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Killing Animals That Don't Fit In: Moral Dimensions of Habitat Restoration

Jo-Ann Shelton

University of California Santa Barbara

The purpose of this paper is to discuss justifications for the violent destruction of feral animals during habitat restoration projects. Habitat restoration is the process of changing a landscape, which has been altered by human activities, back to an approximation of its former appearance. This process of reversal requires a high degree of human intervention and management. These are, of course, the same human behaviors that produced the initial alterations, the ones which now seem regrettable. I will argue that proponents of the eradication of feral species continue to adhere to an age-old paradigm that assigns value to animals in accordance with human interests. And when they are unwilling to take into consideration the animal distress that their projects cause, they exhibit the same desire to manipulate Nature that has motivated humans from the beginning of our existence as a species.

One goal of restoration is to insure the survival of flora and fauna which existed in a region before the arrival of humans (especially Europeans) and their biological baggage. Killing species which were introduced by humans and which now threaten the survival of species which have inhabited an area for a much longer period seems like a simple, quick and relatively inexpensive remedy. And therefore killing is widely condoned by restorationists, even when the methods -- for example, poisoning, snare trapping, or shooting -- cause considerable pain to the animals. But the infliction of pain by humans raises ethical issues because humans, unlike other species, are well aware of

the impact of our actions; it is, moreover, an aspect of human nature to have sympathetic impulses and to believe that causing harm is a matter of moral concern. Although animals do, of course, cause one another pain and distress, we humans are not therefore absolved of moral responsibility for the pain and distress that *we* cause.

When restorationists defend their methods of killing, they assert that they are fulfilling another moral responsibility -- a moral responsibility to preserve biological diversity and to undo ecological damage done by people who had a very different opinion about the natural world. There are several problems with this defense, perhaps the most obvious being that it depends on an internally contradictory definition of Nature, a definition that presumes that Nature is, on the one hand, something separate, autonomous and undisturbed by humans, but also that Nature is, on the other hand, something able to be (re)constructed and managed by humans. Correlative to the first definition, that Nature is an entity free of human interference, is the belief that feral animals (or their domesticated ancestors) have been constructed by humans, are therefore unnatural, and do not belong in a natural landscape. However this disdain for "constructed" animals seems to conflict with the belief expressed in the second definition, that it is appropriate for humans to (re)construct Nature. Also problematic are the assumptions that recreating an archaic landscape is both a feasible goal and a laudable display of human ingenuity.

I want especially to challenge two suppositions: that the killing of feral animals to protect wild species demonstrates a fundamental shift in attitudes toward the natural world, and that we cannot promote the interests of some species without ignoring humane considerations about others. I will argue that the violent destruction of animals perpetuates a philosophy that humans have the right to destroy elements of nature whenever and why ever they choose. To illustrate my argument, I will discuss two examples of mass shootings of grazing animals. In each case, shooters justified the killing on the grounds that the targeted species "did not fit" in the region any more. The first example is the

shooting of bison in 19th century America. The second example is the shooting of feral sheep in the final decades of the 20th century in the area of California where I live.

People of European descent killed bison for several reasons: to clear the land for agriculture and herding, to profit from the sale of hides, to reduce the population of native Americans by eliminating their food source, and to have fun. The procurement of food was only one, and frequently not the primary reason for hunting bison. In fact, very often the skinned carcasses were left where the animals had fallen. And sometimes they were not even skinned because they had been shot only for sport (Roe 1970, p. 429; Fleharty 1995, pp. 29 and 255; Danz 1997, pp. 92-114). The hunting of bison for sport became even more popular as railroad lines across the continent were constructed. Consider these accounts from the years 1867 and 1872 (Fleharty, pp. 73-75).

"Few lines of railway in the world offer such facilities for the sportsman and hunter as the Kansas Pacific. Where else in the world can a man recline in the luxuriously cushioned seats of a Pullman Palace car, gliding over the smoothest of tracks, and look out on the immense herds of that Monarch of the Plains -- the Buffalo -- some clumsily cantering along within one hundred yards of the train, and others still further off, watching it with a sort of lazy stupid wonder".

"Nearly every railroad train which leaves or arrives at Fort Hays on the Kansas Pacific Railroad has its race with these herds of buffalo; and a most interesting and exciting scene is the result. The train is 'slowed' to a rate of speed about equal to that of the herd: the passengers get out fire-arms which are provided for the defense of the train against the Indians, and open from the windows of the cars a fire that resembles a brisk skirmish. Frequently a young bull will turn at bay for a moment. His exhibition of courage is generally his death-warrant, for the whole fire of the train is turned upon him or some member of the herd in his immediate vicinity".

