

Animal Rights and the Antarctic Treaty System

Helena Ellinor Widolf

Institute of Antarctic and Southern Ocean Studies and Antarctic CRC, University of Tasmania, Hobart, Tasmania, AUSTRALIA

Abstract

This paper outlines an investigation into the rights of individual animals belonging to species that live in Antarctica and the Southern Ocean, home to many species of mammals, birds, finfish, crustaceans and cephalopods. I address the identification of prominent animal rights issues, an assessment of the relevance of those issues to Antarctic management and an examination of Antarctic legal provisions and management guidelines.

Keywords: *Antarctica, animal rights, ethics, policy*

Environmental Management

It is important for environmental managers to be aware of evolving public attitudes about environmental issues and for policy-makers to accommodate changing community expectations. This is particularly true for management regimes that govern the world's largest natural reserves such as Antarctica. These places hold value for many people that can no longer be accommodated in other parts of the world due to changes to the natural environment caused by human activities. Animal rights issues are much debated in contemporary Western societies. As a concept that is largely based on personal interpretation and opinion, the very existence of animal rights is disputed by some, whilst seen as axiomatic by others (Rodd 1990).

Considered by many as being the world's last wilderness unaltered by humans, Antarctica provides a habitat for many different faunal species, many of which are found nowhere else on Earth. The Southern Ocean that surrounds the continent is home to a vast variety of marine species such as whales, seals, penguins, finfish, and krill. Antarctic and sub-Antarctic fauna include many species of whales, seals, penguins, albatrosses, petrels, skuas, shearwaters, prions, terns, gulls, sheathbills, cormorants and fulmars, and a large variety of finfish, mollusks, and crustaceans. Approximately 45 species of bird breed south of the Antarctic Convergence, including all of the species of Antarctic and sub-Antarctic penguins. Few bird species breed in Antarctica itself, including the Emperor, Adelie and Gentoo penguins, Snow petrels, Antarctic petrels, and South Polar skuas (Rubin 2000).

Today, Antarctic and sub-Antarctic native fauna is protected under a variety of instruments in the Antarctic Treaty System (ATS). Currently, there are 43 Antarctic Treaty Parties (states) that have all obligated themselves to abide by the provisions within the ATS. The Antarctic Treaty came into force in 1961 and applies to all areas south of 60° South Latitude. The most recent addition to the Treaty is the Protocol on Environmental Protection to the Antarctic Treaty (1991) known as the Madrid Protocol, which designates Antarctica as a natural reserve devoted to peace and science. It establishes environmental principles, including the protection of wildlife from the conduct of all human activity (Jackson cited in Rubin 2000, 61). Protection for faunal species is primarily dealt with by Annex II of the Protocol. The killing of all species of mammals, birds and plants is prohibited, with the exception of special circumstances for which a permit is required. In Australia, such permits are issued only by the Australian Antarctic Division under strict guidelines (Heap 1990). Under Annex II, permits may be granted for the taking of specimens for zoological and botanical gardens, scientific research, and educational purposes. There are guidelines for the numbers of animals that can be taken, and the circumstances under which they can be taken.

The conservation of marine species such as fish and invertebrates today is primarily dealt with by the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) (1981), an ATS instrument. Adopting the ecosystem approach, CCAMLR aims to preserve populations of different marine species in order to maintain the integrity of the marine environment (CCAMLR 2001).

Wilderness Values

Broom (cited in Paterson and Palmer 1989) and Pyers and Gott (1994) confirm that contemporary Western attitudes toward the treatment of animals vary widely, but add that the majority of Australians accept the need to protect native species. This includes species in the wild that they may never have seen, such as wildlife in Antarctica. Antarctica's remoteness is understood to add to the romantic picture that many people hold about its wildlife, adding to the desire to protect it. Dawkins (1980) has commented that the media have been highly instrumental in evoking public sympathy for seals, due

to footage of fluffy seal pups with big round eyes lying helplessly on the ice. Penguins have also become high-profile animals, perhaps not so much for their capacity to evoke sentimentality as for their unique and peculiar appearance and behavior. Antarctic birds of flight such as albatrosses and petrels also capture the imagination of the public, often being depicted as symbols of freedom and beauty. Many people also consider Southern Ocean whales as being charismatic. Their exposure through the media has contributed much to the general public's increasing admiration for Antarctic and sub-Antarctic wildlife. Today they have become icons for the rights of wild animals and have been the center of much attention over animal rights issues (Skare 1994; Carwardine 1998; Gill and Burke 1999).

