Earthscan Studies in Natural Resource Management

earthscan from Routledge

Large Carnivore Conservation and Management

Human Dimensions

Edited by Tasos Hovardas

12 Inappropriate consideration of animal interests in predator management

Towards a comprehensive moral code

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Introduction

Wildlife managers frequently intervene in the lives of nonhuman animals ('animals' hereafter). For example, managers may attempt to condition, relocate or kill animals if these damage human property. Such interventions are usually averred to be guided strictly by the facts of science. However, facts and science, without values, are unable to decide how we ought to coexist with animals (Lynn, 2010; Nelson et al., 2011; Nelson and Vucetich, 2012). Whether our interventions in animals' lives are ethically appropriate is a value judgment and a question for ethics.

In this chapter, we provide a brief introduction to ethics and its role in establishing and fostering a moral community, which we define. We proceed to review the ethical and scientific case for including individual animals in the moral community (a.k.a., 'animal ethics', 'nature ethics', 'interspecies ethics'), which contends that dismissing individual animal interests is arbitrary and ethically inconsistent. With advances in environmental sciences highlighting our interdependence with other animals, and the harmful effects we have on them, have come advances in ethology confirming their commonly appreciated emotional and cognitive abilities. Individual animals have their own lives and interests that can be helped or harmed by human action. This is the root reason why carnivore management is unavoidably a matter of ethics.

We go on to explain why the ethical consideration of carnivores is crucial for ethical wildlife management. We examine why dismissal of animal ethics or ethical arguments of any kind inappropriately dismisses individual animals' moral standing, which can culminate in a version of 'might makes right' asserted by a minority of humans who claim paramount interests. We show how various institutions and actors at different levels of government are primarily responsible for deciding the scale and scope of lethal interventions into the lives of carnivores. Here, we make use of the formal and systematic analysis provided by an ethical framework (Horner, 2003) to perform an ethical and legal examination

of the legal documents intended to guide and regulate decisions by the state of Wisconsin to kill grey wolves (*Canis lupus*) during the period in which federal protections for the species were removed (2012–2014).

We provide evidence that current laws and regulations lack appropriate consideration of animal ethics when intervening in the lives of grey wolves. Further, we discuss why wildlife management may be more prone than other applied fields to cater to powerful interest groups that fail to acknowledge the moral value of individual carnivores. We conclude by articulating a vision for wildlife management in the 21st century that explicitly injects ethics into carnivore policy and management.

Ethics, science, and predator management

Ethics is defined as 'the branch of knowledge that deals with moral principles' (OED, https://en.oxforddictionaries.com) that govern a person's conduct or behaviour. That is, ethics asks 'how we ought to live'. This question has epitomized ethics for millennia since its utterance by Socrates as recorded in Plato's *Republic*. Ethics evolves out of the human concern with what is right or wrong, good or bad, just or unjust, including what ends we should seek and what means are appropriate for pursuing them (Lynn, 1998a). In this evolving process, humans develop ethical arguments supported by reason and evidence into broadly accepted moral principles for analyzing and revising our conduct towards other living beings (Lynn, 1998a; Lynn, 2010).

Moral principles are indispensable for community living, serving as guidelines that foster not only our own personal good, but the good of the community as well. This provides a basis for moral cooperation and social living. One way of thinking about ethical principles is that they are truths considered ultimate (usually cannot be overridden), universal (apply to everyone within the community), impartial (treat everyone equitably), and other-regarding (the good of others is placed alongside self-interest) (Horner, 2003). Another way is to consider them rules of thumb that assist in revealing moral issues and how to address them. In this chapter, we assume the latter perspective, and view ethics as a set of situationally applied moral insights. We follow this ethical approach because moral conflict is inescapably rooted in specific situations. Which rules of thumb we use to guide us will differ based on the context and character of specific cases, providing for greater flexibility in considering the ethical principles and interests involved (Lynn, 1998a; Jonsen and Toulmin, 1988; Midgley, 1993).

When it comes to public policies like the management of carnivores, ethics and science are complementary. Science helps establish the empirical reality of the problems we face, and can provide options in addressing those problems. Ethics helps reveal the moral values at stake, and what options we are justified in choosing. Thus, lacking either science or ethics may result in a lack of relevant information or moral insight, respectively, culminating in the legal sanctioning of harmful yet unnecessary behaviour. In this sense, science and ethics are twin

stars that can help guide carnivore policy and management into making better decisions; that is, decisions that are both ethically and scientifically sound (Lynn, 2006; Callahan and Jennings, 1983; Shrader-Frechette and McCoy, 1994). Science and ethics are thus powerful tools when combined and (if only used) for helping people, animals, and nature flourish.

Sentience and the moral community

Even though humans might be the only animals capable of engaging in ethics as a philosophical exercise (Lynn, 2007; Lewis et al., 2016), they are not the only beings to whom ethics apply. Peer-reviewed scientific studies from various disciplines – such as ethology, neuropsychology, and evolutionary biology – have gathered decades of evidence confirming that many animals are sentient and sapient, aware and self-aware beings with rich emotional and cognitive lives. Insofar as we know, qualities such as awareness may not apply to all animals equally (e.g., certain arthropods), but does characterize animals with more complex neuroanatomical structures, including all mammals (e.g., wolves) and birds (Low et al., 2012). And while there is great variability among species, and real differences between individuals of the same species, the idea that humans are unique as feeling or thinking creatures is wrong-headed (Bekoff and Goodall, 2004). The scientific evidence has invited scientists and ethicists to question and reject the inherent superiority of humans over other animals (Midgley, 1983; Peterson, 2013; Vucetich et al., 2015; Batavia and Nelson, 2016). This should not be taken to mean that substituting a rigid moral hierarchy focused on humans with one focused on other sentient animals is our point. It is rather that to understand the moral values at stake and that to make ethical distinctions, the particularities of individuals and species need to be considered.

