



Minister Barbara Creecy

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Dear Minister Creecy,

**RE: Octopus Trapping in the False Bay, how to move forward**

The undersigned organizations are part of the Wildlife Animal Protection Forum South Africa (WAPFSA), an alliance of diverse organizations that share certain values, knowledge, and objectives and that collectively comprise a body of expertise from scientific, conservation, legal, welfare, rights, social justice, faith, and public advocacy sectors.

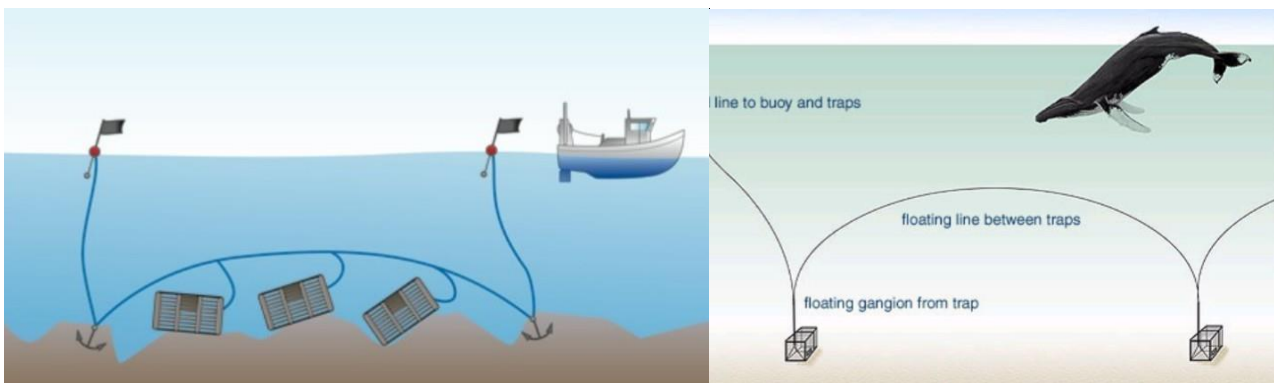
We wish to thank you for your prompt action and decision to place a moratorium on the octopus trap permits in the False Bay.

It is of serious concern to us that 13 whales have been entangled in octopus-trap fisheries along the South African coast over several years, with 9 whales having succumbed to their injuries. Although very dangerous, octopus traps are not the only line catch devices causing entanglements; other fatalities have been recorded and have been linked to crayfish line traps. It is our understanding that both octopus and crayfish catch devices, as well as other line non-movable systems, are a huge threat to marine life and simply should not be permitted in or near protected areas and along all known whale reproductive routes.

## 1. Studies on entanglements

A 2012 USA study, based on 15 years' evidence of whale entanglement, by right whale researcher Amy Knowlton, estimated that around 83 percent of all living whales have been entangled in fishing gear at some point in their lives, as evidenced by the bright white scars the gear leaves on their dark bodies. Entanglement in non-mobile fishing gear, including pot (trap) and gillnet gear, was identified as one of the leading causes of mortality in this well-studied population. Both living and dead whales were documented with a rope through the mouth and/or wrapped around other body parts, including flippers and flukes. Ropes that were retrieved from entangled whales and humpbacks along the east coast of the USA and Canada, were found to come from non-mobile fisheries such as lobster and gillnet gear in 80% of the cases. The remaining 20% of the cases carried rope that was not identifiable as to the source. In addition to those animals seen bearing ropes, right whales have been documented with acute wounds, chronic unhealed wounds, and scars, determined to be the result of entanglement with rope.

