



Northeast Fisheries Science Center Reference Document 20-06

Serious Injury and Mortality Determinations for Baleen Whale Stocks along the Gulf of Mexico, United States East Coast, and Atlantic Canadian Provinces, 2013-2017

by Allison G Henry, Mendy Garron, David Morin,
Andrew Reid, Wayne Ledwell, and Timothy VN Cole

July 2020



Northeast Fisheries Science Center Reference Document 20-06

Serious Injury and Mortality Determinations for Baleen Whale Stocks along the Gulf of Mexico, United States East Coast, and Atlantic Canadian Provinces, 2013-2017

by AG Henry¹, M Garron², D Morin², A Reid³, W Ledwell⁴, TVN Cole¹

¹NOAA Fisheries, Northeast Fisheries Science Center, 166 Water Street, Woods Hole, MA 02543

²NOAA Fisheries, Greater Atlantic Regional Office, 55 Great Republic Drive, Gloucester, MA 01930

³Marine Animal Response Society, c/o Nova Scotia Museum, 1747 Summer St.
Halifax, Nova Scotia CAN B3H 3A6

⁴Whale Release and Strandings Group, 244 Tolt Rd., Portugal Cove-St. Philip's,
Newfoundland, CAN A1M 1R2

US DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Northeast Fisheries Science Center
Woods Hole, Massachusetts

July 2020

Northeast Fisheries Science Center Reference Documents

This series is a secondary scientific series designed to assure the long-term documentation and to enable the timely transmission of research results by Center and/or non-Center researchers, where such results bear upon the research mission of the Center (see the outside back cover for the mission statement). These documents receive internal scientific review, and most receive copy editing. The National Marine Fisheries Service does not endorse any proprietary material, process, or product mentioned in these documents.

If you do not have Internet access, you may obtain a paper copy of a document by contacting the senior Center author of the desired document. Refer to the title page of the document for the senior Center author's name and mailing address. If there is no Center author, or if there is corporate (*i.e.*, non-individualized) authorship, then contact the Center's Woods Hole Laboratory Library (166 Water St., Woods Hole, MA 02543-1026).

Information Quality Act Compliance: In accordance with section 515 of Public Law 106-554, the Northeast Fisheries Science Center completed both technical and policy reviews for this report. These predissemination reviews are on file at the NEFSC Editorial Office.

This document may be cited as:

Henry AG, Garron M, Morin D, Reid A, Ledwell W, TVN Cole TVN. 2020. Serious Injury and Mortality Determinations for Baleen Whale Stocks along the Gulf of Mexico, United States East Coast, and Atlantic Canadian Provinces, 2013-2017. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 20-06; 53 p. Available from: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/northeast-fisheries-science-center-publications>

TABLE OF CONTENTS

ABSTRACT.....	1
INTRODUCTION	1
METHODS	1
RESULTS AND DISCUSSION.....	3
Species Accounts.....	4
North Atlantic right whale	4
Humpback whale	4
Fin whale.....	5
Minke whale.....	5
Sei whale.....	6
Blue whale	6
Gulf of Mexico Bryde’s whale.....	6
Unidentified whales	6
ACKNOWLEDGEMENTS.....	7
REFERENCES CITED.....	8
Table 1. Baleen whale human-caused injury categories and criteria established by NMFS Instruction 02-038-01	10
Table 2. Baleen whale human-caused mortality criteria established by Northeast Fisheries Science Center (NEFSC).	11
Table 3. Numbers of confirmed baleen whale injury events reported along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017.....	12
Table 4. Summary of all unique baleen whale mortalities observed along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017.....	13
Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2012-2016.....	15
Appendix B. Confirmed human-caused mortality records of baleen whale stocks along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017	45

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 2013 through 2017. All available information for reported whale injury and mortality events was evaluated by using criteria to assign injury severity and cause of injury or death for each event. The minimum annual rate of human-caused serious injury and mortality during the period was 6.85 for North Atlantic right whales (*Eubalaena glacialis*), 12.15 for Gulf of Maine humpback whales (*Megaptera novaeangliae*), 2.35 for western North Atlantic fin whales (*Balaenoptera physalus*), 8.2 for Canadian East Coast minke whales (*B. acutorostrata*), 1.0 for Nova Scotian sei whales (*B. borealis*), and 0 for western North Atlantic blue whales (*B. musculus*) and northern Gulf of Mexico Bryde's whales (*B. edeni*). The number of serious injuries and mortalities not reported is unknown, and actual levels may be much higher.

INTRODUCTION

The Marine Mammal Protection Act (MMPA) requires the National Marine Fisheries Service (NMFS) to estimate annual levels of human-caused serious injury and mortality to marine mammal stocks (section 117) and to categorize commercial fisheries based on their frequency of incidental serious injury and mortality of marine mammals (section 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 nonserious injuries (NSI) of marine mammals¹. There are currently no national guidelines for determining cause of death, but Northeast Fisheries Science Center (NEFSC) staff have used a set of criteria to evaluate reports of human-caused mortality to baleen whales since 2005 (Cole et al. 2005; Henry et al. 2014). This report presents the results of applying the national SI criteria and the NEFSC mortality criteria to all reported baleen whale events from along the Gulf of Mexico, United States east coast, and Atlantic Canadian provinces from 2013 through 2017. 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 the northern Gulf of Mexico Bryde's whale (*B. edeni*).

METHODS

Opportunistic reports of baleen whale injuries and mortalities were provided by members of the US and Canadian regional stranding networks, whale survey and disentanglement teams, the US and Canadian Coast Guards, and the general public. With the exception of minke whales, the incidental takes of baleen whales recorded by fisheries observer programs are also included here as opportunistic reports because the numbers of takes witnessed by fisheries observers were not sufficient to calculate bycatch rate estimates. Minke whale bycatch rates were estimated from

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

fisheries observer program data and are reported separately on stock assessment reports. Reports from Newfoundland and Labrador involving confirmed transboundary stocks (i.e., stocks that enter US waters during part of the year) were also included. However, humpback reports from these regions were not included in tallies because the Newfoundland and Labrador humpback feeding stocks are distinct from the Gulf of Maine stock inhabiting US waters (Palsbøll et al. 2001).

Reports of significant entanglement injuries 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 a body part. Observations of small entanglement scars, however, were not included but are instead accounted for by population monitoring studies (e.g., 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 “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 were obtained from population monitoring studies, where available.

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

More detailed injury information or extended observation on 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 category or NSI if a whale is disentangled, sheds all entangling gear, or is resighted healed or healthy sometime after the injury.

If a whale was rescued from entangling gear and there was documentation that all gear was removed, the SI value was set to 0. If the entanglement configuration prior to disentanglement would have warranted an SI value greater than 0, the event was still identified for the List of Fisheries (LOF) assessment of US commercial fisheries’ incidental mortality and serious injury of marine mammals. The subsequent LOF classification of US commercial fisheries for regulation is beyond the scope of this report².

Injury or mortality events were assigned to either US or Canadian waters if circumstances indicated which side of the Hague Line the event likely took place. Such circumstances included identification of entangling gear by gear 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

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

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 US/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 reconciled. The determinations were also provided to the regional Scientific Review Group (SRG) for review prior to final reporting of determinations. Final determinations and the associated SI and mortality values were assigned to the date of the first detection of the injury or mortality.

RESULTS AND DISCUSSION

Table 3 summarizes the total number of reported injury events and the number of events assigned a SI value. Table 4 summarizes the total number of reported mortality events for the baleen whale stocks along the Gulf of Mexico, United States east coast, and Atlantic Canadian provinces from 2013 through 2017. The average annual human-interaction values by stock presented in Table 5 are a combination of confirmed human-caused SI, a prorating of poorly documented injury events based on observed ratios of mortality to survival by injury type, and confirmed human-caused mortalities. The values are presented by stock, country of origin, and type of human interaction.

Appendix A provides details for each injury event listed chronologically by stock with location, individual identification (if known), assessment of whether the injury occurred in US or Canadian waters, description of injury, and the assigned SI category and value. For events where the final SI value conflicts with the value guidance provided by the national SI procedural directive, the SI value change provides the rationale for the discrepancy. The header row for each stock in Appendix A includes the stock's total number of reported injury events over the 5-year period, the total of the resulting SI values for the stock, and the number of events whose SI values were changed from those prescribed by the national guidelines. Appendix B provides details by stock of each confirmed human interaction event that resulted in mortality. Both appendices indicate which records should be considered for the LOF, should the fishery be identified.

Most entanglement events could not be assigned to a fishery or country of origin because of the inability to identify the entangling gear or a lack of circumstantial evidence for country identification. Gear type (not necessarily fishery) was identified in 114 of 238 entanglement cases, 27 of which were monofilament line or hooks. Two animals were entangled in unidentified debris, 1 in a boat anchoring system, and 1 in a boat mooring system. Of the 122 entanglements for which the country of origin could be assigned with confidence, 75 were identified as from the United States and 47 from Canada. Included in these entanglement totals are 4 reported entrapments in Canadian weirs. Of the 66 vessel strikes, 52 either occurred or likely occurred in US waters, and 6 occurred in Canadian waters. For specific fishery information involved in baleen whale entanglements, see GARFO'S Atlantic Large Whale Take Reduction Plan Entanglement Reports³.

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

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

Species Accounts

North Atlantic right whale

The average annual human-caused serious injury and mortality value for right whales from 2013-2017 increased 23% from the value for the 2012-2016 period (6.85 from 5.56). There were 61 confirmed injury events and 28 mortalities observed from 2013-2017. Twenty-two of the injury events were determined to be SI. Entanglements accounted for 21 of the SIs and 8 of the mortalities, while vessel strikes accounted for 1 of the SIs and 6 of the mortalities. Of the remaining mortality events, 14 were from undetermined causes: 4 carcasses could not be examined, 6 were partially examined, and 4 were too decomposed. Thirty-five of the 61 injury events had their SI value changed from those prescribed by the national guidelines. Twenty-two of these changes were events assigned to the L2 or L10 injury categories because of evidence of constricting or extensive entanglement, but the whales were seen again gear free and healing from the injuries. In 5 events, the whale was disentangled from constricting gear. There was 1 case of a right whale being released from a herring weir in Canadian waters, which we categorized as L10 but gave an SI value of 0. Conversely, 6 animals showed evidence of significant health decline following an entanglement: 1 was partially disentangled from constricting gear (L2) and left carrying gear that is expected to shed (L3), 1 with evidence of constricting gear (L2) but lacking evidence to confirm if any gear remained (L10), 1 with evidence of constricting gear (L2) but carrying a single, nonwrapping line (L3), and 3 with no gear present but evidence of recent severe injuries. The SI value was set to 1 for all 6 of these events. One event was categorized as L5a (a deep gouge potentially affecting bones or arteries), but the whale was seen again in good condition, and the wound appeared to be healing, so the SI value was set to 0.

An Unusual Mortality Event (UME) was declared for right whales beginning in June 2017 because of documentation of elevated mortalities⁴. Seventeen confirmed carcasses were detected in 2017 (12 in Canada; 5 in the United States). Details on cause of death where determined is included in Appendix B. The right whale UME remains active at time of publication of this report, and details on additional events will be included in future reports.

Humpback whale

The average annual rate of humpback whale serious injury and mortality increased 24% from the 2012-2016 period (12.15 from 9.8). From 2013-2017, there were 113 confirmed injury events and 106 mortality events. Thirty-nine of the injury events were determined to be SI. Thirty-

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

six of the SI events and 10 of the mortalities were caused by entanglement. Three SI events and 19 mortality events were attributed to vessel strikes. Another 11 mortality events were from natural causes. The remaining 66 mortalities had undetermined cause of death: 37 carcasses were not examined, 12 had partial examinations, and 17 were too decomposed. One mortality was previously reported as caused by vessel strike but is now classified as natural cause. Another animal was involved in a vessel strike and an entanglement event. This animal was previously reported as not seriously injured since the lacerations appeared superficial (L5b) and there was indication it was gear free. Upon further review it was determined that the lacerations are of undetermined depth (L11), and the animal still carried an unknown entanglement configuration (L10). It is tallied as 2 separate injury events in Table 3, but as both criteria result in proration, the greater prorated value (L10) is utilized in calculating the entanglement serious injury rate in Table 5. Fifty-seven of the 113 injury events had their SI value changed as a result of post-injury sighting information and/or human intervention. Twenty-four of these were type L2 or L10 injuries whose SI values were adjusted to 0 when the whales were resighted healing and free of gear. Another 21 SI values were reduced because disentanglement teams improved the whale's prognosis by removing some or all entangling gear. There was 1 event where an animal was released from a weir. The SI values for 2 deep chop wound events (L5a), 1 laceration of unknown depth (L11), and 2 strikes by a small vessel traveling at greater than 10 knots (L6b) were also reduced to 0 because healing of the injuries was apparent. Conversely, 6 whales showed signs of health decline, and the SI value for each of these events was increased to 1. Two of these events were categorized as L10, and 4 were L3 (loose wrap or draped gear).

An Unusual Mortality Event was declared for humpback whales beginning in January 2016 because of documentation of elevated mortalities⁵. Twenty-six confirmed carcasses were detected in 2016 and 34 in 2017. Details on cause of death where determined is included in Appendix B. The humpback UME remains active at time of publication of this report, and details on additional events will be included in future reports.

Fin whale

The average annual fin whale SI and mortality decreased 19% from the previous period's value (2.35 from 2.9). There were 12 confirmed injury and 25 confirmed mortality events. Seven injury events were determined to be SI, and all were attributed to entanglement. Two mortalities were caused by entanglement and 4 by vessel strike. One of the mortality events was from natural causes, and the cause of the remaining 18 could not be determined. Fourteen carcasses were unexamined, 2 were incompletely examined, and 2 were too decomposed. Of the 12 injury events, the SI values of 3 were reduced to 0. One was an adult with healing propeller scars (L11). Another animal was previously reported as entangled in an unknown configuration (L10) but was subsequently seen gear-free and healthy. The remaining event was an animal that self-released from a weir entrapment.

Minke whale

The average annual minke whale SI and mortality value increased 4% (8.2 from 7.9) compared to 2012-2016. Minke whales had the highest number of confirmed mortalities: 130

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

events. Twenty-six deaths were confirmed entanglements, 5 caused by vessel strike, 20 from natural causes, and the remaining 79 were of undetermined cause. Sixty-four of these carcasses were not examined, 8 were partially examined, and 7 were too decomposed. One 2014 event was previously reported as a mortality caused by vessel strike, but upon further review it was changed to undetermined cause of death because we could not verify if the injuries sustained were pre- or post-mortem. Of the 24 reported injuries, all were from entanglements, and 12 were determined to be SI. The SI values of 9 events were changed to 0 because the whales were disentangled. The SI value was changed to 0 for 2 weir entrapments: one whale self-released, and the other was released by the fisher. One animal carrying an unconfirmed configuration of gear showed evidence of health decline, so its SI value was increased to 1. One minke whale was anchored in gear and subsequently died as a result of a vessel strike. It was previously reported as an entanglement SI but counted as a vessel strike. Upon further review it is now considered an entanglement mortality event (Tables 4, 5; Appendix B).

An Unusual Mortality Event was declared for minke whales beginning in January 2017 because of documentation of elevated mortalities⁶. Twenty-seven confirmed carcasses were detected in 2017. Details on cause of death where determined is included in Appendix B. The minke UME remains active at time of publication of this report, and details on additional events will be included in future reports.

