Chapter 33 **Epilogue**

Andy Butterworth



The image credit as Eva Butterworth 2017

A. Butterworth

Department of Clinical Veterinary Science, University of Bristol Veterinary School, Langford, N Somerset, UK

e-mail: andy.butterworth@bris.ac.uk

A. Butterworth

Day 1. It's getting darker, the water is cooling at the surface, and I can feel it cold against my back as I surface. I've been feeding for about half an hour, and the small fish I am gathering into my mouth are quite easy to collect in the still water tonight. The other humpback whale, which is feeding next to me, is quietly resting on the surface at the moment, and I can hear his blows intermittently when I also surface. I swim and then allow the water to flow into my mouth and to expand my jaws and open the ridged throat grooves and folds which allow me to scoop the fish and small food creatures into my mouth and then to concentrate them as they are held against the baleen plates in my mouth. I move slowly to the left and right as I move forward, sensing the density of the fish like wavering shadow clouds in the water. After taking several scoops, I rest for a short time and then start swimming actively to move toward another density of fish, which I can sense and see in the water. I feel a slight pulling sensation on the right side of my jaw and then a more distinct sense of something tight across the tissues of my mouth as it closes. This is not a sensation I have felt before, and quite suddenly, I am aware of a strong intense pulling force on the side of my mouth, so strong that it actually pulls me to the right side. Something has got hold of my jaw and is slowing me down, pulling me to the right, and I can now feel a burning cutting sensation in the tissues along the edge of my jaw. I'm not prepared for this sudden attack—I did not sense any killer whales or other large animals close to me before—all I was aware of was open water and the schools of fish which moved in clouds ahead and around me. I react in the way I always do when I am surprised by something potentially dangerous—I flip my tail and dive down—the water here is not very deep and soon I am close to the seabed. The tension on the side of my mouth has not reduced; in fact, it is so strong that it is now pulling me to the side as I try to swim, and the more I push with my powerful tail fluke and long pectoral fins, I feel the cutting, burning sensation at the side of my mouth. Now I start to become frightened; I am not used to much being dangerous for me—of course the big human floating things concern me because they are noisy and large and fast and hard, and the killer whales can try to nip my fins and flukes, but this is something new, something I don't know anything about. Whatever it is, it's silent, and small (I can't sense any swimming movements from the attacker) and very, very strong, and now, extremely painful. The thing is cutting deep into my mouth, and I can feel it bending and damaging my baleen plates, cutting into the soft tissues of my mouth, and also I can taste blood (my blood) in the water. Also, worryingly, I cannot fully close my mouth, and I can feel the water flowing in, and out, as I swim. I decide to surface fast in the hope that the attacker will be thrown off, and as I breach at the surface, I feel myself freed a little from the intense pulling tension. Maybe I've lost it! But no, soon I can sense another feeling—not only is the thing attached at my mouth, but I can feel strands of it, whatever it is, against my sides. I don't like this at all; I'm scared; I spin myself around in the water—this takes a few moments as I weigh about 35 tonnes (I'm only medium sized) and I'm 12 m long, not fully grown! I make three spinning turns, hoping to throw the thing off. Oh no! I can feel that one of my pectoral fins is now held against my side. This is very, very scary—how can I turn, steer, and propel myself? I start to panic and rush to the surface to make a series of short snorty breaths and blows-my huge 33 Epilogue 611

heart is beating fast, and I propel myself along the surface as fast as I can, powering with my tail, but hampered by the fact that I can't completely close my mouth. My pectoral fin is not working at all, 4 m in length, and it is held tight against me, and despite my huge muscles, I am unable to pull it away from my side. Two of the whales from my pod have been trying to keep up with me, clearly concerned by my strange behavior and are sending acoustic signals to me—what's wrong? What's wrong? I'm so frightened; all I can do is swim and spin and make shallow dives and short snorty breaths—and repeatedly send out an alarm signal to the other whales around me.

