



Northeast Fisheries Science Center Reference Document 24-10

**Serious injury and mortality determinations for  
baleen whale stocks along the Gulf of Mexico,  
United States East Coast, and  
Atlantic Canadian Provinces, 2018-2022**



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# Serious injury and mortality determinations for baleen whale stocks along the Gulf of Mexico, United States East Coast, and Atlantic Canadian Provinces, 2018-2022

Allison Henry<sup>1</sup>, Mendy Garron<sup>2</sup>, David Morin<sup>2</sup>, Ainsley Smith<sup>2</sup>, Andrew Reid<sup>3</sup>,  
Wayne Ledwell<sup>4</sup>, Tim Cole<sup>1</sup>

<sup>1</sup> NOAA Northeast Fisheries Science Center, 166 Water St., Woods Hole, MA 02543 USA

<sup>2</sup> Greater Atlantic Regional Fisheries Office, 55 Great Republic Drive, Gloucester, MA 01930 USA

<sup>3</sup> Marine Animal Response Society, 1747 Summer St., Halifax, NS B3H 3A6, Canada

<sup>4</sup> Whale Release and Strandings Group, 244 Tolt Road, Portugal Cove, NL A1M 1R2 Canada

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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 2018 through 2022. 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 5.45 for North Atlantic right whales (*Eubalaena glacialis*), 13.6 for Gulf of Maine humpback whales (*Megaptera novaeangliae*), 1.89 for western North Atlantic fin whales (*Balaenoptera physalus*), 7.8 for Canadian East Coast minke whales (*B. acutorostrata*), 0.4 for Nova Scotian sei whales (*B. borealis*), 0 for western North Atlantic blue whales (*B. musculus*), and 0.2 for northern Gulf of Mexico Rice's whales (*B. ricei*). 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 mammals<sup>1</sup>. 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 2018 through 2022. 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 Rice's whale (*B. ricei*).

## 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,

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<sup>1</sup> 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>)

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 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. Gear experts provided information on identification of entangling gear when possible.

NEFSC staff reviewed each injury or mortality event and assigned the appropriate criteria from Tables 1 and 2 using all available information. SI and mortality values, determined by which criteria were met, were either 0 (NSI), 1 (SI or mortality), or prorated at a value between 0 and 1 (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 an SI, 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 or self-release 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 report<sup>2</sup>.

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 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.

The summation of reported injury and mortality events for the baleen whale stocks along the Gulf of Mexico, United States East Coast, and Atlantic Canadian provinces from 2018 through 2022 are provided in Tables 3 and 4. Table 3 contains confirmed human-induced injuries only and is separated by source of injury and SI value. Injuries assigned an SI value  $>0.5$  are tallied as SI, while those  $<0.5$  are tallied as NSI. Table 4 presents the total number of reported mortality events including human-caused, natural, and unknown cause of death. The average annual number of individuals removed from each stock by human-interaction are presented in Table 5. The values 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 category (Table 1), and confirmed human-caused mortalities and 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.

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<sup>2</sup> 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>)

## RESULTS AND DISCUSSION

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. While robust estimates of total annual mortality for North Atlantic right whales are now available (Pace et al. 2017; Pace et al 2021; Linden 2023), the number of serious injuries and mortalities not reported for other species is unknown, and actual levels may be much higher (Kraus et al. 2005; Williams et al. 2011; Wells et al. 2014).

## Species Accounts

### *North Atlantic right whale*

The average annual human-caused SI and mortality value for right whales from 2018-2022 decreased 23% from the value for the 2017-2021 period (to 5.45 from 7.1). There were 49 confirmed injury events and 18 mortalities observed from 2018-2022. Six animals were involved in more than 1 injury event. Each injury event is tallied separately in Table 3 with the greater injury value used in calculating injury rates in Table 5.

Nineteen of the injury events were determined to be SI, 16 from entanglements and 3 from vessel strikes. Entanglements and vessel strikes each accounted for 6 of the mortalities. Of the remaining 6 mortality events, 1 (a perinate) was from natural causes, and 5 were from undetermined causes: 4 carcasses could not be examined and 1 was too decomposed. One animal suffered from 2 vessel strikes: one determined to cause serious injury and the second determined to be the cause of death. This is accounted for in both tallies above to document the number of events but is counted as a vessel strike mortality in Table 5. Two of the 16 SI entanglement events were suffered by 1 animal. These are both included in the entanglement serious injury tallies in Table 3 but are counted as 1 entanglement SI in Table 5. This animal's dependent calf is also determined to be an SI as a result of entanglement.

Twenty-three of the 49 injury events were determined to be NSI. Twenty 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. One whale was disentangled from constricting gear and another whale exhibiting health decline was disentangled from a closed bridle, thereby improving the whale's prognosis. Conversely, 1 entanglement event assigned to a prorated injury category was ultimately given an SI value of 1 because of significant health decline.

Three additional animals were sighted in severe health decline, but the cause of injury could not be determined. Lastly, an abandoned neonate was sighted off El Hierro, Spain, in December of 2020 and was deemed unlikely to survive on its own. The cause of abandonment is unknown. These serious injuries from unknown cause are not included in the Table 3 tallies.

An Unusual Mortality Event (UME) was declared for right whales beginning in June 2017 because of documentation of elevated mortalities<sup>3</sup>. Seventeen confirmed carcasses were detected

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<sup>3</sup><https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2024-north-atlantic-right-whale-unusual-mortality-event>

in 2017 (12 in Canada; 5 in the U.S.), 3 in 2018 (U.S. waters), 10 in 2019 (Canadian waters), 3 in 2020 (U.S. waters), and 1 in 2021 (U.S. waters). In 2020, the UME tallies were updated to include prior and current SI events. Two SIs were detected in 2017 (1 in Canada; 1 in the U.S.), 5 in 2018 (2 in Canada; 3 in the U.S.), 1 in 2019 (Canadian waters), 5 in 2020 (U.S. waters), and 5 in 2021 (1 in Canada; 4 in the U.S.). One SI acquired in 2022 resulted in a mortality in 2024. It is listed under 2024 entanglement mortality events in the UME but is tallied as a 2022 mortality in this report. SI event details are included in Appendix A. Details on human-induced 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 SI and mortality decreased 15% from the 2017-2021 period (to 14.15 from 16.6). From 2018-2022, there were 135 confirmed injury events and 125 mortality events. Seventeen animals were involved in multiple injury events. Each injury event is tallied separately in Table 3 with the greater injury value used in calculating injury rates in Table 5.

Forty-nine of the injury events were determined to be SI. Forty-four of the SI events and 12 of the mortalities were caused by entanglement. Four SI events and 16 mortality events were attributed to vessel strikes. One SI event was confirmed as human-caused, but there was no expert consensus on source of injury, so it was assigned as 0.5 entanglement and 0.5 vessel strike in the calculations for Table 5. Three mortality events were from natural causes. One of these cases is an animal that 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 NSI events in Table 3 and as 1 of the 3 confirmed natural mortalities in Table 4. The remaining 94 mortalities had undetermined causes of death: 60 carcasses were not examined, 10 had partial examinations, and 24 were too decomposed.

Seventy of the 114 entanglement injury events were determined to be NSI as a result of post-injury sighting information and/or human intervention. Thirty-two of these were type L2 or L10 injuries whose SI values were adjusted to 0 when the whales were resighted healing and gear-free. Another 11 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. Conversely, 5 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, 1 was categorized as L3 (loose wrap or draped gear), and 1 is the aforementioned event with human-cause apportioned equally between entanglement and vessel strike.

Another 7 whales exhibited severe health decline, but the source of decline could not be determined and therefore they are not included in the Table 3 tallies.