Hunters were not deterred by sympathetic impulses, as this 1879 account reveals (Collison 1963, p. 56). "I have killed, and seen killed, thousands of buffalo cows. They

were skinned and their calves were left to starve to death or be eaten by the wolves and coyotes....These little calves were lying by the dead cows.We had to keep driving them away while skinning the cows.I saw some of them trying to suck the cows.After the mothers were skinned and the hides were in the wagon, the calves would follow.They could smell the hides and would follow them to the hide yard.They were gone the next morning -- back to where they had sucked the last time, either to starve to death or be killed by the wolves."

The relentless slaughter of millions of bison prompted no moral concern because their killers were eradicating a species that impeded human interests in exploiting the land.Buffalo occupied areas which could be grazed by domesticated animals or cultivated for crops.Consider this justification by Frank Mayer, one of the last professional buffalo hunters (Mayer and Roth 1958, p. 27)."The buffalo served his mission, fulfilled his destiny in the history of the Indian, by furnishing him everything he needed-- food, clothing, a home, traditions, even a theology.But the buffalo didn't fit in so well with the white man's encroaching civilization -- he didn't fit in at all, in fact.He could not be controlled or domesticated.He couldn't be corralled behind wire fences.He was a misfit.So he had to go."

In an era when wilderness was a region waiting to be cultivated, grazed, mined, logged, or otherwise utilized for human economic benefit, bison had few defenders.

Let me now turn to a contemporary situation: the shooting of sheep on Santa Cruz Island, which lies off the southern California coast, about 26 miles from Santa Barbara.The island's long isolation from the mainland allowed the evolution of several species and sub-species of plants and animals.The earliest human immigrants to the Island were Chumash Indians who settled there about 10,000 years ago.Europeans reached the Island in the 18th century and subsequently introduced domesticated plants and animals, particularly sheep, cattle, pigs and horses (as well as, inadvertently, alien wild species).Activities that have altered the landscape over the last two centuries include the

grazing and rooting of the introduced animals, the clearing of native vegetation to make room for cultivated plants, the cutting of trees for timber, and the construction of roads and buildings. Even the suppression by humans of periodic wildfires, which play an important role in maintaining the health of southern California ecosystems, has contributed to modifying the landscape. In response to these various changes, populations of indigenous plants have been reduced. Conversely, introduced plants, particularly fennel and thistle, are thriving (Brumbaugh 1980; National Park Service 1985, pp. 6-10 and 40). By 1980, when ranching operations had become unprofitable for the several private owners of Santa Cruz Island, opportunities arose for the acquisition of the land by groups interested in restoration and conservation (Gherini 1994). In 1978, The Nature Conservancy purchased an interest in the western 90% of the Island, about 54,500 acres, over which it assumed full control in 1987. In 1997, the National Park Service acquired the eastern 10%, about 6200 acres, and incorporated it into the Channel Islands National Park which had been created in 1980. In 2000, The Nature Conservancy transferred 8500 of its acres to the Park Service (Burns 2000). In both areas, cattle had been removed by their owners to the mainland for slaughter, but large numbers of sheep and pigs, and a small number of horses had been abandoned to free-roam and thus become feral. Despite its name, The Nature Conservancy planned not simply to *conserve* populations of pre-Columbian plants and animals, but to *restore* a pre-Columbian landscape. The two goals are similar, but not identical. Conservation allows for a possible co-existence of species; restoration is a type of biological cleansing, an "exorcism of the exotics" (Holloway 31) that requires that all European elements be removed in order to recreate an archaic scene. The Nature Conservancy considered it necessary to eliminate the sheep as quickly as possible, and, in December, 1981, it instituted a program of shooting them (Schuyler 1993). By June of 1989, over 37,000 sheep had been killed. The success of the restoration program has been compromised by some of its consequences. The extermination of grazing animals has, for example, encouraged the unwanted expansion of the introduced

