

**UFAW** UFAW Animal Welfare Series

# Wildlife Ethics

The Ethics of Wildlife Management  
and Conservation

**Clare Palmer, Bob Fischer, Christian Gamborg,  
Jordan Hampton and Peter Sandøe**



**WILEY** Blackwell



# Wildlife Ethics

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**Universities Federation for Animal Welfare**  
**The Old School, Brewhouse Hill,**  
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**Phone: +44 (0) 1582 831818**  
**Website: [www.ufaw.org.uk](http://www.ufaw.org.uk)**  
**Email: [ufaw@ufaw.org.uk](mailto:ufaw@ufaw.org.uk)**

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# Wildlife Ethics

## The Ethics of Wildlife Management and Conservation

Clare Palmer

Texas A&M University  
College Station, TX, USA

Bob Fischer

Texas State University  
San Marcos, TX, USA

Christian Gamborg

University of Copenhagen  
Frederiksberg, Denmark

Jordan Hampton

University of Melbourne  
Parkville, Victoria, Australia

Peter Sandøe

University of Copenhagen  
Frederiksberg, Denmark



**WILEY** Blackwell

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# Foreword

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We are delighted to publish this important book by some of the foremost thinkers in animal ethics. It fills a significant gap both in the UFAW/Wiley-Blackwell Animal Welfare book series and in the animal welfare and ethics literature as a whole. There are numerous books covering the ethics of veterinary practice, the use of animals for food, scientific research, and animals as companions or for entertainment, but comparatively little has been written about the ethics of managing and conserving animals in the wild.

At first glance the ethical issues associated with wild animals may seem rather simple compared with those concerning the animals we keep in captivity. Many of us treasure the natural world and would hope that human impacts on wild animals can be minimized. As an animal welfare charity, UFAW was established to protect the welfare of animals through a scientific understanding of their needs and how to meet them. Therefore, as an organization, when we consider wild animals, our concern is for the welfare of each individual with the aim of maximizing the welfare of as many animals as possible. As an example, we support research to establish the welfare consequences of practices that impact wild animals and advocate for the elimination of those that are detrimental to welfare. For instance, we recently funded research to assess which methods of controlling rats when they come into conflict with humans were least humane. When this research confirmed, unsurprisingly, that glue traps are extremely inhumane, we campaigned for their use to be restricted. UFAW has the luxury of being concerned only about the welfare of animals. Conservation of species, the impact of animals on humankind, and many other issues lie outside our purview. However, in the world at large all these concerns and more are just as valid as animal welfare when we consider how we interact with wild animals. Many laudable human aims for animals in the wild are contradictory, raising complex questions. For instance, how can we simultaneously protect animals in the wild from anthropogenic impacts upon their welfare, protect humans from wild animals which spread zoonotic disease and threaten food supplies, preserve natural habitats, and conserve species? The simple answer is that we cannot achieve all these highly desirable outcomes, which raises complex questions about where we should make compromises when there is no single “right thing to do.”

How and where we make these compromises is an issue of ethics, and this excellent book is one of the first to consider these ethical issues in relation to wild animals. Careful ethical consideration is needed to allow us to come to conclusions about whether the benefits of our actions toward animals in the wild outweigh the harms. These are rarely simple or obvious judgments. Indeed, some of the proposed solutions to wildlife issues are counter-intuitive and profoundly controversial such as the idea that licensed trade in wildlife products or organized trophy hunting can contribute to species conservation and minimize illegal hunting. It is with complex issues such as these that thoughtful ethical debate is vital if we are to avoid kneejerk reactions before we have considered whether less obvious approaches might be more beneficial.

In this book the authors take real-world scenarios such as those mentioned above to illustrate ethical issues and approaches, some of them longstanding such as the conflict between humans and animals when wild animals threaten human health or food security, and others that have recently risen to prominence such as re-wilding and the impacts of wind turbines on welfare.

This book will be invaluable to all those with an interest in the welfare of wild animals, and the authors have done an excellent job of keeping the material accessible to a general audience whilst tackling complex ethical concepts. This is crucial since those who can use the concepts in the book to bring about positive change for wildlife and the natural world will not, largely, be trained in ethics or philosophy.

I congratulate the authors for producing this important book that I hope will become required reading for those studying wildlife biology or animal welfare as well as those who make policy and guidance about our interactions with animals in the wild.

Huw Golledge

Chief Executive and Scientific Director,  
Universities Federation for Animal Welfare

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**THE THEORY OF  
WILDLIFE ETHICS**

**PART  
1**





# Introduction



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## 1.1 Introduction

The Amazon rainforests of South America are famously home to some of the most beautiful parrots in the world. Not surprisingly, there's demand, both locally and globally, to keep these birds as pets. This has led to a market in which parrots are trapped and traded even as, in many cases, wild populations decline. In Peru, for instance, although the parrot trade was banned in 1973, even in the year 2000 roughly 80 000–90 000 parrots were illegally captured annually (Gastañaga et al. 2011). Declining populations lead to rising prices, creating a positive feedback loop where parrot trapping is further incentivized. Indeed, researchers have found a significant positive correlation between the most profitable species in the wildlife markets of Amazonian Peru and those that are becoming increasingly rare (D'Cruze et al. 2021). Similar practices occur in other parts of South America (Figure 1.1).