A UME was declared for humpback whales in U.S. waters only beginning in January 2016 because of documentation of elevated mortalities<sup>4</sup>. Twenty-six confirmed carcasses were detected in 2016, 34 in 2017, 26 in 2018, 27 in 2019, 33 in 2020, 10 in 2021, and 19 in 2022. These UME tallies differ from the numbers presented in Table 4 because this report includes Canadian events involving the Gulf of Maine humpback stock. Details on cause of death (where determined) are

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<sup>4</sup> <https://www.fisheries.noaa.gov/national/marine-life-distress/2016-2024-humpback-whale-unusual-mortality-event-along-atlantic-coast>

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 decreased 10% from the previous period's value (to 1.89 from 2.09). There were 6 confirmed injury and 33 confirmed mortality events from 2018-2022. Four entanglement injury events were determined to be SI. One vessel strike injury involving a vessel <65 ft. at >10 kn. (L6b) was tallied as a NSI in Table 3, but the value of 0.2 was used in the rate calculations in Table 5. Four mortalities were caused by entanglement and 2 by vessel strike. Two of the mortality events were from natural causes, and the cause of the remaining 25 could not be determined. Twenty-two carcasses were unexamined, 2 were partially examined, and 1 was too decomposed.

### ***Minke whale***

The average annual minke whale SI and mortality value decreased 17% (to 7.8 from 9.4) compared to 2017-2021. Minke whales had the highest number of confirmed mortalities: 172 events. Twenty-four deaths were confirmed entanglements, 3 were caused by vessel strikes, 29 were from natural causes, and the remaining 116 were of undetermined cause. Eighty-six of these carcasses were not examined, 12 were partially examined, and 18 were too decomposed.

Twenty-six of the 27 reported injuries were from entanglements and 1 from vessel strike. Fifteen entanglement events were determined to be SI. Of the 11 entanglement events determined to be NSI: 7 events were due to animals being disentangled from L2 or L10 type injuries, and 3 were released from weir entraptments by the fisher, setting their SI values to 0. One animal live stranded in extremely poor condition but refloated with the tide and was not resighted. The source of health decline was undetermined, so is not included in the Table 3 tallies.

A UME was declared for minke whales in U.S. waters beginning in January 2017 because of documentation of elevated mortalities<sup>5</sup>. Twenty-seven confirmed carcasses were detected in 2017, 32 in 2018, 23 in 2019, 24 in 2020, 19 in 2021, and 14 in 2022. These UME tallies differ from the numbers presented in Table 4 because this report includes Canadian events. Details on cause of death (where determined) are 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 decreased 33% from the 2017-2021 period (to 0.4 from 0.6). There were no injury events. Of the 5 mortality events, 1 was the result of entanglement, 1 of ingestion of human debris, 1 of natural causes, and 2 for which the cause of death could not be determined. One of these was not examined, and the other was partially examined.

### ***Blue whale***

There were no changes in the SI and mortality values for blue whales between the 2017-2021 and 2018-2022 periods. The SI and mortality value remains 0. One mortality event was from

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<sup>5</sup><https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2020-minke-whale-unusual-mortality-event-along-atlantic-coast>

natural causes, 3 events were mortalities of undetermined origin because they were not examined, and 1 carcass was too decomposed for a determination.

### **Gulf of Mexico Rice's whale**

There were no changes in the SI and mortality values for Rice's whales between the 2017-2021 and 2018-2022 periods. The SI and mortality value is 0.2. There were no reported injuries and 1 mortality from ingestion of plastic debris during the time period.

### **Unidentified whales**

In 4 injury events (5%) and 26 mortality events (7%), we could not verify the species of whale involved. Though we could not identify species, we could confirm that there were 2 entanglement SIs and 2 vessel strikes, both of which are tallied as NSI in Table 3, but 1 has the SI value of 0.2 applied in Table 5.

## **Gear Type and Country of Origin**

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. From 2018 through 2022, gear type (not necessarily fishery) was identified in 106 of 233 entanglement cases, 37 of which were monofilament line or hooks. One animal was entangled in unidentified debris, 1 in a navigational buoy, and 2 in boat anchoring systems.

Of the 107 entanglements for which the country of origin could be assigned with confidence, 75 were identified as from the U.S. and 32 from Canada. Included in these entanglement totals are 7 reported entraptments in Canadian weirs and 4 entraptments in U.S. seines. For specific fishery information involved in baleen whale entanglements, see GARFO'S Atlantic Large Whale Take Reduction Plan Entanglement Reports<sup>6</sup>. Of the 64 vessel strikes, 42 either occurred or likely occurred in U.S. waters, and 6 occurred in Canadian waters.

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<sup>6</sup> See 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>)

with sighting, photo, and health histories. Members of the Atlantic Scientific Review Group have provided numerous helpful comments on the protocols described here.

## TABLES

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

<p>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.</p>			
Category	Injury/ Information	Injury Determination	Criteria
L1	Ingested gear <sup>1</sup> or hook(s)	SI <sup>2</sup>	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 <sup>3</sup>	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 <sup>4</sup>	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 $\geq 65'$ 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 $\leq 10$ knots	NSI	Struck by vessel of any size traveling at equal to or less than 10 knots.
L7a	Vessel $\geq 65'$ 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 <sup>5</sup>	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 one or more of the following indications were confirmed to be present on a whale carcass:

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

**Table 3. Numbers of confirmed baleen whale injury events reported along the Gulf of Mexico, U.S. East Coast, and Atlantic Canadian provinces, 2018-2022. 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 Rice's whale ( <i>B. ricei</i> )	Unidentified whale spp.	Totals
Total confirmed injury events	<b>49</b> (15, 7, 12, 7, 8)	<b>135</b> (39, 29 <sup>d</sup> , 16, 27, 24)	<b>6</b> (0, 1, 2, 3, 0)	<b>27</b> (7, 8, 2, 4, 6)	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b> (2, 1, 1, 1, 0)	<b>221</b>
Confirmed entanglement serious injuries <sup>a</sup>	<b>16<sup>b</sup></b> (5, 1, 3, 4, 3)	<b>44</b> (10, 7, 9, 9, 9)	<b>4</b> (0, 0, 2, 2, 0)	<b>15</b> (3, 5, 1, 2, 4)	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b> (0, 1, 1, 0, 0)	<b>81</b>
Confirmed entanglement non-serious <sup>a</sup> injuries	<b>23</b> (7, 6, 5, 1, 4)	<b>70</b> (24, 17, 5, 14, 10)	<b>0</b>	<b>11</b> (4, 3, 1, 2, 1)	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>104</b>
Confirmed vessel strike serious injuries <sup>a</sup>	<b>3</b> (0, 0, 2 <sup>c</sup> , 1, 0)	<b>4</b> (2, 1, 0, 1, 0)	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>
Confirmed vessel strike non-serious <sup>a</sup> injuries	<b>7</b> (3, 0, 2, 1, 1)	<b>16</b> (3, 3, 2, 3, 5)	<b>2</b> (0, 1, 0, 1, 0)	<b>1</b> (0, 0, 0, 0, 1)	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b> (1, 0, 0, 1, 0)	<b>28</b>
Confirmed unknown anthropogenic serious injuries <sup>a</sup>	<b>0</b>	<b>1<sup>d</sup></b> (0, 1, 0, 0, 0)	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>

<sup>a</sup> Serious (>0.5 SI value) and non-serious (<0.5 SI value) injuries are tallied as number of events. See Appendix A for assigned serious injury values.

<sup>b</sup> Includes 1 animal with 2 separate entanglement injuries. Tallied separately here to document total number of events. Counted in Table 5 as 1 serious injury from entanglement.

<sup>c</sup> Includes 1 animal with 2 separate vessel strike injuries, 1 of which was fatal. Tallied separately here to document total number of events. Counted in Table 5 as a mortality from vessel strike.

