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Ethics and Marine Mammals

Marc Bekoff

The whale in the sea, like the wolf (*Canis lupus*) on land, constituted not only a symbol of wildness but also a fulcrum for projecting attitudes of conquest and utilitarianism and, eventually, more contemporary perceptions of preservation and protection.

Stephen R. Kellert R(1996)

I. Humans and Other Animals: Multidimensional Encounters

Humans are a curious lot, and our intrusions, intentional, and inadvertent, have significant impacts on other people, non-human animal beings ("animals") plants, water, the atmosphere, and inanimate landscapes. Often our influence is subtle and long term. Our relationship with other animals is a complex, ambiguous, challenging, and frustrating affair, and we must continually reassess how we should interact with our non-human kin. Often we live with deep contradictions about what we do and what we believe we morally should do.

There are many important and difficult issues that demand serious consideration in discussions of the ethics of how human beings interact with animals. Their complexity is compounded because highly charged subjective opinions and passions run high. This article highlights just how complex and multidimensional these issues are. It is meant to be a starting point for a discussion of different perspectives; none is more important than others. What is important is that we all agree that ethics is an essential element in any discussion of human interactions with other animals.

Since I wrote the original version of this essay for the first edition of this encyclopedia (2002), things have gotten worse for numerous aquatic animals including marine mammals. Human-induced (anthropogenic) assaults on aquatic ecosystems and on individuals due to climate change, recreation, and over-fishing have increased globally (Bekoff, 2007a and references therein; see also For cod's sake, act now, 2006; Mackenzie, 2006; Osinga and 't Hart, 2006; Raloff, 2006). The Food and Agricultural Organization of the United Nations (FAO) noted in February 2006 that their "…most recent global assessment of wild fish stocks found that out of the almost 600 major commercial species groups monitored by the Organization, 52 percent are fully exploited while 25 percent are either overexploited (17%), depleted (7%) or recovering from depletion (1%). Twenty percent are moderately exploited, with just three percent ranked as underexploited" (Food and agricultural organization of the United Nations, 2006). There are also problems with non-target species getting caught due to fishing activities. For example, in 1990, about 42 million marine mammals and sea birds were caught in drift nets as squid and tuna were being harvested (Fox, 1997). About 129,000 Olive Ridley turtles (*Lepidochelys olivacea*) have died over the past 13 years because they suffocate in the nets of fishing boats not using mandatory turtle-excluder devices. Experts fear that the movement of giant ships and artificial illumination would put the turtles in even deeper trouble in the years ahead. Whales also are non-target victims of fishing nets. In 2003 the World Wildlife Fund reported that nearly 1000 whales, dolphins, and porpoises drowned daily after becoming entangled in fishing nets and other equipment (Verrengia, 2003). Annually, more than 300,000 individuals may perish because of fishing activities. And while there is a global moratorium on commercial whaling since 1986, Japan and Iceland continue to hunt as part of what they call "scientific programs." Norway has objected to the moratorium and runs commercial whaling operations.

Here I focus on human–dolphin and human–whale encounters (e.g., hunting, keeping animals in captivity, swimming programs, using them for entertainment), for ethical questions that arise when considering these types of highly visible interactions can be used as illustrations for human encounters with other marine mammals, including the pinnipeds [seals, sea lions, and the walrus (*Odobenus rosmarus*)], manatees (*Trichechus* spp), and polar bears (*Ursus maritimus*). Understandably, there is much and growing public interest in these rendezvous. Individuals of these species are sentient beings (capable of experiencing pleasure and pain) and sentience must influence how we interact with them (Bekoff, 2006a, b, c, 2007b). In scientific research there are always surprises. New scientific data appear that force us to rethink what we know and to revise our stereotypes. For example, spindle cells, which were long thought to exist only in humans and other great apes, have been discovered in humpback whales (*Megaptera novaeangliae*), fin whales (*Balaenoptera physalus*), killer whales (*Orcinus orca*), and sperm whales (*Physeter macrocephalus*) in the same area of their brains as spindle cells in human brains (Coghlan, 2006). This brain region is linked with social organization, empathy, and intuition about the feelings of others, as well as rapid gut reactions. Spindle cells are important in processing emotions. There is also a growing database showing that fish are sentient beings that experience pain and suffering (Sneddon, 2003; Moccia and Duncan, 2004).