Given the serious impact that the pet trade has had on parrot populations, there's been much discussion about how to discourage such practices (Ribeiro et al. 2019). Such discussion raises complex ethical questions. At the most fundamental level, the question is why, exactly, such practices *should* be discouraged. Aren't parrots just another resource, like oil or timber? Why shouldn't humans capture and sell them?



**Figure 1.1** A cage full of wild parrots destined for the pet trade, seized by the Police in Brazil. Source: Joa Souza/dreamstime LLC/, reproduced with permission.

Granted, some populations and whole species of parrot are becoming scarce. But why does it matter whether parrot species decline or disappear? What's so concerning about the loss of species?

It's also worth asking whether it's fair to deny the many Indigenous parrot trappers of their income. After all, the Indigenous people who trap the parrots aren't responsible for the extensive habitat loss that's primarily causing the decline in parrot populations. Why should they bear the burden of actions from which other, often richer, people benefit?

Taking a different perspective, while trapping parrots may have consequences for populations, species, and the ecosystems of which they form a part, it also affects the welfare of *individual* parrots. There's considerable evidence that being captured and smuggled over long distances is highly stressful for wild parrots, and, despite the efforts of their handlers, birds regularly die in the process (Baker et al. 2013). Being kept in captivity also has welfare consequences; despite being highly social animals, parrots are often kept in small cages and confined alone. But then, how important is the welfare of wild animals? How far – if at all – should welfare be factored into decisions about how to manage populations of animals such as parrots, both in the wild and in captivity?

This book, *Wildlife Ethics: The Ethics of Wildlife Management and Conservation*, has been written to assist in thinking through questions like these. To explain what this book is about, it's helpful to look more closely at what the terms in our title mean. We'll start with "wildlife", for there's certainly no universally agreed definition of what's meant by the term. Most generally, "wildlife" is usually taken to refer to wild *animals* rather than to wild plants, fungi, bacteria, and so on (though these are obviously forms of wild life). Until the 1970s, wildlife was generally used as a synonym for "game" – animals hunted by people – but this use is in decline. Now, the term "wildlife" is most commonly applied to undomesticated animals living free in a natural environment.



However, there are obvious exceptions and boundary cases (and different interpretations of both “natural” and “domestication,” which we’ll discuss later in the book).

In this book, then, wildlife refers to free-living animals in natural environments, as well as in urban, suburban, and rural areas. We’ll also include zoo animals since they are kept as representatives (and sometimes as potential saviors) of their free-living relatives and are generally bred to retain “wild” traits. We’ll also include animals that belong to species generally thought of as wildlife but that live at the borderline of being farmed. Some game management practices, for instance, come close to animal husbandry in that the animals are given supplemental feed (e.g., feeding corn to white-tailed deer in North America). Some “wild” animals are even farm reared (e.g., civets and bear species kept in captivity for bile production in East Asia and gamebirds bred to be released for hunting in Europe). There are also “feral” animals, such as cats, pigs, and dogs/dingoes in Australia, which were once farmed or kept as companions but now live outside human support. And sometimes domesticated or “de-domesticated” animals are released to perform ecological functions as part of rewilding projects, such as cattle and horses in northern Europe.

All these borderline cases suggest that there’s a wide gray area where animals are more or less wild, including feral, captive-bred, and heavily managed populations. These questions aren’t simply terminological; they may well have legal and ethical implications. For instance, it’s often thought that human responsibilities toward animals (such as whether sick animals should be treated) are partially determined by the kinds of relationships that humans have with them (Gamborg et al. 2016). However, for the purposes of this book, we’ll adopt a broad understanding of wildlife that includes all these animals and untangle the details as we go through them.

In another sense, though, our use of the term “wildlife” in this book is less broad than it could be; we use the term to refer to *sentient* vertebrates (which is also the most common interpretation) for reasons we’ll say more about below. By sentient, we mean animals with subjective experiences and inner lives: they can, for instance, consciously experience pleasure and pain, fear, hunger, and excitement. (Note that “consciously” here doesn’t mean “reflectively.” We assume that animals can have conscious experiences without the more sophisticated metacognitive abilities that humans possess.) This means that as we use the term, wildlife includes at least mammals, birds, reptiles, amphibians, and fish. While we recognize that some invertebrate animals are now widely agreed to be sentient – especially the cephalopod mollusks (such as octopods, cuttlefish, and squid) and decapod crustaceans (crabs, crayfish, etc.) – we won’t focus on them in this book. The sentience of other invertebrates – such as insects – is not currently widely accepted, although there’s uncertainty here (Lacalli 2022).