Day 30. I've been living with the thing for a whole moon cycle now. I've lost quite a bit of weight—whereas before I was fat and sleek with a very thick layer of blubber, I am now finding it very difficult to feed because my jaw hurts so much, the baleen has been damaged inside, I can't completely close my mouth (which I need to be able to do, to dive properly, and to swim fast, and to allow my baleen filter to work well), and the thing has wrapped itself around my body a number of times (I can't say how many) and has trapped my right fin against my side—so I can only limp through the sea. I trail a long tail of "the thing"—it's heavy with pieces of litter and weed, and it slows me down so much that my most common companion, and the rest of the pod—usually three others with whom I usually move through the sea—have had to leave me. I am very alone, but other humpback pods and other species of whales sometimes come close to me and send me acoustic messages. But they can all see that I am sick and unable to feed and move easily. I feel very tired most of the time, the lack of food, the fear, the cold (my blubber is not as thick as it should be), and the constant pain (the thing has cut right into the tissues in my mouth and also deep into my side along the line from my mouth to the root of my pectoral fin). The cut is so deep that I can see blood in the water sometimes, and the pain is very, very severe—I can feel the thing against my insides and feel a grating feeling as it moves against my bones around my fin. The swelling and infection around the thing are sapping my strength and endurance.

Day 90. The thing has been with me for three moon cycles now. I'm very tired, I fin slowly—and sometimes I am lucky enough to sense a school of fish or a cloud of small crustacea and to summon enough energy to open my sore and damaged mouth and to envelop them—but my mouth does not work well, the thing has formed a tight band across the middle of the inside of my jaw, and even the mass of soft fish and krill bodies hurt me when I close my mouth against them. I have lost a lot of weight, and the cold water is beginning to really affect me, so I have turned north, back toward warmer water—and I have reached a place now where I can just about tolerate the temperature—but the feeding is bad, and I am very alone. I feel very sick; the infection around the thing is causing me to feel emptied of energy, confused, and sometimes disoriented. I have tried scraping myself along a pebble seabed to try and relieve myself of the thing, but now it is so deeply sunk into my skin, blubber, muscle, and the bone of my jaw and pectoral fin that I know it cannot be released—unless it chooses to let go of me itself. I used to send out distress signals when other whales came within hearing distance—but I have stopped now, as this simply caused whales to come to see what was happening, but they could do nothing. I know that I am dying, but I fight on with the small hope that the thing will break off, let go, or decide to leave me.

Day 115. I am lying silent in shallow water. I have no strength left. I can feel seabirds landing on me to peck at the open wound caused by the thing. I have not been able to feed for 20 days and nights, and my blubber is very thin and my skin is damaged and sore in places where the trailing part of the thing has touched and cut into me again and again. I feel my life sliding away; at least the constant pain, the deep burning constant pain of the thing will be finished.

Bibliography (Papers Which Influenced the Text of the Epilogue)