Public Support

Animal welfare organizations in the Western world have done much to promote the rights of animals in the past few decades. The Antarctica Project is one conservation organization that works exclusively for the Antarctic environment. It leads the Antarctic and Southern Ocean Coalition (ASOC) that is comprised of 240 member groups in 50 countries, running international campaigns to protect Antarctica's wilderness (The Antarctica Project 2001). ASOC works to ensure that the environment comes first when management decisions are made about Antarctica. The Antarctica Project works towards protecting the Antarctic environment because its members believe that as the world's last wilderness unaltered by humans, it is important for the citizens of the world to protect it. They also believe that Antarctica is important because there is much scientific knowledge to be gained from it, because it is highly valued as a tourist destination, and because the unique Antarctic environment represents wilderness values that cannot be enjoyed by people in other parts of the world (The Antarctica Project 2001). There are many Australian organizations in ASOC that work for the welfare

of Antarctic animals. Some of these include Greenpeace, World Wide Fund for Nature (WWF), the Animal Liberation Society, Friends of the Earth (FOE), Australians for Animals, the Australian Conservation Foundation, the Wilderness Society, and the World League for the Protection of Animals (ASOC 2001). These organizations run independent campaigns in an attempt to influence policy-makers when making decisions about policy and legislation concerning the welfare of Antarctic animals and their environment.

Are Animal Rights Relevant to Antarctic Management?

In democratic countries it will always be the extent of public support for a particular issue that determines its relevance to management strategies. Antarctic managers and operators, like managers and operators of public services, are obligated to make decisions about Antarctica based on the desires of the general population. In order to gain some insight into public support for animal rights issues in Antarctic, a statewide telephone survey was conducted within the Australian state of Tasmania. The survey was planned according to guidelines established by de Vaus (1990) and Neuman (1997). The survey was conducted between 27 August 2001 and 6 September 2001. A sample population of 123 participants was selected at random from Tasmania's telephone books. According to de Vaus (1990), at a 95 % confidence level a sample size of 123 reduces the sampling error of a survey to 9%. Participants were presented with four statements and asked to respond according to a Likert scale from 1 to 5 (see Table 1).

As approximately 64.2 % of the sample population (between 55.2 % and 73.2 % calculated against the sample error {c.a.s.e.}) strongly agree with Statement 1, we can conclude with 95% confidence that most people in Tasmania do not want to see Antarctic animals disturbed by tourists. As 65.8 % of participants strongly agreed with Statement 2, it

Table 1. Results from "Entitlements of Antarctic Wildlife: A Statewide Survey in Tasmania, Australia 2001" (% of sample population) n = 123.

Responses/ Statements	1. Strongly Disagree	2. Generally Disagree	3. Neutral (do not agree or disagree)	4. Generally Agree	5. Strongly Agree
1. Tourism to Antarctica is best kept to a minimum in order to control disturbances to Antarctic animals.	4.8 %	4 %	11.3 %	15.4 %	64.2 %
2. It is important that the public is informed about scientific research on animals in Antarctica.	2.4 %	.8 %	11.3 %	19.5 %	65.8 %
3. Animals living in natural reserves such as Antarctica are entitled to live out their natural lives without being disturbed by human beings.	6.5 %	2.4 %	8.9 %	15.4 %	66.6 %
4. It is justified to catch/ kill fish and squid in the Southern Ocean to provide people with food.	23.5 %	8.9 %	36.5 %	17 %	13.8 %

can be estimated that most people in Tasmania want to be informed about research on Antarctic animals. Statement 3, supporting the entitlement of Antarctic animals to not be disturbed by human beings, has been supported by 82 % of the sample population. It can be estimated from this percentage bracket that in the opinion of most Tasmanians, people should not disturb Antarctic wildlife. We can also assume that there is a strong trend in Tasmania's population towards the entitlement of Antarctic wildlife to live out their natural lives without hindrance from human beings. Statement 4 claims that it is justified to kill fish in the Southern Ocean to feed people; 36.5 % of participants were neutral in their opinion about this statement, 23.5 % strongly disagreed, 17 % generally agreed and only 13.8 % strongly agreed with the statement. These results indicate that the majority of Tasmanians do not hold very strong opinions about the killing of fish in the Southern Ocean for the purpose of providing people with food.

In order to further assess the relevance of animal rights to Antarctic management, a case study of public opposition to scientific research involving animals was carried out. The issue selected for the study was the recent hot iron branding of seals on Macquarie Island. Results from this study also confirm that opposition to scientific research involving animals exists in Western societies, and that public opinion can influence the direction of scientific research. Although Macquarie Island is not situated south of 60° South Latitude and therefore not strictly under the regime of the Antarctic Treaty System, as a sub-Antarctic island it is relevant to Australia's management of the Australian Antarctic Territory because of the concept of dependent and associated ecosystems embraced by the Madrid Protocol.