Dolphins, whales, and other marine mammals have often been fabricated to be the animals we want them to be. Most descriptions of dolphins and other cetaceans picture them as highly intelligent and capable of experiencing pleasure and pain with remarkable social and cognitive skills. Indeed, dolphins and other marine mammals seem to fulfill some criteria of "personhood" in that they are alive, aware of their surroundings, sentient, and may have a sense of self. Why, then, do some people feel comfortable intruding into their worlds if it will cause pain and suffering? Toni Frohoff (1998, p. 84) has poignantly noted: "Currently we are walking a fine line in our relationship with cetaceans. The same attraction that motivates us to protect them from harm is also what drives us to be close to them, to have them 'within reach.'" It is because dolphins and other marine mammals are thought to be attractive, harmless, endowed with mystical qualities, or to be of economic value as commodities for show or food that we seek them out. However, we may bring much harm to them in our efforts to include them in our lives, even in ways that do not involve killing them.

Many issues that are pertinent when considering marine mammals are also raised when discussing other mammals such as terrestrial CARNIVORES. Wolves and whales have been among the most persecuted of animals during the last three centuries, wolves because they were feared predators and whales because of their economic value. The near EXTINCTION of both wolves and some whales was important in setting environmental policies. However, while many people swim and wade with dolphins, few if any truly dance or howl with wolves. Thus, the close contact that many humans have with some marine mammals leads to other questions that are unique to these encounters.

A. What Should We Do?

Human impacts on other animals, intentional and inadvertent, are universal. A major question in need of serious debate is should we ever interfere in other animals' lives—when might human interference be permissible? Thus, should we let other animals be and not intentionally interfere in their lives? Or, should we hunt them for food whenever we so wish? Should we hunt only when there are no alternative food sources? Should we interfere in other animals' lives when we have spoiled their habitats or when they are sick, provide food when there is not enough food to go around, provide care to young if a parent does not, stop aggressive encounters, stop predators in their tracks, or translocate individuals from one place to another, including zoos, wildlife and marine theme parks, and aquariums? Should human interests always trump those of other animals? If not, then when should the interests of other animals trump our own?

The question of when humans *should* intrude is a difficult one. However, just because we *can* do something does not mean that we *should* or *have* to do it. Furthermore, just because some intrusions may be *relatively* less injurious than others, this line of reasoning places us on a very slippery slope and can, in the end, lead to narrow or selfish anthropocentric claims. Even in situations when humans have good intentions, those intentions are not always enough.

This article discusses some basic principles that underlie the use and exploitation of marine mammals, especially whales and dolphins, presents a few general questions, and discusses some representative examples. Definitive answers to these and other questions are quite elusive, but open discussion can provide guidelines for proactive decision-making. All too often we are left in the position of trying to rectify messy and difficult situations that we have created; proactivity needs to become the *modus operandi* for future actions. For many questions about how animals should be treated by humans there are no "right" or "wrong" answers. However, there are better and worse answers. Perhaps it will turn out that in some cases what we think is the "right" action is not when the big picture is carefully analyzed.

It is essential to remember that even if wild or captive marine mammals develop close social bonds with humans, these animals are socialized or habituated individuals, but they are not domesticated animals. Often people remark that individuals who interact closely with humans have become domesticated. However, domestication does not happen to an individual during his or her lifetime. Domestication is a long-term evolutionary process during which humans selectively breed animals for desirable traits. "Domesticated" and "socialized" or "habituated" are not synonyms.

B. Human Responsibilities

It is generally accepted that humans have unique responsibilities to other living organisms (and to inanimate environments). Our unique responsibilities stem from our (at least most of us) being moral agents who are responsible for our actions. It is usually assumed that neither animals nor young human infants and mentally impaired adults are moral agents. Rather, they are moral patients, not usually held responsible for their actions. They do not know "right" from "wrong" or "good" from "bad." Nature, too, cannot be good or bad, although the consequences of natural acts can be better (good) or worse (bad). Nature simply is. We do not have to apologize for nature's ways. Nor should her ways—her supposed cruelty and ruthlessness—be used as excuses for what we do to other animals (including humans).