<sup>d</sup> Includes 1 animal with a confirmed human-induced serious injury, but no expert consensus on source. Injury value in Table 5 apportioned as 0.5 entanglement and 0.5 vessel strike.

**Table 4. Summary of all unique baleen whale mortalities observed along the Gulf of Mexico, U.S. East Coast, and Atlantic Canadian provinces, 2018-2022. 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 Rice's whale ( <i>B. ricei</i> )	Unidentified whale spp.	Totals
Total confirmed mortalities	<b>18</b> (3, 10, 3, 1, 1)	<b>125</b> (30, 28, 35, 10, 22)	<b>33</b> (12, 7, 3, 7, 4)	<b>172</b> (56, 34, 32, 27, 23)	<b>5</b> (1, 4, 0, 0, 0)	<b>5</b> (0, 4, 0, 1, 0)	<b>1</b> (0, 1, 0, 0, 0)	<b>26</b> (9, 7, 3, 3, 4)	<b>385</b>
Confirmed entanglement mortalities	<b>6</b> (3, 1, 1, 0, 1)	<b>12</b> (3, 1, 4, 2, 2)	<b>4</b> (1, 2, 0, 0, 1)	<b>24</b> (11, 3, 5, 2, 3)	<b>1</b> (1, 0, 0, 0, 0)	<b>0</b>	<b>0</b>	<b>0</b>	<b>47</b>
Confirmed vessel strike mortalities	<b>6</b> (0, 4, 1, 1, 0)	<b>16</b> (7, 5, 3, 0, 1)	<b>2</b> (1, 0, 0, 1, 0)	<b>3</b> (1, 0, 0, 1, 1)	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>27</b>
Confirmed foreign debris ingestion mortalities	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b> (0, 1, 0, 0, 0)	<b>0</b>	<b>1</b> (0, 1, 0, 0, 0)	<b>0</b>	<b>2</b>
Confirmed natural mortalities	<b>1</b> (0, 0, 1, 0, 0)	<b>3</b> (0, 2, 1, 0, 0)	<b>2</b> (0, 0, 0, 2, 0)	<b>29</b> (10, 7, 7, 1, 4)	<b>1</b> (0, 1, 0, 0, 0)	<b>1</b> (0, 1, 0, 0, 0)	<b>0</b>	<b>0</b>	<b>37</b>
Confirmed mortalities, IITD <sup>a</sup>	<b>5</b> (0, 5, 0, 0, 0)	<b>94</b> (20, 20, 27, 8, 19)	<b>25</b> (10, 5, 3, 4, 3)	<b>116</b> (34, 24, 20, 23, 15)	<b>2</b> (0, 2, 0, 0, 0)	<b>4</b> (0, 3, 0, 1, 0)	<b>0</b>	<b>26</b> (9, 7, 3, 3, 4)	<b>272</b>

<sup>a</sup> 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, 2018-2022.**

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 Rice's whale ( <i>B. ricei</i> )	Unidentified whale spp.
U.S. waters	Entanglement	0.2	2.05	0	1.8	0	0	0	0
	Vessel strike	0.7	3.3	0.44	0.4	0	0	0	0.04
Canadian waters	Entanglement	1.55	0.15	0.6	1.65	0	0	0	0
	Vessel strike	0.8	0	0	0.2	0	0	0	0
Unassigned waters	Entanglement	2.2	7.95	0.85	3.75	0.2	0	0	0.3
	Vessel strike	0	0.7	0	0	0	0	0	0
	Foreign debris ingestion	0	0	0	0	0.2	0	0.2	0
<b>Combined Average Annual Human-Caused Injury and Mortality Rate</b>		<b>5.45</b>	<b>14.15</b>	<b>1.89</b>	<b>7.8</b>	<b>0.4</b>	<b>0</b>	<b>0.2</b>	<b>0.34</b>

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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, 2018-2022.

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 <sup>a</sup>
<b>Western North Atlantic right whale (<i>Eubalaena glacialis</i>)</b>								<b># events/sums:</b>		<b>49</b>	<b>16.27</b>	<b>24</b>
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 until subsequent entanglement (see 16-May-2022 event).	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	-	-
21-Apr-18	3912/ Sickle	Massachusetts Bay, MA	Vessel strike	Unknown; First seen USA	-	-	New, minor, healed lacerations on right back. Resights indicate healing. Event added in 2017-2021 report.	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 until subsequent entanglement (see 31-Jan-2020 event).	L10	L10	0	Gear-free	Yes

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
<b>Western North Atlantic right whale (<i>Eubalaena glacialis</i>)</b>												
05-Jul-18	4615/ Hercules	27.5 nm NE of Miscou Island, NB	Entangled	Unknown; First seen Canada	-	Unknown	No gear present. Evidence of new, constricting rostrum wraps and peduncle injuries. Resights indicate healing until subsequent entanglement (see 23-Jul-2020 event). Previously reported as 20-Feb-2019 in Cape Cod Bay.	L2	L2	0	Healing	-
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	-	-
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	-

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
<b>Western North Atlantic right whale (<i>Eubalaena glacialis</i>)</b>												
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	Healing	-
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 Percé, 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
03-Jul-19	1271/ Dropcloth	Gulf of St. Lawrence	Entangled	Unknown; First seen Canada	-	Unknown	No gear present. Evidence of recent multiple constricting rostrum wraps along with injuries to lips and at fluke insertion. Resights indicate healing. Event added in 2018-2022 report.	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
<b>Western North Atlantic right whale (<i>Eubalaena glacialis</i>)</b>												
04-Jul-19	3125	35.2 nm E of Percé, 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	-	-
29-Sep-19	3301/ Neptune	Bay of Fundy	Entangled	Unknown; First seen Canada	-	Unknown	No gear present but evidence of constricting entanglement across rostrum and on peduncle and fluke insertion. Resights indicate healing. Previously reported as 22-Jan-2020 in Cape Cod Bay.	L2	L2	0	Healing	-
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	5010	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	-	-
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 show injuries healing and reproductively successful.	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

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
<b>Western North Atlantic right whale (<i>Eubalaena glacialis</i>)</b>												
29-Feb-20	1017/Batman	Cape Cod Bay, MA	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) unknown. No photos. No resights.	L10	L10	0.75	-	-
05-Apr-20	4539/Zeus	Cape Cod Bay, MA	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	-	-
22-Jun-20	3579	Gulf of St. Lawrence	Entangled	Unknown; First seen Canada	-	Unknown	No gear present. New, raw, and healing injuries along leading edges of both flukes with wrapping injuries on peduncle. Resights indicate healing. Event added in 2018-2022 report.	L10	L10	0	Healing	-
24-Jun-20	5060	0.5 nm off Elberon, NJ	Vessel strike	USA	Fresh injury or known location	-	Dependent calf with 2 separate vessel strike injuries—a deep laceration to head with evidence of healing indicating it a separate event from the deep, fatal laceration to peduncle. (See 24-Jun-2020 mortality event for details.) Event added in 2017-2021 report.	L5a	L5a	1 <sup>b</sup>	-	-
16-Jul-20	5001/Agave	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/Hercules	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 (see 13-Jul-2021 event).	L10	L10	0	Healing	-

b. Animal involved in 2 separate vessel strike events. Included in both appendices to provide details of each event. Counted in Table 5 as a vessel strike mortality.