It is for these reasons that ethicists increasingly argue that animals also value their lives, and have an interest in their own well-being. The *sentience* of animals (i.e., 'their ability to perceive or feel things' [OED]) is one of the main reasons – and, some argue, sufficient reason – to recognize the moral considerability of animals (Bentham, 1789; Singer, 1975; Feinberg, 1981; Midgley, 1983; Regan, 1987; Francione, 2009; Peterson, 2013). Sentient creatures have preferences and needs, and can experience subjective states such as stress, fear, and joy. In other words, they have interests – not the same, but akin to our own – in terms of freedom from avoidable or unjustified harm and death. Evaluating the avoidability or justification for harming another being would hinge on the weighing and consideration of all interests involved.

Philosopher Peter Singer argues that sentient beings deserve equal consideration of their interests when intervening in their lives (Midgley, 1983; Singer, 1993; Lynn, 1998a). This does not mean equal rights, a misunderstanding of terms by many observers. The moral principle of equal consideration refers to the equitable and explicit acknowledgement of all affected interests when determining the appropriateness of an action. Neither Singer nor we mean equal rights or equal treatment for every species or individual; "what this

principle does require is for humans to give due consideration to the well-being of other creatures, and to do so without prejudice" (Lynn, 1998a, p. 291).

To reinforce the distinction between considering the interests of animals and not conflating this with animal rights theories or expectations of equal treatment among all species, we speak hereafter in terms of *equitable consideration*. This concept has both process-oriented and outcome-oriented dimensions. In terms of process, it argues for the fair consideration of animal interests in policy or management decisions that will impact their well-being in the world. Examples would include, but not be restricted to, population management through lethal control. In terms of outcomes, it argues that policy or management decisions must do more than consider animal interests as a pro forma matter of administrative process, only to subsequently dismiss them. Rather, the weight of reason and evidence for animal sentience is overwhelming (Bekoff et al., 2002; Bekoff and Goodall, 2004), and the outcomes of policy or management decisions should act upon this whenever appropriate.

Equitable consideration leads to similar treatment when interests are similar, but allows for differences in treatments when interests differ, or when the specific moral problems demand differential treatment. For example, both people and predators have a direct interest in avoiding harm. Only people have a direct interest in political participation. While predators might benefit from certain public policies and practices, they are not the kinds of beings for whom engagement in politics is applicable, because they do not have the capabilities to engage in it. So, while it is necessary to consider the interest of predators when human actions may harm or affect them, including in the political arena, only people can directly participate in the political deliberation necessary to set forth policies and management practices that do indeed consider these interests. Context plays a crucial role, and close attention to the type of beings and interests involved are part of the circumstances to which we apply moral principles (Lynn, 1998a).

As Mary Midgley (1983, p. 90) points out, the experience of other beings can be: "sufficiently like our own to bring into play the Golden Rule – 'treat others as you would wish them to treat you'". This punctuated continuity of interests between humans and carnivores grants them membership in what ethics calls a community of moral concern, or *moral community*. This has strong implications for predator management. For even if the sentience of carnivores is different from our own, we are obligated to consider their interests and well-being when it is impacted by human actions. Such actions include direct and indirect harms to their well-being, such as hunting, trapping, poisoning, habitat loss or degradation, and global warming. Unregulated and uncontrolled versions of these are contributing to the sixth great extinction of wildlife the world over (Kolbert, 2014) and underscore this point.

Although sentience by itself could be considered the ethically relevant trait for extending equal consideration to individual animals, our various relationships with animals add additional reasons for their moral consideration. Animals are an integral component of society and the environment. A purely 'human

community' is a fiction; instead, humans live within a 'mixed-community' of species (Midgley, 1983). Human civilization has been built on the care and exploitation of individual animals (Peterson, 2013). Indeed, our instrumental use of animals has been made possible because of animal sentience, a prerequisite for the interspecies communication that facilitated domestication (Midgley, 1983). The food, fibre, labour, and companionship of animals are not free of moral weight.

Moreover, wild animals contribute to the health of the environment and the provision of ecosystem services indispensable for human well-being (Leopold, 1949; Favre, 1978; Callicott, 1980; Midgley, 1983; Lynn, 2007; Wallach et al., 2015). Our dependence on ecosystem processes such as pollination, seed dispersal, predation, scavenging, and water filtration, among others, are mediated through animals.

Altogether then, our species is neither ethically, socially, nor environmentally isolated. Instead, we have always lived our lives in deep relation to other species. This is nowhere truer than with respect to the only wild carnivore to have undergone domestication (wolves), and its domesticated descendants (dogs).

Ethical worldviews about people, animals, and nature

Thinking about animals as both sentient beings and contributors to ecological processes has resulted in questions of whether the interests of animals and the integrity of ecosystems can be aligned.

Carnivore policy and management is dominated by two worldviews of ethics. These worldviews are 'big-picture' approaches to thinking about humans and their place alongside the community of life on planet Earth.

The first worldview is *anthropocentrism*. Anthropocentrism asserts that only human beings have moral value and need to be considered from a moral point of view. Everything that is not human (e.g., the animals and ecosystems referred to as nature) is only of instrumental use for human beings. In their relation to the environment, humans are ends, while animals and natural objects are means to those ends. Humans, of course, can still have instrumental value to others, but their prevailing value is as ends in themselves. Anthropocentrism is the ideology behind the early conservation movement of Gifford Pinchot with his emphasis on the wise use of biotic and abiotic resources for the greater good of the nation and for future generations of citizens.

The second ideology is ecocentric holism, or *ecocentrism*. This is an ethical outlook that believes the needs of individual animals can be ignored or sacrificed if a population or species is protected. One touchstone for ecocentric holism is Aldo Leopold's 'land ethic' (1949; but see Millstein, 2018). The land ethic is mainly concerned with the ecosystem health of the 'land community'. It is based on two ideas: (1) nature has intrinsic value (meaning its existence has value for its own sake, irrespective of what it can provide for humans), and (2) this value lies in ecological aggregates or wholes (i.e.: species, ecosystems) rather than individual beings (Peterson, 2013).

