

Wildlife Viewing and Ecotourism

Ethical, Scientific, and Value-Based Considerations

by

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Abstract

Management of wildlife viewing tourism, possibly as a legacy of management of hunting and trapping activities, tends to see its ultimate goal largely in terms of the sustainable human use of wildlife resources. However, where the potential impacts of human activities are non-lethal, the focus on population dynamics may not adequately address relevant societal and ethical concerns. Additional concerns include protecting tourist safety, maintaining a pristine wilderness experience, habituation (either positive, allowing for easier viewing, or negative, reducing animals' "wildness"), stressing animals, and showing disrespect or a lack of courtesy.

Formal theories of animal and environmental ethics, while frequently conflicting and under-determinate in terms of specific prescriptions, provide a coherent basis and language for the discussion of each of these different concerns.

The values extant in society, as reflected in lay writing about wildlife tourism, show that there is societal support for a variety of goals that wildlife tourism management should address. These include population-level and

individual-level consequences as well as non-consequentialist goals such as fostering respect for wildlife or avoiding a “trophy photograph” mentality.

Scientists attempting to assess the impacts of wildlife tourism use a variety of measures related to both individual and population responses. Especially when using individual-animal measures (behaviour, stress responses), scientists are rarely explicit about why these measures are important, relying instead on an implicit and uncertain link to population-level impacts. These measures, however, may be linked more directly to equally valid (from a management perspective) individual-level concerns.

Given the variety of goals that are ethically justified and societally supported, it is inappropriate to conceptualise management as a mere scientific problem. Instead, I use a decision-analysis framework to synthesize relevant contributions from the scientific, ethical, and social-values literatures, identify their respective contributions to the decision-making process, and conclude that while good indicators exist for most of the objectives identified, thresholds at which changes in the indicators call for management action remain to be established.

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Chapter 1

Introduction

Various forms of “non-consumptive” tourism are often suggested as economic alternatives to un-sustainable resource extraction. Non-consumptive tourism includes activities such as hiking, mountain biking, bird watching, nature photography, and wildlife viewing, while excluding the more “traditional” concerns of wildlife management agencies, hunting and fishing. The latter are obviously and explicitly consumptive, and a main focus of management is to determine the maximum sustainable harvest rate that the wildlife resource can support. In contrast, the former are, at least at first glance, not consumptive: animals are not removed directly from the population. However, it has long been recognised that “non-consumptive” recreation does in fact degrade various landscape and wilderness values: non-consumptive users create and erode trails, disturb wildlife behavioural and reproductive patterns, leave garbage behind, and, as numbers grow, cause crowding, reducing the feelings of solitude and wilderness which inspired the activities in the first place. Thus the notion that “non-consumptive” land use is entirely benign and needs no regulation or management can readily be rejected. The term may still have some use in separating these activities from the more directly

consumptive resource-harvesting activities, where the management goals and methods will be different. On the other hand, there are many forms of “non-consumptive land use”, and management goals and methods may also differ among these various forms.

In this thesis, I will bound my attention to the narrower topic of wildlife disturbance due to non-consumptive wildlife-viewing tourist activities. In these activities, the interaction with animals is the driving force behind the activity; it is true, however, that many of the same considerations will apply where wildlife is incidentally disturbed by hiking, mountain biking, ATV riding, skiing, or snowmobiling. In these cases, the interaction with wildlife may be unintentional, and the tourists may even be unaware that it is occurring. However, I will focus mostly on contexts where tourists pay a tour operator to take them out to view wildlife, or individual tourists travel independently to an area where wildlife are readily viewed for the express purpose of observing and/or photographing them. In addition, by “animals” or “wildlife” in this thesis, I refer primarily to birds and mammals; these are the groups most frequently the subjects of organised wildlife tourism activities¹, and as such, are the ones generally discussed in my data sources. I do not intend this to be a firm boundary, however, and many of the ethical considerations and management objectives discussed may apply to many taxa outside these

¹I recognise, however, that there are exceptions—sharks and sea turtles are the most conspicuous of these

boundaries, but determining exactly how much force each consideration has for every possible taxonomic grouping is beyond the scope of this thesis.