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
<b>Western North Atlantic right whale (<i>Eubalaena glacialis</i>)</b>												
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
11-Jan-21	1803	9.1 nm E of Fernandina Beach, FL	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with constricting wraps at peduncle and fluke insertion and around left fluke blade. No resights post-12-Jan-2021.	L2	L2	1	-	Yes
12-Feb-21	3230/Infinity	St. Augustine, FL	Vessel strike	USA	Fresh injury or known location	-	Fifty-four ft. vessel traveling at 21 kn. self-reported strike. Lactating female with lacerations of unknown depth resighted on 16-Feb-2021. Dependent calf died from injuries received (see 12-Feb-2021 mortality event). No additional resights.	L6b, L11	L6b, L11	0.52	-	-
07-Mar-21	1209/El	Massachusetts Bay, MA	Vessel strike	Unknown; First seen USA	-	-	Two minor propeller lacerations to right fluke tip. Subsequent sightings show eventual loss of tip, but evidence of healing. Event added in 2018-2022 report.	L5b	L5b	0	-	-
10-Mar-21	3560/Snow Cone	8.3 nm N of Sandwich, MA	Entangled	Canada	-	Unknown	Free-swimming with constricting rostrum wrap and trailing gear 300 ft. Partial disentanglements on 3 separate occasions removed sections of trailing gear. Successful calving event in December 2021. Stable health until 23-Jul-2022 when appeared thinner, increased lesions and cyamids, and discolored rostrum. Sighted 22-Sep-2022 in significant health decline and carrying new entanglement. No additional resights. Dependent calf (see 02-Dec-2021 event) last sighted on 26-Apr-2022. Originally reported as Unknown, First seen USA, and LOF Yes. Updated in 2018-2022 report.	L2	L2	1 <sup>c</sup>	-	-

c. Animal involved in 2 separate serious injury entanglement events. Details on both are included in this appendix. Counted in Table 5 as one entanglement serious injury.

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
<b>Western North Atlantic right whale (<i>Eubalaena glacialis</i>)</b>												
30-Mar-21	2223/ Calvin	11.3 nm N of Race Point, Provincetown, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present but new, extensive, raw and healing injuries along peduncle and at fluke insertion. Resights indicate healing.	L10	L10	0	Healing	-
13-Jul-21	4615/ Hercules	32.6 nm NE of Sainte-Marie-Saint-Raphaël, NB	Entangled	Canada	Fresh injury or known location	Unknown	Recent (within 5 hours) entanglement. Line through mouth and over rostrum leading down toward right flipper and back toward flukes. Constricting line over peduncle and down to weighted gear. Resighted on 14-Jul-2021 with rostrum wrap leading down to weighted gear, no gear on fluke or peduncle area. No additional resights.	L2	L2	1	-	-
02-Dec-21	2022 Calf of 3560	Cumberland Island, GA	Entangled	Canada	-	Unknown	Dependent calf of entangled lactating female (see 10-Mar-2021 event). No resights post-26-Apr-2022. Originally reported as Unknown, First seen USA, and LOF Yes. Updated in 2018-2022 report.	L8	L8	1	-	-
06-May-22	4042/ Martini	Cape Cod Bay, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present. New, healing rostrum injury consistent with constricting gear. Resights indicate healing.	L2	L2	0	Healing	-
16-May-22	3823/ Sundog	32 nm NE of Percé, QC	Entangled	Unknown; First seen Canada	-	Unknown	Free-swimming with line through mouth, possibly forming a bridle under the chin, and trailing aft. One portion trails hundreds of feet, terminating at a bullet buoy and polyball, the other portion descends to depth. Full configuration unknown. No resights.	L10	L10	0.75	-	Yes
24-May-22	5012	72.5 nm E of Truro, MA	Vessel strike	Unknown; First seen USA	-	-	At least 8 healing and healed lacerations of unknown depth across back. Resights indicate injuries healing.	L11	L11	0	Healing	-
30-Jun-22	1403/ Meridian	55.6 nm E of Shippagan, NB	Entangled	Unknown; First seen Canada	-	Unknown	Free-swimming with tight body wrap. Attachment point(s) unknown. No additional resights post-07-Jul-2022.	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
<b>Western North Atlantic right whale (<i>Eubalaena glacialis</i>)</b>												
08-Jul-22	4650/ Sebastian	Gulf of St. Lawrence	Entangled	Unknown; First seen Canada	-	Unknown	No gear present, but raw and healing injuries on head, lips, peduncle, and flukes consistent with constricting entanglement. Resights indicate healing.	L2	L2	0	Healing	-
24-Aug-22	4501	48.2 nm E of Shippagan, NB	Entangled	Unknown; First seen Canada	-	Unknown	Cryptic entanglement, line shifting during observation period. Attachment point(s) unknown. Resights confirm gear-free and healing.	L10	L10	0	Gear-free	-
21-Sep-22	3560/ Snow Cone	16.3 nm S of Nantucket, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with line through mouth and trailing to weighted gear. Possible flipper involvement. Heavy cyamid load on mandibles, lips, and head. Still carrying constricting rostrum wrap from previous entanglement (see 10-Mar-2021 event). No resights.	L2	L2	1 <sup>c</sup>	-	Yes
22-Dec-22	4310/ Prickly Pear	1 nm E of Ponte Vedra Beach, FL	Entangled	Unknown; First seen USA	-	Unknown	No gear present. New, raw, and healing entanglement injuries to peduncle and leading edges of flukes. Resights indicate healing.	L10	L10	0	Healing	-
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>							<b># events/sums:</b>	<b>135</b>	<b>42.97</b>	<b>55</b>	<b>46</b>	
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 and injuries healing.	L3	L3	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
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>												
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). Resights confirm gear-free and injuries healing.	L10	L10	0	Gear-free	Yes
14-Jul-18	Not named	3.6 nm N of Brier Island, NS	Entangled	Canada	Fresh injury or known location	Unknown	Dependent calf. Free-swimming 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	-	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	Astro	Stellwagen Bank off MA	Vessel strike	Unknown; First seen USA	-	-	New, healed, superficial lacerations across back. Healthy resights until subsequent entanglement (see 01-Sep-2018 event).	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 attachment point(s). 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	Yes
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 attachment point(s). 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	Yes
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 reproductively successful.	L10	L10	0	Gear-free	Yes
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) 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
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>												
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	Not named	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. Genetically matched to carcass found on 15-Mar-2019 in Virginia. No gear present or COD <sup>d</sup> determined.	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 reproductively successful.	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

d. Cause 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
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>												
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 tangle 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) unknown. Resighted in subsequent entanglement (see 17-Aug-2018 event). Confirmed to have shed all gear.	L10	L10	0	Gear-free	Yes
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 trailing from unknown attachment point(s). Unclear which animal involved but resights confirm both gear-free and injuries healing until subsequent entanglement (see 14-Sep-2018 event).	L10	L10	0	Gear-free	Yes
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 until subsequent entanglement (see 19-Jul-2021 event).	L10	L10	0	Gear-free	Yes
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 until subsequent entanglement (see 02-Sep-2018 event).	L10	L10	0	Gear-free	Yes
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 gear-free and healing.	L4	L4	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
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>												
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	Yes
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 show reproductively successful.	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	Yes
01-Sep-18	Astro	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	Godzilla	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. Resights confirm gear-free and reproductively successful.	L10	L10	0	Gear-free	Yes
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). Resights confirm gear-free and reproductively successful until subsequent entanglement (see 13-Jul-2021 event).	L10	L10	0	Gear-free	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
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>												
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. Previously reported as an unidentified whale. Genetic samples confirmed species ID. Updated in 2018-2022 report.	L6b	L6b	0.2	-	-
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). No resights.	L10	L10	0.75	-	Yes
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 reproductively successful until subsequent entanglement (see 04-Aug-2021 event).	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) 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). 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). No resights.	L10	L10	0.75	-	Yes
29-Sep-18	Smile	E of Campobello Island, NB	Entangled	Unknown; First seen Canada	-	Unknown	Free-swimming with orange float 40 ft. aft of flukes. Attachment point(s) unknown. Resights confirm gear-free and injuries healing.	L10	L10	0	Gear-free	Yes
13-Dec-18	-	0.7 nm E of Mayport, FL	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with unknown configuration. Partly disentangled by public. Final 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
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>												
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	-
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
26-May-19	Molten	off Rockaway, NY	Vessel strike	Unknown; First seen USA	-	-	15 fresh, superficial lacerations along right side and across peduncle. Resights indicate healing. Subsequently sighted with new fluke injuries (see 22-Aug-2019 event). Event added in 2018-2022 report.	L5b	L5b	0	-	-
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) unknown. Shed gear during observation. Resights indicate healing.	L10	L10	0	Gear-free	Yes
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	New Jersey	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	Yes
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	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
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>												
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	Not named	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) unknown. Resights indicate shed gear and healing.	L10	L10	0	Gear-free	Yes
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	Yes
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 injury 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 reproductively successful.	L10	L10	0	Gear-free	Yes
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	-	-
15-Aug-19	Cashew	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 ganglion. Disentangled. Injuries healing until subsequent entanglement (see 03-Jun-2020 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
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>												
22-Aug-19	Molten	Raritan Bay, NJ	Unknown anthropogenic	Unknown; First seen USA	-		Large, raw, healing injuries bisecting both fluke blades. Human-caused, but no expert consensus on source. Limited resights show increased cyanide load. Carcass documented on 09-Oct-2019, but no necropsy conducted to determine COD. Event added in 2018-2022 report. Injury value in Table 5 apportioned as 0.5 entanglement and 0.5 vessel strike.	L10, L11	L10, L11	1	Decline	-
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	Not named	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) unknown. Confirmed shed gear. Carcass found 14-Nov-2019, no COD determined. New vessel strike injury also seen (see 03-Sep-2019 event below).	L10	L10	0	Gear-free	Yes
03-Sep-19	Not named	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 determined.	L5b	L5b	0	-	-
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