It is important to stress that most, if not all, other animals depend on our goodwill and mercy. Individuals can choose to be intrusive, abusive, or compassionate. We do not have to do something because someone else wants us to do it. We do not have to do something just because we can do it. Each of us is responsible for our choices.

II. The Moral Status of Animals: Animal Rights and Animal Welfare

In current discussions about the moral status of animals, there is an obvious "progressive" trend for greater protection for wild and captive animals. (This might be due in part to an increasing number of people moving from farms and rural areas to more urban environments.) This is clearly the case for marine mammals (Kellert, 1999). In a survey of American's perception of marine mammals, most respondents were opposed to commercial WHALING, often for ethical reasons. Concern was also expressed for the commercial exploitation of seals, sea otters (*Enhydra lutris*), walruses, and polar bears. Most Americans also objected to commercial whaling by native peoples or the resumption of killing gray whales (*Eschrichtius robustus*). A majority of Alaskans opposed oil and gas development if it injured or killed marine mammals. There was also an unsuccessful effort prior to the reauthorization of the Marine Mammal Protection Act in 1988 to prohibit any invasive research involving marine mammals unless that research would directly benefit the subject of the research.

In recent years, philosophers and scientists have devoted increasing attention to questions about the moral status of animals. Many people support a position called the *rights* view. To say that an animal has a right to have an interest protected means that the animal has a claim, or entitlement, to have that interest protected even if it would benefit us to do otherwise. Humans have an obligation to honor that claim for other animals (just as they do for humans who cannot protect their own interests). Thus, if a wild dolphin has a

right to feed, then humans have an obligation to allow her to do so and not do anything to interfere with her feeding activities. Likewise, if a dolphin has a right to life, she cannot be used in war games, warfare, or other activities in which death is possible.

Animal rights advocates stress that animal's lives are valuable in and of themselves (they have inherent value) and that their lives are not valuable because of what they can do for humans (their utility) or because they look or behave like us. Animals are not property or "things," but rather they are living organisms that are worthy of our compassion, respect, friendship, and support. Animals are not "lesser" or "not as valuable" as humans; they are not property that can be abused or dominated. Human benefits are irrelevant for determining how animals should be treated.

Many people believe that the rights view and the *animal welfare* view are identical. They are not. Animal welfarists focus on individual's usefulness to humans. They practice *utilitarianism*, in which the general rule of thumb is that the right actions are those that maximize utility summed over all those who are affected by the actions. Often welfarists/utilitarians are called "wise users." They believe that while humans should not abuse or exploit animals, as long as we make the animals' lives comfortable, physically and psychologically, we are taking care of them and respecting their welfare. Welfarists are concerned with the quality of animals' lives. However, welfarists do not believe that animals' lives are valuable in and of themselves. Many conservation biologists and environmentalists are utilitarians who are willing to trade off individuals' lives for the perceived good of higher levels of organization such as populations, species, or ecosystems.

The welfarists' rule of thumb, and it is not a moral rule, is that it is permissible to use animals if the relationship between the costs to the animals and the benefits to the humans is such that the costs are less than the benefits. Welfarists believe that if animals experience comfort, appear happy, experience some of life's pleasures, and are free from prolonged or intense pain, fear, hunger, and other unpleasant states, then we are fulfilling our obligations to them. If individuals show normal growth and reproduction and are free from disease, injury, malnutrition, and other types of pain and suffering, they are doing well. Thus, welfarists argue that using animals in experiments, slaughtering them for human consumption, and using them for treating human disorders (e.g., dolphin-assisted therapy, DAT, programs) are permissible as long as these activities are conducted in a humane way. Welfarists do not want animals to suffer from any unnecessary pain, but they sometimes disagree among themselves about what pain is necessary and what humane care really is. Welfarists agree that the pain and death animals experience are sometimes justified because of the benefits that humans derive. The ends—human benefits—justify the means—the use of animals.