On the Canadian west coast, key examples of such tourism are whale watching and grizzly bear viewing. On the coast, these activities are often boat-based. For whales, boats of various sizes from rigid-inflatable Zodiac-type open boats to large, enclosed cruisers conduct whale watching tours ranging from a few hours to several days. For grizzly bears, tours are either land-based at salmon streams, where bears congregate during the fall salmon runs to fish at locations where rapids slow and concentrate the migrating fish, or boat-based at locations where bears feed on grasses and sedges in open intertidal marshes during the spring. Tours are also conducted to observe black bear (and especially the Kermode colour phase—also known as the “Spirit bear”—on Princess Royal Island.) Various other marine mammals and birds are often incorporated into both whale- and bear-based tours.

The notion that these wildlife viewing activities may not be entirely benign is not new. As early as 1977, Wilkes questioned the notion that activities other than hunting and fishing can legitimately be called “non-consumptive” (Wilkes, 1977). There is certainly current public and societal concern over the impacts that wildlife viewing might have. Andrew Scott² suggested that “Orcas are at risk from too many human fans and the water itself”, but after mentioning “inconclusive speculation in the media about the harmful effects of excessive whale-watching” devoted most of the column to discussing toxi-

²“Watching Killer Whales Die”, Georgia Straight travel section. Date unknown

ecological results implicating pollution as a culprit in killer whale population declines. Calvin Sandborn (1999) asked “Are we loving whales to death?” and suggested that while whale-watching tourists carry cameras rather than guns, they may contribute to the decline of killer whales just as buffalo-hunting tourists drove the buffalo to the brink of extinction. Sandborn also pointed out that while the southern resident population numbered (in 1999) 84 whales, there were at that time 85 commercial tour boats operating in the area.

There are current attempts to regulate tourist behaviours in order to protect the wildlife in question. The “Be Whale Wise” whale viewing guidelines³, co-produced by a collaboration of government agencies, aquaria, tour operator groups, and environmental NGOs on both sides of the U.S. border, establish a “no-go” zone 100m around whales and out to 400m in front of and behind the whales’ travel direction. Between 400 and 100m to the sides of the whales’ direction of travel is a “go-slow” zone, in which speeds should be reduced to 7 knots and sudden changes of course should be avoided.

While voluntary, these guidelines are backed up by the *Marine Mammal Regulations* (enacted under the *Fisheries Act of 1985*), which state:

7. No person shall disturb a marine mammal except when fishing for marine mammals under the authority of these Regulations.

(MMR, 1996, s. 7)

³<http://www.bewhalewise.org/bewhalewise.pdf>

A more general guide to wildlife viewing opportunities in British Columbia (Wareham et al., 1991) includes a code of “ethics for the field”, which includes confining movement to existing trails to allow animals to adapt, avoiding nesting sites and dens, using binoculars, and keeping a respectful distance to avoid stressing animals. Similarly, a brochure published by B.C. Parks⁴ recommends viewing “from a distance that respects the needs of wildlife,” being patient, and avoiding “noises or actions that might stress wildlife.”

The *British Columbia Wildlife Act (1996)* has a provision similar to the one in the *Marine Mammal Regulations*:

Definitions and interpretation

1 (1) In this Act: [...] ”harass” includes worry, exhaust, fatigue, annoy, plague, pester, tease or torment, but does not include the lawful hunting, trapping or capturing of wildlife; (BCW, 1996, s. 1)

While there is no explicit link between the legal regulations (which are rather short on detail) and the published voluntary or recommended guidelines (which have no strict legal force), it has been found in court of law that failing to abide by accepted guidelines may be treated as evidence of violating the relevant legal statutes (Westad, 2003a,b, 2004).

There is also a growing body of scientific literature addressing the impacts that wildlife viewing may have on the wildlife being viewed. MacArthur et al.