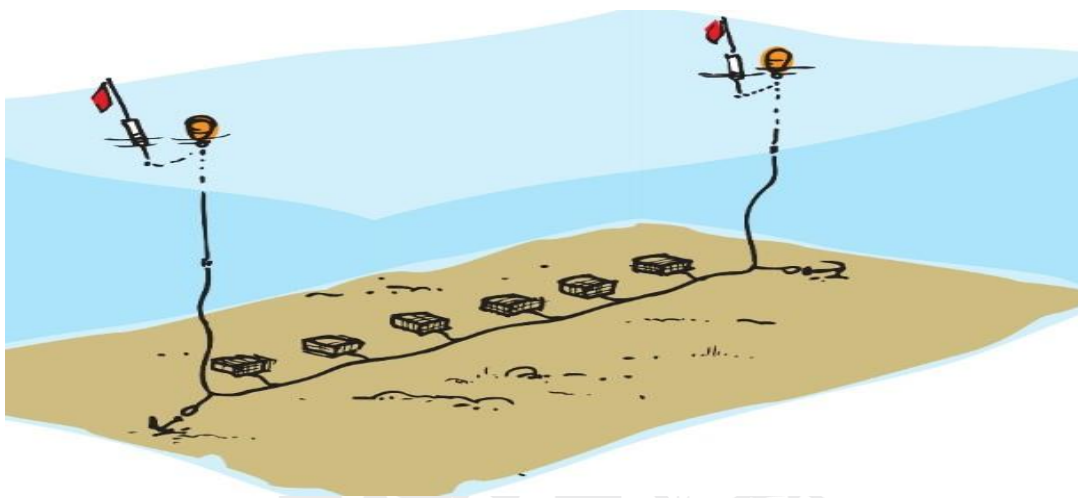
The study served as research into whale population biology and behaviour, fishing gear interactions and the effects of fishing gear modifications; it was used to inform and collaborate with fishermen and included a large-whale disentanglement program, and ultimately it helped authorities formulate and apply a variety of both regulatory and non-regulatory measures that have been implemented to mitigate whale mortality. Furthermore, this study also indicated that various mitigation strategies were not significantly reducing the number of entanglements. On the contrary, incidents were drastically reduced after suspending all line fishing permits for six months.



Picture: floating groundline system with vertical line to buoy

Among different pilot strategies, the following were applied:

- a. limiting the lengths of lines between traps
- b. using red or orange ropes which are more visible to whales
- c. capping the thickness of lines so that whales can more easily break the ropes
- d. halving the number of traps per fisherman
- e. banning the use of ropes in water deeper than 80 meters
- f. using weak links to connect the vertical line to the buoy system
- g. using sinking groundline versus floating groundline, between traps



**Picture: vertical line in a sinking groundline system**

The application of the above strategies, and the use of more expensive and sophisticated equipment, were problematic and dependent on the human factor and the will of the fisherman, since it was very difficult to monitor and control the continuity in the use of underwater materials, especially when these materials break and have to be replaced.

## **2. Entanglements in the False Bay**

The Brydes Whale, killed on the 10th of June 2019, was part of an “inshore”, non-migratory population that is thought to be quite small in numbers. Data on this population is not exhaustive, but recent studies have resulted in the population being up-listed as “Vulnerable” on the South African Red List, with certainly less than 1 000 individuals thought to be in existence.

Gwen Penry at Nelson Mandela University (NMU) recently conducted genetic studies which suggest that this Brydes Whale population could potentially be a subspecies. The Humpback Whale killed on the 26th of June 2019 was a juvenile and is an example of whales being entangled and killed within a designated Marine Protected Area. The death of these whales is not only tragic and avoidable but detrimental to the whale populations and the ecosystems in which they reside.

Studies have shown a higher incidence of serious entanglements in calves and juveniles, than in adults. Also, whales do not appear to learn to avoid fishing gear after becoming entangled, as 51.3% (157/306) of the individuals that were entangled multiple times during the study, had been first entangled as a calf or juvenile. It has been suggested that an individual who has previously been entangled, panics and becomes more easily entangled than whales who have not been entangled before.