fennel, which now dominates 10% of the Nature Conservancy property and is spreading more rapidly than other species. One study notes that "the most important factor contributing to the recent expansion of fennel was the rapid removal of cattle and feral sheep from Santa Cruz Island" (Brenton and Klinger 1994; also Beatty and Licari 1992; Klinger, Schuyler and Sterner 1994). In the ecosystem which evolved in the 20th century, grazing activities had served a beneficial role in restricting the spread of introduced plants and thus in maintaining a diversified biotic community on the Island. It was unlimited grazing, rather than simply grazing, which was so destructive. The Nature Conservancy acknowledges that its removal of grazing animals may have precipitated the unwelcome explosion of fennel and it is now trying to eliminate the fennel by a combination of controlled burns and herbicides, which kill native as well as non-native plants (Dash and Gliessman 1994; Burns 1997a, 1997b and 1998; Hamm 1998; Aschehoug 2001). Another unanticipated result of the shooting of the sheep has been an increase in the population of feral pigs, which has grown from several hundred to several thousand (Pearl, Patton and Lohr 1994). In addition, golden eagles that have been attracted to the Island by the abundant supply of piglets are hunting to extinction the indigenous Santa Cruz Island fox (Van De Kamp 2000; Davison 2003; Schoch 2003). The fox population plummeted from about 1500 in 1994 to fewer than 100 in 2003. Against the pigs, the National Park Service and The Nature Conservancy are planning "an all-out assault, including the use of rifle squads" (Polakovic 1999). Former Park Superintendent, Tim Setnicka, called the planned assault "the last big roundup", even though the pigs will be shot, rather than removed from the Island alive (Polakovic 1999; Kelly 2002). The grim determination to eradicate the pigs is described by one reporter thus: "Like the Pentagon facing an entrenched army, the Park Service is girding for an all-out war on pigs on Santa Cruz Island. There will be no prisoners taken in this campaign" (Burns 2001). Militaristic metaphors figure prominently in discussions about eradicating feral

animals, and they have the effect of framing the issue as a moral one, in which the forces of "good" (humans) are engaged in a contest with the forces of "evil" (feral animals). To save the few remaining foxes, bald eagles are being brought in to drive out the golden eagles (Polakovic 1999; Todd 2004). These experiments in restoration reveal the problems inherent in suddenly removing elements from a biotic community on a species by species basis. They should instruct us of the complex interactions of the various elements of the present day Island ecology and the need to take into account the contributions of the introduced animals. They should certainly lead us to question whether restoration, as distinct from conservation, is a feasible goal, and, if not, why animals are being shot in pursuit of it.

Like the Nature Conservancy, the National Park Service wishes to recreate a pre-Columbian scene. However its mandate, as stated in the General Management Plan, is not simply to restore wilderness, but to open it for the pleasure of human visitors (National Park Service 1985, pp. 81 and 82). This mandate is flawed by an internal contradiction, because humans of European descent are, of course, as much an anachronism as sheep and pigs in a pre-Columbian landscape. Nonetheless, the Park Service, in accordance with its charge, has constructed camp grounds and hiking trails and encourages people to enjoy the experience of placing themselves in a scene which approximates the pristine wilderness of an earlier period. Ironically it has also left standing structures built by the ranchers, in order to retain the "historic scene" of the ranching era, but without the ranch animals (National Park Service 1985, pp. 36, 37, 41, 44 and 45). The projected increase in annual human visitors to the Island will contribute to the degradation of the land and adjacent ocean water. The Park Service has no tolerance, however, for other non-native species, and had planned to shoot the feral sheep, pigs and horses once it took possession of the east end. In fact, in the days surrounding the Park Service takeover on February 10, 1997, about 1000 sheep were shot near the boundary between the National Park and The Nature Conservancy properties (Burns 1997a). The Nature Conservancy, as mentioned

above, had been shooting sheep since 1981, but in relative secrecy because access to the property was very restricted. However the shootings in the early part of 1997, which coincided with the opening of the Park property, received considerable media attention. The public responded with outrage to newspaper reports and television film of wounded sheep trying to crawl to safety, of lambs starving by their dead mothers, and of rotting carcasses strewn on the hillsides. Yielding to public pressure, but not admitting wrong-doing, the Park Service rounded up the sheep and send them to the mainland for sale at a livestock auction (Burns 1997a; MacGregor 1997; Schultz 1997; Polakovic 1999). (The horses were moved off the island to a horse sanctuary.) Public disapproval of the shooting was prompted by two considerations: that it was wasteful, because the carcasses were left to rot or be eaten by carrion birds, and that it was cruel, because wounded sheep and nursing lambs were left to suffer. People thus reacted in the same way that most of us do to the accounts of bison hunts -- and with the same moral concern, that is, that the reasons for killing the animals did not justify the cruelty and wantonness of the process. However proponents of the sheep killing dismissed the criticisms as sentiments expressed by people ignorant of the goals of habitat restoration. The issue I want to explore here is whether there is, in fact, a similarity between the reasons for shooting sheep and the reasons for shooting bison. Restorationists will argue that bison were killed by people whose interests were selfishly anthropocentric, whereas feral sheep and pigs are killed by people whose interest is the repair of damage done to the environment by previous generations of thoughtless humans. The goals certainly seem distinct, but there is a common denominator here: it is we humans who make the determination that a species does not "fit in", that it has "to go", and we make this determination on the basis of whether the existence of that species conflicts with our own interests -- our interests at one time being economic expansion, at another time being the pleasure of visiting restored landscapes. Eric Aschehoug, a Nature Conservancy biologist,