Ecocentrism vies with anthropocentrism to be the dominant voice in carnivore management. To its credit, it has contributed immensely to global efforts to mitigate environmental degradation and the loss of biodiversity. Yet it has also justified ignoring the equitable consideration of interests that the subjective lives of animals makes mandatory (Peterson, 2013). For example, although unnecessary in most developed countries, ecocentrists may support scientifically managed subsistence hunting when it does not harm species or ecosystem integrity. Another example of ecocentrism is the prohibition on substantial impairment of environmental assets under the U.S. public trust doctrine, without a concomitant consideration of individual organisms that in part make up those biodiversity assets (Treves et al., 2015). Both anthropocentrism and ecocentrism may allow for relative consideration of certain animal interests through 'humane' treatment principles, but there is little attempt, if any, to question their killing if it serves a human interest.

The opposite to ecocentrism is frequently framed as biocentric individualism or *biocentrism* (Peterson, 2013). Biocentrists believe ecocentrism errs in its approach to parts and wholes, as only individual animals (human or otherwise) are thought morally considerable. Ecosystems, as wholistic entities, do not have moral value *per se*. Rather, they are the living context for morally valuable sentient lives. Our duty towards preservation of ecosystem integrity stems from ecosystems allowing wild organisms to flourish (Taylor, 2003). As a competing viewpoint to ecocentrism, biocentrism has become a dominant position of the animal rights movement. Conservationists following ecocentrism and animal rightists following biocentrism are often on polar opposite sides of management issues involving predators. In terms of their ideologies, the reasons for this are clear. For example, in Washington, USA, conservation organizations are evenly split on authorizing the killing of members of wolf packs involved in livestock depredations on public land. Meanwhile, animal advocates have publicly denounced some of these conservation organizations for sanctioning the killing of wolves as a form of subsidy to an unnecessary practice based on animal exploitation (breeding domestic ungulates).

The authors, however, do not believe this dichotomy to be helpful. Ecocentrism rightly recognizes ecosystems as ecological entities rooted in a network of interrelationships. Biocentrists rightly recognize individual animals as part of that ecology, many of whom are simultaneously sentient and sapient. Terrestrial predators exemplify this point. As individuals, all are subjective beings, members of our moral community, and deserving of ethical consideration. As predators, each of these individuals is also a functional unit of ecosystem processes and contributes to the ecological health of the biotic community.

To draw hard and fast lines between the parts and wholes, then, seems arbitrary to us, and creates a false dichotomy between *a priori* locations of moral value in aggregates or individuals. It is for that reason that we adopt a geocentrist approach. *Geocentrism* extends moral considerability to both individuals and ecological communities, recognizing that both have a well-being that needs

to be explicitly considered at the same time. As a practical discipline, ethics should be rooted in context. Rather than arguing for a main location of moral value, geocentrism argues for a contextual accounting of the various overlapping sources of moral value (i.e., individual subjectivity as well as ecological and social relationships). It regards all animals as ends in themselves, yet acknowledges their intrinsic and extrinsic values (Lynn, 1998a).

An instructive example is that of predation. When wolves hunt deer, both predator and prey are manifestly sentient species. Individual wolves and individual deer matter from a moral point of view. Yet this does not mean it is wrong for the wolf to kill deer to survive or thrive. Predation is an ecological process necessary for life on earth. It would be irrational and unscientific to simply declare it immoral. Rather, the wolf killing the deer, and predation in general, exemplifies what is termed a 'sad good' (Lynn, 2012). The death of the individual deer is sad as a distinct individual has been extinguished. It is good, however, for the wolf or wolves that consume the deer, as well as for the ecological dynamics of trophic systems of which both the wolf and deer are a part. The case is similar when we talk about humans as the predator if this killing, as in the case of the wolf, is necessary for subsistence (Lynn, 2017). However, not all human motives for killing may override the vital claims of animals. Some kind of special urgency of the human claim in question (i.e., subsistence) should be established for the killing (as well as the treatment) to be ethically justified (Midgley, 1983).

We note that geocentrism should not be considered a superseding concept in a decision hierarchy that always or mostly justifies the lethal management of wildlife in pursuit of ecosystem health or function. Nor is it a typology providing categorical answers to contextual questions, or an imperialist theory seeking supremacy in self-serving academic debates (Lynn, 2002). It is rather a value-paradigm that seeks to untangle the complex ethical presuppositions and implications of varied worldviews (Lynn, 1998b).

Aligned with the pluralistic and interpretive ethics that gave it birth (Toulmin, 1950; Midgley, 1993; Weston, 2006), geocentrism does not claim to be uniquely true but rather helpfully insightful (Lynn, 2006). It is thus not concerned with being correct to the exclusion of insights from other paradigms about the intrinsic value of people, animals, or nature, respectively. Rather, it seeks to appreciate what each of these is right about, integrate their insights into a distinctive conceptual tool, and deploy this tool to better understand the nuances of ethical reasoning about predators and their management.

Law and ethics

Ethical judgments about the moral value and consideration of animals pervade policies about and the management of carnivores. Statutory laws, agency regulations, executive actions, and judicial decisions (collectively, the 'law') frequently focus on actions impacting individuals or groups in society, as well as various elements of the built and natural environment. These actions potentially

have good or bad consequences for those they impact, and are thus legitimate topics of ethical scrutiny. Moreover, both the instruments and practice of the law are intrinsically bound up with ethics, as they encode a variety of value assumptions that recognize some (but perhaps not others) as part of the moral community served by legal and political institutions. In these senses, then, legal documents are moral documents – documents that matter in terms of the ethical positions they assume, convey, or impose (Caldwell and Shrader-Frechette, 1992; Beatley, 1994).

When ethical arguments have not been made explicit in them, one should not conclude that there are no ethical concerns. Nor should one conclude that those ethical concerns have been well considered but left unwritten because they were obvious. Rather, ethical reasoning should be made manifest and not left latent. This is done by seeking out the 'best' (e.g., accurate, comprehensive) accounts of ethical, legal, or scientific claims through reason and evidence.

Unfortunately, legal instruments relevant to individual carnivores are frequently not explicit about their ethics. Governments and individuals frequently resort to lethal 'management' methods for these individuals and populations when they are perceived to threaten human property or safety (Treves et al., 2016). This resort to lethal management, however, is most frequently predicated on an overt or implicit dismissal of their interests. For example, in the Global North, the costs of managing wild carnivores are relatively minor and attacks on people are vanishingly rare (say, compared to domestic dogs). Nevertheless, lethal management of carnivores is commonly the first intervention, and promoted when humans are not content with carnivore population numbers, the animals are considered a nuisance, hunters perceive competition for game, or based on the hypothesis that lethal management would promote the species' conservation (Treves, 2009).