Branding of the Macquarie Island Southern Elephant seals was part of a research project by the Australian Antarctic Division (Gales 2001, 2-3). The project began in 1993 and was intended to run its course over ten years. Breeding patterns within seal populations were studied, with a focus on reproductive females. Prior to commencement, the Animal Ethics Committee of the University of Tasmania, which was involved in the project, as well as the Animal Ethics Committee of the Australian Antarctic Division had both sanctioned the project. According to Gerald Harwood (2001), Ministerial Liaison Officer in the Antarctic Treaty and Government Section of the Australian Antarctic Division, at the time that the branding was exposed through the media, there was a feeling of public revulsion to the branding. The Division received approximately 250 letters from the public about the branding, an unusually large number of letters from the public regarding a single issue. The letters expressed concern that acts of cruelty were being carried out on the seals, with quite a number of letters commending the Minister for

the Environment for taking such prompt action in stopping the branding. Animal rights were a consistent theme in many of the letters, especially those that came from other countries such as the USA (Harwood 2001).

When the seal-branding story first broke, criticism was specifically aimed at the branding of seals, but this soon changed, with criticism being increasingly aimed at seal research in general. For many authors, the main concern seemed to be the handling of seals in general (Harwood 2001). Newspapers such as *The Advocate*, *The Examiner* and *The Mercury* printed several articles about the issue for several months. *The Mercury* received many Letters to the Editor about the issue, with authors stressing that the branding was cruel, unnecessary and inhumane (Buenger 2000; Burkhalter 2000; Penprase 2000; van den Berg 2001). Burkhalter (2000) asks how the public's outcry against current research practices can be ignored by scientific research organizations. The following letter typifies many letters sent to the Editor:

It still amazes me to read about useless people, namely scientists paid by taxpayers, committing unnecessary and cruel acts on animals. I am referring to the seals on Macquarie Island...As for the scientists who branded the seals, I am sure many people, like myself, would like to see the scientists branded on their backsides. Maybe they would stop saying that it does not hurt. Members of the ethics committee who gave their approval to the program should perhaps also have a taste of it.

(Buenger 2000, 15)

One author commented that "it's time the Antarctic Ethics Committee members investigated more humane methods of marking individual seals" (Penprase 2000, 18). Michael Lynch, Director of the Tasmanian Conservation Trust (2000), wrote that animal ethics committees have a statutory responsibility "to ensure such barbaric research does not occur." Scientists are not deliberately cruel, according to Lynch (2000), but they can become 'desensitised and handicapped by the illusion of knowledge and can be blinded by the single-minded pursuit of what they regard as overwhelmingly important.'

It is significant that concerns expressed by the public in this case were for the experiences of individual seals, not for the survival of seal populations or for the survival of the species. As such, the sentience of the seals was necessarily acknowledged by the public and considered important enough to take action for. The public's outcry was for the physiological and perhaps psychological suffering of seals, which is primarily experienced on the individual level. This is evidence that the public is concerned about the well-being of individual animals, not just the survival of populations and species.

According to Andrew Jackson (2001), manager of the Australian Antarctic Division's Antarctic Treaty and Government section, it was the perception of the public that the branding was inhumane that directly led to the abandonment of this project. This is an example of how the expectations of the broader community can influence the direction of scientific research. Jackson commented that if community attitude about human activity in the sub-Antarctic can have such an effect on management decisions, then it could also have the same effect on management decisions in Antarctica itself. Whether or not the public is misinformed about the specifics of a research project is irrelevant, according to Jackson, because the Minister for the Environment will act on behalf of the public, regardless of their knowledge about an issue. Jackson confirms, however, that input from scientists and managers from the Division always informs decisions that are made by the Minister about Antarctic research.

Michael Stoddart (2001), Chief Scientist for Australia's National Antarctic Research Expeditions (ANARE), has commented that animal rights issues will make themselves felt on research in the future. He claims that the extent to which that research is used in management of the Antarctic will be the same extent to which research-based management is used in other geographical regions. He adds, however, that there is a view that Antarctica is somehow special, almost holy, which may enhance the public's desire to keep it in its pristine state.

As policy relating to animal rights issues is influenced by the public, Stoddart (2001) estimates that there is a real chance that public support for the rights of animals will direct the course of relevant policy in the future. Even though it will be a controversial issue for policy-makers, it is 'the way things are moving' (Stoddart, 2001). He adds that the current expansion of ethical considerations in society is a community driven development; it has originated from the public itself.

Jackson (2001) has "no hesitation" in saying that animal rights as an emerging issue in society will absolutely become relevant to Antarctic management in the future. He states that as an issue that is increasingly important in the broader community, it will definitely translate into the Antarctic. "It is inevitable" (Jackson 2001). In reference to the seal-branding affair, Jackson states that "The effect of the recent decisions to stop research into seals which involved branding of seals in the sub-Antarctic, will inevitably rub off on our attitude to research in the Antarctic." This view is supported by Harwood (2001).

Williams (2001), a CCAMLR fisheries biologist working for the Australian Antarctic Division, has stated that harvested marine species such as fish and squid are generally not thought of in ethical terms by the broader community.