Sei whale

The average annual SI and mortality value for sei whales increased 25% from the previous period (1.0 from 0.8). There was 1 serious injury and 1 non-serious injury from entanglement. Of the 10 mortality events, 4 were the result of vessel strikes, 1 from natural causes, and for 5 the cause of death could not be determined. One of these was not examined, and the remaining 4 were only partially examined.

Blue whale

There were no changes in the SI and mortality values for blue whales between the 2012-2016 and 2013-2017 periods. The SI and mortality value remains 0. Ten mortality events were from natural causes, 3 events were mortalities of undetermined origin because they were not examined, and 1 carcass was too decomposed.

Gulf of Mexico Bryde's whale

The Bryde's whale SI and mortality value remains 0. There were no reported injuries or mortalities during the time period.

Unidentified whales

In 8 injury events (4%) and 36 mortality events (10%) we could not verify the species of whale involved. Though we could not identify species, we could confirm that there were 4 entanglement SI and 3 vessel strike SI.

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

ACKNOWLEDGEMENTS

The Serious Injury determination process was refined through many discussions with Dee Allen, Jim Carretta, Karin Forney, Lance Garrison, Kristy Hall, and Stacey Horstman. We are grateful to the US and Canadian disentanglement and stranding networks. The United States and Canadian Coast Guards were instrumental in conveying sightings reported by mariners. We also thank the staff of the Center for Coastal Studies (CCS), New England Aquarium (NEA), Marine Animal Response Society, Sea to Shore Alliance, the states of Florida and Georgia, Northeast Fisheries Observer Program, Canadian Wildlife Health Cooperative, Grand Manan Whale and Seabird Research Station, Whale Release and Strandings Group, and many others for providing the sightings that have allowed this work to be conducted. Kathryn Roy, William Greer, Stephanie Petrus, and Johanna Peterson assisted in verifying records. NEA and CCS provided sighting histories and demographic information. Jooke Robbins (CCS), Laura Ganley (CCS), Corey Accardo (CCS), Brigid McKenna (CCS), and Katie Jackson (Florida Fish and Wildlife Conservation Commission) were particularly helpful with sighting, photo, and health histories. Members of the Atlantic Scientific Review Group have provided numerous helpful comments on the protocols described here.

REFERENCES CITED

- Andersen MS, Forney KA, Cole TVN, Eagle T, Angliss RP, Long K, Barre L, Van Atta L, Borggaard D, Rowles T, Norberg B, Whaley J, Engleby L. 2008. Differentiating serious and non-serious injury of marine mammals: Report of the serious injury technical workshop. NOAA Technical Memorandum NMFS-OPR-39.
- Angliss RP, DeMaster DP. 1998. Differentiating serious and non-serious injury of marine mammals taken incidental to commercial fishing operations: report of the Serious Injury Workshop, 1-2 April 1997, Silver Spring, Maryland, US Dept. of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service. NOAA Tech. Memo. NMFS-OPR-13, 48p.
- Cole TVN, Hartley DL, Merrick RL. 2005. Mortality and serious injury determinations for large whale stocks along the eastern seaboard of the United States, 1999-2003. US Dep Commer, Northeast Fish Sci Cent Ref Doc. 05-08; 18 p.
- Henry AG, Cole TVN, Hall L, Ledwell W, Morin D, Reid A. 2014. Mortality determinations for baleen whale stocks along the Gulf of Mexico, United States east coast, and Atlantic Canadian provinces, 2008 - 2012. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 14-10; 17 p.
- Knowlton AR, Hamilton PK, Marx MK, Pettis HM, Kraus SD. 2012. Monitoring North Atlantic right whale *Eubalaena glacialis* entanglement rates: a 30 yr retrospective. Mar Ecol Prog Ser. 466:293-302.
- Kraus SD. 1990. Rates and potential causes of mortality in North Atlantic right whales (*Eubalaena glacialis*). Mar Mamm Sci. 6(4):278-291.
- Kraus SD, Brown MW, Caswell H, Clark CW, Fujiwara M, Hamilton PK, Kenney RD, Knowlton AR, Landry S, Mayo CA, McLellan WA, Moore MJ, Nowacek DP, Pabst DA, Read AJ, Rolland RM. 2005. North Atlantic right whales in crisis. Science 309:561–562.
- Moore MJ, Knowlton AR, Kraus SD, McLellan WA, Bonde RK. 2004. Morphometry, gross morphology and available histopathology in North Atlantic right whale (*Eubalaena glacialis*) mortalities (1970–2002). J Cetacean Res Manage. 6(3):199-214.
- Palsbøll PJ, Allen J, Anderson TH, Bérubé M, Clapham PJ, Feddersen TP, Friday N, Hammond P, Jørgensen H, Katona SK, Larsen AH, Larsen F, Lien J, Mattila DK, Nygaard FB, Robbins J, Sponer R, Sears R, Sigurjónsson J, Smith TD, Stevick PT, Vikingsson G, Øien N. 2001. Stock structure and composition of the North Atlantic humpback whale, *Megaptera novaeangliae*. Cambridge (UK): International Whaling Commission. Presented to International Whaling Commission Scientific Committee. SC/53/NAH11.
- Robbins J. 2010. Scar-based inference into Gulf of Maine Entanglement: 2008. Report to the Northeast Fisheries Science Center under contract EA133F09CN0253. 18 p.

Williams R, Gero S, Bejder L, Calambokidis J, Kraus SD, Lusseau D, Read AJ, Robbins J. 2011. Underestimating the damage: interpreting cetacean carcass recoveries in the context of the Deepwater Horizon/BP incident. *Conserv Lett.* 4:228–233.

Table 1. Baleen whale human-caused injury categories and criteria established by NMFS Instruction 02-038-01.

Instructions: Each large cetacean injury event is recorded to the appropriate injury/information category by using all available information and scientific judgment, as described in the Procedural Directive. Criteria L10 - L12 accommodate events that lack details necessary for assignment to a more specific category. For a single injury event to which several categories apply, the injury determination with the highest level of severity is assigned. More detailed information or extended observation on an individual case/animal may justify a determination differing from the guidance of this table. An animal that is fully disentangled would generally be considered not seriously injured, unless there is additional evidence of a serious injury. Any injury leading to apparent significant health decline (e.g., skin discoloration, lesions near the nares, fat loss, increased cyamid loads) is a serious injury.

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

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

Table 2. Baleen whale human-caused mortality criteria established by Northeast Fisheries Science Center (NEFSC). Events were categorized as human-caused mortalities if 1 or more of the following indications were confirmed to be present on a whale carcass.

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

Table 3. Numbers of confirmed baleen whale injury events reported along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Parentheses contain the numbers for each year during the period.

Species	Western North Atlantic right whale (<i>Eubalaena glacialis</i>)	Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)	Western North Atlantic fin whale (<i>Balaenoptera physalus</i>)	Canadian East Coast minke whale (<i>B. acutorostrata</i>)	Nova Scotian sei whale (<i>B. borealis</i>)	Western North Atlantic blue whale (<i>B. musculus</i>)	Northern Gulf of Mexico Bryde's whale (<i>B. edeni</i>)	Unidentified whale spp.	Totals
Total confirmed injury events	61 (8, 16, 13, 13, 11)	113 (10, 14, 28, 37, 24)	12 (1, 2, 2, 6, 1)	24 (4, 5, 7, 3, 1)	2 (0, 0, 0, 1, 1)	0	0	8 (1, 0, 3, 3, 1)	220
Confirmed entanglement non-serious injuries	33 (4, 9, 6, 5, 9)	60 (5, 2, 16, 22, 15)	4 (0, 0, 0, 3, 1)	12 (1, 3, 4, 1, 3)	1 (0, 0, 0, 1, 0)	0	0	0	110
Confirmed entanglement serious injuries ^b	21 (1, 6, 4, 8, 2)	36^a (2, 7, 9, 10, 8)	7 (1, 2, 1, 3, 0)	12 (3, 2, 3, 2, 2)	1 (0, 0, 0, 0, 1)	0	0	4 (0, 0, 2, 1, 1)	81
Confirmed vessel strike non-serious injuries	6 (3, 0, 3, 0, 0)	13 (3, 4, 3, 3, 0)	1 (0, 0, 1, 0, 0)	0	0	0	0	1 (0, 0, 0, 1, 0)	21
Confirmed vessel strike serious injuries ^b	1 (0, 1, 0, 0, 0)	4^a (0, 1, 0, 2, 1)	0	0	0	0	0	3 (1, 0, 1, 1, 0)	8

^a Includes 1 animal with both entanglement and vessel strike injuries. Tallied separately here to document total number of events. Counted in Table 5 as a serious injury from entanglement.

^b Serious and prorated injuries are tallied as whole integers.

Table 4. Summary of all unique baleen whale mortalities observed along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Parentheses contain the numbers for each year during the period.

Species	Western North Atlantic right whale (<i>Eubalaena glacialis</i>)	Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)	Western North Atlantic fin whale (<i>Balaenoptera physalus</i>)	Canadian East Coast minke whale (<i>B. acutorostrata</i>)	Nova Scotian sei whale (<i>B. borealis</i>)	Western North Atlantic blue whale (<i>B. musculus</i>)	Northern Gulf of Mexico Bryde's whale (<i>B. edeni</i>)	Unidentified whale spp.	Totals
Total confirmed mortalities	28 (1, 3, 3, 4, 17)	106 (19, 12, 12, 28, 35)	25 (4, 9, 2, 1, 9)	130 (17, 17, 31, 27, 38)	10 (0, 4, 2, 2, 2)	14 (1, 9, 2, 0, 2)	0	36 (6, 3, 10, 8, 9)	349
Confirmed entanglement mortalities	8 (0, 2, 0, 2, 4)	10 (2, 2, 1, 3, 2)	2 (0, 1, 0, 0, 1)	26^b (1, 3, 7, 3, 12)	0	0	0	0	46
Confirmed vessel strike mortalities	6 (0, 0, 0, 1, 5)	19 (2, 0, 4, 5, 8)	4 (1, 2, 0, 0, 1)	5^b (0, 2, 1, 0, 2)	4 (0, 3, 0, 1, 0)	0	0	0	38
Confirmed mortalities, NOT vessel strike or entanglement	0	11 (2, 1, 0, 4, 4)	1 (0, 0, 0, 0, 1)	20 (1, 4, 3, 1, 11)	1 (0, 0, 1, 0, 0)	10 (0, 9, 0, 0, 1)	0	0	43
Confirmed mortalities, IITD ^a	14 (1, 1, 3, 1, 8)	66 (13, 9, 7, 16, 21)	18 (3, 6, 2, 1, 6)	79 (15, 8, 20, 23, 13)	5 (0, 1, 1, 1, 2)	4 (1, 0, 2, 0, 1)	0	36 (6, 3, 10, 8, 9)	222

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

^b Includes 1 animal with proximate cause of death from entanglement and ultimate cause of death from vessel strike. Counted in Table 5 as a mortality from vessel strike.

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, US East Coast, and Atlantic Canadian provinces, 2013-2017

Event Location	Event Type	Western North Atlantic right whale (<i>Eubalaena glacialis</i>)	Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)	Western North Atlantic fin whale (<i>Balaenoptera physalus</i>)	Canadian East Coast minke whale (<i>B. acutorostrata</i>)	Nova Scotian sei whale (<i>B. borealis</i>)	Western North Atlantic blue whale (<i>B. musculus</i>)	Northern Gulf of Mexico Bryde's whale (<i>B. edeni</i>)	Unidentified whale spp.
US waters	Entanglement	0.2	2.05	0	2.9	0	0	0	0
	Vessel strike	0.5	4	0.8	0.8	0.8	0	0	0.08
Canadian waters	Entanglement	1.2	0.75	0.6	2.5	0	0	0	0
	Vessel strike	0.8	0	0	0.2	0	0	0	0.2
Unassigned waters	Entanglement	4.15	4.95	0.95	1.8	0.2	0	0	0.6
	Vessel strike	0	0.4	0	0	0	0	0	0
Total Annual Human-caused Injury Rate		6.85	12.15	2.35	8.2	1.0	0	0	0.88

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2012-2016. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Western North Atlantic right whale (<i>Eubalaena glacialis</i>)							# events/sums:		61	20.27	35	43
29-Jan-13	2013 Calf of 1612	off Mayport, FL	Vessel strike	USA	Fresh injury or known location	-	New, superficial lacerations across back. Resights indicate healing.	L5b	L5b	0	-	-
07-Mar-13	3692	off South Carolina	Vessel strike	USA	Fresh injury or known location	-	Lactating female with new, moderate lacerations to right fluke lobe. Resights show distal portion of fluke missing, but healing.	L5b	L5b	0	-	-
08-Apr-13	3705/ Check Mark	Cape Cod Bay, MA	Vessel strike	Unknown First seen USA	-	-	Missing trailing edge of right fluke blade, healing, but still raw in areas. Resights indicate injuries healed.	L5b	L5b	0	-	-
27-Apr-13	2160	Massachusetts Bay, MA	Entangled	Unknown First seen USA	-	Unknown	No gear present but deep, raw, and healing wrapping entanglement injuries to peduncle and flukes. No resights.	L2	L2	0	Healing	Yes
12-Jul-13	3123	55.8 nm E of Virginia Beach, VA	Entangled	Unknown First seen USA	-	Unknown	Line through mouth, twisting together beneath animal and leading to heavy gear (not visible). No wraps on right pectoral; left side not seen/described. Line cutting into right mouthline. One cut made to line trailing from right mouth. Resighted on 17Jul2013 with significant abrasions to leading fluke edges and peduncle, but no indication of severe health decline. Unable to confirm animal is gear free. No resights post July 2013.	L2	L10	0.75	-	Yes
20-Sep-13	1920	Roseway Basin, NS	Entangled	Unknown First seen Canada	-	Unknown	No gear present but new, raw, and healing entanglement injuries on peduncle and fluke insertion and new, healed rostrum wrap scar. Resights indicate injuries healing.	L2	L2	0	Healing	Yes
20-Sep-13	3946	38.1 nm SSE of Clark's Harbour, NS	Entangled	Unknown First seen Canada	-	Unknown	Line through mouth. One line trails out of right mouth just aft of flukes ending at a tangle of frayed line. Two lines trail out of left side past midbody, 1 ending at bullet buoy and the other ending at a small float. Attempts to attach telemetry failed. Resighted gear free and healthy.	L3	L3	0	-	-

a. Consider for List of Fisheries Inclusion

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Western North Atlantic right whale (<i>Eubalaena glacialis</i>)												
02-Dec-13	3503/ Caterpillar	25 nm E of Fernandina Beach, FL	Entangled	Unknown First seen USA	-	Unknown	No gear present but new, raw, and healing peduncle injuries and new, healed rostrum wrap and left lip scar. Resights indicate injuries healing.	L2	L2	0	Healing	Yes
15-Jan-14	4394	12 mi E of Ossabaw Island, GA	Entangled	Unknown First seen USA	-	Unknown	No gear present but new entanglement injuries indicating prior constricting gear on both pectorals and at fluke insertion. Injury to left ventral fluke. Evidence of health decline. No resights post February 2014.	L2	L2	1	-	Yes
16-Feb-14	4057/ FDR	38.3 nm ESE of Amelia City, FL	Entangled	Canada	Gear identified	Pot/trap	Line woven into baleen in left mouth and trailing. No wraps. Evident that entanglement constricted many body parts at earlier point. Trailing line shortened, shed remaining gear. Resights show right pectoral discolored, but injuries healing, and animal appears robust. Gear previously reported as unknown.	L2	L3	0	-	-
01-Mar-14	2479/ Scoliosis	Cape Cod Bay, MA	Entangled	Unknown First seen USA	-	Unknown	No gear present but new, healing, entanglement injuries on peduncle, right fluke insertion, and head indicating prior constricting entanglement. Resights indicate injuries healing.	L2	L2	0	Healing	Yes
05-Mar-14	2810	Cape Cod Bay, MA	Entangled	Unknown First seen USA	-	Unknown	No gear present but new, healing, entanglement injuries. Evidence of constricting body wrap just aft of post-blowhole callosities and extensive damage to peduncle and leading edges of flukes. Resights indicate injuries healing.	L2	L2	0	Healing	Yes
19-Mar-14	3360/ Horton	Cape Cod Bay, MA	Entangled	Unknown First seen USA	-	Unknown	No gear present but new, significant, healing, entanglement injuries to peduncle and leading edges of flukes. Resights indicate injuries healing.	L10	L10	0	Healing	Yes
23-Mar-14	1203/ Senator	Cape Cod Bay, MA	Entangled	Unknown First seen USA	-	Unknown	No gear present but new, healing, entanglement injuries. Evidence of a constricting rostrum wrap and extensive damage to peduncle and leading edges of flukes. Resights indicate injuries healing.	L2	L2	0	Healing	Yes