has said about the slaughter of pigs on Santa Cruz Island: "We are interested in restoring an island. Unfortunately, the pigs are in the way" (Kelly 2002).

Our interest in turning back the ecological clock and recreating a landscape which existed before the introduction of European species is controversial. Consider the comments of William Cronon, arguing for the need for a critical reassessment of our ideas about nature and wilderness (Cronon 1996, p. 24). "Recent scholarship has clearly demonstrated that the natural world is far more dynamic, far more changeable, and far more entangled with human history than popular beliefs about 'the balance of nature' have typically acknowledged. Many popular beliefs about the environment are premised on the conviction that nature is a stable, holistic, homeostatic community capable of preserving its balance more or less indefinitely if only humans can avoid 'disturbing' it. This is in fact a deeply problematic assumption." Similarly Mark Sagoff, arguing against "all-out battles" against exotic species, comments that "ecosystems lack order, purpose, and design; they have no balance to disrupt" (2000). Species introductions and environmental change take place without anthropogenic influences. Had Santa Cruz Island remained until this day entirely free of any European human invasion, it would still not be the same as it was in 1400 AD. And even if we were able now to restore its 1400 AD scene, its proximity to the mainland will produce repeated introductions of "exotic" plants and animals through the actions of winds, currents, and human visitors. Therefore restoration will be an on-going process, managed by humans, and requiring constant intervention. The result -- the conservation of native species -- is arguably desirable, but the process of achieving and maintaining a pre-European scene will be only as "natural" an activity as is landscape architecture. It is human will and technology that convert wilderness to garden, and garden to wilderness. And it is a paradox that the ideology of nature and wilderness which abhors anthropogenic changes must also depend on anthropogenic changes to reconstruct landscapes.

Restorationists contrast their assignment of intrinsic value to the natural world with the view that nature is valuable only for human exploitation. Kate Faulkner, chief of natural resources for the Channel Islands National Park, says "we used to value the islands for commodity production and now we're in a new era of restoration and environmental protection of natural plants and removal of animals that are causing lots of destruction" (Polakovic 1999). Restoration requires the disruption of an existing ecosystem which is deemed to be "unnatural". Consider the polarization expressed in the comment that "introduced animals represent a deadly threat to the *natural* ecosystem of the islands" (Schoenherr, Feldmeth and Emerson 1999). Justification for restoration relies, first, on the construction of conceptual distinctions between "native" and "introduced", "indigenous" and "exotic", "wild" and "feral" -- distinctions which may not be tenable in situations where the so-called "exotic" species are actually "native" elements of the present biotic community -- and, second, on the construction of preferences for "indigenous", "native" and "wild". However restorationists do not simply prefer one group over another; they dismiss the other group as having no value at all and no claim for moral consideration. Having been deprived of their commodity value, the feral animals that "are causing lots of destruction" are granted no intrinsic value.

Feral animals are animals that were once domesticated, or whose ancestors were once domesticated, but have escaped or been released from their interdependence with human beings. Although self-sufficient and free-roaming, they differ from animals that we term "wild" because they belong to those species, very small in number, which have been domesticated and they can, if captured, become domesticated. There is a difference, for example, between a horse and a zebra, the former belonging to a species whose members can be trained to work with and for humans, the latter to a species whose members remain intractable, even if the occasional zebra can be taught a trick. Feral animals have undoubtedly been a phenomenon since the time that humans first began to utilize animals, but the separation of feral animals into a category distinct from wild

animals is a recent development. We are generally not interested in making the distinction unless the feral animals are frustrating our attempts to conserve other species or to recreate a landscape. For example, free-ranging horses and pigs in other parts of California are referred to simply as "wild horses" and "wild pigs". Farmers and ranchers, for example, include free-roaming horses and pigs in the category of wild animals such as deer, and target them for extermination when they destroy cultivated areas, compete with domesticated animals for resources, and endanger human economic well-being. Restorationists, however, call the free-roaming pigs of Santa Cruz Island "feral" in order to deny them any claim to be part of the wild (i.e. "natural") landscape.