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
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>												
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) unknown. Resights confirm gear-free and reproductively successful.	L10	L10	0	Gear-free	Yes
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	-
29-May-20	Not named	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	Not named	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	Cashew	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

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
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>												
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) unknown. No photos. 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) unknown. No photos. 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) unknown. Resights indicate shed gear and healing.	L10	L10	0	Gear-free	Yes
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
27-Jul-20	Sailor	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	-

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
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>												
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. Two lines trail along right flank ending in a jumble 15 ft. aft of flukes. Poor condition—emaciated with gray skin. No resights.	L2	L2	1	-	Yes
22-Oct-20	Not named	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) 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) 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	-	-
02-Jan-21	Not named	2 nm E of Virginia Beach, VA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming trailing bullet buoy one body length aft of flukes. Attachment point(s) forward on body but full configuration unknown. Confirmed gear-free. No resights post-11-Jan-2021	L10	L10	0	Gear-free	Yes
07-Jan-21	-	10.0 nm SE of Bald Head Island, SC	Vessel strike	Unknown; First seen USA	-	-	Free-swimming in extremely poor condition—emaciated, gray skin, heavy cyamid load. Evidence of 2 sets of propeller lacerations on flukes: healed lacerations on left distal end and lacerations likely affecting major artery on right fluke. No resights.	L5a	L5a	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
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>												
03-Mar-21	-	18.9 nm SE of Beaufort, NC	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with tight body wrap of heavy line just forward of flippers. No resights.	L2	L2	1	-	Yes
07-May-21	Not named	15.4 nm SE of Gloucester, MA	Entangled	Unknown; First seen USA	-	Unknown	Dependent calf. Free-swimming with embedded body wrap. Only visible gear were short bitter ends emerging from chest. Attempted disentanglement—unsure if cutting arrows made contact with line. Resights confirm shed gear and healing until subsequent entanglement (see 08-Aug-2021 event).	L2	L2	0	Gear-free	Yes
08-Jun-21	Valley	7.6 nm NE of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Free-swimming in thin condition with buoy trailing 100 ft. aft of flukes. Attachment point(s) unknown. Relocated 09-Jun-2021 anchored with line exiting left gape and descending, the other end exiting right mouth. Disentangled. Resights indicate healing.	L10	L2	0	Rescue	Yes
24-Jun-21	Cat Eyes	11.1 nm E of Eastham, MA	Entangled	Unknown; First seen USA	-	Netting	Free-swimming with small piece of monofilament netting caught on tip of right flipper. No wraps. Resights confirm gear-free and healing.	L3	L3	0	-	-
28-Jun-21	Clamp	13.8 nm NE of Rockport, MA	Entangled	USA	Fresh injury or known location	Monofilament	Free-swimming with monofilament over back. Attachment point(s) unknown. Resights indicate gear-free and healing until subsequent entanglement (see 04-Sep-2022 event).	L10	L10	-	Gear-free	Yes
28-Jun-21	Not named	Stellwagen Bank, MA	Vessel strike	USA	Fresh injury or known location	-	Dependent calf with 4 new, superficial lacerations along right flank. Involved in subsequent vessel strike 2 days later (see 30-Jun-2021 event).	L5b	L5b	-	-	-
29-Jun-21	-	14.2 nm SE of Block Island, RI	Entangled	Unknown; First seen USA	-	Netting	Free-swimming wrapped in netting but no photos or description to determine extent or configuration of entanglement. 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
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>												
30-Jun-21	Not named	Stellwagen Bank, MA	Vessel strike	USA	Fresh injury or known location	-	Dependent calf surfaced under stern of 89.5 ft. vessel at idle speed. Blood observed coming from flukes. Documented on 01-Jul-2021 with 4-5 fresh lacerations along right trailing edge of fluke, to the right of the fluke notch. No resights post-20-Oct-2021.	L5b, L6c	L5b, L6c	0	-	-
07-Jul-21	Not named	12.9 nm NE of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Monofilament	Dependent calf. Free-swimming with closed bridle of monofilament through mouth with line along right side, trailing aft of fluke at depth and along left flank, and crossing over peduncle. Partial disentanglement—shortened line on both sides leaving calf with open bridle. Resights confirm gear-free and healing until subsequent entanglement (see 08-Aug-2021 event).	L3	L3	0	-	-
13-Jul-21	Shuffleboard	7.3 nm NW of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Monofilament	Free-swimming with monofilament line trailing from right fluke tip. Attachment point(s) unknown. Resights confirm gear-free and healing.	L10	L10	0	Gear-free	Yes
14-Jul-21	-	6.5 nm NW of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Monofilament	Witnessed animal strike gear from rod and reel fisher. No photos or description of attachment point(s) or configuration. No resights.	L10	L10	0.75	-	Yes
19-Jul-21	Mogul	4.3 nm E of Gloucester, MA	Entangled	USA	Fresh injury or known location	Monofilament	Free-swimming with monofilament trailing from left fluke. Attachment point(s) unknown. Resights confirm gear-free and healing.	L10	L10	0	Gear-free	Yes
20-Jul-21	-	off Mecox Beach, Bridgehampton, NY	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming, emaciated, with heavy cyamid load all over back. Evidence of multiple constricting body wraps at mid-body. Unable to confirm if gear is embedded. Deep laceration at right pectoral insertion consistent with constricting gear. No resights.	L2	L2	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
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>												
27-Jul-21	Sedge	3.0 nm NW of Brier Island, NS	Entangled	Unknown; First seen Canada	-	Monofilament	Free-swimming with monofilament trailing over right fluke blade. Attachment point(s) unknown. Resights confirm gear-free and healing.	L10	L10	0	Gear-free	-
28-Jul-21	Crisp	15.3 nm E of Gloucester, MA	Entangled	USA	Fresh injury or known location	Monofilament	Free-swimming with monofilament line trailing over left fluke blade. Attachment point(s) unknown. Resights confirm gear-free and healing.	L10	L10	0	Gear-free	-
01-Aug-21	-	41.2 nm SE of Nantucket, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with constricting wraps at fluke insertion. No resights.	L2	L2	1	-	Yes
04-Aug-21	Dross	14.1 nm N of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Monofilament	Lactating female. Free-swimming with monofilament trailing from barnacle on left tip. No wraps. Resights confirm gear-free and reproductively successful.	L3	L3	0	-	-
08-Aug-21	Not named	4.0 nm E of Rockport, MA	Entangled	USA	Gear identified	Pot/trap	Dependent calf. Free-swimming with line looped over leading edge of left pectoral and trailing 2 buoys aft of fluke. Witnessed shed gear. Resights indicate injuries healing.	L3	L3	0	-	-