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Western North Atlantic right whale (<i>Eubalaena glacialis</i>)												
25-Mar-14	1280/ Luna	Cape Cod Bay, MA	Entangled	Unknown First seen USA	-	Unknown	No gear present but new, healing, entanglement injuries. Damage to peduncle and fluke insertion. Evidence of constricting rostrum wrap. Many baleen plates missing from both sides of mouth. Resights indicate injuries healing.	L2	L2	0	Healing	Yes
01-Apr-14	1142/ Kleenex	80.5 nm SE of Atlantic City, NJ	Entangled	Unknown First seen USA	-	Unknown	Entanglement discovered during photo processing just after the sighting. Constricting rostrum wrap with line trailing to at least midbody. Resighted in 2018, 2 lines exiting right mouth, crossing over head and entering left mouthline, no gear trailing. Health decline evident.	L2	L2	1	-	Yes
02-Apr-14	3390	Cape Cod Bay, MA	Entangled	Unknown First seen USA	-	Unknown	No gear present but new, healing, entanglement injuries. Evidence of a rostrum wrap, body wrap just aft of blowholes, and damage to right pectoral, peduncle, and leading fluke edges. Previously reported as Serious Injury. Subsequent sightings indicate fluctuation in health.	L2	L2	0	Healing	Yes
09-Apr-14	-	Cape Cod Bay, MA	Vessel strike	USA	Fresh injury or known location	-	Animal surfaced underneath a research vessel while it was underway (39 ft at 9 kts). Small amount of blood and some lacerations of unknown depth on lower left flank.	L6c, L11	L6c, L11	0.52	-	-
12-Apr-14	3293/ Porcia	Cape Cod Bay, MA	Entangled	Unknown First seen USA	-	Unknown	No gear present but new, healing, entanglement injuries. Evidence of a constricting rostrum wrap and damage to peduncle and fluke insertion. Resights indicate healing.	L2	L2	0	Healing	Yes
29-Jun-14	1131/ Snowball	180 nm E of Provincetown, MA	Entangled	Unknown First seen Canada	-	Unknown	At least 1, possibly 2, embedded rostrum wraps. Remaining configuration unclear but extensive. Animal in extremely poor condition - emaciated, heavy cyamid coverage, overall pale skin. No resights.	L2	L2	1	-	Yes

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Western North Atlantic right whale (<i>Eubalaena glacialis</i>)												
29-Jun-14	3333	180 nm E of Provincetown, MA	Entangled	Unknown First seen Canada	-	Unknown	No gear present but new, healing, entanglement injuries. Extensive damage to peduncle, leading, and trailing fluke edges. New head scar and right lip injury. Resights indicate injuries healing.	L2	L2	0	Healing	Yes
04-Sep-14	4001	7.3 nm SE of Grand Manan, NB	Entangled	Unknown First seen Canada	-	Unknown	Free-swimming with constricting rostrum wrap. Remaining configuration unknown. No resights post October 2014.	L2	L2	1	-	Yes
17-Sep-14	3279	9 nm SE of Grand Manan, NB	Entangled	Unknown First seen Canada	-	Unknown	Free-swimming with heavy, green line over head cutting into nares. Remaining configuration unknown. In poor overall condition - heavy cyamids on head and blowholes. Left blowhole appears compromised. No resights.	L2	L2	1	-	Yes
18-Dec-14	3670/ Cherokee	11 nm E of Sapelo Sound, GA	Entangled	Unknown First seen USA	-	Unknown	No gear present but new, healing, entanglement injuries. Portion of right lip torn away leaving an opening in mouth. Severe injuries to peduncle and leading and trailing fluke edges. Wrapping injuries on head and body. Possible damage to right pectoral. Resights indicate health decline.	L2	L2	1	-	Yes
06-Apr-15	CT04CCB14	Cape Cod Bay, MA	Entangled	Unknown First seen USA	-	Unknown	Encircling laceration at fluke insertion with potential to affect major artery. Source of injury likely constricting entanglement. No gear present. Evidence of health decline. No resights.	L2, L5a	L2, L5a	1	-	Yes
06-May-15	3999/ Braid	7.0 nm S of Wood End, Provincetown, MA	Vessel strike	USA	Fresh injury or known location	-	Fresh lacerations bisecting blowholes. Likely is the same large whale reported struck by a vessel on 03May2015, but cannot confirm. Resights indicate deformed, but healing and functioning blowholes.	L5a	L5a	0	Healing	-
11-May-15	4545	Cape Cod Bay, MA	Vessel strike	USA	Fresh injury or known location	-	Fresh, shallow wound on back from either a propeller or keel. Resights indicate healing.	L5b	L5b	0	-	-

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Western North Atlantic right whale (<i>Eubalaena glacialis</i>)												
13-Jun-15	-	8.8 nm NW of Westport, NS	Entangled	Unknown First seen Canada	-	Unknown	Line through mouth, trailing 300-400m ending in 2 balloon-type buoys. Full entanglement configuration unknown. No resights.	L10	L10	0.75	-	Yes
05-Jul-15	4140	Middle Head, Ingonish, NS	Entrapped	Canada	Gear identified	Weir	Entrapped in weir. Released the following day. No injuries or contact with gear observed. Resights indicate healthy.	L10	n/a	0	Released	-
10-Jul-15	4530	Gulf of St Lawrence, QC	Entangled	Unknown First seen Canada	-	Unknown	No gear present, but new, wrapping entanglement injuries on head, body, peduncle, and flukes. Resights indicate injuries healing.	L2	L2	0	Healing	Yes
18-Jul-15	3160/ White Cloud	23 nm NE of Glace Bay, NS	Entangled	Canada	Gear identified	Pot/trap	Constricting wraps around peduncle leading to weighted gear. Disentangled. No resights.	L2	n/a	0	Rescue	Yes
07-Aug-15	3229	35.9 nm SE of Percé, QC	Entangled	Unknown First seen Canada	-	Unknown	No gear present, but new entanglement injuries on peduncle, fluke insertion, and both leading fluke edges. Resights in 2016 indicate acquisition of additional entanglement injuries, but all injuries appear to be healing.	L10	L10	0	Healing	Yes
02-Sep-15	BK01MB15	Plymouth Bay, MA	Vessel strike	USA	Fresh injury or known location	-	Abandoned calf of the year with superficial lacerations from a skeg and propeller along right flank and back. No resights post 05Sep2015.	L5b	L5b	0	-	-
13-Sep-15	1306/ Velcro	33.4 nm SE of Cape Sable Island, NS	Entangled	Unknown First seen Canada	-	Unknown	Green line fouled in baleen near tip of right rostrum and trailing 10 ft. Resights indicate still carrying gear and compromised health, but unable to confirm directly related to entanglement.	L3	L3	0	-	-
13-Sep-15	1327/ Scoop	Roseway Basin, NS	Entangled	Unknown First seen Canada	-	Unknown	No gear present, but new entanglement injuries on rostrum, peduncle, and fluke blade. Resights indicate possible health decline, but unable to confirm directly related to entanglement injuries.	L10	L10	0	Healing	Yes

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Western North Atlantic right whale (<i>Eubalaena glacialis</i>)												
28-Sep-15	-	22.2 nm E of Cape Elizabeth, ME	Entangled	Unknown First seen USA	-	Unknown	Unknown amount of line trailing from flukes. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes
29-Nov-15	3140/ Lou	6.4 nm E of Truro, MA	Entangled	Unknown First seen USA	-	Unknown	New, significant entanglement injuries indicating constricting wraps of head, flipper, and body. No gear visible, but unable to confirm if deeply embedded or no gear is present. In poor condition with gray skin and heavy cyamid coverage. No resights.	L2	L10	1	Health decline	Yes
29-Jan-16	1968/ Quatro	off Jupiter Inlet, FL	Entangled	Unknown First seen USA	-	Unknown	No gear present, but evidence of recent entanglement of unknown configuration. Significant health decline - emaciated, heavy cyamid coverage, damaged baleen. Resighted in April 2017, still in poor condition.	L10	L10	1	Health decline	Yes
01-Mar-16	4140/ Casper	Cape Cod Bay, MA	Entangled	Unknown First seen USA	-	Unknown	No gear present, but evidence of recent, extensive, constricting entanglement. Resights indicate injuries healing.	L2	L2	0	Healing	Yes
08-Mar-16	3229	Cape Cod Bay, MA	Entangled	Unknown First seen USA	-	Unknown	No gear present, but evidence of recent, extensive, constricting entanglement. Resights indicate injuries healing.	L2	L2	0	Healing	Yes
19-May-16	3791/ Truffula	20.2 nm E of Chatham, MA	Entangled	Unknown First seen USA	-	Unknown	New entanglement injuries on peduncle. Left pectoral appears compromised. No gear seen. Significant health decline - emaciated with heavy cyamid coverage. No resights post August 2016.	L2	L2	1	-	Yes
26-Jul-16	1427	Gulf of St Lawrence, QC	Entangled	Unknown First seen Canada	-	Unknown	No gear present, but new entanglement injuries on peduncle and fluke insertions. No gear present. Resights show subsequent health decline - gray skin, rake marks, cyamids.	L10	L10	1	Health decline	Yes
01-Aug-16	2608	Bay of Fundy, NS	Entangled	Unknown First seen Canada	-	Unknown	New, severe entanglement injuries on peduncle and flukes. No gear seen. Resighted carrying gear (see 28Aug2016 event).	L10	L10	0	Healing	Yes

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01 Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Western North Atlantic right whale (<i>Eubalaena glacialis</i>)												
01-Aug-16	3323	Bay of Fundy, NS	Entangled	Unknown First seen Canada	-	Unknown	No gear present, but new, severe entanglement injuries on peduncle, fluke insertions, and leading edges of flukes. No gear present. Significant health decline - emaciated, cyamids patches, peeling skin. No resights.	L10	L10	1	Health decline	Yes
13-Aug-16	4057/ FDR	Bay of Fundy, NS	Entangled	Canada	Gear identified	Pot/trap	Free-swimming with extensive entanglement. Two heavy lines through mouth, multiple loose body wraps, multiple constricting wraps on both pectorals with lines across the chest, jumble of gear by left shoulder. Partially disentangled - left with line through mouth and loose wraps at right flipper that are expected to shed. Significant health decline - extensive cyamid coverage. Current entanglement appears to have exacerbated injuries from previous entanglement (see 16Feb2014 event). No resights.	L2	L3	1	Health decline	-
16-Aug-16	1152/ Necklace	2.0 nm S of Baccaro, NS	Entangled	Unknown First seen Canada	-	Unknown	Free-swimming with line and buoy trailing from unknown attachment point(s). No resights.	L10	L10	0.75	-	Yes
28-Aug-16	2608	5.2 nm N of Brier Island, NS	Entangled	Unknown First seen Canada	-	Unknown	Free-swimming with constricting wraps around rostrum and right pectoral. Line trails 50 ft aft of flukes. Significant health decline - heavy cyamid coverage and indication of fluke deformity. No resights.	L2	L2	1	-	Yes
22-Sep-16	3823	6.5 nm N of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Free-swimming with rostrum wrap leading to heavy gear below. Trailing buoys 150 ft aft of flukes. Partially disentangled - trailing line shortened, telemetry gear attached, cut made to rostrum wrap. Resights confirm shed remaining gear and injuries healing.	L2	L10	0	Rescued, Healing	Yes
04-Dec-16	3405/ Fuse	3.5 nm E of Sandy Hook, NJ	Entangled	Unknown First seen USA	-	Net	Lactating female. Free-swimming with netting crossing over blowholes and one line over back. Full configuration unknown. Calf not present, possibly already weaned. No resights. Previously reported as gear unknown.	L10	L10	0.75	-	Yes

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Western North Atlantic right whale (<i>Eubalaena glacialis</i>)												
20-Dec-16	2760	Massachusetts Bay, MA	Entangled	Unknown First seen USA	-	Unknown	No gear present, but new entanglement injuries on head, lip, peduncle, and fluke insertion consistent with constricting gear. Resights indicate healing.	L2	L2	0	Healing	Yes
05-Jan-17	3530/ Ruffian	17.6 nm E of Cumberland Island, GA	Entangled	Canada	Gear identified	Pot/trap	Free-swimming with lines exiting both sides of mouth, forming an open bridle, with remaining line trailing 450 ft to a single trap. Disentangled. Resights indicate healing.	L2	L2	0	Rescue	-
23-Apr-17	4146	2.9 nm W of Truro, MA	Entangled	USA	Fresh injury or known location	-	Free-swimming with line exiting from left mouthline and trailing 50 ft aft of flukes. No wraps. Resights confirmed gear free and healing.	L3	L3	0	-	-
27-Jun-17	1820/ Cello	46.0 nm SE of Sainte-Marie Saint- Raphaël, NB	Entangled	Unknown First seen Canada	-	Unknown	No gear present, but new injuries on head and peduncle consistent with constricting gear. Resights indicate healing.	L2	L2	0	Healing	Yes
04-Jul-17	3139/ Diablo	1.5 nm S of Nantucket, MA	Entangled	Unknown First seen USA	-	Unknown	No gear present, but new extensive injuries on head and body consistent with constricting gear. Severe wounds on leading edge and insertion of flukes. Significant health decline. No resights post 10July2017.	L2	L2	1	-	Yes
05-Jul-17	4510	37.9 nm SE of Sainte-Marie Saint- Raphaël, NB	Entangled	Canada	Gear identified	Pot/trap	Anchored with line exiting out right side of mouth. Disentangled. Resights indicate healing.	L2	L2	0	Rescue	-
08-Jul-17	1317/ Ergo	22.3 nm E of Sainte-Marie Saint- Raphaël, NB	Entangled	Canada	Gear identified	Pot/trap	Line through mouth and over rostrum, but configuration shifted throughout observation. Unclear if anchored or free-swimming. Confirmed gear free and resights indicate healing.	L3	L3	0	-	-
09-Jul-17	4123	22.5nm E of Sainte- Marie Saint- Raphaël, NB	Entangled	Canada	Gear identified	Pot/trap	Multiple body, head, and flipper wraps descending to weighted gear. Disentangled. Resights indicate healing.	L2	L2	0	Rescue	-