⁴http://www.env.gov.bc.ca/bcparks/conservation/wildviewing_part2.pdf

(1982) measured heart rate and withdrawal behaviours in mountain sheep (*Ovis canadensis canadensis*), finding that heart rate responses frequently occurred before, or without, any overt escape behaviour, and that human approaches from an “expected” direction (i.e. from the road) elicited less dramatic responses than approaches from an “unexpected” direction. Gill et al. (1996) proposed a method to quantify the effects of human disturbance in birds, based on the idea that animals will abandon a foraging area when the perceived risks of predation outweigh the benefits of continuing to forage. Assuming that animals react to human presence as a form of predation, this should allow us to measure the extent to which animals perceive humans as a threat. Gill et al. (2001) later suggested that behavioural measures such as departure from a feeding area may not accurately reflect the impacts of human disturbance, as the decision by an animal to leave the current foraging area depends not only on the quality of that area and the perceived risk due to human presence, but also on the quality of other available habitats and the costs of travelling to them. Unless these quantities are controlled for, the decision by an animal to continue to forage or to depart cannot by itself be interpreted as indicating the severity of the human disturbance. Creel et al. (2002) used immunoassays of fecal glucocorticoid levels as a non-invasive measure of the stress imposed on wolves (*Canis lupus*) and elk (*Cervus elaphus*) by snowmobile activity, finding that these stress levels are correlated with the amount of snowmobile use, but concluding that there is no evidence that snowmobiling at current levels was impacting the population

dynamics of either species. Frid (2003) attempted to predict energetic and fitness costs to Dall's sheep (*Ovis dalli dalli*) due to disturbance by fixed-wing and helicopter overflights, by measuring the distance from the aircraft at which sheep fled (if they did), the total distance travelled by the fleeing sheep, and the time until which the sheep resumed their pre-disturbance behaviour (either feeding or resting). Frid (2003) concluded that the cost due to lost foraging may exceed the direct cost of locomotion in this context, and that his data could be a first step towards establishing set-back distances, elevation limits, or speed limits for aircraft operating in sheep habitat.

In summary that there is public concern about disturbance to wildlife, there is scientific work attempting to quantify this disturbance, and there are management regulations or guidelines aimed at minimising disturbance. It is not clear, however, whether these are acting in concert. Scientists and managers often put forward the argument that management decisions ought to be based on sound scientific information. It remains true, however, that management is inherently a goal- and value-driven activity: if all possible outcomes were equally desirable, there would be no particular point to managing in order to encourage one over the other. In many cases, disagreements over policy directions are not fundamentally questions about what *is* (these disagreements could, in principle, be resolved through scientific or other empirical work), but rather about what *ought to be*—and this is a normative, rather than an empirical question.

My goal in this thesis is to develop principles that could be used to resolve these normative questions as an aid to formulating rational and comprehensive policies for the management of wildlife-viewing tourism. In particular, I aim first to determine the extent to which theories of animal and environmental ethics might contribute to this goal. Second, I aim to find the extent to which the concepts and values identified in these ethical theories are supported by societal perspectives, as expressed in the popular media's reporting on wildlife issues and wildlife tourism. Third, I will identify the extent to which existing scientific research addresses the values and management objectives derived from the two previous bodies of literature. And lastly, I use a decision-analysis framework to synthesise the contributions of these relevant but disparate domains of inquiry and identify the ways in which they can serve as inputs to rational and comprehensive management decision-making.

Raz (1999) argued that there are many kinds of reasons, but fundamentally they can be grouped into two categories: reasons for belief and reasons for action. Empirical reasoning, which includes science, produces reasons for belief, whereas practical reasoning, which includes ethics, produces reasons for action. In this thesis, I will focus primarily on reasons for action, and especially on reasons for wildlife viewing policy and management.

Reasons for action, Raz argued, consist of two parts: (a) operative premises, which must state values (including desired goals) or norms, and (b) auxiliary premises, which state specific information about how an action affects these values or norms. A complete reason for action must include an operative

premise, and may in addition contain one or more auxiliary premises. In ordinary conversation, complete reasons for action are rarely given. In conversation, one generally assumes ones interlocutor shares the basic operative premise. Pointing out specific features of a given action is sufficient justification because one assumes the interlocutor is familiar with the context or it is obvious how the underlying operative premise is to be applied.