During the millennia that humans have been herders and cultivators, we have prospered, both by establishing a co-dependent relationship with a few tractable species (Diamond 1997), and by ruthlessly eliminating any species which threatened our food supply by occupying land we wanted to farm, or by eating crops we planted, or by preying on our livestock. Our ancestors constructed both physical and mental boundaries between domesticated space, which was predictable and safe because humans had imposed order, and wilderness, which seemed chaotic and unsafe because it was beyond our control. In the traditions of Classical art and literature, it was not trackless forests and rugged mountains that inspired artists, but rather landscapes of orchards and pastures. The pastoral scene demonstrated an ideal situation where elements of nature lived together peacefully, controlled, but also protected by the *pastor*, which is the Latin word for "shepherd", "the man who ensures a safe pasture for his flocks". The use of the image of the "good shepherd" as a religious metaphor for the benevolent deity indicates that the imperative to secure pastoral regions was given an ethical as well as an economic dimension.

Only recently have we begun to reconsider our place in nature and to admit that our promotion of our own species has been achieved at the expense of most other species. As we calculate the damage done by our exploitative practices, we have developed an

appreciation for the scientific, aesthetic, and spiritual values of uncivilized areas. It is not coincidental, of course, that American society is now overwhelmingly urban, which means that we can cherish wild-ness without experiencing its threats directly. Today fewer than 5% of the American people make their living directly from agriculture. Most of us never see, much less touch, care for or worry about protecting, the animals whose flesh we eat or whose skins and wool we wear. They no longer share our lives of domestic security and, hidden from view in factory farms and feed lots, they are seldom objects of our moral concern. On the other hand, we now rarely feel threatened by wild animals. Comfortably ensconced in our urban jungles, we no longer perceive deer as pests who devour our grain fields, or wolves as predators who kill our sheep and cattle. In fact, we now romanticize wild species. The wolf, for example, once hunted to near extinction, has been converted from a frightening icon of unrestrained violence to a cherished icon of unrestrained freedom. And, as we assign a high value to wild species, we also develop an interest in conserving their habitat. In most cases, this new system of valuation has produced positive results and encouraged us to consider the interests of animal and plant species which we have never domesticated. Bison, for example, are no longer seen as our competitors for land use. The animals described by the Pullman car hunters as clumsy and stupid have now become symbols of American strength and independence. In reality, of course, bison could no longer exist independent of human management plans. Having reduced their population from millions to thousands, we restrict their movement to designated areas, and we control and protect them within the boundaries we have established. The very process of managing wild species and defining preserves for them blurs the traditional distinctions between wild and domesticated space. Thus, in our modern post-pastoral world, we have ironically become the shepherds of wild species. Sometimes we even bring them into our urban spaces to care for them. For example, indigenous foxes from Santa Cruz Island have been removed to a mainland zoo for protection.

At the same time, however, that we are willing to endorse human management of wild species, we continue to cherish the illusion that wild and civilized spaces, or natural and human activities, are mutually-exclusive realms. We have retained the conceptual dichotomy developed by our ancestors, but with two modifications important to this discussion: we now assign an intrinsic value to wild species, but we have removed feral animals from the category of “wild”. On Santa Cruz Island, the alternative to shooting the sheep was to assign them to the category of domesticated animals and ship them to a livestock market, that is, to assign them value only as commodities. For the biologists and managers of the National Park Service and The Nature Conservancy, the process of the sheep’s adaptation to their environment is of no interest to the study of natural processes. In areas that we choose to “re-wild” -- a term used by some proponents of restoration (Soule and Noss 1998) -- the presence of feral animals like sheep and pigs offends us because we associate these species with cultivated landscapes. We therefore label the animals as “misfits” and refuse to accept them as a natural element of the landscape into which they were born and are therefore native. Frank Mayer noted that “the buffalo didn’t fit in with the white man’s encroaching civilization ... so he had to go.” Today, feral sheep and pigs don’t fit in with restoration plans or with our changing vision of how the non-urban environment should look, so they have to go. The words “introduced” and “exotic” have replaced “predator” and “pest” as terms which destine an animal for extermination.