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a	
Western North Atlantic right whale (<i>Eubalaena glacialis</i>)													
19-Jul-17	4094/ Mayport	26.5nm SE of Sainte-Marie Saint-Raphaël, NB	Entangled	Canada	Gear identified	Pot/trap	Free-swimming with line exiting right side of mouth, crossing over back, and leading to buoys aft of flukes. Extensive severe injuries consistent with constricting gear. In poor condition. No resights.	L2	L3	1	Health decline	Yes	
24-Jul-17	G048	14.9 nm E of Sainte-Marie Saint-Raphaël, NB	Entangled	Unknown First seen Canada	-	Unknown	No gear present, but new injuries from right mouthline, over back, and on peduncle consistent with constricting entanglement. Resighted on 26Jul2017. Health condition fair.	L2	L2	0	Healing	Yes	
29-Jul-17	1971/Nantucket	22.2 nm E of Sainte-Marie Saint-Raphaël, NB	Entangled	Unknown First seen Canada	-	Unknown	No gear present, but new injuries on head, peduncle, and flukes consistent with constricting entanglement. Resights indicate healing.	L2	L2	0	Healing	Yes	
28-Aug-17	3245	37.7nm SE of Gaspé, QC	Entangled	Canada	Fresh injury or known location	Unknown	Hogtied and anchored in gear. Resights indicate gear free and healing.	L2	L2	0	Gear free	-	
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)									# events/sums:	114	32.27^b	57	53
06-Jan-13	-	6.4 nm NNE of Virginia Beach, VA	Entangled	Unknown First seen USA	-	Unknown	Original configuration unknown, but shifting. At last sighting had a nonconstricting wrap at fluke insertion. No resights.	L10	L3	0	-	-	
17-May-13	2013 Calf of Buckshot	Stellwagen Bank off MA	Vessel strike	Unknown First seen USA	-	-	Calf of the year with healed laceration along left flank. Unable to determine original depth. Resights indicate healthy.	L11	L11	0	Healing	-	
05-Jun-13	Thumper	11.1 nm SE of Chatham, MA	Entangled	USA	Fresh injury or known location	Monofilament line	At least 40 ft of monofilament trailing from right fluke tip. No hooks, wraps, or other body parts involved. Resighted gear free and healthy.	L3	L3	0	-	-	

b. Single individual with 2 separate injuries. The greater SI value (0.75) is used in the Table 5 calculations following NMFS Instruction 02-038-01.

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
20-Jun-13	Thicket	13 nm ESE of Chatham, MA	Entangled	USA	Fresh injury or known location	Hook/Monofilament	3-4 ft of squid lures exiting right side of mouth, possible monofilament running through mouth, but can't confirm. Presume hooks associated with lures, which are all positioned aft of eye. Resighted gear free and healthy.	L4, L10	L4, L10	0	Gear free, Healing	-
07-Jul-13	2013 Calf of Spar	off Bar Harbor, ME	Vessel strike	Unknown First seen USA	-	-	Calf of the year with new, healing laceration across peduncle, potentially deep enough to penetrate bone. Resights indicate healing.	L5a	L5a	0	Healing	-
11-Sep-13	-	Poquoson River, VA	Vessel strike	USA	Fresh injury or known location	-	23 ft private vessel at < 10 kts with single outboard motor reported whale swam beneath his boat and surfaced near the stern, lifting it at least 8 inches out of the water. No injuries or blood noted.	L6c	L6c	0	-	-
16-Sep-13	-	29.4 nm SE of Chatham, MA	Entangled	Unknown First seen USA	-	Unknown	Line across head and 2 lines trailing aft of the flukes, 1 ending 40-50 ft with buoy and 1 ending 200-300 ft. F/V removed 75 ft of line from longer trailing end (which likely did not alter configuration much), but discarded retrieved gear. Original and final configuration unknown. No resights.	L10	L10	0.75	-	Yes
29-Sep-13	Foggy	4.5 nm NW of Freeport, NS	Entangled	Canada	Fresh injury or known location	Pot/trap	Immobile in weighted gear, drifting with tide. At least 5 tight wraps over head, line entering mouthline, line from one side of mouth went tightly over peduncle with a large tangle of pots suspended 8 ft below. Mostly disentangled - left with short lengths of line in mouth likely to shed. Resights confirm gear free and healthy.	L2	L3	0	Rescue, Gear free, Healing	-
04-Oct-13	-	2 nm E of Chatham, MA	Entangled	Unknown First seen USA	-	Unknown	Short bundle of lines and floats tucked between right flipper and flank. Attachment point(s) unclear. Full configuration unknown. Disentanglement attempt unsuccessful. Health decline - emaciated with pale skin. No resights.	L10	L10	1	Health decline	Yes

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
14-Nov-13	-	2.7 nm NE of Manasquan, NJ	Entangled	USA	Fresh injury or known location	Gillnet	Anchored by flukes with freshly dead dogfish in gear. Mostly disentangled - small amount of mesh remains on flukes, likely to shed. No resights.	L2	L3	0	Rescue	Yes
02-Jun-14	-	14.5 nm SE of Chatham, MA	Entangled	Unknown First seen USA	-	Unknown	Free-swimming with buoy and high flier trailing 100 ft aft of flukes. Attachment point(s) and configuration unknown. Unable to confirm if resighted on 21Jun2014.	L10	L10	0.75	-	Yes
09-Jun-14	Hangglide	31.2 nm WSW of Brier Island, NS	Entangled	Canada	Gear Identified	Pot/trap	Anchored, disentangled. Left with short line in mouth and over rostrum that is expected to shed. No resights.	L2	L3	0	Rescue	-
21-Jun-14	-	5 mi E of Gloucester, MA	Entangled	Unknown First seen USA	-	Unknown	Free-swimming trailing a buoy and possibly another buoy or high flier aft. Attachment point(s) and configuration unknown. Unable to confirm if this is a resight of 02Jun2014.	L10	L10	0.75	-	Yes
16-Jul-14	2014 Calf of Canopy	Stellwagen Bank off MA	Vessel strike	Unknown First seen USA	-	-	Calf of the year with healing, shallow laceration across right back, forward of the dorsal. Resights indicate healthy.	L5b	L5b	0	-	-
16-Jul-14	Northstar	Stellwagen Bank off MA	Vessel strike	USA	Fresh injury or known location	-	New, raw, shallow lacerations in front of its dorsal. Resights indicate healthy.	L5b	L5b	0	-	-
18-Jul-14	-	Provincetown Harbor, MA	Entangled	Unknown First seen USA	-	Unknown	Free-swimming, trailing short amount of line from left side of mouth. No other gear noted, but evidence of previous, more complicated, constricting entanglement. Current configuration deemed not life threatening. Unsuccessful disentanglement attempt. In poor condition - emaciated with some cyamids. No resights.	L2	L3	1	Health decline	Yes
30-Jul-14	-	Cape May, NJ	Vessel strike	USA	Fresh injury or known location	-	Small recreational vessel documented harassing whale. Apparent contact between bow and the back or right flank of animal. No noticeable injuries and animal exhibited normal behavior.	L6c	L6c	0	-	-

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
11-Aug-14	Monarch	Great South Channel	Entangled	Unknown First seen USA	-	Unknown	No gear present. Lactating female sighted with new, healing injuries indicating constricting gear around peduncle and leading edges of flukes. Resights indicate healthy.	L2	L2	0	-	Yes
14-Aug-14	-	off Long Beach, NJ	Vessel strike	Unknown First seen USA	-	-	New, healing vessel lacerations of undetermined depth. Animal already in compromised condition prior to vessel strike injury - skin lesions and cyamids on dorsal fluke blades. Seen entangled on 03Sep2014. Previously reported as L5b with SI value = 0.	L11	L11	0.52 ^b	-	-
03-Sep-14	-	off Long Beach, NJ	Entangled	Unknown First seen USA	-	Net	Monofilament netting over rostrum and possibly through mouth. Full configuration unknown. Small section removed by recreational boater. Animal behaved as though anchored for hours, though no evidence that it was. Animal eventually began to travel. Final configuration unknown. Seen with new vessel strike lacerations on 14Aug2014. Health compromised (lesions and cyamids on dorsal fluke blades) prior to either human interaction event. No resights. Previously reported as gear unknown and being gear free (SI value = 0) but gear status determined to be unconfirmed.	L10	L10	0.75 ^b	-	Yes
20-Sep-14	NYC0010	off Rockaway Beach, Long Island, NY	Entangled	USA	Fresh injury or known location	Gillnet	Free-swimming with netting and rope with floats wrapping flukes. Entanglement noticed during photo processing. Full configuration unknown. No resights. Previously reported as gear unknown.	L10	L10	0.75	-	Yes
01-Oct-14	-	12 nm E of Metompkin Inlet, VA	Entangled	Unknown First seen USA	-	Unknown	Free-swimming whale with line and/or netting on left fluke blade. Gear appeared heavy. Full configuration unknown. No resights.	L10	L10	0.75	-	Yes
15-Oct-14	Buckshot	Stellwagen Bank off MA	Vessel strike	Unknown First seen USA	-	-	Sighted with new, raw, and healing superficial wound across mid-back. Resights indicate healthy.	L5b	L5b	0	-	-
15-Dec-14	-	8.5 nm S of Grand Manan, NB	Entangled	Canada	-	Pot/trap	Fisher found animal entangled in trawl. Grappled line, animal dove. Upon surfacing, appeared free of gear, but unable to confirm. Original and final configuration unknown. Previously reported as first seen in Canada.	L10	L10	0.75	-	-

b. Single individual with 2 separate injuries. The greater SI value (0.75) is used in the Table 5 calculations following NMFS Instruction 02-038-01.

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
01-Feb-15	-	12.1 nm S of Beaufort, NC	Entangled	Unknown First seen USA	-	Net	Constricting wrap at fluke insertion with line and monofilament netting trailing from flukes. Partial disentanglement by fisherman. Left with embedded gear and at least 40 ft of trailing line and netting. Unknown if there are additional attachment points. No resights. Previously reported as gear unknown.	L2	L2	1	-	Yes
26-Apr-15	-	1.1 nm N of Race Point, Provincetown, MA	Entangled	Unknown First seen USA	-	Unknown	Collar of extremely thick line forward of the flippers with no trailing gear. Line cutting into leading edge of left flipper. Disentangled. No resights.	L2	n/a	0	Rescue	Yes
14-May-15	Spinnaker	77.2 nm E of Portsmouth, NH	Entangled	USA	Gear identified	Pot/trap	Hogtied and anchored in gear. Disentangled from this gear but gear from 11Sep2014 event remains in mouth - unable to pull free. Found dead in June 2015. Mortality attributed to 2014 entanglement event (See Appendix B).	L2	n/a	0	Rescue	Yes
20-Jun-15	-	27.6 nm SE of Chatham, MA	Entangled	Unknown First seen USA	-	Unknown	Constricting wraps of thin line around right fluke blade, cutting deeply into the leading and trailing edges. Loop cut, leaving draped, nonwrapping gear that is expected to shed. No resights.	L2	L3	0	Rescue	Yes
09-Jul-15	-	3.4 nm SE of Sandy Hook, NJ	Entangled	Unknown First seen USA	-	Unknown	High flier trailing 30 ft aft of flukes. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes
09-Jul-15	Lacuna	4.4 nm N of Brier Island, NS	Entangled	Unknown First seen Canada	-	Unknown	Bridle of line through mouth and leading to a large tangle of lines at right flank and trailing. Full configuration unknown. Resights confirm shed gear and healthy.	L10	L10	0	Gear free	-
11-Jul-15	-	7.2 nm N of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Unknown	Hogtied and anchored in gear. Disentangled. No resights.	L2	n/a	0	Rescue	Yes

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
25-Jul-15	Putter	2.7 nm NE of North Truro, MA	Entangled	USA	Fresh injury or known location	Monofilament line	Monofilament line trailing from flukes. Attachment point(s) and configuration unknown. Resighted gear free and healthy.	L10	L10	0	Gear free	Yes
02-Aug-15	-	3.5 nm SE of Race Point, Provincetown, MA	Entangled	Unknown First seen USA	-	Gillnet	Free-swimming with 2 sets of gear through its mouth. Primary gear: a closed bridle of gillnet joining mid-belly and trailing just past flukes and restricting movement; Secondary gear: an open bridle with one end leading to a buoy and the other to a pot. Disentangled from both sets of gear. Left with very short amount of gillnet through mouth that is expected to shed. Emaciated. No resights. Gillnet is primary cause of injury and of unknown origin. Pot/trap is US gear.	L2	L3	1	Health decline	Yes
02-Aug-15	-	4.8 nm NE of Chatham, MA	Entangled	Unknown First seen USA	-	Monofilament line	Monofilament around flipper with attachment point(s) and remaining configuration unknown. Resighted gear free and healthy.	L10	L10	0	Gear free	-
02-Aug-15	-	14.8 nm NNE of Chatham, MA	Entangled	Unknown First seen USA	-	Unknown	Calf with line around tail leading to buoys 4 ft aft of flukes. Full configuration unknown. No resights post 22Aug2015.	L10	L10	0.75	-	Yes
14-Aug-15	-	1.7 nm N of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Trailing 170 ft line and buoy from left side of mouth, no wraps. Disentangled. Resight indicates healthy.	L3	L3	0	-	-
15-Aug-15	Mogul	Jeffreys Ledge, off NH	Vessel strike	USA	Fresh injury or known location	-	Fishing vessel <65 ft at > 10 kts struck animal. Whale watch vessel documented animal with minor lacerations across its back. Resights indicate healthy.	L5b, L6b	L5b, L6b	0	Healing	-
16-Aug-15	Cardhu	6.7 nm NE of Race Point, Provincetown, MA	Entangled	Unknown First seen USA	-	Hook/Monofilament	Monofilament line trailing from right fluke blade. Attachment point(s) and configuration unknown. Resighted - gear shifted to a hook in the peduncle with trailing line. Subsequent sightings confirm gear free and healthy.	L4, L10	L4, L10	0	Gear free	-

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
29-Aug-15	Crinkle	10 mi E of Chatham, MA	Entangled	USA	Gear identified	Pot/trap	Free-swimming, but hogtied. Disentangled. Resights indicate healthy.	L2	n/a	0	Rescue	Yes
01-Sep-15	2015 Calf of Owl	6.0 nm NE of Race Point, Provincetown, MA	Entangled	Unknown First seen USA	-	Monofilament line	Monofilament line trailing from flukes. Attachment point(s) and configuration unknown. Resighted gear free and healthy.	L10	L10	0	Gear free	-
07-Sep-15	-	12.2 nm NW of Race Point, Provincetown, MA	Entangled	Unknown First seen USA	-	Monofilament line	Monofilament line trailing from flukes. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes
17-Sep-15	Epee	10.5 nm NNE of Race Point, Provincetown, MA	Vessel strike	USA	Fresh injury or known location	-	34 ft vessel witnessed traveling at 25-30 kts through aggregation of feeding whales. Audible contact was made. Vessel appeared to have engine damage. Whale observed with fresh abrasions on dorsal fin and superficial lacerations on right peduncle. Resumed feeding post-incident. Resights indicate healthy.	L5b, L6b	L5b, L6b	0	Healing	-
18-Sep-15	Azrael	9.4 nm NE of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Hook/Monofilament	Hooks and monofilament trailing from flukes. Attachment point(s) and configuration unknown. Resights indicate gear free and healthy.	L4, L10	L4, L10	0	Gear free	-
18-Sep-15	Diablo	6.5 nm NE of Race Point, Provincetown, MA	Entangled	Unknown First seen USA	-	Monofilament line	Lactating female. Monofilament trailing from left fluke blade. Attachment point(s) and configuration unknown. Resights indicate shed gear and healthy.	L10	L10	0	Gear free	-
20-Sep-15	Mogul	13.0 nm ESE of Hampton, NH	Entangled	USA	Fresh injury or known location	Hook/Monofilament	Hook in left fluke blade with monofilament trailing. No wraps. Resights indicate gear free and healthy.	L4	L4	0	-	-