It is important to note that operative premises are always normative or value statements. Wood (2000) pointed out that practical reasoning can be either prudential (self-interested) or ethical (taking others' interests into account.) The focus of this thesis is mostly on those ethical operative premises that take into account the interests of non-humans. Auxiliary premises can include both empirical information as well as judgements of value or importance. The scientific method, strictly speaking, deals only with empirical information. I find in this thesis that ethical theories tend to concern themselves with what Raz (1999) termed operative premises. This leaves a “gap” consisting of those auxiliary premises that are not purely empirical. In order for wildlife managers to have a complete reason for action, then, they would need to consider input from the ethical and scientific literatures, as well as making various judgements based on either their own intuitions or an interaction with public or societal expressions of concern.

Fraser (1985) suggested that societal concerns, ethical theories, scientific research, and management efforts often fail to address each other, and that wildlife management could learn some lessons from the management of agri-

cultural systems. In agriculture, the goals of particular systems may vary (e.g. breeding stock, meat animals, show animals, etc.), but this goal will generally be explicitly defined, and both data collection techniques and management techniques will be fitted together into a management system aimed at achieving the system's goal. Fraser (1985) suggested that in many cases, wildlife management is heavy on techniques, but light on decision rules and on explicit framing of over-arching goals. This leads to confusing management action, and to supposedly “applied” scientific research that does not explicitly address management needs.

Decker et al. (1991) picked up on this theme by warning that debates over animal rights in wildlife management are hampered by blurring of values and scientific statements: concern over animal rights are dismissed by wildlife professionals as “emotion”, while direct manipulation of individual animals, populations, and habitats is considered “science-based or biologically correct.” Decker et al. (1991) pointed out that both the goal of protecting individual animals' rights (or well-being) and the goal of perpetuating wildlife populations are fundamentally ethical positions, and that scientific judgements cannot in themselves advocate for any particular management action: such decisions depend fundamentally on the specific value positions regarding how we ought to relate to wildlife (in other words, on the goals of management in that particular system.)

Cronon (1995) collected a number of essays to make the general point that there is no scientifically “correct” end-goal for management efforts. En-

viromental management and restoration tend to claim to restore or manage for what is ‘natural’ for the ecosystem in question, but this claim is not sufficiently detailed and explicit. Both the definition of what is ‘natural,’ and the normative claim that what is natural is good or desirable as a management goal need to be made more explicitly.

Similarly, [Rolston \(1990\)](#) detailed several apparently contradictory management policies in Yellowstone National Park:

We permitted an epidemic of pinkeye to destroy half the bighorn herd, intending to strengthen the species, thinking it good to let nature take its course. We rescued a grizzly sow and her three cubs stranded after the spring ice breakup on Frank Island in Yellowstone Lake, hoping to save the species, not letting nature take its course. A park official forbade four compassionate snowmobilers from either rescuing or mercy-killing a bison that had fallen through the ice into a river...” ([Rolston, 1990](#), p. 242)

[Rolston \(1990\)](#) cited a previous book ([Chase, 1987](#)), which advocated “sound scientific management,” and deplored that Yellowstone management is slave to “a metaphysical ideal” of non-interference, which he fears is leading park managers into a paralysis of non-action, thus endangering the park itself. [Rolston \(1990\)](#), however, argued that “scientific management” is a means, not a goal, and that many of the questions regarding management in Yellowstone are not empirical questions amenable to scientific resolution, but questions about what the appropriate goals are and how they should be valued—questions requiring normative, rather than empirical analysis:

What eludes Chase is that urging scientific management is an instrumental, not an intrinsic, value judgment. To instruct managers to be scientific is to set only strategic not ultimate goals for them. Science can be used to determine what the spontaneous course of nature was, is, or will be, in order to determine how far human alterations have and will upset it and how far we can restore the original course. But do we value that nature course at Yellowstone? That is a philosophical question. (Rolston, 1990, p. 243.)

In summary, these examples argue that management is a decision problem, not a data problem, and while scientific information can inform management on how to achieve specific goals, deciding which goals to pursue is a normative or value question.