08-Aug-21	Not named	19.0 nm SE of Gloucester, MA	Entangled	USA	Fresh injury or known location	Monofilament	Dependent calf. Free-swimming with monofilament trailing from flukes—line passing over left fluke blade, under peduncle, and then over right fluke blade. Shed gear. No resights post-09-Aug-2021.	L3	L3	0	-	-
16-Aug-21	-	33.3 nm SE of Nantucket, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with line crossing over back, just forward of flippers and trailing aft of flukes. Full configuration unknown. No resights.	L10	L10	0.75	-	Yes
30-Aug-21	-	35.9 nm E of Ashbury Park, NJ	Entangled	Unknown; First seen USA	-	Gillnet	Free-swimming with netting wrapping body, 2 lines embedded forward of dorsal. Extremely poor condition—heavy cyamid load. No resights.	L2	L2	1	-	Yes
31-Aug-21	Aquarius	Sheepscot River, ME	Vessel strike	USA	Fresh injury or known location	-	New, superficial lacerations below left dorsal fin. No resights.	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
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>												
03-Sep-21	Not named	1.3 nm off Sea Girt, NJ	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming in extremely poor condition: flukes missing, vertebrae exposed, emaciated, heavy cyamid load. No gear present, but injury consistent with constricting entanglement. No resights.	L2	L2	1	-	-
25-Sep-21	Sword	14.1 nm E of Hampton Beach, NH	Entangled	USA	Fresh injury or known location	Hook/monofilament	Free-swimming with hook in trailing edge of dorsal fin and trailing monofilament aft of flukes. No wraps. Resights confirm gear-free and healing until subsequent entanglement (see 04-Jul-2022 event).	L4	L4	0	-	-
29-Dec-21	-	2.0 nm E of Little Island, VA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with line embedded forward of dorsal. Line extending forward on both sides, indicating mouth and/or flipper involvement, but full configuration unknown. No resights.	L2	L2	1	-	Yes
12-Mar-22	Twine	Silver Banks, DR	Entangled	Unknown; First seen Dominican Republic	-	Unknown	Free-swimming lactating female sighted on calving grounds with jumble of line across back and remaining configuration unknown. Injuries indicate constricting body wrap at earlier point. Resighted in May on feeding grounds. No gear visible, but unable to confirm gear free. Both female and dependent calf (see 12-Mar-2022 event below) in poor health—emaciated with scattered cyamids. No resights post-06-May-2022	L2	L10	1	Health decline	Yes
12-Mar-22	Not named	Silver Banks, DR	Entangled	Unknown; First seen Dominican Republic	-	Unknown	Dependent calf of seriously injured entangled lactating female (see 12-Mar-2022 event above). Both animals show evidence of health decline. No resights post-06-May-2022.	L8	L8	1	-	Yes
30-May-22	Thumper	12.7 nm E of Chatham, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming lactating female with 5 body wraps around body, forward of dorsal fin with a mass of line along left flank and no trailing gear. In poor condition—thin with moderate cyamids. Disentangled, short section of gear recovered. Resighted in Sep2022, calf not present. Additional sightings indicate healing.	L2	n/a	0	Release	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
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>												
30-May-22	Not named	12.7 nm E of Chatham, MA	Entangled	Unknown; First seen USA	-	Unknown	Dependent calf of female entangled in multiple body wraps and in poor condition. Adult disentangled and seen later in improving condition but no resights of the calf (see 30-May-2022 event above). Suspect failure to thrive due to poor condition of adult during key lactation months.	L8	L8	1	-	Yes
14-Jun-22	Not named	11.2 nm E of Chatham, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming dependent calf with line through mouth leading to a jumble of line at the dorsal peduncle with 2 lines trailing a few feet aft of flukes. Evidence that entanglement involved extensive constricting wraps from head to fluke. Disentangled, but SI warranted due to extensive injuries. No resights.	L2	L3	1	Health decline	Yes
23-Jun-22	Luna	off Brier Island, NS	Entangled	Unknown; First seen USA	-	Unknown	No gear present. Extensive raw and healing injuries to body, peduncle, and fluke consistent with constricting entanglement. Resights indicate injuries healing. Carcass recovered in 2023, COD unrelated to this event.	L2	L2	0	Healing	-
29-Jun-22	-	0.7 nm W of Coney Island, NY	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with constricting line at fluke insertion. Tight peduncle wrap(s) and line cutting into leading edges of flukes. Little to no trailing gear. No resights	L2	L2	1	-	Yes
04-Jul-22	Sword	15.7 nm SE of Frenchboro, ME	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with line trailing along right flank. Indication of constricting wrap aft of blowholes, but no gear visible. Attachment point(s) unknown. Resights indicate no evidence of health decline. Likely gear-free but unable to confirm.	L2	L10	0	Healing	-
21-Jul-22	-	Plymouth, MA	Vessel strike	USA	Fresh injury or known location	-	Lunge feeding whale came in contact with starboard bow of stationary recreational fishing vessel. No human injuries. No resights.	L6c	L6c	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
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>												
23-Jul-22	Dusky	2.5 nm N of Race Point, Provincetown, MA	Entangled	Unknown; First seen USA	-	Hook/ monofilament	Free-swimming with monofilament crossing over back and trailing along right flank. Some hooks in right body. Attachment point(s) unknown. Resights confirm gear-free and healing.	L4, L10	L4, L10	0	-	-
24-Jul-22	Hashtag	Plymouth, MA	Vessel strike	USA	Fresh injury or known location	-	Lunge feeding whale landed on bow of stationary 19 ft. recreational vessel, damaging railings and hatch cover. No human injuries. Resights indicate healthy.	L6c	L6c	0	-	-
26-Jul-22	-	7.1 nm SE of Plymouth, MA	Entangled	Unknown; First seen USA	-	Monofilament	Free-swimming with monofilament trailing from head. Attachment point(s) unknown. No resights.	L10	L10	0.75	-	Yes
03-Aug-22	-	0.2 nm N of Long Island, MA	Entangled	USA	Fresh injury or known location	Monofilament	Free-swimming with monofilament trailing from left fluke. Attachment point(s) unknown. Resights confirm gear-free.	L10	L10	0	Gear-free	-
15-Aug-22	Hiatus	26.7 nm SE of Chatham, MA	Entangled	Unknown; First seen USA	-	Hook/ monofilament	Free-swimming with hook in trailing edge of right fluke blade. Monofilament trailing. No wraps. No resights.	L4	L4	0	-	-
04-Sep-22	Clamp	14.5 nm E of Hampton, NH	Entangled	USA	Fresh injury or known location	Hook/ monofilament	Free-swimming with hook in right fluke blade and trailing monofilament line. No wraps. Resights indicate hook gone and injuries healing.	L4	L4	0	-	-
15-Sep-22	-	0.8 nm E of North Truro, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with 2 buoys trailing 60 ft. aft of flukes. Attachment point(s) unknown. No resights.	L10	L10	0.75	-	Yes
17-Sep-22	-	4.0 nm E of Bridgeport, CT	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with line originating from forward on the left side, crossing over back at dorsal fin, and trailing aft. Attachment point(s) unknown. No resights.	L10	L10	0.75	-	Yes
25-Sep-22	Anole	6.3 nm NE of Allerton, MA	Entangled	USA	Gear identified	Pot/trap	Free-swimming with line through mouth leading to a loose peduncle wrap with 200 ft. of trailing line. Orientation—head up and tail down—indicates presence of weighted gear. Disentangled. Resights indicate healing.	L2	n/a	0	Release	