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
24-Sep-15	-	13.5 nm ESE of Hampton, NH	Entangled	USA	Gear identified	Anchor system	Became entangled in anchor line of fishing vessel during the night. Believed to be towing the entire system - 45 lb anchor, 20 ft of chain, 350 ft of anchor line, 150 ft of float line, polyball and acorn buoy - in an unknown configuration. No resights.	L10	L10	0.75	-	Yes
25-Sep-15	-	0.6 nm N of Menemsha Basin Harbor, MA	Entangled	Unknown First seen USA	-	Unknown	Evidence of constricting body wrap, unable to confirm if gear embedded. Trailing 10 ft of line from flukes, full configuration unknown. Animal emaciated with heavy cyamids. No resights.	L2	L10	1	Health decline	Yes
18-Nov-15	Lunar	6.9 nm N of Race Point, Provincetown, MA	Entangled	Unknown First seen USA	-	Monofilament line	Monofilament along left side of body and over the peduncle. Attachment point(s) and configuration unknown. Resights indicate gear free and healthy.	L10	L10	0	Gear free	-
04-Dec-15	-	8.8 nm SW of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Unknown	Wraps on both fluke blades with associated buoy. Full configuration unclear, but animal weighted/anchored. Disentangled. No resights.	L2	n/a	0	Rescue	Yes
04-Dec-15	-	16.5 nm NW of Brier Island, NS	Entangled	Canada	Gear identified	Pot/trap	Likely anchored in gear. Partially disentangled by fishermen. Left free-swimming with a body wrap aft of blowholes and 2 balloon floats close to body. Final configuration unknown. No resights.	L2	L10	0.75	-	-
13-Dec-15	-	off Virginia	Vessel strike	USA	Fresh injury or known location	-	Fresh lacerations that do not appear to penetrate blubber layer. No resights	L5b	L5b	0	-	-

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
15-Dec-15	-	3.7 nm SE of North East Harbour, NS	Entangled	Canada	Gear identified	Pot/trap	Likely anchored in gear. Partially disentangled by fishermen. Left free-swimming with buoy and lines around front of whale and lines on the peduncle. Attachment point(s) and final configuration unknown. No resights.	L2	L10	0.75	-	-
07-Jan-16	-	1 nm S of Great Captain Island, Greenwich, CT	Entangled	USA	Gear Identified	Pot/trap	Anchored in gear with line through mouth and around tail. Partially disentangled - all gear removed from mouth and some from tail. Post intervention whale was using pectorals to swim and tail was down, but unable to confirm if any gear remained and in what configuration. No resights.	L2	L10	0.75	-	Yes
09-Jan-16	MAHWC-254	2.6 nm NE of Fort Story, VA	Vessel strike	USA	Fresh injury or known location	-	Deep laceration across back - penetrating into muscle and impacting ability to dive. No resights.	L5a	L5a	1	-	-
11-Jan-16	-	1.2 nm SE of Hatteras, NC	Entangled	USA	Gear Identified	Gillnet	Anchored in gear. Forward body wrap pinning flippers. Wrap shifted to peduncle and flukes. Disentangled. No resights.	L2	n/a	0	Rescue	-
14-Jan-16	-	1.0 nm NE of Fort Story, VA	Entangled	USA	Gear Identified	Gillnet	Not anchored, but movement restricted by weight. Line over head, through mouth, and around tail. Buoy and polyballs attached by responders which were recovered with buoyline the following day. Fisher hauled remaining gear and determined all gear recovered confirming animal shed gear. No resights.	L2	n/a	0	Rescue	Yes
16-Jan-16	-	2.3 nm NE of Fort Story, VA	Vessel strike	USA	Fresh injury or known location	-	Two parallel lacerations across distal end of right fluke blade. No resights.	L5b	L5b	0	-	-
03-Mar-16	MAHWC-251	off Virginia Beach, VA	Vessel strike	USA	Fresh injury or known location	-	Deep laceration on left fluke blade, near insertion. Fluke blade necrotic. No resights.	L5a	L5a	1	-	-

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a	
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)													
21-Apr-16	-	off Shackleford Banks, NC	Entangled	Unknown	First seen USA	-	Unknown	No gear present, but evidence of constricting body and peduncle wraps. Injuries appear to be healing. No resights.	L2	L2	0	Healing	Yes
24-Apr-16	-	1 nm SE of Race Point, Provincetown, MA	Entangled	Unknown	First seen USA	-	Unknown	Free-swimming with 2 buoys - submerged orange at 5 ft and white bullet at 10 ft - trailing behind flukes. Line appears to wrap flukes. Subsequent sighting only reported white buoy, but only 1 surfacing and no photos. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes
14-May-16	-	0.5 nm SW of Wood End, Provincetown, MA	Entangled	USA	Gear Identified	Pot/trap	Anchored with line through mouth and buoy near right pectoral. Partially disentangled - all gear removed except short line through mouth that expect to shed. No resights.	L2	L3	0	Rescue	Yes	
18-May-16	Foggy	7.6 nm NE of Gloucester, MA	Entangled	Unknown	First seen USA	-	Unknown	Anchored with lines through mouth and 2 embedded body wraps with large float alongside by right body. Entangling gear fouled in 2 other sets of gear. Animal in emaciated. Partial disentanglement - left with an open bridle of 2 lines through the mouth. Subsequent sightings show lines had relooped into a closed bridle and health continued to decline. No resights post July 2016.	L2	L3	1	Health decline	Yes
21-May-16	-	0.4 nm E of Mantoloking, NJ	Entangled	Unknown	First seen USA	-	Gillnet	Full configuration unknown, but minimally wrapped in gear from head to dorsal. Unknown amount of gear removed by public. Unable to confirm if gear free. No resights.	L2	L10	0.75	-	Yes

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
26-May-16	-	1.5 nm SE of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Free-swimming with constricting line around base of flukes and both fluke blades. Line trailing 100 ft. Animal swimming with flippers. Disentangled. No resights.	L2	n/a	0	Rescue	Yes
16-Jun-16	Freckles	3.4 nm E of Wellfleet, MA	Entangled	Unknown First seen USA	-	Unknown	Free-swimming with buoy 60 ft aft of flukes. Attachment point(s) and configuration unknown. Poor condition - emaciated and pale. Resights confirm gear free and healthy.	L10	L10	0	Gear Free	-
25-Jun-16	-	0.4 nm E of Monomoy, MA	Vessel strike	USA	Fresh injury or known location	-	Strike witnessed. 35-40 ft vessel at approximately 25 kts. Blood in water seen. Resights indicate wounds have healed.	L6b, L11	L6b, L11	0	Healing	-
02-Jul-16	2016 Calf of Twine	9.9 nm NE of Race Point, Provincetown, MA	Entangled	Unknown First seen USA	-	Hook/Monofilament	Red monofilament hook lure on belly. No resights.	L4	L4	0	-	-
05-Jul-16	-	2.4 nm SE of Chatham, MA	Entangled	Unknown First seen USA	-	Unknown	Free-swimming with embedded wraps at base of flukes and buoy trailing 50 ft. Partially disentangled. Peduncle wraps loosened and expected to shed. Prognosis poor - flukes compromised and deteriorating. Animal swimming with flippers. No resights.	L2	L3	1	Health decline	Yes
26-Jul-16	Scratch	9.9 nm NE of Race Point, Provincetown, MA	Entangled	Unknown First seen USA	-	Unknown	Free-swimming with line over back. Attachment point(s) and configuration unclear. Resights indicate gear free and healthy.	L10	L10	0	Gear Free	-
08-Aug-16	-	5.0 nm NE of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Unknown	Anchored with line through mouth - exiting left mouth to weight at depth, exiting right mouth and trailing to pectoral. Partially disentangled - left with short line through mouth that expect to shed. No resights.	L2	L3	0	Rescue	Yes

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
14-Aug-16	Storm	10.1 nm N of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Lactating female. Free-swimming with line through mouth - exiting right mouth and ending at pectoral, left mouth trailing 90 ft. Disentangled. Healthy resights until subsequent entanglement (see 19Oct2016 event).	L3	L3	0	-	-
15-Aug-16	Victim	21.5 nm SSW of Grand Manan Island, NB	Entangled	Canada	Gear identified	Pot/trap	Lactating female anchored in gear. Line through mouth, twisting together, and leading to depth. Disentangled. Resights indicate healthy.	L2	n/a	0	Rescue	-
16-Aug-16	A+	30.0 nm E of Nantucket, MA	Entangled	USA	Gear identified	Monofilament line	Entanglement witnessed. Free-swimming with monofilament draped across rostrum. Attachment point(s) and configuration unknown. Resights confirm gear free and healthy.	L10	L10	0	Gear Free	-
02-Sep-16	-	14.9 nm SE of Gloucester, MA	Entangled	Unknown First seen USA	-	Unknown	Free-swimming and trailing red buoy. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes
09-Sep-16	GOM-1602	off Race Point, Provincetown, MA	Vessel strike	USA	Fresh injury or known location	-	Raw superficial lacerations on distal end of left dorsal fluke. Resight indicates healing.	L5b	L5b	0	-	-
15-Sep-16	Echo	5.9 nm N of Race Point, Provincetown, MA	Entangled	USA	-	Pot/trap	Lactating female. Free-swimming with line through mouth. Buoys trail along both sides, no trailing line visible, unclear if weight present on line exiting right mouth. Resights confirm gear free and healthy. Previously reported as first seen in US waters in unknown gear.	L10	L10	0	Gear Free	-
16-Sep-16	-	3.6 nm NE of Chatham, MA	Entangled	USA	Gear identified	Pot/trap	Anchored with line through mouth and buoy 60 ft aft of flukes. Disentangled. No resights.	L2	n/a	0	Rescue	Yes
16-Sep-16	Tear	6.6 nm N of Race Point, Provincetown, MA	Entangled	Unknown First seen USA	-	Monofilament line	Free-swimming with monofilament trailing from flukes. Attachment point(s) and configuration unknown. Resights confirm gear free and healthy.	L10	L10	0	Gear Free	-

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
17-Sep-16	Crisscross	9.1 nm NE of Race Point, Provincetown, MA	Entangled	Unknown First seen USA	-	Monofilament line	Free-swimming with monofilament trailing from flukes. Attachment point(s) and configuration unknown. Resights confirm gear free and healthy.	L10	L10	0	Gear Free	-
27-Sep-16	GOM-1626	off Bliss Island, NB	Entrapped	Canada	Gear identified	Weir	Entrapped in weir for approximately 1 day. Released.	L10	n/a	0	Release	-
08-Oct-16	Aswan	9.5 nm N of Race Point, Provincetown, MA	Entangled	Unknown First seen USA	-	Monofilament line	Free-swimming with 2 strands of monofilament trailing from right fluke. Attachment point(s) and configuration unknown. Resights confirm gear free and healthy.	L10	L10	0	Gear Free	-
19-Oct-16	Storm	0.5 nm N of Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Lactating female. Free-swimming with line through mouth and both ends trailing 50-60 ft aft of flukes. Disentangled. Resights confirm gear free and healthy.	L3	L3	0	-	-
25-Oct-16	-	3.9 nm SW of Beaufort, NC	Entangled	USA	Gear identified	Gillnet	Initial configuration unknown - possibly anchored, but unable to confirm. Final configuration is and open bridle at fluke. No resights.	L10	L3	0	-	-
13-Nov-16	NYC0052	off Belmar, NJ	Entangled	Unknown First seen USA	-	Monofilament line	Free-swimming with monofilament over peduncle and trailing from flukes. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes
14-Nov-16	-	4.7 nm E of Stone Harbor, NJ	Entangled	USA	Gear identified	Pot/trap	Free-swimming with line wrapping left flipper and flukes and trailing. Full configuration unclear. No resights. Previously reported as first seen in US waters in unknown gear.	L10	L10	0.75	-	Yes
04-Dec-16	-	1.1 nm S of Quogue, NY	Entangled	Unknown First seen USA	-	Unknown	Free-swimming with high flier near flukes. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes
08-Dec-16	GOM-1636	3.8 nm NE of Hull, MA	Entangled	USA	Gear identified	Pot/trap	Anchored by 2 wraps around the peduncle. Disentangled. No resights.	L2	n/a	0	Rescue	Yes

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a	
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)													
19-Dec-16	-	0.1 nm E of Tiverton, NS	Entangled	Unknown	First seen Canada	-	Unknown	Free-swimming with line around tail and buoy trailing. Full configuration unknown. No resights.	L10	L10	0.75	-	Yes
20-Dec-16	GOM-1633	1.2 nm S of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Entanglement witnessed. Initially mouth, peduncle, and flukes involved in unknown configuration. Entanglement resolved to line through mouth, over back, with 2 lines and buoy trailing 150 ft. Disentangled. No resights.	L10	L3	0	-	-	
05-Jan-17	-	6.2 nm E of Virginia Beach, VA	Entangled	USA	Gear identified	Gillnet	Bullet buoy, high flyer, and netting on head. Full configuration unknown. Disentangled by fisher. Gear inspected - no significant portion missing or damaged. No photos taken to determine ID or sighting history.	L10	L10	0	Rescue	-	
14-Feb-17	-	off Virginia Beach, VA	Vessel strike	USA	Fresh injury or known location	-	Two new, deep lacerations fore and aft of dorsal fin. No resights.	L5a	L5a	1	-	-	
15-Jul-17	2016 Calf of Thumper	6.3nm NW of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Hook/Monofilament	Free-swimming with hook and monofilament trailing from right fluke blade. Attachment point(s) unknown. Resighted on 28Jul2017 but unable to confirm gear free. No additional resights.	L10	L10	0.75	-	Yes	
18-Jul-17	2017 Calf of Firefly	3.7nm NE of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Hook/Monofilament	Dependent Calf. Free-swimming with green lure and monofilament on left fluke blade. Attachment point(s) unknown. Resights confirm gear free and healthy.	L10	L10	0	Gear Free	-	
20-Jul-17	Firefly	8.5nm N of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Monofilament	Lactating female. Free-swimming with monofilament on tip of left fluke blade. Attachment point(s) unknown. Resights confirm gear free and healthy.	L10	L10	0	Gear Free	-	
26-Jul-17	Sprinkles	8.2nm NW of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Monofilament	Free-swimming with monofilament trailing from left fluke blade. Attachment point(s) unknown. Resights confirm gear free and healthy.	L10	L10	0	Gear Free	-	