Turning back to the management of wildlife tourism, guidelines published for use by tourists themselves may need to use coarse, easy-to-observe rules of thumb. Assessing whether these guidelines are effective, sufficient, or excessive (and whether some alternative guidelines would be better) is a subject for more detailed inquiry—but what should we measure in order to assess the suitability of wildlife viewing guidelines? In order to conduct useful scientific inquiry into the appropriateness of viewing guidelines, policies or regulations, it will first be necessary to define “harassment” or “disturbance” in ways that are both amenable to empirical observations and reflective of the desired outcome of the guidelines. Staffleu et al. (1996) warn that this process of making definitions operational (i.e., deciding what to measure as indicators) can lead to a loss of the multidimensionality of the original, broader definition of the societal concern under study. Defining “harassment”

to include “worry, exhaust, fatigue, annoy, plague, pester, tease or torment” might work in a legalistic framework, but it offers scant guidance to a scientist attempting to determine whether a 100m no-go zone and a 400m go-slow zone are better or worse than some other numbers. On the other hand, measuring a 10-second change in the duration of whales’ dives might work well as a scientific measurement, but it is unclear whether it is fully reflective of the underlying social concern implied by the legal definition.

The justifications offered by the use of terms such as “survival” or “reproductive success” are useful for framing scientific questions, but it is unclear whether “stress” is a concern *solely* to the extent that it leads to the former, or whether a measurable level of stress in wildlife is itself evidence of inadequate guidelines even if it leads to no demonstrable effect (or, even, leads to a demonstrable lack of effect) on survival and reproduction. There may also be other parameters that should be considered relevant to management guidelines: displacement from specific areas, temporal shifts in use of specific areas, changes in which individuals or classes from a population preferentially use specific areas, etc. Many such parameters could potentially be measured, and changes over time tracked, but without a clear notion of what goals or outcomes the guidelines are attempting to achieve or prevent, it would be difficult to decide how to respond to any given finding from such a measurement and tracking program.

Thus, it is not clear from the current management guidelines, or from the current scientific work supporting those guidelines, exactly what goals such

management is pursuing. Is it to ensure the population's continued viability? To ensure the tourism operations' continued viability? To protect individual wild animals against stress and harassment? To protect a minimum standard of "wilderness experience" for the tourists? As argued above, these are societal and ethical questions, rather than scientific ones.

To examine these questions, this thesis takes an inter-disciplinary approach to combining and comparing findings from an analysis and application of theories of both animal ethics and environmental ethics ([chapter 3](#)) with an analysis of societal expressions of value in relation to wildlife viewing ([chapter 4](#)) and an analysis of the implicit value judgments underlying existing scientific attempts to quantify impacts of wildlife viewing operations and behaviours ([chapter 5](#)). These analyses are then tied together by considering the management question as a decision problem, and applying a structured decision-making framework ([chapter 6](#).)

I start with a review of historical trends or changes in environmental and wildlife values ([section 2.1](#)). I then provide some background on the nature of wildlife viewing and its management at a few selected locales on the west coast of Canada and the United States ([section 2.3](#)); these case studies will be discussed in [chapter 6](#) where the findings of the intervening chapters are used to run the management decision problem through a formalised decision-making framework. While a full assessment of the extent to which variations between the management strategies used in these locales might lead to different outcomes, along each of the dimensions identified as relevant, is beyond

the scope of this thesis, I present in [Table 6.1](#) some proposed indicators that could be used in such an assessment.

In [chapter 3](#), I attempt to derive specific goals or prescriptions for wildlife viewing tourism management starting from various theoretical moral frameworks in the literature. In particular, there are two approaches to doing applied ethics. Monistic approaches hold that there is a single consistent, logically coherent theory of ethics, and that once we have identified that theory, practical questions in specific contexts are a simple matter of applying the theory. Pluralistic approaches argue that the simplicity of monistic theories is illusory, and that several incommensurable types of values can and do exist, and need to be balanced or traded off, and while various ethical theories can draw attention to specific values and frame questions in their terms, there is no single, fully coherent theory from which specific decisions can be deduced logically.