To illustrate the absence of express ethical reasoning in carnivore management, we use a case study of grey wolf management in Wisconsin, USA. For our evidence, we rely on a close reading of the statutes and regulations that sanction lethal or harmful interventions into the lives of Wisconsin wolves.

Grey wolf extermination and management in the USA

Although grey wolves historically ranged throughout most of North America, the campaign to exterminate them and other large predators started soon after European settlers arrived (Lopez, 1978; Boitani, 2003). Predators were generally regarded by Europeans as pests that reduced game numbers and preyed on livestock. Persecution was widespread and government-sponsored (Lopez, 1978; Boitani, 2003). By the 1930s, the wolf had been eradicated from almost all 48 contiguous states, except for small pockets in Minnesota and Michigan (Bangs and Fritts, 1996; Boitani, 2003).

Recovery of predator populations was only possible after the enactment of the Endangered Species Act (ESA) in 1973. By 1974, the grey wolf was listed

as an endangered species in the Great Lakes region (Minnesota, Wisconsin and Michigan), and by 1978 throughout the 48 contiguous states (Boitani, 2003). ESA listing placed the species under temporary federal authority, providing protection from 'take' ("to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" according to the US Endangered Species Act [US, 1973]) and critical habitat protection (Treves et al., 2015). Full federal protections remain in place until the population is either 'down-listed' (reclassified recovery status removing certain protections) or 'delisted' (full removal of protections) federally, based on target recovery goals. ESA delisting also entails the transfer of management authority from the federal government to the states.

The Great Lakes wolf population was managed according to the US Fish & Wildlife Service's (USFWS) Eastern Timber Wolf Recovery Plan (Service, 1992). The plan classified the Minnesota population as 'threatened', which allowed for state removal of wolves through lethal management or translocation (16 USC §1531 Sec. 4d permits) but no public hunting or trapping season. The Wisconsin and Michigan populations were classified as 'endangered' (no 'take' except for imminent threats to human safety), because of their much smaller populations.

Likewise, the Wisconsin Department of Natural Resources (WDNR), developed a Wolf Management Plan (WMP) providing similar (to federal) protections from 'take' or lethal management until wolves reached their target recovery goals (DNR, 1999). Following the WMP, wolves were down-listed to state threatened status in 1999 and delisted in 2004, allowing the state to conduct public hunting and trapping seasons if delisted federally (Wydeven et al., 2009).

Simultaneously, the USFWS proceeded with plans to delist regional populations in preparation for delisting the whole species (Bruskotter et al., 2011; Bruskotter, 2013). In Wisconsin and Michigan, federal down-listing to threatened status first occurred in 2003 (Wydeven et al., 2009). Shortly after, in a series of agency decisions and legal battles between 2005 and 2014, the USFWS attempted to remove federal protections for wolves, while federal courts restored them, disagreeing with the USFWS determination that wolf populations were sufficiently recovered or protected to warrant delisting (Treves et al., 2015). Because of these lawsuits, as of December 2014 wolves in the Great Lakes were relisted as 'endangered' in Wisconsin and Michigan, and 'threatened' in Minnesota (HSUS, 2014). However, attempts at delisting the species via legislation are ongoing.

Grey wolf management in Wisconsin, 2012–2014

Despite their status as 'endangered' in Wisconsin as of writing, the species was federally delisted in the winter of 2012 for a period of approximately three years (2012–2014). By 2 April 2012, the state legislature had approved Act 169, authorizing the WDNR to plan for a public wolf hunting and trapping season,

sanctioning wolf-killing for the first time since wolf bounties were terminated in 1957. The public hunting and trapping seasons, however, are regulated by the state to ensure the killing is sustainable (i.e., does not affect the viability of the population). The seasons were held from October through February. Hunters and trappers were allowed to kill wolves in hunting zones statewide (except inside Native American reservations) until the zone kill quotas were reached. Methods allowed included authorized firearms, bow and arrow or crossbow, cable restraints or steel-jawed foothold traps, subject to certain restrictions. Use of dogs to track or trail, predator calls, and some baiting were also allowed. Most likely, hounds harass or attack wolves, especially young wolves near dens and rendezvous sites during the summer hound-training period. There are no data on such incidents because hounds were left to run loose far from their owners for kilometres often tracked remotely by telemetry by owners on the nearest road. The evidence that hounds and wolves engaged in deadly confrontations is one-sided with reports of hounds injured or killed (see next paragraph); it is one-sided because injured or killed wolves were never reported. The WDNR went on to hold three wolf hunting and trapping seasons during which hunters and trappers killed 117, 257, and 154 wolves (WDNR, http://dnr.wi.gov/topic/hunt/wolf.html). State officials from the WDNR and supporters of the wolf hunt argued that the hunt would allow for maintaining the wolf population at target levels, bolstering political support for species' conservation and reducing conflicts over safety and property (DNR, 2013; Hogberg et al., 2015).

The state legislature also authorized the WDNR to remove wolves that were causing damage or nuisance (WI Stat §29.885[2]). Most complaints of this sort come from domestic animal breeders who perceive wolves as a threat or that have had domestic animals killed by wolves (depredation). Although depredation(s) can cost domestic animal breeders and the domestic animals certainly would not want it to happen, statistics also show that the amount of depredations is minuscule from an industry perspective, with wolves accounting for only 0.8% of cattle losses in Wisconsin in 2010 (NASS, 2011 http://usda.mannlib.cornell.edu/usda/current/CattDeath/CattDeath-05-12-2011.pdf). In 2016, with a wolf population of approximately 866–897, Wisconsin had a total of 52 depredations and six threats on domestic and farm animals (Wiedenhoeft et al., 2016). Complaints also come from people whose hounds or pets have been attacked by wolves. Between 2015–2016, wolves were involved in nine attacks on dogs outside of hunting situations, and killed 18 dogs while these were engaged in hunting activities (Wiedenhoeft et al., 2016). Besides these private concerns, there have also been public concerns about wolves threatening human safety, but at the time of writing no attacks have been confirmed in Wisconsin.