Most right whales that become entangled apparently clear themselves from the gear and are left with only scars. Other whales continue their lives bearing fishing gear or with deep wounds from entanglement. In the study, the criteria used to define serious entanglement included any animal with a cut deeper than 8 cm caused by an entanglement with gear either in the mouth, wrapped around a body part, or trailing behind the whale, or wounds that could lead to infection. Serious entanglements were subdivided into non-fatal, potentially fatal, and fatal. An entanglement was considered potentially fatal if the animal was wrapped in gear that would impede its movements or feeding behaviour or appeared to be in poor condition. Indicators of poor condition included slow swimming, pronounced skin lesions, greying of the skin, not raising the flukes above the surface when diving, visible necrosis or swelling, and higher than normal levels of orange cyamids (whale lice) present on the skin of animals > 1-year-old. In these cases, the animal typically disappeared without a carcass being found. Fatal entanglements were, in this study, only those that led to documented deaths where a carcass was found but in addition to the documented deaths also disappearances of animals observed bearing fishing gear should be taken in account as well as the sub-lethal effects of severe wounding and the reduced reproduction and increased susceptibility to disease.

### **3. Other species involved**

Bycatch in non-mobile fishing gear leading to incidental mortality or serious injury has been identified as a worldwide conservation concern for many species of marine mammals including dolphins, sharks, otters, seals, penguins and other animals who feed on octopuses. Ecosystems are also affected by the decreasing octopus population numbers due to fishing, and it is difficult to ascertain due to insufficient data whether, or not, this is happening to a detrimental degree.

### **4. Trading octopus**

According to FAO, (UN Food and Agriculture Organisation), the current utilization of octopus as a resource is unsustainable. Their report shows that due to a shortage of octopuses and reductions in African quotas, the global market prices hit record levels in 2018 because the tight supply cannot meet the international demand. Asian markets are the main importers from all African coasts and about 220.000 tons of octopus are exported with Japan being the main importer (about 120.000 tons per year), the Republic of Korea and China being the other major importers.

The FAO showed in September 2018, January 2019 and June 2019, that octopus as a resource has been and continues to be under pressure and is “reaching a very serious state globally”. The Fisheries Directorate expressed concerns about the alarming decline of this species. FAO also indicated how supply shortage is clearly reflected in supply figures and emphasized “the urgent need to review the management policies of these resources”.

In keeping with the Sustainable Development Goals targets, time is running out for the government to achieve certain targets and wildlife under the seas (number 14) needs to be sustainable for future targets to be reached post-2030.

### **5. Who are octopuses?**

Octopuses have been indicated as a keystone species in marine ecosystems. It is also argued that octopuses are an intelligent and sophisticated species and therefore should not be eaten. Octopuses are recognized as the world’s most intelligent invertebrate; they are a unique species, and so distant from any other invertebrate or living organism on earth, that they will be presented at the 2019 Astrobiology Community Conference sponsored by NASA in June 2019, as one of the species on earth who could have an alien origin. Octopuses have nine brains, of which eight are in

each one of their arms. The different brains function in perfect coordination with the others. Octopuses possess a well-developed nervous system capable of feeling stimuli and pain, as well as complex sensory organs and an amazing sense of touch; despite arms being cognitive organs, octopuses can regrow them and their functions if they lose one or more of these arms; octopuses see with their eyes but also with their skin and they seem to be the only living creature who dies one cell at the time, in a very short time.

Octopuses learn faster than dogs and any other predator, use problem-solving tools in a constructive manner (like only chimpanzees, elephants, dolphins, and crows can do), and they have sharp, long and short-term memory and can work out geometry challenges. They don't only camouflage but mimic undersea objects and dangerous animals to scare aggressors. Octopuses pass their personality traits onto their offspring, suggesting their personalities are at least partly genetic, as they do not raise their offspring. There are a few studies indicating Octopuses have their own intricate language and communicate with each other by changing the colour of their skin cells<sup>1</sup> and dream/communicate whilst asleep<sup>2</sup>.

Researchers are studying octopuses with exponentially increasing interest and we believe we should protect them until we know and understand more not only about its population but also about the species, on a whole.

For all the above reasons, there is a global trend increasingly condemning the farming of octopuses for commercial use.