In terms of monistic ethics, I use [Singer \(1990\)](#), [Singer \(1993\)](#) and [Singer and Mason \(2006\)](#) as examples of a utilitarian animal ethic, [Regan \(1983\)](#) and [Regan \(1992\)](#) as an example of a rights-based animal ethic and [Taylor \(1986\)](#) as an individualistic and deontological nature ethic, [Leopold \(1949\)](#), [Callicott \(1999a, 1988\)](#) and [Midgley \(1983\)](#) as examples of holistic or communitarian environmental ethics, and [Rolston \(1990, 1994a\)](#) as an explicitly non-consequentialist ethic of respect for “wildness”, rather than for the individual animals or even the populations concerned. More recent attempts to apply each theory to animal issues tend to focus on the contexts of agricul-

ture or hunting and fishing. I find that each of these theories could be used to generate some goals and prescriptions for wildlife tourism management, but that, as per the pluralistic argument, the simplicity of monistic ethics is illusory.

If we accept the utilitarian premise, then we should simply add up the benefits and costs of various options in terms of some common currency (“utility”), and pick the most beneficial option. However, in order to conduct such a calculus, we need to decide which changes to an animal’s behaviour, physiology, reproduction, etc., or to the habitat it lives in, are relevant to its utility (and, beyond that, exactly how many units of utility changes of various magnitude are worth.) Such questions are clearly value-laden, but merely accepting the premise of utility calculations as a basis for ethical decision-making is insufficient to generate answers—and if making a decision requires value-laden decisions based on considerations entirely separate from the simple monistic theoretical framework, then the simplicity of that framework is lost.

If we are drawn instead to extending the notion of rights to non-human animals ([Regan, 1983](#)), we quickly run into similar problems of application: it is immediately obvious that *some* rights we hold dear in human-human relationships (e.g. the right to vote, to assemble, to practice religion freely, to express one’s opinions) do not apply to non-human animals. This raises the question of which rights *do* apply, and simply appealing to the theoretical apparatus of rights does not provide clear answers in the grey areas.

Alternately, we could avoid the language of moral rights, as does [Taylor \(1986\)](#), and derive specific rules of conduct based on respecting the individual life processes of non-human individuals. Taylor includes both animals and plants, and derives general rules of conduct. Rights and duties often conflict, however, and while one can come up with rules of thumb for resolving such conflicts that look reasonably good on paper, in practice they require an estimation of how “serious” the various rights violations are. Especially where the rights or duties violated differ drastically in kind, and especially where the rights-holders belong to different species, these again are value-laden questions to which answers cannot readily be deduced from basic foundational principles.

If we turn instead to a more community-oriented ethical framework which argues that ethical rights and obligations are generated by community co-membership, we run into similar questions. While [Callicott \(1999a\)](#) claims to have provided simple rules of thumb to resolve conflicts between claims based on how “important” the obligation in question is and how “venerable” the community whose co-membership generates it, in practice, judging the importance of obligations and the venerability of communities remain difficult or intractable questions.

Noting and accepting these difficulties with the monistic notion that we can “do” ethics by coming up with the “correct” underlying theory of right behaviour, and then simply applying it to the objectively-determined specifics of a given decision problem, pluralistic and pragmatic approaches

to ethics reject the foundational focus and call instead for a more explicit discussion of the sorts of value-laden questions that we have seen lie between an abstract ethical theory and a specific application. Without falling into a pure populism where whatever course of action is most popular must be right—ethical theories are still considered useful in critically framing and assessing societally held values—these suggestions also recognise that values, rights, and obligations may exist in entirely incommensurable dimensions, that utility and rights (for example) may both be valid ways of seeing the problem, and that the lay public (perhaps with some help) is capable of making ethical, rather than merely self-serving, judgements and decisions.

In the following chapter ([chapter 4](#)), I take up the pluralistic challenge of engaging with societally held values by examining what expressions of value and obligation towards wildlife are expressed in the context of non-consumptive wildlife tourism. I do this by locating 1800 records from a database of articles published in Canadian daily and periodical media sources between 2002 and 2007, analysing the full text of 570 relevant articles, and extracting 373 expressions of moral value or opinions about ethically correct or incorrect behaviour from 209 of the articles (see [Appendix 7](#)).