According to Williams, such animals are generally not valued in the same way as mammals and birds are. This is supported by Jackson (2001) who has stated that fishing is not an inhumane activity according to most people in Western societies. Jackson claims that it is for this reason that several Antarctic marine species are today being harvested for human consumption. He has commented that the ecosystem approach to environmental management adopted by CCAMLR is consistent with ordinary expectations in contemporary society regarding how animals should be dealt with by humans. Williams estimates that this situation will not change in the near future.

Antarctic Law and Management

Existing legal provisions within the ATS restrict all Antarctic human activities. As such, all human-animal interaction in Antarctic and sub-Antarctic regions must operate within the parameters established by the ATS. The Antarctic Treaty itself makes very limited reference to Antarctic animals. Article IX (1.f) states:

Representatives of the Contracting Parties shall meet for the purpose of exchanging information ... consulting together ... and recommending to their Governments, measures ... regarding preservation and conservation of living resources in Antarctica.

This statement contains the only reference to the management of Antarctic animals within the whole Treaty. There are no guidelines for how the Representatives of the Contracting Parties shall approach the preservation or conservation of the 'living resources' or what the essential considerations should be in formulating measures. The fact that the Treaty refers to Antarctica's native wildlife as "living resources" reveals that at the time of the drawing up of the Treaty, the native wildlife was appreciated primarily as exploitable commodities for human beings. Whatever appreciation existed outside this scope at that time was not deemed important or relevant enough to acknowledge within the Treaty. This wording is still employed today by the Treaty, as well as other instruments within the Treaty System. This paper argues that changes that have occurred to this appreciation of Antarctic fauna within many Western states in the last few decades needs to be acknowledged by Antarctic managers, researchers, and policy-makers.

The Agreed Measures for the Conservation of Antarctic Fauna and Flora (1964) were the first formal extension made to the Antarctic Treaty. As the title suggests, the purpose was to provide guidelines for how human beings should treat Antarctic fauna and flora. Measures were introduced to allocate 'specially protected areas' and to list 'specially protect-

ed species' as needing extra protection. The permit system introduced by the Agreed Measures allows specific numbers of mammals and birds to be killed or captured for specific reasons considered necessary by Antarctic management. Although these restrictions prohibit the harvesting of mammals and birds, individual animals belonging to these classes cannot be guaranteed protection as they stand the risk of being selected by permit-holders. The survival of individuals that have not been killed has therefore been the consequence of permit-holders selecting other individual animals, and not because surviving individuals have been granted a right to life. The permit system introduced by the Agreed Measures does therefore not accommodate the rights of individual animals to life.

The Convention for the Conservation of Antarctic Seals (CCAS) (1972) gives legal sanction to the harvesting of seals, which had been banned by the Agreed Measures. In the drawing up of this Convention, restrictions on sealing imposed by the Agreed Measures were recalled. The inauguration of CCAS was thus detrimental to emerging animal rights issues within Western societies in the 1970s. In terms of animal welfare and animal rights, this was a step backwards. Although CCAS restricts harvesting to certain seal species and numbers, there are no favourable developments in terms of animal rights implemented by this Convention. The very purpose of CCAS was to give legal sanction to sealing in the Southern Ocean, which in spite of restrictions imposed by the Agreed Measures, was still taking place in the early 1970s (Mascott 2001, 1-2; World Wide Fund 2001, 1).

At the time of the drawing up of CCAS, certain species of seal were considered more vulnerable than others. Killing and capturing of Ross seals, Southern Elephant seals, and Fur seals of the genus *Arctocephalus* were forbidden under any circumstances. The harvesting of other species (Crabeater seals, Leopard seals, and Weddell seals) was limited to certain numbers, and the killing of Weddell seals one year old or older was forbidden during their breeding season in order to ensure breeding success of the species. This Convention still stands today and can be taken advantage of by sealers at any time. Even the Madrid Protocol does not override this Convention, leaving Southern Ocean seals in a vulnerable position.

Although the ecosystem approach adopted by CCAMLR is aimed at maintaining faunal populations and their species, individual animals also benefit from measures taken by this convention. By maintaining the natural balance that exists between different species within the Southern Ocean ecosystem, CCAMLR serves the purpose of providing individual animals with an environment conducive to their well-being. In this way, the ecosystem approach to management adopted by CCAMLR contributes towards the welfare of individual

animals, as well as populations and species. CCAMLR was the first Antarctic Treaty System fisheries management instrument, and the first legal instrument to introduce the concept of managing an ecosystem (CCAMLR 2001, 1). However, although these measures taken by CCAMLR are favorable for the welfare of marine animals, it should not be overlooked that one of CCAMLR's main objectives is to regulate commercial fishing. Being referred to as "living resources" by the Convention, marine animals are being valued as exploitable entities, not individuals with rights of their own.