III. Hunting Whales

Whale HUNTING brings to light numerous issues that reflect utilitarian thinking. Whales are frequently viewed as commodities, whether they are hunted centers or whether it is economical. Rarely are the costs to the individuals entered into the equation. In the past, many people thought that whales were an inexhaustible resource and historically there were few restrictions on killing them. When whale watching became popular, whales were more valuable alive than dead. They went from being a consumptive to a non-consumptive resource.

Political and sociocultural motives also play a role in whale hunting. Various indigenous people (e.g., the Makah in Washington State) want to be able to hunt whales (in the Makah case, gray whales) because their ancestors did so, because it was part of their cultural heritage. They claim that the tradition of whale hunting defines "who they are."

The revival of aboriginal whaling is controversial in various parts of the world and involves species other than the gray whale. When the target species is on the brink of extinction, few argue that any type of whaling is permissible. Likewise, when killing whales is essential for food, few argue against the practice. However, when the whales are not endangered, people disagree about continuing to kill whales or reestablishing this practice. Some argue that whale hunting is permissible because it is part of the heritage of a given indigenous group (it is cultural revival), whereas others argue that there are other cultural practices that are no longer followed and little effort to regain them. Why is whaling hunting so important if it is not essential for sustenance?

Methods of killing whales also are controversial. For example, the Makah used a rifle to kill a whale who had been wounded by a harpoon. A majority of Americans oppose the use of weaponry. Hunting whales produces much pain and suffering. Chasing and stalking individuals compromises their physical and psychological well-being and death usually is not instantaneous, frequently taking upward of 10 min. Furthermore, family groups are broken up. All in all, hunting whales and other animals, including such marine mammals as seals, raises numerous difficult ethical issues.

IV. Keeping Animals in Captivity

A. Swimming with Dolphins

"Swim with dolphin" and "petting pool" programs are very controversial. Such proffered reasons as "it's fun," "aren't the animals cute," or "it's a spiritual experience" are insufficient to justify these practices. Much attention has been given to the question of whether human encounters with dolphins may have negative effects on the dolphins. Human–dolphin interactions may be noisy and stressful. One study reported that captive dolphins showed enlarged adrenals, especially those individuals exposed to humans on numerous occasions. The long-term effects of swim programs on dolphin behavior and well-being still need to be studied systematically, but evidence shows that the stress associated with these programs may have long-term effects on the dolphins.

Swim programs are risky to humans. Dolphins are large and strong animals. While higher risks seem to be experienced more in non-controlled swims, there are also serious risks in controlled swims that might be fatal. "Controlled" refers to situations when all interactions are directed by trainers who give the dolphins commands at all times. "Non-controlled" means interactions are allowed to occur spontaneously.

It is also important to know if DAT programs truly work. While some researchers claim that DAT is an effective therapeutic intervention for several disorders (e.g., depression, autism, cerebral palsy, mental retardation) others disagree. Criticisms center on the use of improper statistical methods and the lack of controlled studies. It is often very difficult to assess experimentally the positive effects of animals on people. In many programs, no other animals, including such domesticated species as dogs, were used as controls to see if they might be as or more effective than dolphins.

Another question that is also important to consider is whether programs that involve interactions with captive dolphins help to educate people about these and perhaps other animals. More research is needed to determine if contacts with dolphins actually change people's attitudes about them. Intuitions are not enough. To date, there

is no solid evidence that interactive captive programs with dolphins are more effective educationally than non-interactive programs. Indeed, some marine biologists fear that these programs may send the message that it is permissible to take animals from the wild and bring them into captivity and keep them in small tanks where they are bored, deprived, and needlessly die. There are also serious concerns about the fate of dolphins once they are too old or aggressive to partake in swim programs. Yet another concern centers on the possibility that these programs may teach people to expect the same kinds of interactions from free-ranging wild animals.

While there have been attempts to regulate swimming programs, little has actually been accomplished. In the United States, federal regulations controlling these programs, mandated in 1998 (after a delay of 4 years before finalizing them) by the US Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) were suspended in April 1999 soon after they were invoked because, according to their press release: "It has come to our attention that the language in the new regulations may be confusing to some. Therefore, we are suspending enforcement of the regulations in order to take a closer look at the language and make it more understandable." (www.aphis.usda.gov/lpa/press/1999/04/dolphin.txt) During this process, there are no regulations for these popular programs. Some people believe the federal regulations were suspended because of pressure from the lucrative industries that exploit dolphins.