I find that these societal expressions of value and judgements about ethical correctness include a high level of detail and refer to all of the different constructs seen in formal ethical theories. However, there are relatively few explicit or formal links between the expressions of moral value and the prescriptions for behaviour—in fact, there are cases both where disparate

moral valuations lead to identical judgments about what is appropriate behaviour, and where similar moral starting points are used to justify *opposite* prescriptions regarding how we ought to behave. Further, unsurprisingly, the non-ethicist writers in the popular media tend not to use the formal or abstract language used by ethicists and philosophers, nor are they much concerned with logical coherence and consistency with a *single* moral theory, upon which at least some of the ethical theorists place great emphasis. The take-home message of this analysis, however, is that a broad variety of concerns do exist, and could be used as justification for regulating or restricting tourism. In addition, there is considerable mutual support between the lay models and the ethical theories.

In [chapter 5](#), I turn to the question of whether the types of empirical work scientists propose as management inputs reflect the wide variety of concerns justified by formal ethical theories and extant in the popular consciousness. In this analysis, I located 870 potentially relevant scientific articles, analysed the full text of 119, extracting 181 value-relevant quotes from 75 articles (see [Appendix 7](#)).

Unsurprisingly, the scientific literature emphasized consequentialist types of thought far more than non-consequentialist ones; science excels at measuring consequences. This does mean, however, that if management decisions are “based on science”, they will only reflect those concerns that can be articulated in terms of consequences. Those societally expressed concerns that reflect non-consequentialist ethical principles will, in this case, end up being

ignored. In addition, there are measurable consequences identified both in the ethics literature and by the lay public that could be measured, but are currently not addressed by the scientific literature.

Perhaps more surprisingly, given the formalised way in which scientific papers are written (with an introduction defining the problem to be addressed, a methods section describing how the chosen methods answer the problem identified, etc.), the links between the actual indicators measured in this literature and specific management goals or desired outcomes tended to be implicit or presumed, rather than explicitly demonstrated. Some papers even went as far as to declare in the introduction that only population-level consequences were of concern, explain that short-term physiological measures do not necessarily reflect these population-level consequences, and then measure physiological changes in wildlife without further explanation. Likewise, several authors recognised the difficulty of interpreting short-term behavioural or physiological measures in terms of “what is important”, but having given a name (biological significance) to “what is important”, the issue tends to not be further explored (or, it is assumed for reasons unexamined that energy budgets are what is meant by “biological significance.”)

I conclude the thesis in [chapter 6](#) by using a framework for structured decision-making to map out the findings of the previous chapters in the context of deciding how to manage wildlife tourism. I find that some of the management examples described in [section 2.3](#) do explicitly describe goals and link specific measurements and management strategies to these goals,

while others are less clear. In addition, I find that much of the scientific work could be used to directly justify management to protect individual-animal level values, but the scientists themselves tend to write in terms of indirect causal chains leading to an eventual population-level impact. Lastly, I find that, while reasonable indicators for many of the goals and values relevant to management do exist, indicators for some (especially those related to ‘respecting wildlife’) are not well established, and that thresholds at which monitoring of indicators should lead to changes in management action need to be determined.

1.1 Contribution to knowledge

First, I present an analysis of the ethical issues involved in non-lethal human interactions with free-living wildlife. Previous applications of ethical theories (whether monistic or pluralistic) tend to focus on agriculture and research where captive animals are killed or on hunting, trapping and fishing where wild, free-living animals are killed. The ‘big issues’ focussed on in these cases (death and captivity) are absent from the context of wildlife viewing tourism—yet questions remain about whether this type of animal use is acceptable, or, more subtly, how best to conduct or manage such animal use to ensure it is as acceptable as possible.