Environmental ethicist Pelli (2000) has commented that humankind's relationship with aquatic species such as fish is the most controversial within the animal rights debate. As the sentience of such species is much debated, so is the value of their lives. Mammals such as seals, however, are reported as being widely accepted as truly sentient creatures (Carruthers 1992, 58). Jackson has commented that it is not the intention of any of the instruments within the ATS to implement regulations that are not consistent with the expectations and standards of the broader public. He adds, however, that whether or not the interests of animals have been considered satisfactorily or meet contemporary standards within society satisfactorily, is an issue that will be looked at in the upcoming review of the Madrid Protocol's annexes. He further states that this issue will be one of the up-front issues looked at within the review (Jackson 2001).

As the title confirms, the Protocol on Environmental Protection to the Antarctic Treaty (1991) is a measure taken specifically to protect the Antarctic environment and not to regulate its exploitation. Article 3 (2) establishes that human activities in the Antarctic Treaty area shall be conducted so as to limit adverse impact on the environment. Specifically, it stresses that activities shall avoid detrimental changes in the distribution, abundance or productivity of species or populations of species of fauna and flora (b.iv). Item b.v adds that activities should avoid further jeopardy to endangered or threatened species or populations of such species. Yet again, the lives of individual animals are not acknowledged as being in jeopardy.

Annex II of the Madrid Protocol is primarily based on the Agreed Measures (1964). Article 3 of Annex II implements the same permit system introduced by Article VI of the Agreed Measures, with minor alterations. In addition to restrictions placed on the killing, injuring, capturing and molesting of native mammals and birds by the Agreed Measures, the Madrid Protocol places restrictions on the handling of animals. This is significant in terms of the rights of individual animals. By restricting the handling of animals, the experiences of individual animals have been acknowledged by the Madrid Protocol, as stress caused to animals by

being handled is primarily experienced on the individual level. Article 3 (6) confirms this acknowledgement by stating that "All taking of native mammals and birds shall be done in the manner that involves the least degree of pain and suffering practicable." This obligates permit-holders to use research techniques that are considerate of the pain that they may cause animals in their research activities. Although the killing of animals is still allowed under certain circumstances, by introducing measures that aim to reduce pain and suffering, the sentience of animals has necessarily been acknowledged (Orlans 1993, 129-130). As such, it becomes evident that experiences of individual animals have gained some recognition within the ATS instruments. Yet does it afford animals with their just entitlements?

The upcoming review of the Madrid Protocol will essentially focus on the category of Specially Protected Species. Attention will be given to the concern that the category may still not be necessary, with the increased protection afforded all species by the Madrid Protocol. According to Jackson (2001), ambiguous language within articles will be a major focus in the review. The consensus method, as the means by which terminology within all Antarctic law is determined, will undoubtedly come under scrutiny within this context (Jackson 2001).

It is Jackson's prediction that the issue of animal rights in some form will arise at the review, whether it will be within the context of terminology within articles addressing standards for the treatment of animals, or within the context of how to minimize the suffering of animals (2001). Non-governmental organizations (NGOs) represented at the review, are anticipated to raise the issue of animal rights. NGOs such as Greenpeace are accepted by the Australian Antarctic Division's policy-makers as representing the broader community to a certain degree. Although it is acknowledged that many such organizations often support radical environmental views, their concerns are still considered as providing a guide for the Division's policy-makers when determining concerns of the public (Jackson 2001).

The review will undoubtedly result in increased protection for certain species within specific circumstances, with protection and entitlements of animals estimated to remain focused on populations of animals, not individuals. According to Jackson (2001), the terms conservation and preservation have always been interpreted by Antarctic law as being relevant to populations of species, not individual animals. We thereby discover that individual animals can in fact not be guaranteed protection through the Antarctic Treaty System as it is today. As such, the main focus of conservation and preservation measures for Antarctic and sub-Antarctic animals has not changed since the drawing up of the Antarctic Treaty in 1959.

The Australian Antarctic Division's Animal Ethics Committee (AAEC) was established in 1986. It serves the purpose of providing Antarctic researchers with ethical guidelines for all biological research. The Ethics Guidelines apply to species of fish, birds and mammals, as is consistent with the Australian Code of Practice (AAEC 2001, 1). The guidelines provide instructions for how animals should be treated within different research activities. These activities include moving around breeding animals, as well as killing, capturing, transporting, restraining and handling animals in general.

The fact that killing of animals is sanctioned through the Australian Code of Practice is in itself an issue that has caused much public outcry (Rose cited in Patterson and Palmer 1989, 124-125). While most instructions within the AAEC guidelines include ways in which to minimize impact on animals during research activities, killing them under certain circumstances is sanctioned.

Human Impact

Human impact on Antarctic and sub-Antarctic fauna occurs within many different contexts. Tourism, biological research and the harvesting of marine species are acknowledged as currently incorporating human activity that impacts the most severely on the region's wildlife. Whilst the harvesting of non-mammal marine species in the Southern Ocean is currently the cause of millions of individual animals dying each year, it is the disturbing, harming and killing of mammals and birds that receive the most attention by the media and hence the most opposition by the public. As the sentience of such species is less debated, their rights to not be disturbed, injured or killed are also less debated.