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
10-Aug-17	2017 Calf of Hancock	5.2nm NNE of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Entanglement event witnessed. Dependent calf with line looped over right pectoral and buoy trailing 75 ft aft of flukes. Resights confirm gear free and healthy until subsequent entanglement on 18Aug2017.	L3	L3	0	-	-
14-Aug-17	2014 Calf of Echo	4.7nm NE of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Monofilament	Free-swimming with monofilament trailing down both sides of body and off the flukes. Attachment point(s) unknown. Resights confirm gear free and healthy.	L10	L10	0	Gear Free	-
14-Aug-17	Perseid	4.5nm NE of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Monofilament	Free-swimming with monofilament trailing from trailing edge of right fluke. No wraps. Resights confirm gear free and healthy.	L3	L3	0	-	-
18-Aug-17	2017 Calf of Hancock	Southern Stellwagen Bank	Entangled	USA	Fresh injury or known location	Monofilament	Dependent calf. Free-swimming with monofilament draped over dorsal fin. Attachment point(s) unknown. Line shifting during observation. Resights confirm gear free and healthy.	L10	L10	0	Gear Free	-
19-Aug-17	-	0.5nm off of Smith Point County Park, Long Island, NY	Entangled	Unknown First seen USA	-	Unknown	Free-swimming with buoy trailing 10 ft aft of flukes. Resighted on 11Sep2017 with buoy 30-50 ft aft. Full configuration unknown. No additional sightings.	L10	L10	0.75	-	Yes
28-Aug-17	Drifter	10.2nm SE of Frenchboro, ME	Entangled	USA	Fresh injury or known location	-	Single line wrapping peduncle and left fluke blade leading to weighted gear. Disentangled. No resights.	L2	L2	0	Rescue	Yes
12-Sep-17	2016 Calf of Sanchal	1.1nm E of Truro, MA	Entangled	USA	Gear identified	Pot/trap	Anchored in 3 sets of gear. Disentangled. Resights indicate healthy.	L2	L2	0	Rescue	Yes
18-Sep-17	-	29.3nm SE of Jonesport, ME	Entangled	Canada	Gear identified	Pot/trap	Anchored in gear. Fisher responded and animal not relocated. Hauled gear - 10 pots and buoy line missing from 30 pot trawl.	L2	L10	0.75	-	-

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)												
24-Sep-17	GOM-1744	7.7nm NNW of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Pot/trap	Free-swimming with constricting wrap around left pectoral that trailed under body and over right fluke blade. One line ending at a buoy and one ending at a trap. Partially disentangled. Left with 60 ft of line draped over pectoral that is expected to shed. Resighted 18Oct2017, unable to confirm gear free. No additional sightings.	L2	L3	0	-	Yes
01-Oct-17	2017 Calf of Gumdrop	7.4nm NW of Race Point, Provincetown, MA	Entangled	USA	Fresh injury or known location	Unknown	Dependent calf. Free-swimming with line through mouth that twisted together in a bridle under the jaw. Likely to become constricting as the animal grew. Lines trailing to buoys. Resights confirm gear free and healthy.	L2	L2	0	Gear Free	-
03-Oct-17	GOM-1747	6.4nm NW of Race Point, Provincetown, MA	Entangled	Unknown First seen USA	-	Monofilament	Free-swimming with monofilament looped over and trailing from left fluke tip. Sighted with subsequent entanglement on 21Oct2017. Unable to confirm monofilament had been shed at that point.	L3	L3	0	-	-
06-Oct-17	2015 Calf of Xylem	3.9 nm NE of Chatham, MA	Entangled	Unknown First seen USA	-	Gillnet	Free-swimming with portion of gillnet panel through mouth and tightly wrapping head and rostrum. Resighted in 2018 with same configuration. Partially disentangled - rostrum wrap cut, bitter ends trailing from both mouthlines. Resights confirmed gear free and healthy.	L2	L3	0	-	Yes
10-Oct-17	-	3.0nm NE of Gloucester, MA	Entangled	USA	Gear identified	Pot/trap	Anchored in gear. Partially disentangled by harbor master. Unable to confirm gear free. No resights.	L2	L10	0.75	-	Yes
14-Oct-17	-	6.0nm N of Race Point, Provincetown, MA	Entangled	Unknown First seen USA	-	Unknown	Free-swimming with white, fender-type buoy close to right flank. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes
21-Oct-17	2016 Calf of Echo	9.1nm NE of Gloucester, MA	Entangled	USA	Fresh injury or known location	Unknown	Anchored in gear. Disentangled. No resights.	L2	L2	0	Rescue	Yes

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a		
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)														
21-Oct-17	GOM-1747	1.0nm SE of Quogue, Long Island, NY	Entangled	Unknown	First seen USA	-	Unknown	Free-swimming with buoy in tow. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes	
12-Nov-17	-	1.0nm S of Atlantic Beach, NY	Entangled	Unknown	First seen USA	-	Monofilament	Free-swimming with monofilament trailing from right fluke. Attachment point(s) unknown. No resights.	L10	L10	0.75	-	Yes	
30-Nov-17	-	17nm S of Grand Manan, NS	Entangled	Canada	Gear identified	Pot/trap	Anchored by tail area in trawl between 2 balloons. Fisher cut lines. Unable to confirm gear free. No resights.	L2	L10	0.75	-	-		
Western North Atlantic fin whale (<i>Balaenoptera physalus</i>)									# events/sums:		12	5.75	3	6
06-Jun-13	Capitaine Crochet	Saguenay-St. Lawrence Marine Park, QC	Entangled	Canada	Gear identified	Pot/trap	Bridle of single crab pot set around upper jaw w/ no trailing gear. Line embedded on both sides of mouth, pot resting on top of jaw. Emaciated. Unsuccessful disentanglement attempts. No resights.	L2	L2	1	-	-		
23-Jun-14	-	29.9 nm SE of Chatham, MA	Entangled	Unknown	First seen USA	-	Unknown	Free-swimming, trailing 200 ft of line. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes	
20-Aug-14	-	30.3 nm E of Provincetown, MA	Entangled	Unknown	First seen USA	-	Unknown	Free-swimming, trailing buoy and 200 ft of line aft of flukes. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes	
06-Jun-15	-	41.8 nm SSE of Bar Harbor, ME	Entangled	Unknown	First seen USA	-	Unknown	Free-swimming with 2 buoys and 80 ft of line trailing from fluke. Line cutting deeply into right fluke blade. Emaciated. No resights.	L2	L2	1	-	Yes	
16-Sep-15	-	49.9 nm E of Corolla, NC	Vessel strike	Unknown	First seen USA	-	-	Series of raw and healing lacerations potentially penetrating body cavity, but unable to confirm. Injuries healing and animal in apparent good health.	L11	L11	0	Healing	-	

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Western North Atlantic fin whale (<i>Balaenoptera physalus</i>)												
18-Jun-16	CCS_1308	2.3 nm NE of Truro, MA	Entangled	USA	Gear identified	Pot/trap	Free-swimming towing 400 ft of line with bullet buoy. Resighted 22Jun2016. Bridle through mouth leading to a twist of lines near the dorsal. Two buoys trailed 60 ft aft of flukes. Partially disentangled - left with short line through mouth that expect to shed. No resights.	L3	L3	0	-	-
06-Jul-16	-	32.5 nm E of Truro, MA	Entangled	Unknown First seen USA	-	Unknown	Free-swimming with line trailing 60-70 ft aft of flukes. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes
08-Jul-16	-	60 nm NE of Virginia Beach, VA	Entangled	Unknown First seen USA	-	Hook/ Monofilament	Free-swimming with monofilament and lures in tow along left flipper area. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes
27-Jul-16	-	17 nm N of Race Point, Provincetown, MA	Entangled	USA	Gear identified	Pot/trap	Free-swimming with line through mouth and trailing a buoy. Disentangled. No resights.	L3	L3	0	-	-
17-Aug-16	-	Grand Manan, NB	Entrapped	Canada	Gear identified	Weir	Entrapped in weir for less than a day. Self-released. Large hole in bottom twine, but no gear missing. No resights.	L10	n/a	0	Gear free	-
14-Dec-16	-	1.4 nm S of Provincetown, MA	Entangled	Unknown First seen USA	-	Unknown	Free-swimming with buoy trailing 6-8 ft aft of flukes. Attachment point(s) and configuration unknown. No resights.	L10	L10	0.75	-	Yes
07-Jul-17	CCS0919	22nm N of Provincetown, MA	Entangled	Unknown First seen USA	-	Unknown	Free-swimming with line and buoy trailing from unknown attachment point(s). Resights confirm gear free and healthy.	L10	L10	0	Gear Free	-
Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)								# events/sums:	24	10	12	16
21-Mar-13	-	Bay L'Argent, Fortune Bay, NL	Entangled	Canada	Gear identified	Boat mooring	Original configuration unknown. Disentangled.	L10	n/a	0	Rescue	-
23-Jul-13	-	off Newport, RI	Entangled	Unknown First seen USA	-	Unknown	Line, mesh, and trailing high flier with buoy. Attachment point(s) and full configuration unknown.	L10	L10	0.75	-	Yes

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a	
Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)													
17-Aug-13	-	9.4 nm E of Newburyport, MA	Entangled	Unknown	First seen USA	-	Unknown	Constricting rostrum wrap cutting into upper lip.	L2	L2	1	-	Yes
04-Oct-13	-	4.2 nm SE of Seal Harbor, ME	Entangled	USA	Fresh injury or known location	-	Unknown	Anchored. Disentanglement attempted by fishing vessels. Whale swam away and some gear remained at location, but unable to confirm gear free.	L2	L10	0.75	-	Yes
07-Apr-14	-	8.3 nm SE of Marblehead, MA	Entangled	USA	Gear identified	Pot/trap	Acoustic research team reported animal with buoy 20-30 ft off left side. Unclear if anchored. US Coast Guard did not relocate. Resighted by acoustic team on 11Apr2014. Animal anchored with line through mouth, twisting beneath the lower jaw, creating a bridle that was abrading ventral pleats and corners of mouth. Disentangled.	L2	n/a	0	Rescue	Yes	
15-Jun-14	-	Pettes Cove, Grand Manan, NB	Entrapped	Canada	Gear identified	Weir	Whale entrapped in weir. Fisherman used a mammal seine to drag whale out the following day. Animal had scuffed chin and dorsal.	L10	n/a	0	Rescue	-	
10-Jul-14	-	10.2 nm SE of Southport, ME	Entangled	Unknown	First seen USA	-	Unknown	Free-swimming, trailing 2 buoys. Attachment point(s) and configuration unknown.	L10	L10	0.75	-	Yes
12-Jul-14	-	9.8 nm S of Southampton, NY	Entangled	Unknown	First seen USA	-	Debris	Free-swimming with yellow plastic strapping cutting into top and sides of rostrum. No trailing gear. Previously reported as gear unknown.	L2	L2	1	-	Yes
21-Jul-14	-	5 nm NW of Chéticamp, Cape Breton, NS	Entangled	Canada	Gear identified	Pot/trap	Anchored vertically in water column by single trap. Line at mouth and/or flippers on both sides extending down to multiple constricting peduncle wraps. Disentangled. Resighted the next day in good condition.	L2	n/a	0	Rescue	-	
26-Mar-15	-	2.0 nm off Cape Canaveral, FL	Entangled	Unknown	First seen USA	-	Unknown	Evidence of constricting rostrum wrap, but unable to determine if gear still present. Emaciated.	L2	L10	1	Health decline	Yes

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a	
Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)													
14-Jun-15	-	21.8 nm SE of Chatham, MA	Entangled	Unknown	First seen USA	-	Unknown	Free-swimming with acorn buoy trailing 20-30 ft. Attachment point(s) and configuration unknown.	L10	L10	0.75	-	Yes
23-Jun-15	-	4.0 nm SE of Ingonish, NS	Entangled	Canada	Gear identified	Pot/trap	Entangled in traps and buoys. Partially disentangled by fisherman. Original and final configuration unknown.	L10	L10	0.75	-	-	-
03-Jul-15	-	32.6 nm SE of Point Judith, RI	Entangled	USA	Gear identified	Pot/trap	Anchored by a bridle of gear around the lower jaw. Disentangled.	L2	n/a	0	Rescue	Yes	
07-Jul-15	-	Saint Bride's, NL	Entangled	Canada	Gear identified	Cod trap	Entangled in unknown configuration, but self-released from weir.	L10	L10	0	Gear free	-	
20-Jul-15	-	0.5 nm SE of Bliss Island, NB	Entangled	Canada	Fresh injury or known location	Unknown	Anchored by bridle of gear around the lower jaw. Disentangled.	L2	n/a	0	Rescue	-	
31-Oct-15	-	2.2 nm S of Boothbay Harbor, ME	Entangled	USA	Gear identified	Pot/trap	Anchored by line through mouth and body wrap. Disentangled by fisherman.	L2	n/a	0	Rescue	Yes	
21-Jul-16	-	Digby, NS	Entangled	Unknown	First seen Canada	-	Unknown	Free-swimming with netting deeply embedded in rostrum. Disentangled, but significant health decline.	L2	L2	1	-	Yes
09-Aug-16	-	4.4 nm S of Matinicus Island, ME	Entangled	USA	Gear identified	Pot/trap	Anchored with line through mouth, crossing over blowholes, and twisting along right side. Disentangled.	L2	n/a	0	Rescue	Yes	
02-Nov-16	-	Bonne Bay, Gros Morne National Park, NL	Entangled	Unknown	First seen Canada	-	Unknown	Free-swimming and towing gear. Attachment point(s) and configuration unknown. No resights post 06Nov2016.	L10	L10	0.75	-	Yes
24-Apr-17	-	Verrazano-Narrows Bridge, State Island, NY	Vessel strike	USA	Fresh mortality or known location	-	Evidence of bruising on dorsal and right scapular region. Histopathology results support blunt trauma from vessel strike as most parsimonious.	-	24-Apr-17	-	-	-	-
31-May-17	-	Stephenville, NL	Entangled	Canada	Gear identified	Pot/trap	Disentangled from unknown configuration.	L10	L10	0	Rescue	-	
03-Aug-17	-	6.8nm SE of Bar Harbor, ME	Entangled	USA	Gear identified	Pot/trap	Anchored in gear with line through mouth with at least 2 loose peduncle wraps. Partially disentangled. Left with open bridle and line trailing aft of fluke - likely to shed.	L2	L3	0	-	Yes	

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a
Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)												
11-Aug-17	-	3.8nm SE of York, ME	Entangled	USA	Fresh injury or known location	Unknown	Anchored in gear. Partially disentangled by recreational boater. Final configuration - free-swimming with line and buoys from unknown attachment point(s).	L2	L10	0.75	-	Yes
26-Sep-17	-	12.6nm E of Richbucto, NB	Entangled	Canada	Fresh injury or known location	Unknown	Appeared anchored by tail. Animal dove and not resighted. Unable to confirm shed gear.	L2	L10	0.75	-	-
09-Oct-17	-	5.9nm E of Portsmouth, NH	Entangled	USA	Fresh injury or known location	Ghost Pot/trap	Anchored in 2 sets of gear. Disentangled. Primary gear = ghost pot/trap, Secondary gear = US pot/trap.	L2	L2	0	Rescue	Yes
Nova Scotian sei whale (<i>Balaenoptera borealis</i>)								#event/sums	2	1	1	1
11-May-16	-	29.6 nm E of Portsmouth, NH	Entangled	Unknown First seen USA	-	Debris	Free-swimming with plastic strapping around tip of rostrum. Does not appear constricting. Animal is in apparent good health and exhibiting normal behavior. Previously reported as gear unknown.	L3	L3	0	-	-
11-May-17	-	Cape Lookout Bight, NC	Entangled	Unknown First seen USA	-	Unknown	Free-swimming with large mass of heavily fouled gear containing lines and buoys over back and along left side. Full configuration unknown. Emaciated.	L10	L10	1	Health decline	Yes
Unidentified Whale								# events/sums:	8	4.4	0	4
08-Jul-13	-	87.5 nm SW of Cape Sable Island, NS	Vessel strike	Canada	Fresh injury or known location	-	Racing sailing vessel struck whale in the middle of the night. 24m at 12 kts. Strike brought boat to a standstill. Fluke or flipper (12 ft across/long) was seen, and the whale appeared to swim off. Blubber was found on hull and keel was cracked.	L6a	L6a	1	-	-
03-May-15	-	1.3 nm E of Ellisville, MA	Vessel strike	USA	Fresh injury or known location	-	33 ft vessel at 15 kts struck whale when it surfaced in front of him. Remained on site but did not see blood in the water or resight the animal. Sustained damage to propeller. Boater identified as right whale, but no photos or genetic samples on propeller to confirm. Likely is the same whale reported with new lacerations on 06May2015 (see right whale 3999 above), but unable to confirm.	L6b	L6b	0.2	-	-

Appendix A. Details of reported baleen whale injury events along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. Assignment of Serious Injury (SI) criteria, SI values, and List of Fisheries (LOF) inclusion follow the guidance established by NMFS Instruction 02-038-01. Criteria categories described in Table 1.