## **6. How line traps work**

Octopus traps use long ropes that are tied to buoys floating on the surface of the water. Whales and dolphins swim into these long ropes, roll over and dive in panic, entangling themselves more and more. The fishing traps are too heavy for them and they cannot resurface and subsequently drown. The increasing number of entanglements and deaths in recent times has highlighted the severity of the issue, and it raises questions regarding the ethics of this fishing method.

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<sup>1</sup> <https://www.livescience.com/53514-octopuses-lead-social-lives.html>

<sup>2</sup> <https://www.livescience.com/64966-dreaming-octopus-color-change.html>

The last segment of fixed gear, which is the vertical buoy line, remains the major entanglement device section, which is responsible for most entanglements, together with mid water floating lines.

### **7. Danger to other vessels**

Octopus traps were reportedly fitted with lights and sonar reflectors in the past, but this is no longer being done. This poses a serious risk to vessels in the area as the traps are not visible to them. Vessels of the Simon's Town Naval Base, their submarines as well as recreational boat users are at risk in the Simon's Bay area.

### **8. Rope-less devices**

Researchers have developed a rope-less catch system in order to reduce by-catch. The costs involved in the use of these sophisticated and delicate transmitting devices are high and these rope-less catch systems are not considered a practical solution for fisherman yet. Even when affordable, rope-less solutions would be highly problematic considering the difficulty in monitoring and controlling the device used as well as the number of devices placed, once the permit has been issued to the fishermen.

### **9. Ghost gears**

The rope-less solution does not help the issue of the so-called ghost gears: if non-mobile gears are a threat while perfectly active and functioning, we need to consider the impact of both traps and fishing lines systems that are lost at sea and continue to catch, injure and kill marine life. Usually manufactured from metal and plastic, it is estimated that ghost gears will continue killing marine life for up to 500 years.

Furthermore, gears should be licensed and linkable to owners in order to hold them accountable if gears are abandoned at sea. Considering the low cost of GPS apps today, all gears should be fitted with compulsory GPS and connected to the authorities along with information regarding permits, location, and ownership, guaranteeing the equipment and permits are being used in legitimate ways and in authorized areas and ultimately allowing recovery when equipment is lost.

## **10. The Pilot Permit is problematic**

An urgent point of concern is that the fishery using octopus traps has been operating under an exploratory permit, which was issued 17 years ago by the then Department of Agriculture, Forestry & Fisheries (DAFF), without any proper environmental impact assessments, research or consultation being carried out prior to the permit being issued. Furthermore, the permit was allegedly granted for this pilot project based on information regarding the viability of fishing stock that was supplied to the Department solely by the permit holder. Not only is this not good practice, but as per the 2016 Status report (pg. 66), the population number of octopus as the target species was listed as “unknown”. This means that in almost 20 years of octopus trapping, neither the population size nor the impact of fishing on the species and on other species affected by it within their ecosystem is known or has been assessed.

Also, the DAFF has left the assessment of yearly populations in the hands of interested parties, such as the fishermen. Fishermen will obviously consider their demand opportunities as most important, and it is therefore imperative that the octopus populations be assessed by an independent scientific body. Furthermore, if the fishermen are left to assess populations, it would be interesting to independently verify the data the single False Bay octopus- fisherman has handed to DAFF in the past, to justify his 50.000-tons octopus permit per year.

## **11. Communities and local fisheries, the impact**

The Albatross company, owned by Garry Nel, has been exporting between 30- 40 tons octopuses annually to Japan, on his permit of 50.000 tons per year, based on his own population assessment. It is clear how this is a threat, not only to the ecology of our marine systems but also to the survival of small fisheries and communities relying on fish for their survival.

Concerns are not only related to octopuses but to all big scale fishing industries and to the establishment of excessive quotas.