One reason for limiting the discussion to sentient animals is that they have a *welfare*, and animal welfare has become an important and complicating ethical consideration in recent discussions of wildlife ethics (Baker et al. 2013). We think that the focus on wild animals as individuals with their own welfare is an important new emphasis that this book brings to debates about wildlife management and conservation. Given the interest that both the public and many decision makers have in animals as individuals, it’s increasingly difficult to settle controversies about wildlife by insisting only on the value of species, biodiversity, or ecosystems.

Two other things should be noted: by using the term “animals,” we’re not intending to imply that humans are *not* animals. They obviously are. However, it would have been clunky to refer to “other animals” or “nonhuman animals” throughout the book. For similar reasons, we have reduced the use of Latin species names to a minimum for ease of reading, including them only where there may be ambiguity about the wildlife species to which we are referring.

So much for wildlife; what about *ethics*? Most generally, ethics deals with questions about what one *should* or *ought* to do, ideas about what’s right and wrong or good and bad, using terms such as values, duties, rights, responsibilities, and virtues. While the law often incorporates ethical standards, being ethical isn’t the same as following the law; after all, many actions are ethically questionable but still legal. For example, using explosives to catch fish (blast fishing) was legal in Indonesia until 1985 (Fox et al. 2005). Moreover, being ethical isn’t just about following one’s feelings or intuitions, though both can indeed play important roles. In this book, we take ethics in a wide and inclusive way to involve reasoning about values and the rationales for holding those values, about the possible consequences that might follow from actions, about the interests and rights that might be at stake in a given situation, about individual virtue and character, and about people’s aspirations for their societies.

We further take it that decision making about issues such as wildlife management and conservation should depend on being able to give justifying reasons that other people can understand and make sense of, even if they disagree, for reasons that they too can explain. Essentially, we understand wildlife ethics as reasoned dialogue about human management of, and relations with, wildlife that involves bringing to the surface values and ethical commitments that are otherwise often not made explicit. We attempt to be pluralistic in discussing these values and ethical commitments in this book. Thus, we acknowledge that there are many ideas about what’s right and wrong, good and bad, which may not be compatible with our personal ethical stances (which also differ between us as authors). Our goal here is to be as even-handed as possible to clarify and analyze different ideas, theories, views, and beliefs – not to defend particular ethical positions.

Finally, then, what about “wildlife management and conservation”? Wildlife management can refer to two kinds of practices. It may involve *actively* manipulating factors such as species population size and density (abundance); location, habitat, and food supply; interactions between wildlife species; and interactions between wildlife and humans (Giles 1978). Or it may refer to more *passive*, hands-off forms of nonintervention, such as setting land aside, where that strategy has been deliberately chosen among alternatives (sometimes called “preservation”).

Wildlife management can try to protect present or future levels of use, whether this involves consumptive practices (such as hunting and fishing, which, historically, were of primary importance) or nonconsumptive practices (such as making wild animals more visible for tourists). It can attempt to control unwanted wildlife, whether that means individual animals or entire populations. It can aim at protecting biodiversity in one of its many forms. More recently, wildlife management goals have expanded to include other environmental purposes, such as managing wildlife populations with the goal of influencing carbon cycling (Schmitz et al. 2018).

Let’s focus a bit more closely on the idea of wildlife *conservation*, which we take to be a form of wildlife management. This term is important but confusing; in fact, there’s

no single, widely accepted definition of conservation (Soulé 1985). In its most general use, conservation – a word first recorded in the fourteenth century – has two broad meanings, nicely captured in the *Oxford English Dictionary* (OED 2021): “to prevent the wasteful overuse of a resource” and “to protect from harm or destruction.” This double sense carried over into wildlife conservation. However, in the early twentieth century, one of these two meanings became associated with a different term: *preservation*. So, *conservation* meant something like using wildlife wisely, such that stocks could renew for the future (thereby “preventing wasteful overuse of a resource”), while *preservation* meant something like setting land aside entirely and protecting wildlife independently of its use (thereby protecting “from harm and destruction”). Now, however, this distinction is made less frequently; the term “conservation” is commonly used to cover both these senses.

Managing for wildlife conservation, then, might mean actively managing wildlife such that the wildlife can continue to be used in the long term. Or it might mean preserving wildlife more passively by setting land aside, deliberately not allowing wildlife to be used (or at least, not consumptively) in designated reserves, wilderness areas, and so on. More recently, though, as human impacts on wildlife have become more intense, both kinds of conservation have involved more active practices, such as habitat and ecosystem restoration, species reintroduction, and relocation for threatened species, and nonlethal population reduction methods such as fertility control for hyperabundant species.

