peduncle, and fluke wraps. No necropsy, but COD from entanglement is most parsimonious.	-
14-Jan-20	-	S of Port Mouton Island, NS	Entangled	Canada	Gear identified	Pot/trap	Fresh carcass anchored in gear.	-
03-Feb-20	-	1.6 nm W of Chesconessex, VA	Entangled	USA	Gear identified	Gillnet	Gear around pectorals and peduncle and through mouth. COD: peracute underwater entrapment.	Yes
17-Jun-20	-	100 yd S of Ledge Rd, Newport, RI	Entangled	USA	Gear identified	Net	Fresh carcass anchored in year.	Yes
26-Aug-20	-	0.5 nm N of Wood Island, ME	Entangled	USA	Gear identified	Pot/trap	Limited necropsy—fresh, scavenged carcass with flipper wraps and evidence of constricting peduncle wrap. COD from entanglement is most parsimonious.	Yes
06-Oct-20	-	0.5 nm W of Dennis Harbor, MA	Entangled	USA	Fresh mortality or known location	Unknown	Closed bridle of line through mouth with associated hemorrhaging at corners of the mouth.	Yes
Nova Scotian sei whale (<i>Balaenoptera borealis</i>)								
25-Jul-16	-	Newark Bay, NJ	Vessel strike	USA	Fresh mortality or known location	-	Fresh carcass on bow of ship (>65 ft.). Speed at strike unknown.	-
12-Mar-18	-	Fanny Keys, FL	Entangled	Unknown; First seen USA	-	Unknown	Emaciated with constricting gear around rostrum and associated hemorrhaging. COD: chronic entanglement	Yes

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