In September 2018 The SA Small-scale Fisheries Collective (SASSFC), a fishing rights group, welcomed a Western Cape High Court ruling in favour of the reduction of the West Coast Rock Lobster (WCRL) total allocation catch (TAC) set by the Department of Agriculture, Forestry and Fisheries (Daff). Judge Owen Rogers ruled that the TAC for WCRL for 2017/2018 is inconsistent with the Constitution as per the Marine Living Resources Act. The ruling followed an application by



the World Wide Fund for Nature SA (WWF), after the organization complained that the TAC set at 1924.08 tons was too high, thus undermining the lobster's long-term survival and also disregarding fishermen who depend on the valuable resource.

## **12. Costs to the environment and society**

As we mentioned, cetaceans are not the only animals to be affected by the octopus traps. Beside all species who are at risk to succumb due to entanglements, there are many who feed on octopuses and are affected by the decreasing octopus population numbers due to fishing; it is difficult to ascertain whether or not this is happening to a detrimental degree due to insufficient data being supplied.

The City of Cape Town was certainly correct when, in their official statement supporting the request for an octopus trap moratorium, stated that they are considering billing the fishing company for the removal and disposal of whale carcasses in cases where octopus traps have caused their death. The cost for removal and disposal of one carcass was quoted to be between R50 000.00 and R150 000.00, which is a huge financial burden that should not be carried by the ratepayers.

Furthermore, what will the long-term costs be for South Africa's whale, penguin, and seal eco-tourism industry and sustainability if we don't protect all these species and our gentle giants along their reproductive route?

## **13. Whales and Climate Change**

The South African government is a signatory of the United Nations Agenda 2030 Sustainable Development which launched in New York on September 25-27, 2015. In the Agenda, there are 17 "Sustainable Development Goals (SDG 's) all interconnected, with "Climate Action" being number 13 and "Life below the Water" being number 14.

Furthermore, in the recent UN "11 years left" report it is listed that:

- a. 33% of marine fish stocks in 2015 have been harvested at unsustainable levels;
- b. more than 55% of the ocean area is covered by industrial fishing;
- c. there will be a significant (25%) decline in ocean species in the next few decades;

- d. 90% of global fish catch is done by big scale fisheries;
- e. 33% of the world's reported fish catch is illegal, unreported or unregulated

Research shows that whales are crucial in mitigating anthropogenic climate change and that they play a key role in keeping carbon out of the atmosphere. In fact, the deep ocean stores, a lot of carbon. Whales facilitate carbon absorption in two ways:

- a. With their movements — especially when diving — they push nutrients from the bottom of the ocean to the surface, where they feed the phytoplankton and other marine flora that suck in carbon, as well as fish and other smaller animals, by producing large quantities of fecal plumes.
- b. They introduce nutrients that feed marine plants in the area. These plants use photosynthesis, which absorbs carbon, thus enhancing the carbon capture process.

#### **14. Legal actions and global trend**

It is evident that line fishing gears are killing whales and other important marine mammals. In June 2018, a lawyer representing the North Atlantic Right Whales was the first one to sue the US State of Maine's Department of Marine Resources (DMR) for permitting, despite researches on the disastrous impacts, the use of vertical lines in lobster fishing. A few weeks later, another lawyer sued Massachusetts for the same reason. Since then, separate lawsuits have been filed against the National Marine Fisheries by several NGOs including Humane Society US, Defenders of Wildlife, Centre of Biological Diversity and Conservation Law Foundation.

#### **15. Line traps for research**

It has been questioned if the Department of Agriculture, Forestry, and Fisheries (DAFF) is monitoring crayfish population via the usage of crayfish line traps.

Every year the West Coast population of crayfish is assessed, and a quota is established. The 2018/19 West Coast Rock Lobster (WCRL) Total Allowable Catch (TAC) was for 1084 tons, which is a 43.6% reduction when compared to the TAC of 1924.08 tons determined for the 2017/18 fishing season. This clearly indicates a drastic reduction in population.

It has been allegedly reported by local fishermen and whale-watching companies that the use of line traps is not allowed in lobster fishing but DEFF placed such devices, in September – in whale reproduction season - to assess crayfish populations and set the yearly quota from December. It has been indicated that those lines have caused serious entanglements too. It is clear, that this assessment method needs to be abandoned immediately, and all gears must be removed from the ocean.