B. Petting and Feeding Programs

Petting and feeding programs allow people to pet and feed captive dolphins. Many of these programs may not be adequately supervised or monitored. There are some major concerns with these programs, including that dolphins may be unable to avoid encounters with humans and may be highly stressed, the water in which dolphins and humans interact is often heavily chlorinated and may be unhealthy for dolphins (and humans), dolphins may be fed foreign objects that can harm them, and there seems to be little, if any, education value to these programs. There are few data that speak to these and other concerns and this information is needed to determine if petting and feeding programs can be properly regulated. One of the main questions is whether dolphins can be accessible to people in these programs and still be protected from harm.

While feeding and harassing wild dolphins is illegal in the United States, and there are severe penalties for engaging in these activities, this is not so for other countries. There are documented instances of wild dolphins being fed firecrackers, golf balls, plastic objects, balloons, and fish baits with hooks (so that hooked dolphins can be caught). Provisioning dolphins with fish has been associated with a change in the social behavior of free-ranging Indo-Pacific bottlenose dolphins (*Tursiops aduncus*) in Monkey Mia, Australia. Dolphins who have been fed also change their foraging behavior and frequent heavily trafficked harbors and marinas. Some get struck by boats. People have also been seriously injured trying to feed wild dolphins. The National Marine Fisheries Service and other organizations are mounting highly visible campaigns to stop the feeding and harassment of wild dolphins. It also has been noted that some problems associated with feeding terrestrial mammals (changes in foraging patterns and hunting skills) are relevant to concerns about the feeding of dolphins.

Clearly, much more information is needed concerning petting and feeding programs for captive and wild animals. Especially needed are data concerning the effects of these programs on dolphin mortality, health, and psychological and emotional well-being. It is also important to counter the possibility that feeding captive dolphins may send the message that it is permissible to feed wild individuals.

C. Zoos: Aquariums and Marine Theme Parks

The existence of zoos, including aquariums and marine theme parks, raises many important and difficult ethical questions. Certainly, numerous people are interested in exotic animals, including marine mammals. Kellert found that a majority of Americans objected to the captive display of marine mammals in zoos and aquariums if there were no demonstrated educational and scientific benefits. They were concerned with the care given to captive individuals. To date, no unequivocal data show that there are any significant educational and scientific benefits that help the animals, despite beliefs that such benefits accrue. An average zoo visitor spends only about 30 sec–2 min at a typical exhibit and only reads some signs about the animals. A number of surveys have shown that visiting zoos to be entertained was the predominant reason people went to the zoo. In one study at the Edinburgh Zoo in Scotland, only 4% of zoo visitors went there to be educated, and no one specifically stated they went to support conservation. To date, very few empirical data support the notion that much educational information is learned *and* retained that helps the animals in the future. Indeed, some people worry that keeping animals in captivity for humans to view carries the message that it is all right to do so.

Many questions center on how individuals are captured, transported, and kept in various types of captive situations. Animals often are injured and otherwise stressed during capture and transport. Family groups may be broken up and the social structure of populations decimated. The effects of changing the social structure of wild populations are little known. Well-intentioned people often argue that the lives of captive animals are better, of higher quality, than those of wild relatives, but available data for marine mammals suggest that this claim is not well supported. From an ethical perspective, one must consider whether this claim is even relevant, for keeping animals in captivity radically alters numerous behavior patterns that have evolved over millennia. Predation, starvation, and disease are part of what it is to be wild. Is a longer unnatural life in captivity better than a shorter natural life in the wild?

Breeding surplus animals for profit (e.g., polar bears who become the center of media parades and then are moved to other zoos when their resource value or utility is fully exploited) also demands serious discussion. Similarly, the trading, donating, or loaning of unwanted or surplus animals who cannot be released into the wild—treating them as property—also raises numerous ethical questions.