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
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>												
07-Oct-22	-	1.3 nm N of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Free-swimming with line through the mouth trailing to dorsal fin on left side and along right side ending at a buoy at the flukes. Evidence that entanglement previously involved a constricting body wrap. Disentanglement attempt unsuccessful. Expect to shed gear. No resights.	L2	L3	0	-	-
11-Oct-22	Rocker	9.3 nm N of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Monofilament	Free-swimming with monofilament trailing from right fluke. Attachment point(s) unknown. Resights indicate shed gear.	L10	L10	0	-	-
11-Oct-22	Not named	1 nm E of Seaside Heights, NJ	Vessel strike	USA	Fresh injury or known location	-	Fresh laceration to fluke blade, just left of midline. Injury actively bleeding. Resights show left fluke lobe missing, but injury healing and animal in good condition.	L5a	L5a	0	Healing	-
12-Oct-22	-	Belmar, NJ	Vessel strike	USA	Fresh injury or known location	-	Lunge feeding whale came in contact with port bow of stationary recreational fishing vessel. No human injuries. No resights.	L6c	L6c	0	-	-
22-Oct-22	Not named	0.5 nm S of Jones Beach, NY	Vessel strike	USA	Fresh injury or known location	-	Feeding whale surfaced under stationary recreational vessel, dislodging propeller. Animal documented with 2 bleeding, superficial lacerations along left flank, below the dorsal. No human injuries. No resights.	L5b, L6c	L5b, L6c	0	-	-
31-Oct-22	-	7.5 nm E of Appledore Island, ME	Entangled	USA	Fresh injury or known location	Unknown	Anchored with tight body and peduncle wrap with buoy alongside body. Partially disentangled. Final configuration unclear but at minimum free-swimming with tight body wrap and buoy alongside. 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	
<b>Western North Atlantic fin whale (<i>Balaenoptera physalus</i>)</b>								#events/sums		<b>6</b>	<b>3.45</b>	<b>0</b>	<b>2</b>
14-Aug-19	-	S of Bliss Island, NB	Vessel strike	Unknown; First seen Canada	-	-	Superficial lacerations at tip of dorsal fin. No resights.	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. Full configuration unknown. No resights.	L10	L10	0.75	-	Yes	
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	-	-	
08-Aug-21	CCS1212	0.2 nm SW of Race Point, Provincetown, MA	Vessel strike	USA	Fresh injury or known location	-	36 ft. vessel traveling at 26 kn. self-reported strike. Stalled engine putting it into reverse and wake pushed boat onto animal's back. Superficial laceration on left flank. No resights.	L5b, L6b	L5b, L6b	0.2	-	-	
29-Aug-21	-	25.8 nm S of Martha's Vineyard, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming and trailing high flier a body length aft of whale. Attachment point(s) unknown. No resights.	L10	L10	0.75	-	Yes	
01-Sep-21	-	4.3 nm N of Grand Manan, NB	Entangled	Unknown; First seen Canada	-	Navigational buoy	Free-swimming but heavily weighted, struggling to surface and breathe. Navigational buoy tight against left side of head. Fresh wounds on flippers, dorsal fin, and tail. Blood streaming from right side of mouth, near aft corner. Unsuccessful disentanglement attempt. No resights.	L2	L2	1	-	-	
<b>Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)</b>								#events/sums		<b>27</b>	<b>12</b>	<b>10</b>	<b>15</b>
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	-	

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
<b>Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)</b>												
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) 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) unknown.	L10	L10	0.75	-	Yes
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) unknown.	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
<b>Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)</b>												
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) unknown.	L10	L10	0.75	-	-
10-Sep-19	-	0.1 nm N of Mattinicus Rock, ME	Entangled	Unknown; First seen USA	-	Unknown	Unable to confirm if anchored or free-swimming. 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	-	Yes
05-Oct-20	-	4.8 nm E of Isle Au Haut, ME	Entangled	USA	Gear identified	Pot/trap	Anchored at flukes by multiple constricting wraps. Disentangled.	L2	n/a	0	Rescue	Yes
06-Jun-21	-	4.6 nm N of North Truro, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with large jumble of gear on its back, forward of dorsal. Attachment point(s) unknown.	L10	L10	0.75	-	Yes
11-Jul-21	-	Mary's Harbour, NL	Entangled	Canada	Gear identified	Gillnet	Fisher self-reported animal entangled in gear in unknown configuration. Partially disentangled—released carrying part of net and poly float from unknown attachment point(s) and in unknown configuration.	L10	L10	0.75	-	-
19-Jul-21	-	Cheticamp, NS	Entangled	Canada	Gear identified	Pot/trap	Anchored with line wrapped around head and pectoral. Partially disentangled—left with small amount of rope in mouth that expect to shed.	L2	L3	0	Rescue	-
10-Oct-21	-	1.7 nm W of Monhegan Island, ME	Entangled	USA	Gear identified	Pot/trap	Disentangled from anchoring gear.	L2	n/a	0	Rescue	Yes
22-May-22	-	8.2 nm NW of Race Point, Provincetown, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with line or netting trailing from head area. Attachment point(s) 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
<b>Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)</b>												
29-May-22	-	36.9 nm S of Martha's Vineyard, MA	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with tight, closed bridle of thin line through mouth.	L2	L2	1	-	Yes
29-Jun-22	-	3.5 nm E of Plymouth, MA	Entangled	USA	Gear identified	Pot/trap	Anchored with tight wrap of lower jaw. Disentangled.	L2	n/a	0	Rescue	Yes
08-Jul-22	-	1.3 nm E of Chatham, MA	Entangled	Unknown; First seen USA	-	Unknown	Unable to determine if anchored or free-swimming, but has a constricting rostrum wrap at minimum.	L2	L2	1	-	Yes
05-Aug-22	-	12.0 nm E of Hampton Beach, NH	Entangled	Unknown; First seen USA	-	Unknown	Free-swimming with line through mouth joining at a jumble just aft of left blowhole. One line trailing but full configuration and attachment point(s) unknown.	L10	L10	0.75	-	Yes
31-Oct-22	-	Brigantine, NJ	Vessel strike	USA	Fresh injury or known location	-	Live stranded animal refloated with the incoming tide. Made contact several times with stationary small boat (<25ft). Swam into deeper water with rising tide.	L6c	L6c	0	-	-
<b>Nova Scotian sei whale (<i>Balaenoptera borealis</i>)</b>												
<b>Unidentified Whale</b>												
20-Jul-18	-	Raritan Bay, NJ	Vessel strike	USA	Fresh injury or known location	-	20 ft. vessel traveling at >10 kn. drove over whale which lifted vessel in the air. No contact made with propeller. Whale resurfaced, no mention made of blood. Likely a humpback but unable to confirm species.	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. Attachment point(s) and full configuration unknown.	L10	L10	0.75	-	-
18-Jan-20	-	40 nm S of Nantucket, MA	Entangled	Unknown; First seen USA	-	Net	Free-swimming with netting and line trailing 1-2 body lengths. No photos. Attachment point(s) unknown.	L10	L10	0.75	-	-
11-Jul-21	-	off Block Island, RI	Vessel strike	USA	Fresh injury or known location	-	Thirty-eight ft. stationary vessel struck by lunge feeding whale. Vessel sustained damage to port quarter. Unable to confirm if finback or humpback whale—both species documented lunge feeding in the vicinity.	L6c	L6c	0	-	-

## APPENDIX B. CONFIRMED HUMAN-CAUSED MORTALITY RECORDS OF BALEEN WHALE STOCKS ALONG THE GULF OF MEXICO, U.S. EAST COAST, AND ATLANTIC CANADIAN PROVINCES, 2018-2022.