## **16. Recommendations**

- a. South Africa is enriched with amazing biodiversity both on land and under our seas, and in our waterways, and our government is the custodian of these wonderful resources. Entanglement of large whales in fishing gear has emerged as one of the urgent conservation issues of our time. Fishing gear mortalities for several species classified as endangered probably exceed all other causes of mortality combined. We would like to see a total ban on all octopus and crayfish catch devices as well as other line non-movable systems. As can be seen, these devices are extremely dangerous and a huge threat to many species of our marine life and must not be permitted in or near protected areas and along all known whale reproductive routes.
- b. It is essential to include in legislation gear markings and specifications to identify ownership and location and to recover what is lost at sea.
- c. We recommend a revision of gear type limitations, fishing procedures and standards for the collection of data which affect our ecosystems, our climate and our keystone species including whales and octopuses.
- d. The alleviation of poverty is also one of the SDGs (Sustainable Development Goals) targets and so local fishermen and communities and future generations must be able to have access to these resources instead of seeing them being depleted by self-regulated industrial fishing.
- e. Independent assessments in populations are essential to protect our ecosystems.

To avoid further decline in marine resources, and mortalities to oceanic life (especially our megafauna) caused by human impact, we would like to encourage the Minister to take all of this information into consideration, and to make the right decisions regarding our environment, and to protect our biodiversity to ensure it remains sustainable for many years to come.