To carry out wolf removals, the WDNR reinstated a long-standing cooperative agreement with a federal agency within the Department of Agriculture named Wildlife Services (WS), charged with "providing federal leadership in managing conflicts with wildlife" (USDA-APHIS Wildlife Services, 2009, p. 1). WS would investigate complaints and determine whether to authorize

the removal of individual wolves, following procedures outlined in the state WMP. The WMP calls for depredation control activities to "focus on preventive methods and mitigation" (DNR, 1999, p. 24), including non-lethal methods (Willging and Wydeven, 1997). In cases of confirmed and probable depredations (based on depredation verification procedures), the local WDNR wildlife biologist, the WDNR Regional Wildlife Expert, and WS staff determine the appropriate management activity (DNR, 1999) by analyzing the following criteria: (1) there are confirmed losses at the site, and (2) the producer signed a depredation management plan for the property and follows recommended abatement and husbandry recommendations. Other factors – such as location of depredation in relation to known wolves or wolf packs, severity of damage, and type and size of farm operation – seem to be considered (Willging and Wydeven, 1997), but no measurement criteria for any of these are included in the WMP. Thus, if the previous two criteria are met, the WMP provides the WS Depredation Specialist with discretion to recommend and implement 'euthanasia', contingent on WDNR approval (DNR, 1999). That approval was not specified in any regulation or policy we could find and therefore represents another individual's discretion, we surmise. Landowner lethal management was also allowed "by WDNR permit after Federal delisting has occurred" (DNR, 1999, p. 20). Once the population reached target levels, "proactive depredation control can be authorized" (DNR, 2007, p. 6). Proactive control involves the implementation of interventions (lethal or non-lethal) prior to the occurrence of any incident with the objective of mitigating or preventing them.

Ethical considerations in grey wolf management

We reviewed the text of laws, regulations, and related documents relevant to wolf management in Wisconsin to evaluate the appropriateness and thoroughness of the clearest and most ethical arguments explicit in them, if any. We evaluated if these documents accurately acknowledge individual animals as members of the moral community by appropriately considering their interests, in addition to the interests of humans and ecological wholes. We conducted an ethical examination of statements expressing the main concerns of each agency regarding wildlife management, as well as specific statutes and regulations relevant to grey wolf management. The passages included (Annex 12.1) were identified by reviewing the texts looking for sections revealing the types of interests considered behind certain interventions or views relating to wildlife or their treatment, be these human, ecological wholes, or individual animals. These passages contain all the statements that suggest even remotely that the authors considered the interests of other individual animals, particularly wolves.

Our analysis focuses on providing evidence of what interests (human, ecological wholes, and individual animals) are being considered in laws and regulations, and to what extent (partially or equitably considered). By accounting for these interests, we address anthropocentrism, ecocentrism, biocentrism and, if all were equitably considered, geocentrism.

Annex 12.1 presents the ethical concerns stated in all nine federal and state documents governing wolf management in Wisconsin, as established by federal and state agencies involved in management, along with empirical observations detailing what interests each document made explicit in their ethical justifications (corresponding passages in italics). We classified these interests as focusing on instrumental (human) concerns, ecological wholes or individual animals, allowing for overlap based on the interests made explicit in the document. For each interest category, we awarded a rank of '2' if those interests categories were explicitly and appropriately considered, as stated in each document. We awarded a rank of '1' to an interest category if the document contained explicit yet limited or inappropriate consideration of the interests represented by that category (for example, if a statute considers an organism's desire in freedom from harm, but not desire to continue living, as an interest; see discussion of individual animal interests in the next paragraphs). We awarded a rank of '0' if we found no explicit consideration of a particular category. For comparison, we provide rank summaries per interest category (total rank value and median rank, Annex 12.1). After identifying the relevant ethical passages and agreeing on the coding scheme, two co-authors (FSA & WL) separately coded each statement, with perfect agreement on the coding for each statement-interest combination.[1]

In our coding, we exercised the principle of charitable interpretation when accounting for consideration of nonhuman interests (wholes or individuals) within each text. Thus, seemingly ambiguous statements such as calls for environmental stewardship or respect and humaneness towards wildlife or species, when lacking an anthropocentric statement, were taken to denote at least limited consideration for nonhuman interests.

We find evidence that the documents in Annex 12.1 do not adequately consider the most basic needs and interests of individual animals (Annex 12.1, median rank = 0). In contrast, the texts suggest that wolf management is almost exclusively concerned with instrumental (i.e., human) interests (total rank value = 18; median rank = 2), and specifically, human enjoyment of wildlife. Multiple documents reference an agency mission to engage in environmental stewardship "for the continuing benefit of the American people" (USFWS, 1998), species' values "to the Nation and its people" (United States, 1973) or with the objective of "increasing or maintaining populations to provide hunting opportunities" (WI NR Stat Ch 1). It is no surprise that these documents mention instrumental interests; what is more striking is the almost complete lack of mention of other non-instrumental and non-human interests.

The interests of ecological wholes (total rank value = 7; median rank = 1) seem implicit in calls for "environmental stewardship" (USFWS, 1998), respect and humaneness towards wildlife (USDA-WS documents), provision of healthy life systems (WI NR Stat Ch 1) or healthy populations (WMP), but animals' intrinsic value or individual interests are hardly mentioned (Annex 12.1). Concerns related to ecological wholes are restricted to "respect" or "ecological diversity and health", which are ambiguous if they lack an explicit mention of the intrinsic value of ecological wholes and their respective interests. Despite the apparent overlap in consideration of interests of humans and ecological

wholes, if conflicting the focus on the former limits consideration of the latter. For example, a "healthy viable population of grey wolves in the state" (WMP) may still have an interest in freedom from unnecessary harm and social stability (just as healthy groups of humans surely would), yet this interest is not addressed further, particularly when addressing hunting. The human interest in hunting an animal for recreation trumps these interests of the wolf population. Thus, more urgent interests of ecological wholes beyond those relevant for provisioning ecosystem services for humans are not equitably considered. The lack of consideration is even starker for individual animal interests.