Date	Individual	Location	Cause of Injury	Country of Origin	Country ID method	Gear Type	Description	Initial SI criteria	Final SI criteria	SI value	SI value changes	LOF ^a	
Unidentified Whale													
06-Jul-15	-	Middle Head, Ingonish, NS	Entangled	Unknown	First seen Canada	-	Unknown	Trailing 2 ft of gear. Attachment point(s) and configuration unknown.	L10	L10	0.75	-	Yes
09-Jul-15	-	17.8 nm ESE of Shippagan, NB	Entangled	Unknown	First seen Canada	-	Unknown	Trailing buoy and 50 ft of line. Attachment point(s) forward on the body - fluke was free of gear - configuration unknown.	L10	L10	0.75	-	Yes
14-Feb-16	-	15 mi off Palm Coast, FL	Vessel strike	USA	Fresh injury or known location	-	-	27 ft sailboat at 5.5 kts at night made contact on port side of vessel, turning vessel 45-60 degrees to starboard. Heard loud exhalation prior to impact, but did not see animal.	L6c	L6c	0	-	-
06-May-16	-	23.1 nm E of Monomoy, MA	Vessel strike	USA	Fresh injury or known location	-	-	60 ft racing sailboat at 20 kts reported striking a whale. Starboard rudder destroyed. Description indicates probable humpback, but unable to confirm.	L6b	L6b	0.2	-	-
09-May-16	-	0.3 nm NE of Truro, MA	Entangled	Unknown	First seen USA	-	Unknown	Free-swimming with small orange buoy aft of flukes. Insufficient detail provided to determine species or configuration.	L10	L10	0.75	-	Yes
02-Oct-17	-	7.9 nm E of Atlantic City, NJ	Entangled	Unknown	First seen USA	-	Unknown	Multiple lines wrapping peduncle and trailing 2 buoys at unknown distance. Full configuration unknown. Likely a minke, but unable to confirm species.	L10	L10	0.75	-	Yes

Appendix B. Confirmed human-caused mortality records of baleen whale stocks along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. COD = Cause of Death. LOF = Consider for inclusion in List of Fisheries

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF	
Western North Atlantic right whale (<i>Eubalaena glacialis</i>)									
04-Sep-14	-	115 nm SE of Saint-Pierre and Miquelon, NL	Entangled	Unknown	First seen Canada	-	Unknown	Carcass with constricting line around rostrum and body. No necropsy conducted, but evidence of extensive, constricting entanglement supports entanglement as COD.	Yes
27-Sep-14	-	36 nm S of Nantucket, MA	Entangled	USA	Fresh mortality or known location	-	Unknown	Fresh carcass with multiple lines wrapping around head, pectoral, and peduncle. Appeared to be anchored. No necropsy conducted, but extensive, constricting entanglement supports entanglement as COD.	Yes
03-May-16	4681	Morris Island, MA	Vessel strike	USA	Fresh mortality or known location	-	-	Fresh carcass with 9 deep ventral lacerations. Multiple shorn and/or fractured vertebral and skull bones. Destablized thorax. Edema, blood clots, and hemorrhage associated with injuries. Proximate COD - sharp trauma. Ultimate COD - exsanguination.	-
31-Aug-16	4320	Sable Island, NS	Entangled	Canada	Gear identified	Pot/trap	-	Decomposed carcass with multiple constricting wraps on pectoral with associated bone damage consistent with chronic entanglement.	-
23-Sep-16	3694	6.5 nm SE of Seguin Island, ME	Entangled	Canada	Gear identified	Pot/trap	-	Fresh, floating carcass with extensive, constricting entanglement. Thin blubber layer and other findings consistent with prolonged stress caused by chronic entanglement. Gear previously reported as unknown.	Yes
13-Apr-17	4694	1.5 nm NW of Dennis, MA	Vessel strike	USA	Fresh mortality or known location	-	-	Deep hemorrhage and muscle tearing consistent with blunt trauma.	-
19-Jun-17	1402/ Glacier	28.8 nm NE of Tignish, PEI	Vessel strike	Canada	Fresh mortality or known location	-	-	Acute internal hemorrhage consistent with blunt trauma.	-
21-Jun-17	3603/ Starboard	50.1 nm SE of Percé, QC	Entangled	Canada	Gear identified	Pot/trap	-	Fresh carcass anchored in at least 2 sets of gear with extensive, constricting wraps.	-
23-Jun-17	1207	46.1 nm NE of Tignish, PEI	Vessel strike	Canada	Fresh mortality or known location	-	-	Acute internal hemorrhage consistent with blunt trauma.	-
06-Jul-17	-	30.1 nm W of Îles de la Madeleine, QC	Vessel strike	Canada	Fresh mortality or known location	-	-	Fractured skull with associated hemorrhaging. Laceration of oral rete with subsequent exsanguination. Injuries consistent with blunt trauma.	-
19-Jul-17	2140/ Peanut	22.9 nm E of Miscou, NB	Vessel strike	Canada	Fresh mortality or known location	-	-	Acute internal hemorrhage consistent with blunt trauma.	-
06-Aug-17	-	Martha's Vineyard, MA	Entangled	Unknown	First seen USA	-	Unknown	No gear present. Evidence of constricting gear with associated hemorrhaging.	Yes

Appendix B. Confirmed human-caused mortality records of baleen whale stocks along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. COD = Cause of Death. LOF = Consider for inclusion in List of Fisheries.

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
Western North Atlantic right whale (<i>Eubalaena glacialis</i>)								
15-Sep-17	4504	35.7 nm SE of Percé, QC	Entangled	Canada	Gear identified	Pot/trap	Anchored in gear with extensive constricting wraps with associated hemorrhaging.	-
23-Oct-17	-	Nashawena Island, MA	Entangled	Unknown First seen USA	-	Unknown	No gear present. Evidence of extensive, constricting entanglement with associated hemorrhaging.	Yes
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)								
03-Apr-13	-	9.6 nm E of Fort Story, VA	Vessel strike	USA	Fresh mortality or known location	-	Fractured orbitals, left with associated bruising. Bruising at left ribs.	-
13-Sep-13	-	York River, VA	Vessel strike	USA	Fresh mortality or known location	-	Six lacerations penetrate into muscle with associated hemorrhaging.	-
28-Sep-13	-	0.2 nm SE of Saltaire, NY	Entangled	Unknown First seen USA	-	Gillnet	Embedded line in mouth with associated hemorrhaging and necrosis. Evidence of constriction at pectorals, peduncle with fluke with associated hemorrhaging. Emaciated. Previously reported as gear unknown.	Yes
01-Oct-13	-	Buzzards Bay, MA	Entangled	USA	Fresh mortality or known location	Unknown	Evidence of underwater entrapment and subsequent drowning. No gear present.	Yes
11-Sep-14	Spinnaker	18.2 nm SE of Southwest Harbor, ME	Entangled	Unknown First seen USA	-	Gillnet	Free-swimming with gillnet gear. Found anchored on 12Sep2014. Gillnet panel lodged in mouth and tightly wrapping forward part of body. Panel entangled in pots with 20+ wraps of pot lines around flukes and peduncle. Mostly disentangled - left with short section of gillnet in mouth expected to shed. Animal entangled again (14May2015 - anchored and disentangled). Carcass found 11Jun2015. Necropsy revealed gillnet from 2014 entanglement embedded deep into the maxilla and through the vomer. Bone had started to grow around the line. Gillnet is unknown origin. Pot/trap is US gear.	Yes
25-Dec-14	Triomphe	Little Cranberry Island, ME	Entangled	Unknown First seen USA	-	Unknown	Fresh carcass with evidence of extensive constricting entanglement. No gear present. No necropsy, but robust body condition and histopathology results of samples support entanglement as COD.	Yes

Appendix B. Confirmed human-caused mortality records of baleen whale stocks along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. COD = Cause of Death. LOF = Consider for inclusion in List of Fisheries.

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)								
03-Feb-15	-	Corolla, NC	Entangled	USA	Fresh mortality or known location	Unknown	Fresh carcass with injuries consistent with constricting gear. No gear present. Full stomach indicating fed recently. COD likely peracute underwater entrapment.	Yes
13-Apr-15	-	15.4 nm SE of Fire Island, NY	Vessel strike	USA	Fresh mortality or known location	-	Extensive bruising and hemorrhaging at left gape and pectoral, throat, and right and left lateral thorax.	-
18-Apr-15	-	Smith Point, NY	Vessel strike	USA	Fresh mortality or known location	-	Multifocal hemorrhage and edema in right lateral abdomen.	-
29-Jun-15	-	Fire Island, NY	Vessel strike	USA	Fresh mortality or known location	-	Extensive fracturing of cranial bones with associated bruising. Additional extensive bruising along dorsal and right lateral body.	-
17-Oct-15	-	Lloyd Harbor, NY	Vessel strike	USA	Fresh mortality or known location	-	Extensive bruising and edema around right cranial and pectoral area.	-
25-Apr-16	-	Marshfield, MA	Vessel strike	USA	Fresh mortality or known location	-	Bruising deep to muscle and fascia by right pectoral and mandible at the base of the skull. Limited necropsy, but depth and area of bruising consistent with blunt trauma from vessel strike.	-
25-Apr-16	-	Napeague Bay, NY	Vessel strike	USA	Fresh mortality or known location	-	Extensive bruising to ventral thoracic region along with fractured ribs.	-
15-Jun-16	-	20.9 nm E of Fenwick Island, DE	Vessel strike	USA	Fresh mortality or known location	-	Large area of hemorrhaging around neck and head. Organs displaced forward in body cavity. Full stomach.	-
24-Jun-16	-	0.5 nm E off Shinnecock Inlet, NY	Vessel strike	USA	Fresh mortality or known location	-	Extensive bruising to connective tissue and muscles of the left side, back, and right peduncle.	-

Appendix B. Confirmed human-caused mortality records of baleen whale stocks along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. COD = Cause of Death. LOF = Consider for inclusion in List of Fisheries.

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)								
26-Jun-16	Snowplow	15 nm NE of Rockport, MA	Vessel strike	USA	Fresh mortality or known location	-	Limited necropsy, but significant evidence of blunt trauma to left head and pectoral consistent with vessel strike.	-
10-Sep-16	-	Jobs Neck Cove, Martha's Vineyard, MA	Entangled	Unknown First seen USA	-	Unknown	No gear present, but evidence of constricting entanglement with associated reactive tissue at fluke insertions. State of decomposition at time of exam precluded COD determination, but injuries and thin blubber layer are consistent with chronic entanglement.	Yes
16-Oct-16	-	2.1 nm E of Ipswich, MA	Entangled	USA	Gear identified	Pot/trap	No necropsy, but extensive entanglement. Line through mouth with constricting wraps on both flippers, body, and peduncle. Entanglement as COD most parsimonious. Confirmed as same individual released from weir on 27Sep2016 (see Appendix A).	Yes
16-Dec-16	HDRVA078	2 mi E of Dam Neck, VA	Entangled	USA	Fresh mortality or known location	Unknown	No gear present, but evidence of extensive constricting entanglement. Fresh carcass with digestive system full of fish. COD dry drowning by entanglement.	Yes
02-Feb-17	-	Hampton Roads Bridge-Tunnel, Chesapeake Bay, VA	Vessel strike	USA	Fresh mortality or known location	-	Four deep lacerations that penetrated body cavity. Robust condition with full stomach. COD - exsanguination and asphyxia from sharp trauma.	-
05-Feb-17	-	Chesapeake Bay Bridge Tunnel, Chesapeake Bay, VA	Vessel strike	USA	Fresh mortality or known location	-	Extensive skeletal fracturing with associated hemorrhaging consistent with blunt trauma.	-
11-Feb-17	-	Fort Story, VA	Vessel strike	USA	Fresh mortality or known location	-	Three deep lacerations that penetrated body cavity. Robust condition with full stomach. COD - exsanguination from sharp trauma.	-
03-Apr-17	-	Rockaway, NY	Vessel strike	USA	Fresh mortality or known location	-	Extensive hemorrhage and edema along back and side consistent with blunt trauma.	-
04-May-17	-	North Shores, Rehoboth Beach, DE	Vessel strike	USA	Fresh mortality or known location	-	Evidence of blunt trauma with associated hemorrhaging. Deep lacerations to ventral peduncle and side, possibly post-mortem.	-
15-Jun-17	-	Jamestown, RI	Vessel strike	USA	Fresh mortality or known location	-	Muscle contusions and associated cranial fractures consistent with blunt trauma.	-
18-Jun-17	GOM-1625	Monomoy, Chatham, MA	Entangled	Unknown First seen USA	-	Unknown	No gear present, but evidence of constricting entanglement with associated hemorrhaging at insertion of pectorals and fluke. Injuries combined with poor body condition makes entanglement the most parsimonious COD.	Yes

Appendix B. Confirmed human-caused mortality records of baleen whale stocks along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. COD = Cause of Death. LOF = Consider for inclusion in List of Fisheries.