Let’s return briefly to parrot trapping in Peru. It’s clear that multiple values are at stake in this case, including social justice, Indigenous groups’ rights, the protection of biodiversity and species (since nontarget animals are also affected by the parrot trade), the value of animal lives and animal welfare, the flourishing of ecosystems, the esthetic value of the birds in and outside their natural habitats, and other humans’ responsibility for extensive habitat destruction (Gastañaga et al. 2011). By making the parrot trade illegal, specific values, such as species protection, were prioritized over other values. In cases where wildlife use (e.g., hunting) *is* legal, other ways of managing a similar array of values will still need to be chosen. And although decision making about such cases will include social, political, and economic factors, the identification and prioritization of values are of central importance for wildlife management; this is likely to determine, for instance, whether the goal in any particular case should be something closer to sustained use or to complete protection. Questions about what matters, what’s valuable, how to weigh these values, and how these values should be put into practice lie at the heart of wildlife management and conservation. We hope this book will be useful for those reflecting on such questions.

## 1.2 The Scope of the Book

While there are numerous books exploring ethical issues about animals in agriculture (e.g., Schlottmann and Sebo 2018), in research (e.g., Beauchamp and DeGrazia 2019), and a few about companion animals (e.g., Sandøe et al. 2015), this is the first book to attempt to develop a systematic account of the ethical issues related to decisions about managing and conserving wildlife. We recognize, of course, that such decisions are not

only about ethics; they also involve economics, ecology, psychology, environmental science, politics, history, and so on. Ethics is just one piece of the puzzle. Still, it's an important piece that deserves a more thorough examination than has been common in the past. Our main aim is to explore the most important ways wild animals can be valued (or disvalued), different theories about how those values can guide practice and policy making, and to think through how these ethical perspectives could be applied to cases in practice.

As such, this book is designed to be useful to many constituencies. We've written it for students and scholars in many fields, including wildlife management, conservation biology, conservation social science, ecology, animal science, and veterinary medicine. We've also written it for wildlife professionals, practitioners, and stakeholders – people who manage, use, control, or protect wild animals or who are affected by those practices. Finally, we've written it for those who are simply interested in wildlife, and we've tried to ensure that the book is accessible. (For instance, we refrain from citing complex quantitative evidence relating to trends in wildlife populations.)

While the role of ethics is becoming increasingly important in wildlife conservation and management, few wildlife managers, conservation biologists, or veterinarians have any formal ethics training and may feel that they lack the tools to respond to these growing ethical concerns and to communicate about ethical issues. There are, of course, related books on specific wildlife controversies and on the problem of trade-offs in conservation (e.g., Woodroffe et al. 2005), some on politics and conflicts in conservation (e.g., Redpath et al. 2015), and some on particular values, including biodiversity and species values (e.g., Newman et al. 2017). However, there is no other book that looks at all these kinds of concerns through an ethical lens.

Trying to produce a book that aims to be helpful across so many different disciplines and professions is, of course, a huge project, especially given the number of wild animal species, the diversity in human cultures and societies, the number of different ecosystems and habitats, the many ways in which humans interact with them, and the multiplicity of values and ethical theories at stake. We therefore needed to restrict the scope of the project to make it more manageable.

To do this, we took our lead from some key ideas that have emerged from recent psychological research about human attitudes to animals – attitudes that have also influenced the shape that wildlife management and conservation has taken in practice. For instance, a significant body of psychological research suggests that, in general, people are much more positive about animals, particularly mammals, that they perceive to be more human-like and much less positive about animals perceived to be very unlike humans. An early (1980s) study, for instance, found that people were much more willing to pay to protect mammalian and bird species than they were to protect fish and spiders (Kellert 1986). There are generally ambivalent or negative responses to species perceived as threatening, such as large mammalian carnivores and venomous snakes.

The perceived cognitive capabilities of animal species also seem important; research suggests that the more cognitively developed an animal species is perceived to be, the less acceptable people consider it to be for humans to use or harm it (Knight and Barnett 2008). Esthetic features, broadly construed, are also

important; indeed, researchers have found a strong correlation between esthetic preferences for a particular animal and willingness to protect it. Perceived ugliness seems to have a strong negative effect, while cuteness has a positive effect, especially mammalian facial traits: a round face, big eyes, and a small nose and mouth (Prokop and Randler 2018).

Such psychological research into responses to kinds of species aside, evidence is also mounting that broad changes in some societies – increasing modernization, urbanization, higher levels of education, and less direct reliance on wild animals for items such as food and fur – have led to substantial shifts in attitudes toward wildlife, especially among urbanites and suburbanites, particularly those located in western postindustrialized countries. These countries have seen a popular shift from the idea of human domination over wildlife and the belief that wildlife exists to serve human interests to the idea that wild animals are worthy of care and respect, an attitude called *wildlife mutualism* (Manfredo et al. 2016). Of course, care and respect for wild animals also have long histories in Indigenous communities around the globe. Still, because citizens of industrialized countries have an outsized degree of influence on the shape of contemporary wildlife use, management, and conservation, shifts in their attitudes are significant for present purposes.