As the tourism industry is growing faster in Antarctica than anywhere else in the world today, there is growing concern for its impact on the local wildlife. According to the Antarctica Project (2001, 2), the number of Antarctic tourists has increased 133% from 4,800 during 1990/1991 to about 11,200 during 1998/1999. Although some reports confirm that tourists travelling to Antarctica are generally very careful and conscientious around native wildlife, other reports confirm that tourists are often unaware that their behaviour impacts on the local wildlife. In an incident witnessed by Antarctic scientist Barbara Wienecke (2001), a tourist photographing seals blocked a pathway used by penguins to reach the safety of the ocean. In doing so, two penguins were forced to take an alternate route, resulting in both of them being squashed to death by a seal that rolled onto its back. Wienecke claims that this incident could have been avoided had the penguins been allowed to access the water via their usual path.

There are a number of documented problems associated with Antarctic tourists impacting on local wildlife. All seabirds must come ashore to breed, and in Antarctica and sub-Antarctica this is often in the coastal regions where tourists disembark from ships. As seabird colonies are often audible, visible and located within walking distance, they become easy targets for human visitation (Giese 1999, 12). A current concern for Antarctic managers is that almost all commercial tour groups visit a small number of breeding colonies on the Antarctic Peninsula (The Antarctica Project 2001, 1). Repeated visits are estimated to place a great deal of stress on the local animals, which need to conserve their energy in order to survive the extreme conditions of the Antarctic environment. Studies into the breeding success of Antarctic bird species have found that human disturbance around nesting sites can significantly affect breeding success (Trivelpiece and Fraser cited in Fraser 1993, 29; Valencia and Sallaberry cited in Fraser 1993, 31).

Although numerous attempts have been made to manage the problem of disturbances caused by human visitation to Antarctic and sub-Antarctic regions, an existing problem is that adherence to guidelines recommending appropriate behaviour by tourists is voluntary (Giese 1999, 14). Compliance with guidelines depends on the integrity of the individual visitor. In a survey of Antarctic visitor behaviour, it was found that 74% of visitors from commercial tour ships admitted to violating regulations for approach distances to penguins (Giese 1999, 14).

Biological research, whilst contributing to the scientific community's general knowledge of different Antarctic species, is also reported as impacting on individuals and populations unfavourably. Monamy (1996, 38) has stated that there are several factors that can cause psychological stress for animals involved in scientific research. Some of these include confinement, handling in general, exposure to unusual noises and harmful stimuli such as injections. According to Levine (cited in Rollin and Kesel 1990, 175) and Rollin (cited in Rollin and Kesel 1990, 28) factors such as noise level, researcher personality and the method of handling an animal, have all been reported as having demonstrable and metabolic effects on animals involved in research. As an example of the numbers of mammals and birds that are handled by researchers each year, Table 2 includes data on numbers of mammals and birds captured and released by Australian Antarctic researchers south of 60° South Latitude in a one-year period. In light of concern for individual animals, these figures reveal that many individual Antarctic mammals and birds are disturbed every year by researchers. Whilst only a single colony of mammals or birds may have been disturbed, that colony may comprise a very large number of individual animals. It should also be acknowledged

Table 2. Numbers of mammals and birds captured and released by Australian Antarctic researchers south of 60° South Latitude July 1999 to June 2000 (AAD 2001,1-8; Burton 2002).

Species	Number
Leptonychotes weddelli (Weddell seals)	163
Leptonychotes weddelli (Weddell seal pups)	c.150
Ommatophoca rossi (Ross seals)	2
Lobodon carcinophagus (Crabeater seals)	2
Hydrurga leptonyx (Leopard seals)	33
Aptenodytes forsteri (Emperor penguins)	18
Pygoscelis adeliae (Adelie penguins)	300
Catharacta maccormicki (South Polar skuas)	125

that Australia is only one of many countries carrying out Antarctic biological research.

Discussion

Overall findings have revealed that the issue of animal rights is relevant to Antarctic management. As an issue to be addressed by Antarctic policy-makers it is relevant within the context of law. As an issue to be addressed by Antarctic managers, it is relevant within the realm of public relations, particularly within the context of trends in public opinion. As an issue to be dealt with by researchers it is relevant within the context of human impact in general. The extent to which specific issues are relevant needs further research.

Antarctic and sub-Antarctic wildlife is among the world's most remote, which is understood to add to its value for human society. As human activity has significantly altered most other wilderness areas in the world, people's dreams about an unspoiled natural environment with abundant wildlife cannot easily be accommodated any more. Antarctica serves as a reminder that the original, natural state of our planet was not one encumbered by pollution, exploitation or malformation. This reminder has the potential to inspire humankind to work towards a healthier natural environment, as well as encourage research into our original constitutional position in relation to the natural environment (Cremo and Mukunda Goswami 1995, 35, 116; Kofahl 1995, 1; The Antarctica Project 1998, 1-2).