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
Gulf of Maine humpback whale (<i>Megaptera novaeangliae</i>)								
01-Aug-17	2017 Calf of Cajun	21.9nm SE of Gloucester, MA	Entangled	Unknown First seen USA	-	Gillnet	Dependent calf with evidence of extensive constricting entanglement. Gillnet exiting right mouth. Evidence of health decline. Carcass documented in Feb 2018, unable to confirm if gear still present. No necropsy. Proximate COD - entanglement. Ultimate COD - unknown.	Yes
01-Oct-17	-	9nm S of Narragansett, RI	Vessel strike	Unknown First seen USA	-	-	Hemorrhaging along dorsal and left side consistent with blunt trauma.	-
26-Dec-17	-	East Atlantic Beach, NY	Vessel strike	USA	Fresh mortality or known location	-	Extensive bruising and edema along both sides of body consistent with blunt trauma.	-
Western North Atlantic fin whale (<i>Balaenoptera physalus</i>)								
13-Jan-13	-	East Hampton, NY	Vessel strike	USA	Fresh mortality or known location	-	Fractured left cranium with associated hematoma.	-
12-Apr-14	-	Port Elizabeth, NJ	Vessel strike	USA	Fresh mortality or known location	-	Fresh carcass on bow of 965 ft vessel. Speed at strike unknown. Large external abrasions with associated hemorrhage and skeletal fractures along right side.	-
13-May-14	-	10 nm off Rocky Harbour, NL	Entangled	Canada	Gear identified	Pot/trap	Fisherman found fresh carcass when hauling gear. Entangled 90m at depth, close to pots. Line through mouth and around peduncle, hogtying the whale.	-
05-Oct-14	-	35 nm E of Manasquan, NJ	Vessel strike	USA	Fresh mortality or known location	-	Large areas of hemorrhage along dorsal, ventral, and right lateral surfaces consistent with blunt force trauma.	-
30-May-17	-	Port Newark, NJ	Vessel strike	USA	Fresh mortality or known location	-	Fresh carcass on bow of 656 ft vessel. Speed at strike unknown.	-
25-Aug-17	-	38nm NE of Miscou Island, NB	Entangled	Canada	Gear identified	Pot/trap	Fisher hauled carcass up from depth - configuration unknown, but partway between buoy and trap. Unlikely to have drifted post-mortem in midwater column. Entanglement is the most parsimonious COD.	-

Appendix B. Confirmed human-caused mortality records of baleen whale stocks along the Gulf of Mexico, US East Coast, and Atlantic Canadian provinces, 2013-2017. COD = Cause of Death. LOF = Consider for inclusion in List of Fisheries.

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)								
31-Aug-13	-	Miminegash, PEI	Entangled	Canada	Fresh mortality or known location	Unknown	Fresh carcass with evidence of extensive constricting gear. No gear present.	-
09-Jun-14	-	off Truro, MA	Entangled	USA	Gear identified	Pot/trap	Fresh carcass anchored, hogtied in gear. COD - peracute underwater entrapment.	Yes
02-Jul-14	-	Northumberland Strait, NB	Entangled	Canada	Fresh mortality or known location	Unknown	Carcass with constricting gear around lower jaw. Large open injury at attachment point on the left side.	-
17-Jul-14	-	South Addison, ME	Entangled	Unknown First seen USA	-	Unknown	Fresh carcass with line impression across ventral surface and evidence of constricting gear around peduncle and fluke insertion. Bruising evident at fluke injuries. No gear present.	Yes
29-Jul-14	-	4.5 nm S of Herring Cove, NS	Vessel strike	Canada	Fresh mortality or known location	-	Live animal with tongue completely ballooned out, forcing its jaws 90 degrees apart. Found dead at same location the next day. Carcass recovered with 2 traps and constricting line around the peduncle. Necropsy found indication of blunt trauma to right jaw. Suspect animal became anchored in gear and then was struck by a vessel. Proximate COD - entanglement. Ultimate COD - Vessel strike. Previously reported as an entanglement SI but counted as a vessel strike mortality.	-
24-Dec-14	-	Dam Neck, VA	Vessel strike	USA	Fresh mortality or known location	-	Fresh carcass with broken ribs and fractured vertebrae with extensive hemorrhage and edema.	-
16-Apr-15	-	Locke's Island, Shelburne, NS	Entangled	Canada	Fresh mortality or known location	Unknown	Fresh carcass with evidence of constricting wraps. No gear present. Robust, pregnant, fish in stomach and intestines. No other abnormalities noted.	-
09-May-15	-	Duck, NC	Entangled	Unknown First seen USA	-	Unknown	Live stranded and euthanized. Embedded gear cutting into bone of mandible. Emaciated. Proximate COD - entanglement. Ultimate COD - euthanasia.	Yes
06-Jun-15	-	Coney Island, NY	Vessel strike	USA	Fresh mortality or known location	-	Fresh carcass with deep lacerations to throat area and head missing. Large area of bruising on dorsal surface.	-

Appendix B. Confirmed human-caused mortality records of baleen whale stocks along the Gulf of Mexico, US East Coast, and Atlantic Canadian Provinces, 2013-2017. COD = Cause of Death. LOF = Consider for inclusion in List of Fisheries.

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)								
07-Jul-15	-	20.5 nm NW of Funk Island, NL	Entangled	Canada	Gear identified	Pot/trap	Found at 340m depth between 2 pots. Gear through mouth and wrapped around peduncle.	-
18-Aug-15	-	Roseville, PEI	Entangled	Canada	Fresh mortality or known location	Unknown	Evidence of constricting body, peduncle, and fluke wraps. No gear present. No necropsy but robust body condition supports entanglement as COD.	-
01-Sep-15	-	Gloucester, MA	Entangled	USA	Fresh mortality or known location	Unknown	Evidence of extensive, constricting gear with associated hemorrhaging. No gear present.	Yes
21-Sep-15	-	Burton, PEI	Entangled	Canada	Fresh mortality or known location	Unknown	Evidence of constricting body wraps. No gear present. No necropsy but experts state peracute underwater entrapment most parsimonious.	-
06-Dec-15	-	13 nm S of Port Joli, NS	Entangled	Canada	Gear identified	Pot/trap	Live animal anchored in gear. Carcass recovered 4 days later.	-
03-May-16	-	Biddeford, ME	Entangled	USA	Gear identified	Pot/trap	Line through mouth with evidence of constriction across ventral pleats and at peduncle. Hemorrhaging associated with these lesions.	Yes
15-Aug-16	-	2.0 nm SE of Seguin Island, ME	Entangled	USA	Fresh mortality or known location	Unknown	Line through mouth leading to weighted/anchored gear.	Yes
30-Aug-16	-	3.1 nm SW of Matinicus Island, ME	Entangled	USA	Gear identified	Pot/trap	Fresh carcass anchored in gear with evidence of constricting wraps at peduncle and fluke insertions.	Yes
06-Jul-17	-	Manomet Point, MA	Entangled	USA	Gear identified	Pot/trap	Witnessed becoming anchored and drowning in gear.	Yes
22-Jul-17	-	Piscataqua River NH / ME	Entangled	USA	Fresh mortality or known location	Unknown	No gear present. Limited necropsy. Evidence of multiple constricting wraps with associated hemorrhaging. Robust body condition and full stomach supports entanglement COD as most parsimonious.	Yes
09-Aug-17	-	6.2nm NE of Ellisville, MA	Entangled	USA	Fresh mortality or known location	Unknown	No gear present. Fresh carcass with evidence of extensive constricting entanglement.	Yes

Appendix B. Confirmed human-caused mortality records of baleen whale stocks along the Gulf of Mexico, US East Coast, and Atlantic Canadian Provinces, 2013-2017. COD = Cause of Death. LOF = Consider for inclusion in List of Fisheries.

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF
Canadian East Coast minke whale (<i>Balaenoptera acutorostrata</i>)								
12-Aug-17	-	0.9nm W of West Tremont, ME	Entangled	USA	Fresh mortality or known location	Unknown	Fresh, pregnant carcass in unidentified gear. Evidence of constricting wraps with associated hemorrhaging.	Yes
14-Aug-17	-	1.0nm SE of Narragansett, RI	Entangled	USA	Fresh mortality or known location	Unknown	No gear present. Fresh carcass with evidence of constricting gear with associated hemorrhaging.	Yes
17-Aug-17	-	Rye, NH	Entangled	USA	Fresh mortality or known location	Unknown	No gear present. Limited necropsy. Evidence of extensive constricting entanglement. Robust condition and evidence of recent feeding suggests entanglement as most parsimonious COD.	Yes
28-Aug-17	-	9.6 nm S of Harpswell, ME	Entangled	USA	Gear identified	Pot/trap	Fresh carcass anchored in gear with extensive, constricting wraps.	Yes
30-Aug-17	-	11.1nm NE of Tignish, PEI	Entangled	Canada	Fresh mortality or known location	Unknown	Fresh carcass in gear. Full configuration unclear, but unlikely to have drifted into post-mortem.	-
04-Sep-17	-	Saint Carols, Great Northern Peninsula, NL	Entangled	Canada	Gear identified	Netting	Seen alive in gear, found dead the next day.	-
06-Sep-17	-	Newport, RI	Vessel strike	USA	Fresh mortality or known location	-	Extensive hemorrhaging behind the blowhole and along left side. Injuries consistent with blunt trauma.	-
17-Sep-17	-	Henry Island, Inverness, NS	Entangled	Canada	Fresh mortality or known location	Unknown	No necropsy. Fresh carcass with ventrum heavily scavenged indicating entanglement occurred at depth. Gear in mouth and around flukes, unlikely to have drifted into. Evidence of constricting wrap on rostrum.	-
27-Sep-17	-	5.7nm NE of Richibucto, NB	Entangled	Canada	Fresh mortality or known location	Unknown	No gear present. Fresh carcass with evidence of constricting wraps.	-
10-Oct-17	-	5.0nm E of Rockland, ME	Entangled	USA	Gear identified	Pot/trap	Constricting wrap around lower jaw. Carcass found at depth when hauling gear.	Yes

Appendix B. Confirmed human-caused mortality records of baleen whale stocks along the Gulf of Mexico, US East Coast, and Atlantic Canadian Provinces, 2013-2017. COD = Cause of Death. LOF = Consider for inclusion in List of Fisheries.

Date	Individual	Location	Cause of Fate	Country of Origin	Country ID Method	Gear Type	Description	LOF ^a
Nova Scotian sei whale (<i>Balaenoptera borealis</i>)								
04-May-14	-	Hudson River, NY	Vessel strike	USA	Fresh mortality or known location	-	Fresh carcass on bow of 1068 ft vessel. Speed at strike unknown. Extensive skeletal fractures with associated hemorrhage along right side.	-
07-May-14	-	Delaware River, Philadelphia, PA	Vessel strike	USA	Fresh mortality or known location	-	Fresh carcass on bow of 401 ft vessel. Speed at strike unknown.	-
14-Aug-14	-	James River, Craney Island, VA	Vessel strike	USA	Fresh mortality or known location	-	Sighted swimming in river. Live stranded on 20Aug2014. Dead on 21Aug2014. Emaciated. Fragment of plastic DVD case within pyloric stomach. Broken bones with associated hemorrhaging. Proximate COD - starvation by ingestion of plastic debris, ultimate COD - blunt trauma from vessel strike.	-
25-Jul-16	-	Newark Bay, NJ	Vessel strike	USA	Fresh mortality or known location	-	Fresh carcass on bow of ship (>65 ft). Speed at strike unknown.	-

Procedures for Issuing Manuscripts in the *Northeast Fisheries Science Center Reference Document (CRD) Series*

Clearance

All manuscripts submitted for issuance as CRDs must have cleared the NEFSC's manuscript/abstract/webpage review process. If any author is not a federal employee, he/she will be required to sign an "NEFSC Release-of-Copyright Form." If your manuscript includes material from another work which has been copyrighted, then you will need to work with the NEFSC's Editorial Office to arrange for permission to use that material by securing release signatures on the "NEFSC Use-of-Copyrighted-Work Permission Form."

For more information, NEFSC authors should see the NEFSC's online publication policy manual, "Manuscript/abstract/webpage preparation, review, and dissemination: NEFSC author's guide to policy, process, and procedure," located in the Publications/Manuscript Review section of the NEFSC intranet page.

Organization

Manuscripts must have an abstract and table of contents, and (if applicable) lists of figures and tables. As much as possible, use traditional scientific manuscript organization for sections: "Introduction," "Study Area" and/or "Experimental Apparatus," "Methods," "Results," "Discussion," "Conclusions," "Acknowledgements," and "References Cited."

Style

The CRD series is obligated to conform with the style contained in the current edition of the United States Government Printing Office Style Manual. That style manual is silent on many aspects of scientific manuscripts. The CRD series relies more on the CSE Style Manual. Manuscripts should be prepared to conform with these style manuals.

The CRD series uses the American Fisheries Society's guides to names of fishes, mollusks, and

decapod crustaceans, the Society for Marine Mammalogy's guide to names of marine mammals, Integrated Taxonomic Information System guidance on scientific and common names for all other species, the Biosciences Information Service's guide to serial title abbreviations, and the ISO's (International Standardization Organization) guide to statistical terms.

For in-text citation, use the name-date system. A special effort should be made to ensure that all necessary bibliographic information is included in the list of cited works. Personal communications must include date, full name, and full mailing address of the contact.

Preparation

Once your document has cleared the review process, the Editorial Office will contact you with publication needs – for example, revised text (if necessary) and separate digital figures and tables if they are embedded in the document. Materials may be submitted to the Editorial Office as email attachments or intranet downloads. Text files should be in Microsoft Word, tables may be in Word or Excel, and graphics files may be in a variety of formats (JPG, GIF, Excel, PowerPoint, etc.).

Production and Distribution

The Editorial Office will perform a copyedit of the document and may request further revisions. The Editorial Office will develop the inside and outside front covers, the inside and outside back covers, and the title and bibliographic control pages of the document.

Once the CRD is ready, the Editorial Office will contact you to review it and submit corrections or changes before the document is posted online.

A number of organizations and individuals in the Northeast Region will be notified by e-mail of the availability of the document online.

Research Communications Branch
Northeast Fisheries Science Center
National Marine Fisheries Service, NOAA
166 Water St.
Woods Hole, MA 02543-1026

Publications and Reports of the Northeast Fisheries Science Center

The mission of NOAA's National Marine Fisheries Service (NMFS) is "stewardship of living marine resources for the benefit of the nation through their science-based conservation and management and promotion of the health of their environment." As the research arm of the NMFS's Northeast Region, the Northeast Fisheries Science Center (NEFSC) supports the NMFS mission by "conducting ecosystem-based research and assessments of living marine resources, with a focus on the Northeast Shelf, to promote the recovery and long-term sustainability of these resources and to generate social and economic opportunities and benefits from their use." Results of NEFSC research are largely reported in primary scientific media (*e.g.*, anonymously-peer-reviewed scientific journals). However, to assist itself in providing data, information, and advice to its constituents, the NEFSC occasionally releases its results in its own media. Currently, there are three such media:

NOAA Technical Memorandum NMFS-NE -- This series is issued irregularly. The series typically includes: data reports of long-term field or lab studies of important species or habitats; synthesis reports for important species or habitats; annual reports of overall assessment or monitoring programs; manuals describing program-wide surveying or experimental techniques; literature surveys of important species or habitat topics; proceedings and collected papers of scientific meetings; and indexed and/or annotated bibliographies. All issues receive internal scientific review and most issues receive technical and copy editing.

Northeast Fisheries Science Center Reference Document -- This series is issued irregularly. The series typically includes: data reports on field and lab studies; progress reports on experiments, monitoring, and assessments; background papers for, collected abstracts of, and/or summary reports of scientific meetings; and simple bibliographies. Issues receive internal scientific review and most issues receive copy editing.

Resource Survey Report (formerly *Fishermen's Report*) -- This information report is a regularly-issued, quick-turnaround report on the distribution and relative abundance of selected living marine resources as derived from each of the NEFSC's periodic research vessel surveys of the Northeast's continental shelf. This report undergoes internal review, but receives no technical or copy editing.

TO OBTAIN A COPY of a *NOAA Technical Memorandum NMFS-NE* or a *Northeast Fisheries Science Center Reference Document*, either contact the NEFSC Editorial Office (166 Water St., Woods Hole, MA 02543-1026; 508-495-2228) or consult the "Northeast Fisheries Science Center Publications" webpage <https://www.fisheries.noaa.gov/new-england-mid-atlantic/northeast-fisheries-science-center-publications>