The benefits of keeping marine mammals in captivity, to the animals themselves, remain unknown. Because the social and physical environments of marine mammals are virtually impossible to replicate in captivity, ethical questions arise when these animals are maintained in unnatural environments. There can be little doubt that the quality of life is compromised. In captivity, evolved patterns of foraging, care giving, and migrating are lost as are natural patterns of social organization (group size and composition). In captivity, for practical reasons, group sizes may be much smaller than those observed in wild relatives. Stereotyped behaviors often result from conditions of captivity, as do self-mutilation and unusually high levels of aggression. Furthermore, individuals often cannot escape from the glaring eye of the public and cannot choose when and where to rest.

There also seems to be higher mortality (spontaneous abortions, still-births) in captive vs wild individuals (especially killer whales). There is also higher mortality for adult killer whales in captivity. Limited data on annual survival rates suggest that there is high mortality during acclimation to captivity and differences in annual survival rates among different species and age classes within species.

There is little evidence that people leave zoos or aquariums with any long-lasting sentiments or knowledge that benefit either the animals they have seen or their wild relatives. Furthermore, few zoos are engaged in conservation efforts for marine mammals. The Association of Zoos and Aquariums (AZA) which oversees zoos in the United States and grants accreditation if they meet certain standards, admits in its *own* executive summary that "Little to no systematic research has been conducted on the impact of visits to zoos and aquariums on visitor conservation knowledge, awareness, affect, or behavior."

Many ethical concerns are also raised because first and foremost, zoos are businesses and their bottom line centers on money. It costs an enormous amount of money to bring marine mammals into captivity and to keep them there. It has been suggested that the money used to capture, transport, and keep animals in captivity would be better used to do research in the wild. Also, much money is spent on public relations and not on the animals themselves. Some feel that the images of nature that are represented to the public are a manufactured corporate point of view that centers more on what the public wants than what is good for the animals. Witness the existence of numerous "Flippers" (the prototypical dolphin) and "Shamus" (the model killer whale) whose lives do not resemble even closely the lives of free-living conspecifics or relatives.

Similar questions are raised when considering research on captive animals. Certainly, information may be gathered about various aspects of their lives (e.g., maternal behavior, self-recognition, social behavior, communication, and cognitive capacities). However, research on captive animals is being increasingly carefully scrutinized by some researchers, philosophers, many universities, and various funding agencies. Some relevant questions include: Is it ever permissible to keep individuals in captivity regardless of their utility, is the knowledge that is gained by studying captive individuals justified by keeping them in cages or tanks, and could more reliable data be collected under more natural conditions? Very little still is known about the life histories of most marine mammals. For many people it is the benefits that the captive individuals and other members of their (or other) species might accrue that is central, not the benefits that humans might gain. However, rarely are results used to benefit the animals other than in learning about medical treatments and husbandry to make their lives in captivity better. Rarely do wild individuals benefit from work done on captive relatives.

V. Research Ethics

In addition to questions concerned with how humans treat other animals, the study of ethics also considers questions dealing with such areas as (1) the context of research (where it is done, are local people involved when researchers "go into the field" in countries other than their own, are local customs and beliefs about native fauna respected); (2) scientific integrity (researchers' responsibility for integrity in data collection, analysis, and dissemination); (3) the ownership of data (do data "belong" to any single person or to the team that is involved in their collection, analysis, and dissemination); (4) authorship (whose names should appear on a publication and in what order); and (5) individual responsibility for the integrity of a project as a whole and for the integrity of the results. A good deal of trust is involved in all research, and questions that arise in these general areas require, and are receiving, much attention in the scientific community. Studies of marine mammals often require large teams of people, some of whom have never met, and it is important for all individuals to realize that each is responsible not only for his or her involvement, but for the composite product that is generated.

Another area of concern, some aspects of which are included in this volume, is research methodology (trapping, marking, tracking, and observing animals; experimentally manipulating social groups, food supply, and habitat). Often, human intrusions have major effects on animals' behavior even if they are unintentional. For example, the mere handling of individuals can influence their behavior and their acceptance back into a group, as can fitting individuals with various telemetric devices. Tracking or stalking animals can lead to changes in their activity patterns so that they spend more time avoiding humans than feeding or giving care. Most data come from animals other than marine mammals, and future studies of the effects of various methods are needed. Ethical considerations require that we learn about the effects of research methodologies and attempt to avoid them. In some cases the methods used may preclude collecting data relevant to the questions at hand.

