Chapter 1
Introduction

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Abstract Do humans really have any responsibility to wild marine mammals? Marine mammals in zoos certainly come under the heading of being under human control, but, do humans really have any responsibility to the welfare of wild marine mammals? The answer to this is, I suspect, 'it depends'. The marine mammals reflect mammalian adaptations to a fully aquatic (cetaceans, sirenia), mostly aquatic (seals, sea lions) or semiaquatic (otters, polar bear) life. This is a spectrum of dependency on water - a stranded whale will be in deep distress and likely to die after half a day on a beach and out of water; a polar bear may not touch deep water for weeks or months, but, on the contrary, it can swim in deep oceanic seas for up to 12 days without touching solid ground. The chapters in this book reflect the variation in marine mammal adaptation and their responses to human pressures. The chapters also reflect the difficulties in discussing wild animal protection, the links between conservation and animal welfare, hunting, pollution, by-catch and captivity all within the same book cover. There is a profound illogicality to some marine mammal issues - for example - in one part of the world, hundreds or even thousands of whales and dolphins are being killed for meat or for use in the entertainment industry in marine parks. In another part of the world, or even in the same country, and even on the same coastline, stranded whales or dolphins are attracting crowds of people with the good intention to rescue, refloat and rehabilitate these animals. Somewhere in this confusing mix of exploitation and protection, conservation and consumption, there remains the capacity for humans to identify animal suffering and, where it seems expedient or politically or socially appropriate, to act.

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1.1 Wildly Irresponsible or Responsible for the Wild?

Do humans really have any responsibility to wild marine mammals? Or is 'wild irresponsibility' a feature of how mankind views wild animals, 'not in our direct control', therefore not really our responsibility? Marine mammals in zoos certainly come under the heading, 'under man's control', but, do humans really have any responsibility to the welfare of wild marine mammals? The answer to this is *it depends*. It depends on how direct the linkage is between human impacts and the welfare of marine mammals.

Hunting of seals, or whaling, or trapping of otters or boat propeller injuries to manatees - these are very direct impacts on these animals - and how the hunting, trapping, netting and culling are done, and the methods used, are impacts which can be seen to directly affect the welfare of marine mammals when they come into close contact with humans.

Less directly, and perhaps less clearly, the effects of human generated noise in the ocean, boat traffic, coastal development and interactions with fisheries and the effects of warm water outflows from power stations or algal blooms linked with a nutrient run off from agriculture are very much human impacts, but they are probably not 'intentional'. To catch fish, to travel, to produce electrical power and to farm; the impacts on the marine mammals are secondary, not really intended and to a degree unanticipated.

The least direct, or, at least, less immediately obvious, links between human activity and marine mammal welfare are through effects including climate change, pollution in the oceans, marine debris, military sonar, mining and oil exploration, and also through the pressure of human populations on food and fish resources and human impacts on coastal land, on river drainage to the sea and on coastal plant and animal communities on which some marine mammals depend.

So, in answer to the question: can, or should, or do, humans have a responsibility for the welfare of marine mammals? 'It depends on':

(a) The clarity of the association between man, marine mammals and welfare impacts
(b) The actions and reactions that mankind may be able to take; immediate, local, short-term or longer-term, wide ranging and potentially global in implications

The chapters in this book reflect this variation in the types and 'directness' of the linkages between people's actions and marine mammal welfare. As well as discussing the 'issues', the chapters also reflect the enormous differences in approachs that are, or will, or could, be required to tackle marine mammal welfare issues including 'marine debris (Chaps. 3, 13)', 'marine noise (Chap. 7)', 'climate change (Chaps. 2, 8, 15, 19, 22, 23, 24, 25)', 'pollution (Chaps. 3, 18)', 'the welfare impacts of captivity (Chaps. 11, 16, 20, 27, 31)', 'boat strike (Chaps. 4, 17)', 'environmental change (Chaps. 10, 14, 19, 24)', 'hunting (Chaps. 5, 6, 15, 26, 30)' and 'by-catch (Chap. 4)'.

1.2 The Marine Mammals

The marine mammals reflect mammalian adaptations to a fully aquatic (cetaceans, sirenia), mostly aquatic (seals, sea lions) or semiaquatic (otters, polar bear) life. This is a spectrum of dependency on water - a stranded whale will be in deep distress and likely to die after half a day stranded on a beach and out of water; a polar bear may not touch deep water for weeks or months, or it can swim continuously in deep oceanic seas for up to 12 days without touching solid ground. Some marine mammals will be wholly and entirely influenced by the sea (or rivers, estuaries, marshland), and so the welfare impacts which most strongly affect these animals will mostly reflect human impacts on the marine world: fishing, marine debris, by-catch and water pollution. The animals which have a partial dependency on the rivers and oceans will be affected by these same human-linked conditions, pollution, debris, coastal development and boat strikes, and may also be affected by coastal development and loss of coastal habitat. The terrestrially capable marine mammals (seals, otters, polar bear) will be influenced by human influences both on the water, and on land and ice. The chapters in this book reflect this diversity, and also reflect the fact that it is not only water but ice, vegetation and coastal land changes which influence marine mammal welfare.