- Andersen MS, Forney KA, Cole TVN, Eagle T, Angliss R, 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, 10–13 September 2007, Seattle, Washington. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-OPR-39. 94 p
- Brown SL, Reid D, Rogan E (2015) Spatial and temporal assessment of potential risk to cetaceans from static fishing gears. Mar Pol 51:267–280
- Carretta JV, Barlow J, Enriquez L (2008) Acoustic pingers eliminate beaked whale bycatch in a gill net fishery. Mar Mam Sci 24:956–961
- Cassoff RM, Moore KM, McLellan WA, Barco SG, Rotstein DS, Moore MJ (2011) Lethal entanglement in baleen whales. Dis Aquat Org 96:175–185; Cole T, Hartley D, Garron M (2006) Mortality and serious injury determinations for baleen whale stocks along the eastern seaboard of the United States, 2000–2004. Reference document 06-04. Northeast Fisheries Science Center, Gloucester, MA
- Coupland RM (1992) The red cross classification of war wounds: the E.X.C.F.V.M. Scoring system. World J Surg 16(5):910–917
- Dau BK, Gilardi KV, Gulland FM, Higgins A, Holcomb JB, Leger JS, Ziccardi MH (2009) Fishing gear-related injury in California marine wildlife. J Wildl Dis 45(2):355–362
- Hunt KE, Rolland RM, Kraus SD, Wasser SK (2006) Analysis of fecal glucocorticoids in the North Atlantic right whale (*Eubalaena glacialis*). Gen Compare Endocrine 148:260–272
- Jepson PD, Barbieri M, Barco SG, Bernaldo de Quiros Y, Bogomolni A, Danil K, Rowles T (2013) Peracute underwater entrapment of pinnipeds and cetaceans. Dis Aquat Org 103:229–264
- Kirkwood JK, Bennett PM, Jepson PD, Kuiken T, Simpson VR, Baker JR (1997) Entanglement in fishing gear and other causes of death in cetaceans stranded on the coasts of England and Wales. Vet Rec 141:94–98
- 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 2:193–208
- Knowlton AR, Robbins J, Landry S, McKenna HA, Kraus SD, Werner TB (2015) Effects of fishing rope strength on the severity of large whale entanglements. Conserv Biol. doi:10.1111/ cobi.12590
- Lambertsen RH, Rasmussen KJ, Lancaster WC, Hintz RJ (2005) Functional morphology of the mouth of the bowhead whale and its implications for conservation. J Mammal 86:342–352
- Leaper R, Papastavrou V, Sadler L (2006) Consideration of factors affecting time to death for whales following entanglement in fishing gear. Report, University of Bristol. Published by the Whale and Dolphin Conservation Society, Brookfield House, St Paul St, Chippenham SN15 1LJ, UK (2008)
- Lien J (1994) Entrapment of large cetaceans in passive inshore fishing gear in Newfoundland and Labrador (1979-1990). Rep Int Whal Comm 15:149–157

- MARPOL (2016) International convention for the prevention of pollution from ships (MARPOL) International Maritime Organization. http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx. Retrieved 27 June 2016
- Moore M (2013) Welfare of whales bycaught in fishing gear or struck by vessels. Anim Welf 22:117-121
- Moore MJ, van der Hoop JM (2012) The painful side of trap and fixed net fisheries: chronic entanglement of large whales. J Mar Biol. doi:10.1155/2012/230653
- Moore MJ, van der Hoop J, Barco SG, Costidis AM, Gulland FM, Jepson JD, Moore KT, Raverty S, McLellan WA (2013) Criteria and case definitions for serious injury and death of pinnipeds and cetaceans caused by anthropogenic trauma. Dis Aquat Org 103:229–264
- NOAA/NMFS (2007) Serious injury technical workshop, Seattle, 2007 Severity indexes page 7. http://www.nmfs.noaa.gov/pr/pdfs/interactions/serious_injury_techmemo2008.pdf. Accessed 2 April 2016
- Pearson E, Mellish S, Sanders B, Litchfield C (2014) Marine wildlife entanglement: assessing knowledge, attitudes, and relevant behaviour in the Australian community. Mar Pollut Bull 89:136–148
- Read AJ (2008) The looming crisis: interactions between marine mammals and fisheries. J Mammal 89:541–548
- Robbins J, Knowlton AR, Landry S (2015) Apparent survival of North Atlantic right whales after entanglement in fishing gear. Biol Conserv 191:421–427
- Sandoe P, Simonsen HB (1992) Assessing animal welfare: where does science end and philosophy begin? Anim Welf 1:257–267
- Soulsbury CD, Iossa G, Harris S (2008) The animal welfare implications of cetacean deaths in fisheries. A University of Bristol report to the Whale and Dolphin Conservation Society (WDC)
- Wilcox C, Mallos NJ, Leonard GH, Rodriguez A, Hardesty BD (2016) Using expert elicitation to estimate the impacts of plastic pollution on marine wildlife. Mar Policy 65(2016):107–114
- World Society for the Protection of Animals (WSPA) (2012) In: Butterworth A, Clegg I, Bass C (eds) Marine debris: a global picture of the impact on animal welfare and of animal-focused solutions. WSPA International, London. http://oceansandplastics.info/wp-content/uploads/2015/07/REP_WSPA_2012.pdf. Retrieved 27 June 2016