This extremely brief summary of some important attitudes to wildlife tells us that while there are highly divergent public attitudes toward wildlife species, some factors are widely found across the populations interviewed, such as a bias in favor of cognitively sophisticated and esthetically pleasing animals, especially mammals, with some human-like features. These attitudes partly explain why there has been a taxonomic bias toward mammals in conservation practice (e.g., Clark and May 2002). Our book, to some degree at least, reflects these attitudes; we took the practical decision, given space limitations, to focus on mammals. To a lesser degree, however, we do also discuss the management of birds, such as the parrots with which we began this chapter, as well as reptiles and amphibians.

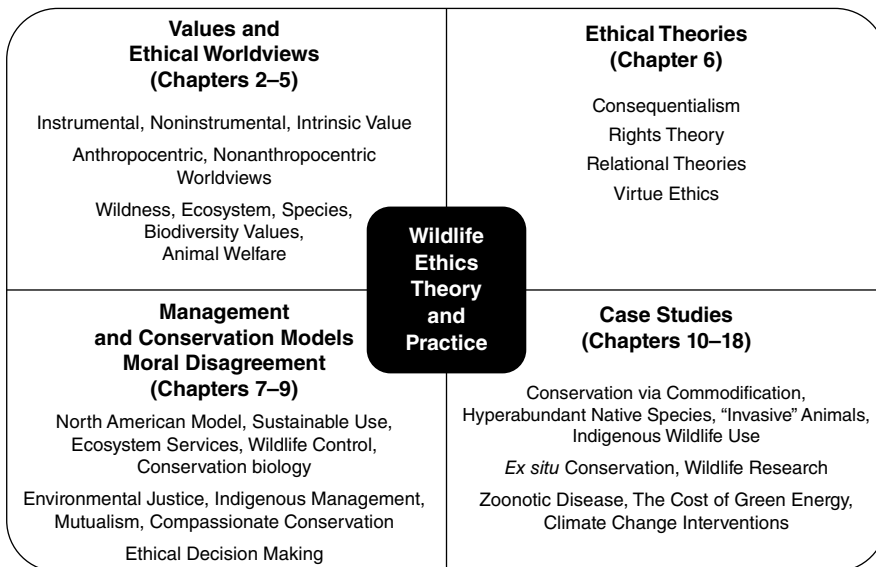
This narrowing of focus toward mammals has also, regretfully, led us to emphasize terrestrial rather than aquatic or marine wildlife conservation and management (with a few exceptions). There's much significant popular and scientific concern about marine wildlife conservation and management, of course, but including substantial material on marine ethical issues here would have made the book even more unwieldy than it is already. Marine wildlife ethics deserves its own volume. Likewise, invertebrate ethics would also make a fascinating book. While many of the same considerations would prove relevant, aquatic animals and invertebrates raise a host of questions of their own, including the difficulties of assessing fish and invertebrate welfare (and which invertebrates can be said to have welfare); the complex history and politics of industrial fishing; and the challenge of responding to the “invisible” problems of aquatic animal and invertebrate population decline (Cooke and Cowx 2004). Especially fish, but also increasingly insects, are now being farmed on a large scale, while insects such as mosquitoes are in the front line of research on genetic modification to reduce their capacity to carry disease. All these issues deserve ethical scrutiny; we hope others will develop texts that tackle the many significant questions that, unfortunately, must remain beyond the scope of the one we've written.

### 1.3 Structure of the Book

This book has two parts. In Part 1, we survey the values, ethical theories, and major value-laden frameworks and movements that have emerged throughout the history of wildlife management and conservation, concluding with a chapter on the challenge of navigating moral disagreement. In Part 2, we turn to a series of real-life wildlife case studies where we put the ideas of Part 1 to work (Figure 1.2).

Part 1 begins properly with Chapter 2, where we distinguish the range of ways in which people value and disvalue wildlife. Many of these values are what are called *instrumental values*: they are values derived from the *uses* that humans have for wildlife. There are also *disvalues*: some animals are seen as threats rather than resources (though, of course, some animals are both). Finally, some people argue that wild species, ecosystems, and/or animals have *intrinsic value* or *moral status* – value in themselves, apart from any use to humans.

Chapters 3–5 consider specific values associated with wildlife. In Chapter 3, we consider the value of the *wildness* of wild animals. That is, their wildness may itself be one reason why they matter. Next, also in Chapter 3, we examine the role of wild animals as contributors to and members of *ecosystems*. In Chapter 4, we look at two closely related ways of valuing wild animals: where they are valuable due to their contribution to biodiversity; and/or because of their embodiment of, or membership in, a particular



**Figure 1.2** The book has two main parts: (a) the theory and (b) the practice of wildlife ethics. The first part examines values, ethical worldviews and theories, management frameworks, and how to deal with moral disagreements. All chapters in Part 1 include short, real-life examples to illustrate concepts and theories. In Part 2, a number of paradigmatic ethical case studies from around the world and across different wildlife species are developed to explore the ethical complexity of specific problems and controversies.

species. In Chapter 5, we consider the importance of animals as *individuals* (rather than as manifesting wildness, contributing to biodiversity, or being members of valuable ecosystems or species). Here, value is located in the *welfare* of wild animals and the significance that can be ascribed to their lives.