The restoration experiments on Santa Cruz Island have indicated that the rapid and total removal of sheep produces new ecological problems, and that limited grazing may be a better strategy if the goal is to insure the survival of a pre-Columbian species. Nonetheless, many restorationists argue for the total removal of feral animals. Their goal is not simply the protection of some species, which can be achieved without the violent removal of others, but also the re-creation of a landscape from the days of yesteryear, a scene which humans can visit, but where feral animals are

unwelcome because they remind us of our exploitative practices and shatter our illusion that we have constructed a pristine wilderness. Our ancestors took pride in their ability to convert wilderness into civilization; we take pride in our efforts to turn a few cultivated areas into a semblance of their former appearance, and we do not want the presence of feral animals to ruin the picture that we have created.

The disdain for feral animals is linked to the contempt for domesticated animals which many environmentalists express, even as they enjoy the products of the environmentally damaging and bio-uniform meat and wool industries. For example, deep ecologists have argued that the development of agriculture initiated a regrettable separation of humans from "nature" and that domesticated animals, being both a process and product of agriculture, can therefore never be accepted as a part of "wilderness" (Foreman 1991, p. 69). Defending their practices against criticism that restored areas are human artifacts (Elliot 84, Katz 85), restorationists argue that they facilitate, not fake nature. "Any restoration is an artifact at the moment that it is deliberately arranged, but it gradually ceases to be so as spontaneous nature returns -- if humans back off and let nature take its course" (Rolston 91). Restorationists deplore, however, the natural processes which occur when humans "back off" and abandon their domesticated species (their artifacts), and when spontaneous nature takes its course and these species survive and thrive. Many environmentalists agree with J. Baird Callicott's derisive comment that farm animals "have been bred to docility, tractability, stupidity and dependency." They could not, he believes, exist in a wild state. If abandoned, they could not cope with freedom and would "hang around farm outbuildings waiting forlornly to be sheltered and fed. ... Most would starve" (Callicott 1980). It is curious that environmentalists frequently define our obligations to animal species on the basis of assumptions about whether an animal would or would not take pleasure in being free of our control. We are encouraged to consider the interests of roaming bison and soaring eagles; cattle and chickens, however, warrant only disdain. In fact, in our modern factory farms, we confine chickens in crowded,

windowless buildings, prevent them from fulfilling natural functions, and then despise them for not being free. As Karen Davis, writing about factory farmed chickens, notes, we victimize our victims, and justify our abuse of them by maintaining that they don't deserve moral consideration because they are the stupid, fragile creatures we have turned them into (Davis 1995). They relinquished their claim to moral consideration when they allowed themselves to be exploited and to be robbed by us of their "wild" and "natural" characteristics (Budiansky 1992). Environmentalists disparage domesticated species for their presumed dependence and weakness (once a source of comfort to us), and cherish the wild species which, until quite recently, we killed because they were "misfits" and, as Frank Mayer said, "could not be controlled or domesticated." And, even as the buffalo hunters described their prey as stupid, lazy and clumsy, perhaps to rationalize their slaughter, environmentalists like Callicott use similar terms to defend their violence and deprive animals of moral concern.

We are responsible for putting domesticated species into an alien environment, but now we despise them for being there because their presence does not correspond with the concept of wilderness and nature which we have recently come to cherish. And yet, the sheep and pigs abandoned on Santa Cruz Island have proved wrong Callicott's comments about stupidity and dependence. They have demonstrated an impressive capacity to survive even if their ancestors were "ruined" by millennia of human husbandry, and they deserve our respect if we are sincere in our professions of regard for natural processes. If, moreover, it can be proved that we cannot protect the interests of pre-Columbian species or promote bio-diversity unless we restrict or phase out the grazing of feral animals (Simberloff 1994, on the fragility of island ecosystems), there are less violent methods of reducing sheep and pig populations, such as chemical sterilization (Kirkpatrick, Turner, Liu, and Fayrer-Hosken 1996). Not only would non-violent methods of animal control address the moral issues of causing painful deaths, but a gradual reduction may also address the practical issue of managing the imported plants which had earlier been

suppressed by grazing (Brenton and Klinger 1994). I am not suggesting that we abandon our desire to conserve other species, but rather that we develop a system of values which would accommodate the interests of all animals, not just those to which we choose to give preference in our own particular decade or century.

The reasons for shooting bison and shooting feral sheep are similar in that both species were targeted for eradication because they violated our idea of what a particular landscape should look like, and our preference for how the land should be used. Thus, although we may believe that our attitudes toward the natural world have undergone a fundamental conversion, and that we are now more sensitive to the interests of other species, we are actually following a very old paradigm: we exterminate, without moral reservation, any species we determine to be a "misfit".

Notes

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