VI. Ecotourism

Ecotourism (whale watching, swimming with wild dolphins, photographing animals, visiting pinniped rookeries), some aspects of which are discussed in this volume, also raises numerous ethical questions concerning human intrusions into the lives of other animals. When, if ever, this activity is justified requires serious debate. People often try to interact with wild marine mammals but do not attempt to pet wild zebras (*Equus* spp.) or lions (*Panthera leo*). What principles underlie these differences in attitude?

Whether ecotourism is less intrusive on the lives of marine mammals than various research practices awaits further study. Indeed, there are observations of humans causing seal pups to stampede and being trampled and of humans striking and injuring animals with boats. It is essential to educate the public of possible negative effects of ecotourism.

VII. The Future: Being Proactive

Kellert's study of American perceptions of marine mammals and their management shows clearly that most people support the various goals of the US Marine Mammal Protection Act. Most are willing to "render significant sacrifices to sustain and enhance marine mammal populations and species … These findings clearly indicate that marine mammals possess considerable aesthetic, scientific, and moral support among the great majority of Americans today" (1999, pp. iv–v).

It is in the best traditions of science to ask questions about ethics; it is not anti-science to question what we do when we interact with other animals. Ethics can enrich our views of other animals in their own worlds and in our different worlds and help us to see that their lives are worthy of respect, admiration, and appreciation. Indeed, it is out of respect, admiration, and appreciation that many humans seek out the company of whales, dolphins, polar bears, and other marine mammals.

Many ethical issues are extremely difficult to reconcile and generate highly charged and deep emotional and passionate responses. Achieving a win-win situation for animals and humans will be very difficult. However, it is clear that the increasingly detailed attention

being given to various sorts of human–marine mammal interactions is showing that there are innumerable negative effects on the lives of the animals. While many negative influences have been anticipated or are not surprising, the severity of human influences has not been fully appreciated. We must be careful not to love these animals to their (or our) deaths. Humans are indeed dangerous to marine mammals and they are dangerous to us.

The study of ethics can also broaden the range of possible ways in which we interact with other animals without compromising their lives. Ethical discussions can help us see alternatives to past actions that have not served us or other animals well. Thus, the study of ethics can be enriching to other animals and to us. If we believe that ethical considerations are stifling and create unnecessary hurdles over which we must jump in order to get done what we want to accomplish, then we will lose rich opportunities to learn more about other animals and also ourselves. Our greatest discoveries come when our ethical relationships with other animals are respectful and not exploitive.

Allowing human interests always to trump the interests of other animals is not the best strategy if we are to solve the numerous and complex problems at hand. We need to learn as much as we can about the lives of wild animals. Our ethical obligations also require us to learn about the innumerable ways in which we influence animals' lives when we study them in the wild and in captivity and what effects captivity has on them. As we learn more about how we influence other animals, we will be able to adopt proactive, rather than reactive, strategies.

The fragility of the natural order requires that people work harmoniously so as not to destroy nature's wholeness, goodness, and generosity. The separation of "us" (humans) from "them" (other animals) engenders a false dichotomy, the result of which is a distancing that erodes, rather than enriches, the possible numerous relationships that can develop among all animal life.

Public education is critical. However, it does not always work (Cunningham-Smith *et al.*, 2006). To disseminate information about what is called the "human dimension," administrators of zoos, wildlife theme parks, aquariums, and areas where animals roam freely should inform visitors of how they may influence the behavior of animals they want to see. Tourism companies, nature clubs and societies, and schools can do the same. By treading lightly, humans can enjoy the company of other animals without making them pay for our interest in their fascinating lives. Our curiosity about other animals need not harm them.

Many marine mammals are closely linked to the wholeness of many ecosystems, and how they fare is tightly associated with how communities and ecosystems fare. By paying close attention to what we do to them, and why we do, what we do, where, and when we do it, we can help maintain the health of individuals, species, populations, and ecosystems. Concerning animal welfare, we can always do better. Quite often, "good welfare" is not "good enough."