Chapter 6 turns toward ethical theory. Values are what *matter* – what’s relevant to moral deliberations. Ethical theories take the next step by providing guidance about what to *do* with these values, including how to prioritize these values when making decisions. Here, we discuss consequentialist, rights-based, relational, and virtue-ethical theories.

Chapters 7 and 8 explore broader, value-laden management and conservation frameworks and movements that have been, or may become, particularly relevant to wildlife professionals. These frameworks and movements include a range of values and ethical commitments, not all of which are obvious at first glance, about how humans ought to relate to wildlife in various circumstances. Chapter 7 considers the development of the idea of conservation of wildlife as resources (in particular, the North American model of wildlife conservation); the control of unwanted wildlife (“pest management”); and conserving wildlife primarily to protect species and ecosystems, an approach found in conservation biology. Chapter 8 explores the growth of the environmental justice movement, its intersection with what’s become known as the “new conservation” movement supporting Indigenous peoples’ wildlife management, and the emerging “compassionate conservation” movement.

We close Part 1 in Chapter 9 by introducing some ways of approaching ethical decision making and dealing with moral disagreement. We consider how individuals might think through specific issues to make their own judgments. We then turn to the even more complex task of justifying decisions to others and making collective decisions that are sensitive to ethical concerns.

Part 2 comprises a series of case studies that go into much more depth than the shorter cases used to ground discussions in Part 1. Thus, in the second part of the book, we apply and develop the concepts, values, ethical theories, and management frameworks discussed in Part 1. We work at disentangling key values and ethical theories at stake and consider what they look like on the ground. Of course, we’ve had no option here but to be highly selective. Still, we have tried to demonstrate geographical breadth, think through a variety of different ethical problems, and take into account varied wildlife species. We have cases from all continents (except Antarctica) and include geographical regions such as tropical South America, southern Africa, Southeast Asia, northeastern North America, northern Europe, New Zealand, and the Arctic. We look at examples involving (in no particular order) rhinos, frogs, rats, parrots, bats, deer, pandas, whales, and polar bears. Here’s a brief look at some of the issues we address in these case studies.

- Rhinos are threatened with extinction. If by establishing a legal, commercial rhino horn market in sub-Saharan Africa, the rhino species could be saved, would it be right to do so? (Chapter 10).
- When native species, such as white-tailed deer in North America, reach high densities in suburban areas, controversies about lethal management frequently arise. What values are at stake here? How should factors such as human convenience, ecological impact, and animal welfare be weighed against one another in the suburbs? (Chapter 11).

- Introduced animal species can have major negative effects on ecosystems, leading to systematic eradication campaigns, as in New Zealand. Should the protection of biodiversity and wildlife species take priority over individual animal lives and welfare? (Chapter 12).
- Ethical tensions arise when traditional practices of wildlife use, especially by Indigenous peoples, appear to conflict with other wildlife values such as species protection and animal welfare. Yet, isn't it a matter of justice for Indigenous groups, such as the Makah people in the US Pacific Northwest, to be able to continue traditional practices that predated colonialism, especially when they are not responsible for broader threats to wildlife species? (Chapter 13).
- Captive breeding and display in zoos are sometimes claimed to contribute to so-called *ex situ* wildlife conservation. One prominent example is the captive breeding of giant pandas in China and their display in selected zoos across the world. However, do captive breeding and display in zoos really achieve conservation goals – and in any case, do the conservation goals justify using captivity as the means? (Chapter 14).
- Wildlife research is an important activity that contributes to human understanding and may help work out ways to better protect species from extinction. But it can involve invasive means and technologies that negatively affect wild animals' welfare, such as clipping the digits of threatened frog species to reidentify them later. Can such practices be ethically justified by the conservation benefits they allegedly bring? (Chapter 15).
- Wild animals are not only of positive value to humans but can also affect human societies negatively through the interspecific spread of infectious diseases, such as Ebola, rabies, and HIV. How should this risk of disease spillover affect our ethical relationship with wild animals? Is the concept of One Health helpful here? (Chapter 16).
- Worldwide, energy demand is increasing while worries about climate change are becoming ever more acute. Most people welcome the fact that an increasing share of energy is produced by means of renewable energy such as wind power, rather than fossil fuels. However, the expansion of wind power can have significant impacts on wildlife, especially bats and birds. In these “green-on-green” dilemmas, where do ethical concerns about wildlife fit? (Chapter 17).
- Climate change is already having significant impacts on wildlife. While some species can adapt, others – especially specialist species or those in places where the climate is changing very fast, such as polar bears in parts of the Arctic – may need human assistance to survive. Should humans intervene to help such animals (especially given that people cause climate change)? Or would it be better to let nature take its course? (Chapter 18).

We end the book with an overall conclusion looking at the future of humans and wildlife, taking stock of current threats, trends in societal views, and emerging technological developments (Chapter 19).