Marine mammals can be divided into:

Cetacea (whales and dolphins, approximately in diminishing order of body size)

Rorquals—*Balaenopteridae*—9 species
Grey whale—*Eschrichtiidae*—1 species
Right and bowhead whales—*Balaenidae*—4 species
Pygmy right whale—*Cetotheriidae*—1 species
Sperm whale—*Physeteridae*—1 species
Pygmy and dwarf sperm whales—*Kogiidae*—2 species
Narwhal and beluga—*Monodontidae*—2 species
Beaked whales—*Ziphiidae*—21 species
Oceanic dolphins—*Delphinidae*—38 species
Porpoises—*Phocoenidae*—7 species

Sirenia (sea cows)

Manatee—*Trichechidae*—3 species
Dugong—*Dugongidae*—1 species

Otters—Mustelidae—The 13 extant species are divided into semiaquatic (11 species) and marine (2 species)

Polar bear—*Ursidae*—1 species

Pinnipedia (sea lions, walruses, seals)

Eared seals and sea lions—*Otariidae*—15 species
Walrus—*Odobenidae*—1 species
True seals—*Phocidae*—18 species

1.3 Welfare, Conservation and the Messy Logic of Human Effects on the Welfare of Marine Mammals

Some readers will probably ask 'what is the difference between conservation and animal welfare?' with the understandable thinking that if animals are conserved, then their welfare is probably a secondary concern, but that if they are not conserved, then welfare becomes irrelevant. Conservation concerns itself with species, and the potential for extinction if a species does not survive.

The word 'welfare' is variably understood in different parts of the world—many languages have their own word for 'welfare' as used in the context of animal welfare or well-being: in Spanish, *benestar*, state of health, prosperity; German, *wohlbefinden*, well-being, wellness, physical comfort; and French, *bien-être*, well-being, a sense of well-being. Animal welfare focuses on the individual animal. Marine mammals are sentient animals, which have a complex experiential world and mental needs and natures; are aware of their own surroundings; have an emotional dimension; are aware of what is happening to them; have the ability to learn from experience; are aware of bodily sensations—pain, hunger, heat, cold etc.; are aware of their relationships with other animals; have the ability to choose between different animals, objects and situations; and have the capacity to suffer.

Historically there has been an understandable focus on negative welfare. However, positive experiences and states are now recognised to be (at least) as important as negative states in their contribution to overall well-being. Animal welfare concerns itself, and tries in some situations, to measure (welfare science) the 'quality' of an animal's life. Welfare science and ethical debate can, and does, address animal death, as well as animal life, as the 'quality' of 'animal death' affects the 'quantity' of animal life and the overall quality of an animal's life. The animals welfare during a marine mammal's life and at the time of its death and the impacts on the quality of life, for example, being entangled for the remainder of your life in a long buoy rope, being injured by a boat impact, or your reproductive fitness and health being affected by PCBs (polychlorinated biphenyls), are discussed in the chapters of this book.

The welfare of marine mammals is starting to enter the political arena at a high level. At its 65th meeting in 2014, the International Whaling Commission (IWC) agreed to direct a programme of work to address human activities which can adversely affect cetacean welfare, including the welfare concerns that arise when large whales become entangled in fishing gear or marine debris, and to work on the methods used to euthanise stranded whales and the effectiveness of those methods. Along with some of the other authors in this book, I attended the first IWC workshop (May 2016), which had a sole focus of considering non-whaling welfare issues (See Chaps. 4, 5, 9).

In 2014, Canada and Norway appealed to the World Trade Organisation (WTO) to overturn a European Union (EU) decision to ban trade in seal products. The trade in seal products was banned by the EU to protect 'public morals', and the science they cited indicated that some shot seals took a considerable period of time to die, and some injured animals were 'unchecked' for periods of several minutes before being finally killed by clubbing. The appeal to the WTO from Canada and Norway

did not actually challenge the 'poor welfare outcomes' of the seals reported by the EU; instead, the appeal concentrated on trade issues and claimed unfair restrictions. The WTO decided against the appeal, and so trade in seal products derived from commercial sealing remains restricted in the EU, based on consideration of welfare as part of public moral concerns (see Chap. 15).

Where humankind has an influence, then it seems logical that consideration should be given for ways to provide marine mammals the potential to experience a life which avoids, as far as is pragmatic, suffering which derives from the hands of humans. The term 'good animal welfare' probably denotes a state in which there is little or no 'unnecessary suffering', and 'good welfare' is not just the absence of cruelty or 'unnecessary suffering'; it is more complex than that; it includes the physical and the mental state of the animal, whether the animal can express a range of 'normal' behaviours and whether the animal can fulfil its essential nature or 'telos'.