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See Also the Following Articles

Captivity ■ Hunting of Marine Mammals ■ Marine Parks and Zoos ■ Whale Watching

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Extinctions, Specific

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Extinction of species has been occurring since the dawn of life on Earth. Sometimes this process is a gradual one, with a few species disappearing over a long period of time. Occasionally, the process appears to be quite rapid and widespread; such mass extinctions often result in the disappearance of many of the flora and fauna on Earth in a relatively short period of time. Such a mass extinction is currently taking place, only this time the cause is not climactic, tectonic, or cosmic, but rather is the result of the activities of one species, *Homo sapiens* (Domning, 1999). It is well established that many species of animals have disappeared over the last 400 years because of humans, including such well-known examples as the passenger pigeon, dodo, quagga, and great auk. Many other lesser-known species of animals, along with many representatives of the plant kingdom, have also died out because of human activities. It is thought that a total of 1190 species of plants and animals have gone extinct since 1600 (Smith *et al.*, 1993). When this is combined with the countless number of fungi, protists, and bacteria that have disappeared without notice, it is easy to see why this human decimation of the Earth's living organisms may easily rank among one of the most major mass extinctions that are a part of our planet's history.

Until recently, the effect of human activities has been primarily felt by those species whose members are relatively large and conspicuous. The great Pleistocene extinctions of mammoths and horses in North America, along with the demise in more recent times of many species of large, flightless birds, are examples of this. Being relatively large, it would be expected that marine mammals would have suffered the same fate as their terrestrial counterparts. The size and remoteness of the habitat of most marine mammals, however, spared them the slaughter and resultant slide toward extinction until more recently. In the last few hundred years, technology gave humans the ability to seek out and kill these animals throughout the vast expanses of the ocean, and many marine mammal species have been brought to the verge of extinction. Lack of profitability from increased costs inherent in trying to find fewer animals, coupled with increased public awareness of and resistance to the destruction, has brought a halt to the exploitation of many of these marine mammals, and in some cases the numbers of certain species are on the rise. This fortunate development came too late for three species of marine mammal: Steller's sea cow (*Hydrodamalis gigas*), the Caribbean monk seal (*Monachus tropicalis*), and the Japanese sea lion (*Zalophus japonicus*). Most recently the river dolphin of the Yantee River (the baiji, *Lipotes vexillifer*) has become extinct. In addition, one population has become extinct in recent times, the Atlantic gray whale (*Eschrichtius robustus*). Direct human destruction was the primary cause of these extinctions, and in all cases the story is one of human ignorance, shortsightedness, and greed.

I. Steller's Sea Cow

In the late autumn of 1741, a Russian exploratory vessel, the *Saint Peter*, wrecked on a bleak, uninhabited island near the western end of the Aleutian chain (Ford, 1966). This island was completely isolated, save for smaller nearby Copper Island, and was over 200 miles from the nearest Russian settlement on the Kamchatka peninsula. As food supplies were practically non-existent in the winter, it was a joyous occasion when it was discovered that the nearshore waters around the island were inhabited by huge, slow-moving, previously unknown marine mammals. These were Steller's sea cows, later named after the naturalist accompanying the voyage, Georg Wilhelm Steller. Upon killing, this animal provided large quantities of beef-like meat and almond-tasting oil. Throughout the winter, the crew members of the *Saint Peter* slaughtered sea cows. When in the summer of 1742, the men who survived the winter reached Kamchatka, they spread the word of the wealth in furs to be had in the Bering Sea and Alaska and of the huge sea cow that would provide food necessary for the required long voyages. From then on, fur traders and hunters would stop at Bering Island and Copper Island to slaughter these animals and stock their vessels with meat and oil. In addition, parties hunting fur-bearing animals would winter on these islands and dine on sea cow meat (Stejneger, 1887). By 1754, the sea cow was gone from Copper Island. With its disappearance 14 years later from Bering Island, *Hydrodamalis gigas* was extinct (Haley, 1978).

What little is known about this species comes from the observations and written accounts of Georg Steller and from bones found