Individual animal interests are not mentioned in most of the legal documents we examined (total rank value = 4; median rank = 0). Some documents addressing lethal control do contain some mention of the welfare of animals and striving for respect and humaneness, but this apparent consideration of animal interests also raises ethical concerns, and so is awarded a '1' for each document where we identified these types of concerns. A legal document expressing an animal welfare concern implicitly acknowledges individual animals as sentient; otherwise, their welfare would be irrelevant. However, this concern for their welfare may also concede to relatively trivial human interests or may be implemented arbitrarily because the documents do not safeguard any animal interests against infringement. For example, USDA-WS directive 1.301(USDA-APHIS, 2010) and their Supplement to the Environmental Assessment (USDA-WS SEA) illustrate concerns for the suffering of individual animals when implementing lethal methods using "the most selective and humane methods available" or "minimizing harmful effects of damage management measures on . . . wolves", respectively. However, use of non-lethal methods is limited to cases where it is "practical and effective" (USDA-WS SEA), without any guidance for weighing these criteria against wolves' vital interests. Hence, practicality and effectiveness would also seem to hinge on purely human interests, which relegates concern for the vital interests of individual wolves to cases where it is convenient or does not conflict with instrumental ones.

Another example, WI Stat Ch 951, illustrates concern for animals' interests in freedom from unnecessary or unjustifiable harm or death. But, again, consideration may stop where arguably trivial human interests (i.e.: recreation) are negatively affected by it. For example, although §951.02 prohibits cruel treatment of individual animals, §951.015(1) and Wisconsin v Kuenzi (2011) clarified that this prohibition only applies to game animals if the behaviour in question is not normally considered 'hunting' (see ** in Annex 12.1 for clarification on this point). Thus, in the case of a wolf hunt, concern for the welfare of individual wolves is reduced to minimizing their suffering (through undefined codes such as 'clean kill' or 'fair chase'), and is left begging the question of how ethical or legitimate is the killing in the first place. Gary Francione (2009, p. 7) critiques this 'welfarist' position:

> Although the animal welfare position supposedly prohibits the infliction of 'unnecessary' suffering on animals, we do not ask whether particular institutional uses are themselves necessary because we assume that these

> uses are acceptable and because our only concern is treatment. It is clear, however, that most of our animal uses are transparently frivolous and cannot be described as involving any 'necessity'.

Once moral consideration is recognized, additional steps would be required to examine the appropriateness of the behaviour in question. Acknowledging the moral standing of wolves would demand an examination of how ethically appropriate would be their killing prior to sanctioning it, equitably weighing the vital interests of wolves against human interests, be these protection, recreation, or convenience. We cannot just assume their killing is appropriate because it conflicts with any human interest, and proceed to examine only the killing technique.

When we consider the state's wolf hunt, the supposed concern for wolf welfare is anthropocentric, given that, despite there being no clear urgent claim to a wolf's life, the vital interest of wolves in living is subordinated to the unnecessary and trivial human interest in recreation (Vucetich and Nelson, 2014). Efforts to justify Wisconsin's wolf-killing in other ways that appear less trivial have not found strong evidence. For example, authorities claim social or ecological chaos without wolf killing (e.g., wolf populations are out of control), threats to human subsistence (e.g., livestock producers and deer hunters cannot compete), or a need for political support of wolf conservation (e.g., social tolerance for wolves depends on state lethal management). Years of scientific testing have come up empty for each claim (Treves, 2009; Treves et al., 2013; Browne-Nuñez et al., 2015; Hogberg et al., 2015; Treves et al., 2015; Chapron and Treves, 2016a, 2016b; Callan et al., 2013; Storm et al., 2015). In Wisconsin, wolf presence has been linked to an increase in ecosystem diversity, while there is no evidence of them driving down the state's deer population. Moreover, there is no evidence that lethal management or liberalized wolf-killing is an effective conflict mitigation strategy, or that these policies increase tolerance for the species.

In sum, as written, and despite our conservative approach, the examined statutes and regulations governing wolf management in Wisconsin lack important ethical principles safeguarding the interests of nonhuman members of the mixed community. The legal documents are more than twice as concerned with human instrumental interests than concerns for ecological wholes and more than four times more than concerned with individual animals' interests (Annex 12.1). We find no evidence that these documents provide an adequate account of the scientifically backed sentience and sapience of wolves or that individual animal interests are being appropriately considered (median rank = 0), especially when weighed against trivial human interests such as recreation or trophies. Nods to animal ethics through welfare concerns are inadequate because the documents fail to justify the foreseeable harm to animals against the standard of necessity. Individual animals may be granted magnanimity when convenient, but we find no evidence that the documents acknowledge individual animals as members of the moral community, let alone evidence of application of the principle of equitable consideration. Moreover, the documents seem

to limit the relevance of moral consideration to instances where they would not conflict with human interests. The documents also fail to state explicitly their moral presuppositions so that the law, managers and public are adequately informed about their ethical implications.

The lack of appropriate and equitable consideration of animal interests present in the regulations precludes geocentrism, which would demand equitable consideration at all scales. Rather, the lack of consideration suggests that the prevailing paradigms within these regulations are anthropocentric and ecocentric. By dismissing the interests of individual animals, both paradigms fail to appropriately consider all loci of moral value and moral perspectives in nature, suggesting that these are ethically incomplete and inappropriate tools for regulating interactions with nature and individual animals that would allow all to flourish equitably.

Given this lack of consideration in explicit regulations, the level of discretion and guidance afforded to government agents is worth examining. As described for Wisconsin, management documents often provide government staff or private citizens with wide discretion for implementing harmful interventions against animals. Based on our results, we hypothesize that the lack of explicit mention of animal interests in these documents would result in their dismissal or inadequate guidance for considering them. Although that assessment is beyond the scope of this chapter, we believe our recommendations might contribute to correcting these ethical flaws, when present.

Moving towards equitable consideration

Equitable consideration entails the equitable and explicit acknowledgement of all affected interests when deciding on the appropriateness of an action. The current disregard for individual animal interests is not inevitable. The interdisciplinary work of ethicists, ethologists, and environmental scientists, among others, sheds light on what ethical coexistence with wildlife might look like. Ethical concerns go hand in hand with the best available science in these fields. We cannot simply dismiss these scientific advances because the ethical implications would prove inconvenient. Nor can we claim a lower standard of consideration for animals, simply because we have not read the latest science. Although there are no simple answers to the complex ethical dilemmas, we propose that an indispensable component of ethical coexistence is the promotion and codification of equitable consideration for individual animals.