Thank you,

*Animal Law Reform South Africa*

*Baboon Matters*

*Ban Animal Trading*

*Beauty Without Cruelty (South Africa)*

*Centre for Animal Rehabilitation and Education*

*Elephant Reintegration Trust*

*EMS Foundation*

*Elephant Specialist Advisory Group*

*Four Paws (SA)*

*Future 4 Wildlife*

*Global March for Elephants and Rhinos*

*Global White Lion Trust*

*Green Girls in Africa*

*Humane Society International (Africa)*

*Institute for Critical Animal Studies (Africa)*

*Landmark Foundation*

*NSPCA*

*OSCAP*

*SAFCEI (Southern African Faith Communities' Environment Institute)*

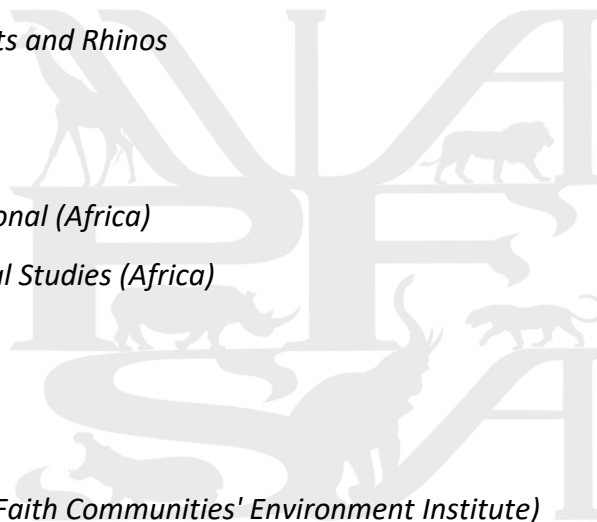
*SEA SHEPHERD*

*Southern African Fight for Rhinos*

*Vervet Monkey Foundation*

*WildAid Southern Africa*

*Wild Law Institute*



## **References:**

- Anderson MS, Forney KA, Cole TV, Eagle T and others (2008) Differentiating serious and non-serious injury of marine mammals: report of the serious injury technical workshop, 10–13 Sep 2007, Seattle, Washington, DC. NOAA Tech Memo 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 Apr 1997, Silver Spring, MD. NOAA Tech Memo NMFS-OPR-13
- Cassoff RM, Moore KM, McLellan WA, Barco SG, Rotstein DS, Moore MJ (2011) Lethal entanglement in baleen whales. *Dis Aquat Org* 96: 175–185
- Hamilton PK, Knowlton AR, Marx MK (2007) Right whales tell their own stories: the photo-identification catalog. In: Kraus SD, Rolland RM (eds) *The urban whale: North Atlantic right whales at the crossroads*. Harvard University Press, Cambridge, MA, p 436–459
- Hamilton PK, Marx MK, Kraus SD (1998) Scarification analysis of North Atlantic right whales (*Eubalaena glacialis*) as a method of assessing human impacts. Report to National Marine Fisheries Service, Northeast Fisheries Science Center, Woods Hole, MA. NOAA Contract #46 EANF-6-0004. [www.nefsc.noaa.gov/publications/reports/EANF-6-004.pdf](http://www.nefsc.noaa.gov/publications/reports/EANF-6-004.pdf)
- Hunt KE, Rolland RM, Kraus SD, Wasser SK (2006) Analysis of fecal glucocorticoids in the North Atlantic right whale (*Eubalaena glacialis*). *Gen Comp Endocrinol* 148: 260–272
- Johnson AJ, Salvador G, Kenney JF, Robbins J, Kraus SD, Landry S (2005) Fishing gear involved in entanglements of right and humpback whales. *Mar Mamm Sci* 21: 635–645
- Kenney (2001) Anomalous 1992 spring and summer right whale (*Eubalaena glacialis*) distributions in the Gulf of Maine. *J Cetacean Res Manag* 2(Spec Issue): 209–223
- Knowlton (2005) A review of gear modifications and fishing practices aimed at reducing the level and frequency of entanglements with right and humpback whales in the western North Atlantic. Report to National Marine Fisheries Service, Northeast Region, Gloucester Point, MA. NOAA Contract #40EMNF300159
- Knowlton AR, Kraus SD (2001) Mortality and serious injury of northern right whales (*Eubalaena glacialis*) in the western North Atlantic Ocean. *J Cetacean Res Manag* 2(Spec Issue): 193–208
- Knowlton AR, Cooper LA, Hamilton PK, Marx MK, Pettis HM, Kraus SD (2008) Analysis of scarring on North Atlantic right whales (*Eubalaena glacialis*): monitoring rates of entanglement interaction 1980–2004. Report to National Marine Fisheries Service, Northeast Fisheries Science Center, Woods Hole, MA. NOAA Contract #EA133: F-03–SE-0323

Kot BW, Ramp C, Sears R (2009) Decreased feeding ability of a minke whale (*Balaenoptera acuturostrata*) with entanglement-like injuries. *Mar Mamm Sci* 25: 706–713

Kraus SD (1990) Rates and potential causes of mortality in North Atlantic right whales (*Eubalaena glacialis*). *Mar Mamm Sci* 6: 278–291

Kraus SD, Moore KE, Price CA, Crone MJ, Watkins WA, Winn HE (1986) The use of photographs to identify individual North Atlantic right whales (*Eubalaena glacialis*). *Rep Int Whaling Comm* 10(Spec Issue): 145–151

Kraus SD, Brown MW, Caswell H, Clark CW and others (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 Manag* 6: 199–214

Neilson JL, Straley JM, Gabriele CM, Hills S (2009) Nonlethal entanglement of humpback whales (*Megaptera novaeangliae*) in fishing gear in northern Southeast Alaska. *J Biogeogr* 36: 452–464

Read AJ, Drinker P, Northridge S (2006) Bycatch of marine mammals in U.S. and global fisheries. *Conserv Biol* 20: 163–169

Robbins J (2009) Scar-based inference into Gulf of Maine humpback whale entanglement: 2003–2006. Report to National Marine Fisheries Service, Northeast Fisheries Science Center, Woods Hole, MA. NOAA Contract #EA133F04SE0998

Weinrich M (1999) Behavior of a humpback whale (*Megaptera novaeangliae*) upon entanglement in a gillnet. *Mar Mamm Sci* 15: 559–563