While it is difficult to make accurate predictions about the future, a consideration for Antarctic managers might be: If Antarctica loses its remoteness through increased tourism and other human activity, how will society's appreciation of the region change? Will it decrease, resulting in less concern and less effort being made for it? If Antarctica loses its exoticness and sacredness, what is there to stop the human race exploiting it as we have other wilderness areas on Earth?

It is understood from these investigations that it is important for people to think about their relationship with

animals. Reflections on ethical issues by environmental managers, scientists and policy-makers, as well as the general public, are predicted to enhance decision-making on critical environmental issues. While anthropocentrism leads the world today in decision-making on global environmental issues, it is considered that time taken to appreciate the experiences of animals may well result in a better environment for human beings as well.

It is also considered that reflection on the quality of life ordinarily experienced by Antarctic animals outside the parameters of human influence can assist people in comprehending the full spectrum of human impact on the Antarctic environment. Reflection on human impact on individual animals is also understood as being particularly conducive for human beings to appreciate the needs and desires of different types of animals within different circumstances. As residents in a world that is dominated by human beings, individual animals' vulnerability needs to be acknowledged.

Evaluation of the findings from the research carried out within this study indicates that there are no quick solutions or panaceas for implementing animal rights issues into Antarctic law and management guidelines. As a topic grounded in ethical debate, the nature of animal rights is so elastic that shaping it into some practical form for implementation will be difficult under any circumstance. The problem, of course, is that the much needed framing of key issues necessarily depends on trends in philosophy, which are themselves elastic.

Overall findings reveal that it is important for Antarctic managers to accurately reflect community expectations when making decisions about animal welfare. Specific animal rights issues therefore need to be accurately identified as they evolve within Australian and international communities. Constant monitoring of ethical trends in society needs to be carried out by Antarctic researchers. In order to accurately gauge community expectations regarding animal rights, researchers may first need to investigate appropriate methods for such monitoring. Community support for specific issues will regularly need to be quantified. After support for specific issues has been confirmed, they can confidently be raised at Antarctic Treaty Consultative Meetings. Concerns about restrictions placed on resources for such research must also be addressed as a management issue.

Conclusion

One of the most significant animal rights issues is the need for environmental management regimes to acknowledge the needs and/or rights of individual animals, not just the needs and/or rights of populations of animals and their species. The case study into the hot iron branding of Southern Elephant Seals on Macquarie Island highlighted public con-

cern for individual animals. Public outcry in this case was for the (perceived) suffering of individual animals, not for the survival of populations, although this may have been a subsidiary concern. As such, this case study revealed that a significant number of people within the broader community is concerned about the needs of individual animals, not just the continuance of biodiversity.

It is concluded that the optimum starting point for future research into animal rights issues is the contrast between the appreciation of the intrinsic value of animals and the appreciation of the instrumental value of animals. This dichotomy necessarily exposes questions about humankind's relationship with animals, as well as the implementation into law and policy of different environmental values. It is also concluded that ethical considerations for animals can themselves act as effective tools in accurately identifying human impact on animals. This is supported by Jamieson and Bekoff (1996, 367), who have suggested that human beings who work with animals may have a moral responsibility to protect animals involved, even advocate for them as a physician would for a patient. If efforts are made by researchers to understand the experiences of individual animals, insight into their particular needs is anticipated to be consequential.

References

- Antarctic Animal Ethics Committee (AAEC). 2001. *Guidelines for Australian Antarctic Research involving Animal Experimentation or the use of Ionising Radiation: Ethics Guidelines*. Hobart: Australian Antarctic Division.
- Antarctic Treaty. 1959. *United Nations Treaty Series* 402, 71.
- Broom, D.M. 1989. Ethical Dilemmas in Animal Usage. In D. Paterson and M. Palmer (eds.), *The Status of Animals: Ethics, Education and Welfare*. Oxon: CAB International.
- Buenger, I. 2000. Seal branding (Letters to the Editor). In *The Mercury* 17 July, 15.
- Burkhalter, D. 2000. Seal branding (Letters to the Editor). In *The Mercury* 05 April, 18.
- Burton, H. 2002. Australian Antarctic Division. *Personal communications* 23 July, 2002.
- Carruthers, P. 1992. *The Animals Issue*. Cambridge: Cambridge University Press.
- Carwardine, M., E. Hoyt, R. E. Fordyce, and Gill, P. 1998. *Whales, Dolphins and Porpoises*. Surrey Hills: Reader's Digest Australia Pty. Ltd.
- Convention for the Conservation of Antarctic Seals. 1972. *International Legal Material* 11, 251.
- Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR). 1980. *International Legal Material* 19, 837.
- Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR). 2001. General Introduction. In *CCAMLR* [WWW site], [accessed 21/07/02]. Available: <http://www.ccamlr.org/>.