We propose that humans have duties to the more vulnerable members of our moral community (marginality . . . compassion, respect, tolerance, kindness), and therefore a responsibility for the ethical handling of conflicts. Without adherence to that ethical principle, regulations cannot be said to imbue any of the moral principles that allow for prosperous community living. The codifying of equitable consideration of animal interests is a powerful way to safeguard against unjustified infringement. As our analysis has shown, leaving codes of conduct unstated and ignoring the interests of individuals allows cruelty, sadism,

and illiberal actions that can affect humanity adversely – as well as the direct victims, the animals.

Codifying moral consideration of animals should be complemented by ethical education. Government sponsored ethical education is mentioned in the regulations, but only when related to hunting and trapping (WI Stat §29.591[1b], WI NR §1.11) through codes of "fair chase" and "clean kill", and the promotion of "wildlife as a renewable natural resource" (WI NR §1.11). Such efforts treat wildlife as a resource instead of sentient beings, with the underlying assumption that certain wildlife interests (such as living) can be trumped by trivial human interests.

As the institution responsible for policies regulating the environment and human-nonhuman interactions, legislatures and wildlife agencies should provide proper ethical guidance incorporating the scientific and ethical advances in understanding and respecting individual animals. Accomplishing this will require ethics education for appropriate legislators, agency personnel, and interested constituency groups. How this is to be accomplished is not the subject of this chapter, but we envision it as minimally involving some combination of mandatory and voluntary training, and partnerships with ethical specialists in animal and environmental ethics. It is imperative that professionals receive the most complete ethical training if wildlife management aspires to manage animals ethically and conform to society's evolving moral codes of conduct.

Our recommendations are not a panacea. Instrumental interests will continue to dominate dialogue and perhaps practice. However, our recommendations provide a starting point for explicitly considering and retaining ethics in our intrusions into the lives of all animals. Their implementation would aid in allowing humans and our entire mixed moral community to flourish.

Annex 12.1 Statements expressing ethical standpoints in statutes, regulations and agency documents relevant to grey wolf management in Wisconsin, USA

Stature, regulation or agency document	*Statements related to ethics and wildlife management (emphasis added)*	*Interests explicit in ethical justification*[1]		
		Human	*Ecological wholes*	*Individual animals*
Federal level				
022 FW 1, Creation, Authority and Functions (USFWS)	D. Objectives. The U.S. Fish and Wildlife Service has three basic objectives: (1) to assist in the development and application of an *environmental stewardship ethic* for our society, based on ecological principles, scientific knowledge of fish and wildlife, and *a sense of moral responsibility*; (2) to guide the conservation, development, and management of *the Nation's fish and wildlife resources*; and (3) to administer a national program to provide the public opportunities to *understand, appreciate, and wisely use fish and wildlife resources*. These objectives support the Service mission of conserving, protecting, and enhancing fish and wildlife and their habitats *for the continuing benefit of the American people*.	2	1	0
Endangered Species Act	Findings (Sec. 2(a)(3)): " . . . these species of fish, wildlife and plants are of *aesthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people*; (4) the United States has pledged itself as a sovereign state in the international community to conserve to the extent practicable the various species of fish or wildlife and plants facing extinction . . . "	2	0	0

(*Continued*)

Annex 12.1 (Continued)

Stature, regulation or agency document	*Statements related to ethics and wildlife management (emphasis added)*	*Interests explicit in ethical justification*[1]		
		Human	*Ecological wholes*	*Individual animals*
USDA-WS Directive 1.201 Mission and Philosophy of the WS Program	4. WS Management Philosophy. (a) General Philosophy: "In the United States, *wildlife is a publicly-owned resource held in trust* and managed by State and Federal agencies. Government agencies, including WS, are required by law and regulation to *conserve and mange wildlife resources while being responsive to public desires, views and attitudes*. In so doing, agencies must also respond to requests for resolution of damage and other problems caused by wildlife. . . . Actions considered and employed should be *biologically sound, environmentally safe, scientifically valid, and socially acceptable*. . . . WS' vision is to improve the coexistence of people and wildlife, *while considering a wide range of public interests* that can conflict with one another. These interests include *wildlife conservation, biological diversity, and the welfare of animals, as well as the management of wildlife for purposes of enjoyment, recreation, and livelihood*."	2	1	1
USDA-WS Directive 1.301 Code of Ethics of the WS Program	4. Policy. WS Code of Ethics: "d. Will show exceptionally high levels of *respect for people, property and wildlife*.; g. Will utilize the WS Decision Model to resolve wildlife damage problems and strive to use *the most selective and humane methods available*, with preference given to nonlethal methods *when practical and effective*."	2	1	1
USDA-WS Supplement to the Environmental Assessment: Management of Wolf Conflicts and Depredating Wolves in Wisconsin (2013)	"WS uses and/or recommends the full range of legal, practical and effective nonlethal and lethal methods for preventing or *reducing wolf damage while minimizing harmful effects of damage management measures on humans, wolves, other species, and the environment* in accordance with the WDNR guidelines for wolf depredation control." (p. 2)	2	1	1

State level

WI Statutes Chapter NR 1 – Natural Resource Board Policies	Management of wildlife, Preamble (NR 1.015(2)): "The primary goal of wildlife management is to provide *healthy life systems* necessary to sustain Wisconsin's *wildlife populations* for their *biological, recreational, cultural and economic values*. Wildlife management is the application of knowledge in the protection, enhancement and regulation of wildlife resources *for their contribution toward maintaining the integrity of the environment and for the human benefits they provide*." Wildlife Management (NR 1.11): "(2) Recognizes the need to strengthen the educational efforts of the department relating to hunter competence, *standards of ethical hunting behaviour* (see 29.591 below) and respect for landowners rights; educational efforts must also be directed toward nonhunters to improve their *knowledge and understanding of wildlife as a renewable natural resource* and of *hunting as both a method of controlling wildlife populations and as a form of outdoor recreation.** (7) Supports the *maintenance of ecological diversity and health*, and will do everything in its power to protect and maintain free-living populations of all species of wildlife currently existing in Wisconsin; extirpated species will be reintroduced whenever feasible ecologically, economically and socially. (8) Supports the management of game species and habitat with the *objective of increasing or maintaining populations to provide hunting opportunities*. (9) Supports the *regulated use of wildlife for human benefits, including hunting and trapping where legal harvests do not reduce subsequent population levels of these renewable wildlife resources or where population reduction of certain species is a deliberate objective*."	2	1	0