## 1.4 The Authors

The authors of this book came together somewhat serendipitously and at a point when we were less fully aware of the range of expertise for which this project calls. We come from a variety of academic backgrounds. Peter Sandøe and Bob Fischer studied philosophy at both undergraduate and graduate levels; Clare Palmer studied theology and then



completed a DPhil in environmental ethics; Christian Gamborg trained as a forester before taking a PhD in bioethics; Jordan Hampton trained as a veterinarian, developed a research portfolio in wildlife biology, and completed a PhD in animal welfare, spending five years subsequently as the Director of Ecotone Wildlife Veterinary Services.

We have subsequently come to specialize in different areas relevant to wildlife ethics. Bob Fischer is an Associate Professor at Texas State University, USA, where he focuses on animal ethics. Clare Palmer is a Professor at Texas A&M University, USA, where she works in environmental and animal ethics; both are based in Departments of Philosophy. Christian Gamborg is an Associate Professor in the Department of Environment and Natural Resources at the University of Copenhagen, where he specializes in ethical questions related to the environment, wildlife, rewilding, and land use. Peter Sandøe is a Professor at the University of Copenhagen, where he divides his time between the Department of Food and Resource Economics and the Department of Veterinary and Animal Sciences. He works on various issues relating to animal welfare, animal ethics, and veterinary ethics. Jordan Hampton focused his veterinary interests on wildlife, in particular on wildlife welfare and managing unwanted animals, and is currently a McKenzie Research Fellow at the University of Melbourne.

These backgrounds provide a strong foundation for working on a book on wildlife ethics. However, in other ways, our backgrounds and perspectives are clearly limited. We are all white. Four of us are male. Though we live across three continents – Europe, Australasia, and North America – we all come from postindustrial, relatively affluent countries. Our perspectives, then, inevitably reflect a Euro-American-Australian approach to wildlife management and conservation (though this is not, as we'll discuss in this book, by any means a unified approach). Moreover, our on-the-ground engagement with wildlife management and conservation is somewhat limited. Jordan Hampton has worked extensively with Australian wildlife, including programs that cull and use fertility control measures on wild and feral animal populations. Clare Palmer co-owns a 200-acre ranch in Texas that's being restored and managed for wildlife conservation. Peter Sandøe has advised the Danish government on a broad range of issues relating to animal welfare and animal ethics and currently serves as an expert advisor on animal welfare in rewilding projects to the Danish Minister for the Environment. Christian Gamborg has advised the wildlife management council in Denmark on issues related to the management of wolves and wild boars. Bob Fischer works with a think tank, Rethink Priorities, which assesses what causes should be prioritized for urgent funding, including causes involving wild animals. However, it remains the case that only one of us, Jordan Hampton, has done wildlife management or conservation work full time.

There are some fairly significant differences of views about the ethics of wildlife management and conservation between us, though we have not generally made our disagreements visible in the text. Although we take animal welfare seriously, this book largely takes a pluralistic form, not defending one particular value or theory. We aim to present a range of possible views and to explore what these look like when applied to different contexts. We have opted to be as even-handed as possible, only defending particular points of view when they are squarely within our expertise and not widely contested. We hope, therefore, that this book serves to improve discussions about wide-ranging ethical dimensions of wildlife use, management, and conservation. Writing it has certainly improved our own understanding.

## 1.5 How this Book Might Be Used

We have tried to write this book in an accessible style; it's aimed at those with no formal training in ethics (though we hope it also offers something to those with an ethics background who want to think more systematically about wildlife). We have tried to keep the discussion grounded by using case studies throughout, not just in the second half of the book but also within the chapters in the first half of the book. We hope that the accessibility and grounded nature of the book will encourage readers from very different backgrounds to engage with it, which makes it likely that the book will be approached in different ways and used for different goals.

Of course, some readers may want to sit down and read the whole book, but we imagine that most people will have specific interests in particular chapters or sections. So, for instance, someone wanting to explore the nature of animal welfare and its relevance to conservation could focus on Chapter 5; someone who wants to think about wildness value in the context of rewilding projects might focus on Chapter 3. For classroom use, individual case studies from the later sections of the book could be used for discussion, with relevant chapters from the first half of the book set as background reading.

We hope that *Wildlife Ethics* will help readers to reflect critically and constructively on their own ethical views, to better understand the contrasting positions others may take on these questions, and be better equipped to enter into a meaningful dialogue with others about ethical issues related to wildlife management and conservation.

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## 2.1 The Value of Tigers

Fewer than 5000 individuals of the two main subspecies of tigers, the Continental tiger and the Sunda Island (Sumatran) tiger, remain in the wild, and the majority of them are found in India. Tigers no longer live in an estimated 96% of their historic range and three subspecies have already become extinct: the Caspian tiger from western Asia, and the Javan and Balinese tigers that once lived in Indonesia (Yamaguchi et al. 2013). Because they are so rare, tigers are classified as endangered by the International Union for the Conservation of Nature, and trade in tigers or their body parts is internationally banned under the Convention on International Trade in Endangered Species. In many countries where wild tiger populations remain, tigers are expensively (and expansively) protected in reserves, sometimes involving the relocation of human populations. Owing to such protective measures, some wild tiger populations are slowly increasing, especially in India where they are also used to attract tourists (Figure 2.1), but others, including the critically endangered Malaysian populations, are nonetheless declining towards extinction (Jhala et al. 2021).