- Cremona, M.A. and Mukunda Goswami. 1995. *Divine Nature: A Spiritual Perspective on the Environmental Crisis*. Los Angeles: The Bhaktivedanta Book Trust.
- Dawkins, M.S. 1980. *Animal Suffering: The Science of Animal Suffering*. London: Chapman and Hall.
- de Vaus, D.A. 1990. *Surveys in Social Research*, 2nd Edition. London: Unwin Hyman Ltd.
- Gales, N. 2001. A Field Review of the Macquarie Island Elephant Seal Hot Iron Branding Program: December 2000. In The Australian Antarctic Division, *Antarctica Online* [WWW site], [accessed 21/07/02]. Available: http://www.aad.gov.au/science/antarcticresearch/biology/elephantseal/vet%5Freport/default.asp#_Toc505052758 .
- Giese, M. 1999. Eco-tourism and seabirds: Antarctica as a case study. *World Bird Watch* 21.1, 12-15.
- Gill, P. and Burke, C. 1999. *Whale Watching: In Australia and New Zealand*. Sydney: New Holland Publishers Pty. Ltd.
- Harwood, G. 2001. Australian Antarctic Division. *Personal communication* 12 September.
- Jackson, A. 2000. The Antarctic Treaty: A unique pact for a unique place. In J. Rubin (ed.), *Lonely Planet: Antarctica*, 2nd Edition. Hawthorn: Lonely Planet Publications Pty. Ltd.
- Jackson, A. 2001. Australian Antarctic Division. *Personal communication* 23 August.
- Jamieson, D. and Bekoff, M. (eds.). 1996. *Readings in Animal Cognition*. Massachusetts: The MIT Press.
- Levine, S. 1990. Stress and cognition in laboratory animals. In B.E. Rollin and M.L. Kesel (eds.), *The Experimental Animal in Biomedical Research 1: A Survey of Scientific and Ethical Issues for Investigators*. Florida: CRC Press Inc.
- Lynch, M. 2000. Seal branding (Letters to the Editor). In *The Mercury* 31 July, 18.
- Monamy, V. 1996. *Animal Experimentation: A Student Guide to Balancing the Issues*. Glen Osmond: Australian and New Zealand Council for the Care of Animals in Research and Teaching (ANZCCART) Ltd.
- Neuman, W.L. 1997. *Social Research Methods: Qualitative and Quantitative Approaches*. Massachusetts: Allyn and Bacon.
- Orlans, F.B. 1993. *In the Name of Science: Issues in Responsible Animal Experimentation*. New York: Oxford University Press Inc.
- Pelli, E. 2000. Southern Cross University. *Personal communication* 23 July.
- Penprase, J.R. 2000. Seal branding (Letters to the Editor). In *The Mercury* 06 April, 18.
- Protocol on Environmental Protection to the Antarctic Treaty. 1991. *International Legal Material* 30, 1455.
- Pyers, G. and Gott, P. 1994. *Treated Like Animals: The Relationship Between People and Animals*. Carlton: CIS Publishers.
- Rodd, R. 1990. *Biology, Ethics and Animals*. Oxford: Clarendon Press.
- Rollin, B.E. 1990. Ethics and research animals. In B.E. Rollin and M.L. Kesel (eds.), *The Experimental Animal in Biomedical Research 1: A Survey of Scientific and Ethical Issues for Investigations*. Florida: CRC Press.
- Rose, M. 1989. Regulation of animal research: The Australian Experience. In D. Paterson and M. Palmer (eds.), *The Status of Animals: Ethics, Education and Welfare*. Oxon: CAB International.
- Rubin, J. (ed.). 2000. *Lonely Planet: Antarctica*, 2nd Edition. Hawthorn: Lonely Planet Publications Pty Ltd.
- Skare, M. 1994. Whaling: A Sustainable Use of Natural Resources or a Violation of Animal Rights. *Environment* 36/ 7, 12 ff. September.
- Stoddart, M. 2001. Australian Antarctic Division. *Personal communication* 12 September.
- The Antarctica Project. 1998. *The Antarctica Project* [WWW site], [accessed 23/07/02]. Available: <http://www.asoc.org/> .
- Trivelpiece, W.Z. and Fraser, W.R. 1993. The effect of human disturbance on the breeding success of South Polar Skuas. In W.R. Fraser (ed.), *Report: Workshop on Researcher-Seabird Interactions*. Montana: Polar Oceans Research Group.
- Valencia, J. and Sallaberry, M. 1993. Undesirable effects of fastened flipper bands on small breeding populations of *Pygoscelis antarctica*, Ardley Island, So. Shetlands. In W.R. Fraser (ed.), *Report: Workshop on Researcher-Seabird Interactions*. Montana: Polar Oceans Research Group.
- van den Berg, P. 2001. *The Mercury*. *Personal communication* 20 September.
- Wienecke, B. 2001. Australian Antarctic Division. *Personal communication* 20 August.
- Williams, D. 2001. Australian Antarctic Division. *Personal communication* 03 October.