> 'I suggest that an animal is in a poor state of welfare only when physiological systems are disturbed to the point that survival or reproduction is impaired'.
>
> McGlone

> 'Welfare defines the state of an animal as regards its attempts to cope with its environment'.
>
> Fraser and Broom

> '… neither health nor lack of stress nor fitness is necessary and/or sufficient to conclude that an animal had good welfare. Welfare is dependent upon what animals feel'.
>
> Duncan

> 'Not only will welfare mean control of pain and suffering, it will also entail nurturing and fulfilment of the animals' nature, which I call telos'. Rollin

For animals kept in captivity, the influence of the captive environment is likely to be central to the animals' experience of life and in this case (as discussed in Chaps. 11, 12, 16, 20, 21, 27, 31) the way that the marine mammals are housed, cared for, fed, treated when sick, and provided with space, companionship and an environment which provides stimulus. These become important factors in welfare considerations that extend beyond those which may be considered for wild marine mammals.

For many people, a description of an animal having 'good welfare' might include the animal being 'well' (i.e. not unwell) and also that the animal had the potential for 'well-being'—or at least is not subject to high levels of distress or high frequencies of interference. With regard to a state of 'good welfare', disease or physiological or anatomical damage, injury and trauma would provide potential welfare challenges. The term 'cost of coping' has been used in relation to welfare, implying that emotional distress, pain or increased levels of physiological or disease-related challenge would have a 'cost' to the animal and that if this cost was great, or in some cases excessive, then the animal would be less likely to 'cope'. Prolonged failure to cope would probably result in suffering, and so the link between welfare and coping, and the cost of a welfare challenges in terms of the ability for the animal to cope, and for the animal to continue to express a range of expected or anticipated

behaviours would result in challenges resulting in depletion of behavioural resilience in animals which were severely challenged by a welfare insult. We have a developing understanding of the complexity of some marine mammal 'societies' and the importance of certain associations for individual and group welfare and this is explored in Chap. 10. Welfare science is now a well-developed discipline (see Chaps. 12, 16), with its own language, agreed way of looking at things and, to a degree, its own paradigm, and I would like to follow the lead of the RSPCA in the UK, by suggesting that practical welfare assessment methods for marine mammals would, or could, follow these principles:

(a) Welfare assessment methods for marine mammals should/could be based on extrapolation from evidence, experience and knowledge from other species.
(b) Interpretation of welfare states in marine mammals would permit comparison with what is considered current 'good practice' for the treatment of other (non-marine mammal) animals.
(c) The way we interpret and try to understand marine mammal welfare issues would allow application of 'reasonable/justifiable anthropomorphism'.
(d) The interpretation of what we see as welfare issues in marine mammals would make use of 'common sense', i.e. making decisions which seem to show 'good sense' (as opposed to being 'nonsense') when viewed by a general body of reasonably informed humankind.
(e) When there are ethical considerations and decisions to be made, a structured, agreed framework based approach to consideration of these ethical issues should be adopted—to allow cool discussion of sometimes emotionally charged issues.
(f) Wherever possible, the application of the 'precautionary principle' ('informed prudence') could/should be adopted so that, when this is possible, the well-being and welfare of the animals is given weight and importance.

1.4 A Changing Wild World

The wild is less wild than it used to be across many parts of the globe; human influence, powered by oil and gas, electricity, the aeroplane, the car, the gun, air and water pollution, can be felt across the entire surface of the planet now—through the creeping tentacles of human population growth. The United Nations (2015) estimate that the global human population will reach 10.1 billion in 2100. Alongside this population growth, increasingly, the world's people live in cities; Osaka, Karachi, Jakarta, Mumbai, Shanghai, Manila, Seoul, Beijing, Mexico City, São Paulo, New York, Lagos, Los Angeles and Cairo each now have close to or more than 20 million people. Delhi and Tokyo are forecast to reach 40 million people within the next decade. Humans and their cities need food and fuel and often spread across coastal land. Human waste is linked with climate change, ocean pollution, air pollution and marine debris. Even if

population growth slows, humankind and its mark on the planet and its animals are already deeply scored into the surface of the earth and will be for a long, geologically long, time.

1.5 Summary

The chapters in this book reflect the difficulties in discussing wild animal protection, the links between conservation and animal welfare, hunting, pollution, bycatch and captivity all within the same book cover. There is a profound illogicality to some marine mammal issues—for example—in one part of the world, hundreds or even thousands of whales and dolphins are being killed for meat or for use in the entertainment industry in marine parks. In another part of the world, or even in the same country, and even on the same coastline, stranded whales or dolphins are attracting crowds of people with the good intention to rescue, refloat and rehabilitate these animals. The lack of logic flows into the contrast between animals protected in the wild in reserves and parks, whilst across international borders, these same animals, if they migrate across international boundaries, may be hunted, trapped or even considered as a pest species to be culled. 'You can please some of the people all of the time, you can please all of the people some of the time, but you can't please all of the people all of the time' (John Lydgate, 1370—c. 1451), and the chapters of this book are not likely to all be received positively by all readers. Somewhere in this confusing mix of exploitation and protection, conservation and consumption, there remains the capacity for humans to identify animal suffering and where it seems expedient or politically or socially appropriate to act.

Reference

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