In contrast to wild populations of tigers, however, captive populations are thriving. There are around 5000 captive tigers in the United States alone (World Wildlife Fund 2014)



**Figure 2.1** A tourist jeep closely approaching a wild tiger in an Indian national park. Source: MaxPixel.net/CC0 1.0.

and perhaps 8000 captive tigers in Asia, the majority in China (Abbott and Van Kooten 2011). Far more tigers exist in captivity than in the wild. In the USA, while a small number of tigers are on display in zoos accredited by the American Zoological Association (AZA) (for more discussion of the role of zoos in conservation, see Chapter 14), the rest are kept in roadside zoos or as exotic pets in private households. In East and Southeast Asia, many captive tigers are kept in what are widely labeled tiger farms, sometimes for entertainment but also contributing to markets in tiger parts (Dinerstein et al. 2007).

That humans hunt, keep, display, trade, breed, and protect tigers, both in and from the wild and in captivity, suggests that they are seen as extremely valuable to us, in a variety of ways. Many – although not all – of these values are what are called *instrumental values*: they are values derived from the *uses* humans have for tigers (Latombe et al. 2022). These use values explain some tiger declines in the wild as well as why tigers are kept in captivity. But their decline in the wild is also due to other factors, including loss of habitat and reduced availability of prey owing to human expansion into tiger territory.

Another reason for the decline of tigers is what we might call an instrumental *disvalue*: tigers are not only resources, they are also threats – they kill people or prey on livestock on which people depend for their livelihood. Often, this results in long-standing, negative human–wildlife relationships, sometimes called human–wildlife conflicts, where tigers may be killed to protect humans from, or to avenge, tiger attacks. The latter phenomenon is known as retaliatory killing targeted on large carnivore species globally (Inskip et al. 2014), as well as other wildlife species associated with significant disvalues (e.g., infectious disease; see Chapter 16).

Finally, alongside these instrumental values and disvalues, it's also sometimes claimed that tigers have *intrinsic value* or *moral status*; that what matters about tigers isn't just whether they are useful or threatening to humans, but also that they have some kind of independent value in themselves (Latombe et al. 2022). Such claims, though, raise

another crucial distinction in the ways people may value wild animals – either as *individuals* or as valued *species*. So, when someone maintains that tigers have intrinsic value, they may mean that each individual tiger, because it is a living, feeling being, has intrinsic value. Alternatively, however, they may mean that the tiger species *as a whole* has such value, and individuals have value because they are members of that valuable species. As we'll see throughout this book, concern about killing or harming *individual animals* is often very different from worrying about threats of extinction to a *whole population* or *species*. A species might, after all, go extinct without any individual species member being harmed or killed by humans; and harming individual species members could, in some cases, help a species to survive (for instance, by confining individual species members for the purpose of captive breeding, as discussed in Chapter 14).

Understanding the ways in which tigers (or any other wild animals) are valued is central to wildlife ethics. Numerous attempts to categorize such values exist. Many such categorizations have been proposed by economists, who understand these values mainly in terms of different kinds of preference satisfaction, measured in terms of people's willingness to pay or to accept compensation to access, promote, or protect such values. These economic categorizations are very useful and we'll draw on these ideas and economic terminology below. However, we'll also talk about related *ethical* ideas, which often reflect rather different commitments, commitments not reliant on preference satisfaction and willingness to pay.

## 2.2 Instrumental or Use Value of Wildlife

Let's begin by thinking about use value or instrumental value, most naturally illustrated by money. Suppose that someone has a \$100 bill. That's valuable to the person who owns it, but it probably isn't *any particular bill* that the person values. If the person had the opportunity to exchange the \$100 bill for five \$20 bills, they would probably be indifferent to the trade. In other words, the person doesn't care about the \$100 bill itself at all; they care about what the bill can do for them in terms of the goods and services it can secure. Something that's of instrumental value is useful because it can get someone what they want. If they can get that same thing some other way, then that's just as good.

Wild animals have this kind of instrumental or use value to humans in multiple ways; this usefulness is captured in the term "wildlife resources." Following a standard economists' distinction, in the following we've divided such use values into direct use and indirect use, and further subdivided direct values into consumptive and nonconsumptive values. Starting with direct consumptive values, we'll talk about these different categories in turn.

### 2.2.1 Consumptive Use Value

The most obvious benefits humans gain from wild animals are in terms of direct consumptive use, where wild animals are killed and their bodies consumed or used in other ways. Tigers are an obvious example here (rhinos are another; see Chapter 10). One of the reasons for the decline in tiger populations has been the demand for tiger body parts in traditional Chinese medicine; this demand has driven tiger poaching and an extensive