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF <sup>a</sup>
<b>Western North Atlantic right whale (<i>Eubalaena glacialis</i>)</b>								
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 <sup>b</sup> : 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	-	-	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 dimension.	-
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	Sighted alive in anchored or weighted gear with constricting rostrum wraps. Carcass found with no gear present but evidence of extensive constricting entanglement involving rostrum, gape, and both flippers. COD: probable acute entanglement.	-

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

b. Cause of death.

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
<b>Western North Atlantic right whale (<i>Eubalaena glacialis</i>)</b>								
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. Necropsy documented 2 separate vessel interactions: lacerations down left side of head chronic but severe and likely debilitating (see 24-Jun2020 event in Appendix A). 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. 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.	-
12-Feb-21	5130	St. Augustine, FL	Vessel strike	USA	Fresh mortality or known location	-	Dependent calf. Fifty-four ft. vessel traveling at 21 kn. self-reported strike. Calf stranded on 13-Feb-2021. Deep lacerations across back and head with associated fractured ribs and skull.	-
20-Aug-22	5120	44.8 nm SE of Shippagan, NB	Entangled	USA	Gear identified	Pot/trap	Free-swimming with 4+ constricting peduncle wraps and 1 fluke blade wrap. Resights through 12-Jun-2023 show deterioration in health—skin sloughing and increased cyamid load. Carcass landed on Martha's Vineyard, MA, 28-Jan-2024.	Yes
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>								
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.	-
27-May-18	-	Fire Island, NY	Vessel strike	Unknown; First seen USA	-	-	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
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>								
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.	-
14-Jul-18	Not named	5.8 nm W of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Free-swimming with deeply embedded wraps a fluke insertion with line trailing, buoy pinned near fluke. Partial disentanglement—remaining gear held in place by wounds. Compromised health—widespread cyanide, skin pitting. Carcass found on 26-Jul-2018 in New York. Embedded wraps still present and partially severing flukes. Carcass matched genetically to 14-Jul-2018 entanglement event. Previously reported as 2 separate events—1 SI in U.S. pot/trap and 1 mortality in unknown gear. Combined in 2018-2022 report.	Yes
29-Aug-18	Not named	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 is 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	Not named	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	Not named	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
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>								
24-Oct-19	Not named	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. Nineteen 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	Not named	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	Not named	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
18-Aug-21	Not named	Great Kills, NY	Entangled	Unknown; First seen USA	-	Unknown	No gear present. Alive and free-swimming with new injuries consistent with constricting entanglement across rostrum and back. Carcass found on 17-Sep-2021. Entanglement wounds also on right pectoral, game, and tongue. Edema and hemorrhaging associated with injuries. Histopathology results support entanglement as COD.	-

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
<b>Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)</b>								
17-Nov-21	-	Long Point, Provincetown, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present. Free-swimming and exhibiting abnormal behavior. Carcass found on 22-Nov-2021. Emaciated with evidence of constricting entanglement with associated hemorrhaging. Proximate COD: suspect chronic entanglement. Ultimate COD: unknown.	-
08-Jan-22	-	Little Compton, RI	Vessel strike	USA	Fresh mortality or known location	-	Bruising behind head and right skull fractures with associated hemorrhage. Histopathology results support blunt trauma as COD.	-
26-Jul-22	-	Wellfleet, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present. Emaciated and live stranded with evidence of constricting entanglement at fluke insertion. Necropsy report unavailable at time of review, but COD due to chronic entanglement most parsimonious based on evidence of hemorrhage at injury sites and level of health decline.	-
05-Dec-22	-	Avon, NC	Entangled	Unknown; First seen USA	-	Unknown	Carcass hogtied with line through mouth trailing along both sides to multiple embedded peduncle wraps. Limited necropsy states entanglement as probable COD.	Yes
<b>Western North Atlantic fin whale (<i>Balaenoptera physalus</i>)</b>								
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.	-
07-Aug-21	-	Newark Bay, NJ	Vessel strike	USA	Fresh mortality or known location	-	Partial necropsy—large area of hematoma on right side. Histopathology results support pre-mortem blunt trauma consistent with vessel strike.	-
10-May-22	-	5.2 nm E of Scaterie Island, Cape Breton, NS	Entangled	Unknown; First seen Canada	-	Unknown	Fresh carcass with line exiting right mouthline and extending to embedded peduncle wraps. Full configuration unclear and no necropsy conducted but necrotic tissue associated with embedded wraps makes COD from entanglement most parsimonious.	Yes

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
<b>Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)</b>								
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
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.	-

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
<b>Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)</b>								
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 gear present, but evidence of multiple constricting body and peduncle wraps. Fluke cleanly severed. Likely removed post-mortem. No necropsy, but 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 gear.	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
04-Jul-21	-	1.1 nm W of Point Judith, RI	Entangled	Unknown; First seen USA	-	Unknown	Constricting rostrum wraps with associated hemorrhaging. Propeller lacerations on ventral jaw acquired post-mortem. COD: acute death consistent with entanglement.	Yes
17-Jul-21	-	1.4 nm E of Manoment Point, Plymouth, MA	Vessel strike	USA	Fresh mortality or known location	-	Fractured rostrum and mandibles with associated tissue damage consistent with blunt trauma. Robust body condition and partially digested fish in forestomach indicates acute mortality.	-
01-Aug-21	-	2 nm off Sequin Island, ME	Entangled	USA	Gear identified	Pot/trap	Anchored in gear with constricting wraps on left pectoral and at fluke insertion. Robust condition. Limited necropsy but COD from entanglement is most parsimonious.	Yes

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
<b>Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)</b>								
07-Jun-22	-	40 nm E of Miscou Island, NB	Entangled	Canada	Fresh mortality or known location	Unknown	No gear present. Carcass with evidence of extensive constricting entanglement wounds across majority of ventral surface and involving gape. No necropsy but COD from entanglement most parsimonious.	-
21-Jun-22	-	Digby Gut, NS	Entangled	Unknown; First seen Canada	-	Unknown	Line through mouth passing over right flipper into a tangle below flippers, snug against the ventrum forming a tight bridle. No necropsy but samples indicate bruising associated with the entanglement wounds. COD from entanglement most parsimonious.	Yes
03-Jul-22	-	Owls Head, ME	Vessel strike	USA	Fresh mortality or known location	-	Fresh carcass with at least 11 deep lacerations running down the left side from rostrum to pectoral flipper. Some penetrated bone or body cavity. No necropsy but COD from sharp trauma consistent with vessel strike is most parsimonious.	-
06-Nov-22	-	Barnstable, MA	Entangled	Unknown; First seen USA	-	Unknown	No gear present. Live stranded with evidence of extensive constricting entanglement involving mouth, body, and flukes. Proximate COD: suspect entanglement. Ultimate COD: stranding-induced trauma.	-
<b>Nova Scotian sei whale (<i>Balaenoptera borealis</i>)</b>								
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
06-Jan-19	-	Masonboro Island, NC	Foreign debris ingestion	Unknown; First seen USA	-	-	Live stranded and euthanized. Plastic bag lodged in oral cavity, blocking the esophagus. Empty gastrointestinal tract. COD: ingestion of foreign object. Event added in 2017-2021 report.	-
<b>Northern Gulf of Mexico Rice's whale (<i>Balaenoptera ricei</i>)</b>								
27-Jan-19	-	Sandy Key, FL	Foreign debris ingestion	Unknown; First seen USA	-	-	Emaciated with sharp piece of plastic in stomach with associated lesions and hemorrhaging. COD: ingestion of foreign object. Event added in 2017-2021 report.	-

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