(*Continued*)

Annex 12.1 (Continued)

Stature, regulation or agency document	*Statements related to ethics and wildlife management (emphasis added)*	*Interests explicit in ethical justification*[1]		
		Human	*Ecological wholes*	*Individual animals*
WI Statutes Chapter 29 – Wild Animals and Plants	Title to Wild Animals (29.011(1)): "The legal title to, and the custody and protection of, all wild animals within this state is vested in the state *for the purposes of regulating the enjoyment, use, disposition, and conservation of these wild animals*." Rule-making of this chapter (29.014(1)): "The department shall establish and maintain open and closed seasons for fish and game and any bag limits, size limits, rest days and conditions governing the taking of fish and game that *will conserve the fish and game supply and ensure the citizens of this state continued opportunities for good fishing, hunting and trapping*." Removal of wild animals (29.885(2)): "The department may remove or authorize the removal of all of the following: (a) a wild animal *that is causing damage or that is causing a nuisance;* (b) a structure of a wild animal *that is causing damage or that is causing a nuisance*." Trapper Education program (29.591(1b)): "The courses of instruction under these programs shall provide instruction to students in the *responsibilities of hunters to wildlife, environment, landowners and others*, how to recognize threatened and endangered *species that cannot be hunted and the principles of wildlife management and conservation*."*	2	1	0
WI Statutes Chapter 951 – Crimes Against Animals	Definitions (951.01(2)): "'Cruel' means causing *unnecessary and excessive pain or suffering or unjustifiable injury or death*." Construction and Application (951.015(1)): "*This chapter may not be interpreted as controverting any law regulating wild animals that are subject to regulation under ch. 169 [hunting], the taking of wild animals, as defined in s. 29.001 (90), or the slaughter of animals by persons acting under state or federal law*."**	2	0	1

	Mistreating animals (951.02): "No person may treat any animal, whether belonging to the person or another, in a cruel manner. This section does not prohibit normal and accepted veterinary practices."			
WI Wolf Management Plan (WMP)	I. Introduction: "These guidelines provide a conservation strategy for *maintaining a healthy viable population of grey wolves in the state*, and contribute toward national recovery, while addressing problems that may occur with wolf depredation on livestock or pets." (p. 8) B. Population Monitoring and Management: "Harvest by private citizens is controversial, but *the taking of wolves in a recovered population is consistent with the management of other furbearers in the state of Wisconsin*." (p. 21) E. Wolf Depredation Management: "*WDNR is charged with protecting and maintaining a viable population of wolves in the state*, but also must *protect the interests of people who suffer losses due to wolf depredations*." (p. 23) 1. Depredation Management Plan. "The objective of the wolf depredation program is to *minimize depredations and compensate people for their losses*." (p. 24)	2	1	0
Total rank value (max.18)		18	7	4
Median rank		2	1	0

[1] '2' – interests in category were explicitly and appropriately considered; '1' – interests in category explicit yet limited or inappropriately considered; '0' – no explicit consideration of a particular interest category.

* Wisconsin's Hunter Education Course Manual (Kalkomey Enterprises, Inc., 2012) limits ethical behaviour towards individual nonhuman animals to codes of "fair chase", "clean kill" and use of all usable parts (p. 66). Although it also advocates for treating "both game and non-game animals ethically", it does not expand on this to explain what that would mean (how the human [subsistence, recreation] and non-human [life, flourishing] interests involved should be weighted) and how it would impact the practice of hunting and the field of conservation.

** However, this chapter only "controverts" those statutes if the behaviour in question is not normally considered 'hunting', following Wisconsin v Kuenzi (2011).

Note

1 Despite highlighting our high level or agreement, we offer no quantitative measure of inter-observer reliability (IRRI) for our coded analysis of the texts. Such quantitative measures are usually provided in qualitative studies as an indicator of rigour ('the quality of being extremely thorough and careful', https://en.oxforddictionaries.com/definition/rigour). We disagree with such an interpretation, and highlight the difference between measures of agreement and measures of rigour.

Coder reliability measures can indeed display a good faith effort in teasing out all the meanings of a text, but they are not a measure of validity ('the quality of being logically or factually sound; soundness or cogency', https://en.oxforddictionaries.com/definition/validity) in qualitative or interpretive research. Such an index may provide a false sense of rigour based on shared value judgements between observers, rather than reason and the evidence presented. One example helpful to illustrate this point is the landmark *Dred Scott v. John F.A. Sandford* US Supreme Court decision (1857). The court overwhelmingly (7–2) agreed that slaves were not entitled to their freedom despite residing in a free state; thus, African Americans could never be US citizens. An IRRI-like index for such a decision would have validated the decision, reflecting high coder (the judges) reliability and 'rigour'. But we acknowledge today, as was argued then, that the argumentation and evidence was flawed.

Moreover, these kinds of methodological misunderstandings inhibit ethical and interpretive contributions to science-based research. Different theories and paradigms of science are amenable to different kinds of data and methods. Rigour in qualitative and interpretive research is based on reason and evidence. Well-intentioned attempts to extend the methods of quantitative science to qualitative and interpretive research, despite their inadequacy, may provide a false sense of objectivity, bolster false empiricist claims of a dichotomy between the subjective and objective, limit interpretation, and value empiricism over reason.

Therefore, we present our interpretations and the original text side by side so the reader can evaluate our interpretations for themselves, without making a claim of independent objectivity implied by an IRRI. Challenges to our interpretation of the language should be based on a review of the same sources (which are provided and endlessly replicable), with evidence for why our interpretation may be incorrect or incomplete.

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