Second, I take up the challenge offered by [Light \(2002\)](#); [Light and De-Shalit \(2003\)](#); [Light and Katz \(1996\)](#); [Minteer \(1998\)](#); [Minteer and Manning](#)

(1999) and Minter et al. (2004) to combine philosophical analysis of ethical theories with an analysis of actual lived moral experience. In doing this, I also test and reject the claim by Callicott (1990) that humans need and strive for consistency and coherency in their moral thinking. I find that the values extant in society, while informally expressed, are not merely arbitrary preferences or sentimentality, but can be supported and defended by appeal to the more abstract work of theoretical ethicists. Likewise, I find that abstract ethical theories are not merely esoteric academic exercises, but that the features identified in each do resonate with and find expression in concerns expressed by the lay public.

Third, I analyse the methods used in the scientific literature to assess the impacts of wildlife tourism. I find that these assessments reflect only a subset of the values, goals, and concerns that management ought to address in order to reflect the societally held values identified in this thesis.

Lastly, I use the framework of structured decision-making to shed light on the integration of existing knowledge and on the existence of knowledge gaps. Seeing wildlife-viewing tourism management as a decision problem rather than a scientific issue helps clarify where science *can* provide insights, and where other inputs (from philosophy, ethics, and social-values analysis) are needed.

Chapter 2

Wildlife tourism management: some trends and possibilities

As a broad generalisation, we can describe traditional wildlife management as concerned primarily with increasing or maintaining the population size of game species, and motivated primarily by an ethic or value system that sees wildlife as a resource (as food, pelts, recreational opportunities/trophies) existing for human use. There are two major historical shifts that have challenged this view. First, there is a concern (possibly partly driven by increasing understanding of ecological processes and interdependencies) with broadening the objects of protection to include non-game species and habitats as well as ecological processes and other features. Second, there are concerns regarding individual animals' well-being or welfare, often expressed (at least by wildlife managers) as constraints on what methods are considered humane means to achieve the ends of managing populations or ecosystems.

In the context of non-consumptive wildlife-viewing tourism, the link between the human activities being managed and the population focus of traditional wildlife management is less obvious than in the case of consumptive

hunting and fishing uses of wildlife. Where hunting of game species is being managed, wildlife is generally seen as a resource, and the goal of wildlife management is to ensure that hunting mortality is low enough that the total mortality is balanced by reproduction. In a wildlife-viewing tourism context, wildlife is not seen merely as a resource to be managed for sustainable use, and the well-being and welfare of individual animals may be a legitimate ultimate goal for wildlife management, rather than a means to, or constraint on, management for population goals.

In this chapter, I will provide some context for the analyses that follow, first by reviewing previous work exploring changing attitudes towards wildlife and the implications this has for the “mission” of wildlife management, and second by introducing a few specific wildlife viewing areas, describing how the viewing activities are actually conducted and what management opportunities and challenges are presented by the nature of the viewing operations.

2.1 Changing Western attitudes towards wildlife

Loo (2006) examined the history of Canadian wildlife management policies. The first major shift she identified occurred roughly at the beginning of the twentieth century, when, following the dramatic declines in buffalo and other conspicuous game species, the government started to take more direct and centralised control over the management of wildlife. This shift from

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fragmentary, un-coordinated, and local management to a more government-driven, centralised approach, however, was not coupled to any great change in the aims of such management: “Until the mid-twentieth century, the law’s bestiary contained references to ‘game’ and ‘vermin’ only.” (Loo, 2006, p. 14.) Early wildlife management tools, whether local or centralised, consisted of bounties paid to encourage the killing of “vermin”, and regulations limiting the numbers of “game” that could be killed. Both options were intended primarily to ensure a continued harvest of the game species.

In a second societal shift, market hunting gave way to what (in contrast to current usage of the term) Loo called “non-consumptive” sport-hunting⁵, but this shift also remained grounded in the ethic of conserving resources for the future. As the frontier became tamed, however, the use of wildlife resources shifted from food to recreation. While much may be made about this distinction as it relates to human relations towards wildlife and nature, the overall view of wildlife as a resource to be used (i.e., killed) by humans remained.

A third major shift occurred around the middle of the twentieth century, when earlier writings in the emerging field of ecology started becoming incorporated into wildlife management actions. This shifted the focus of management away from managing mortality solely through bag limits and

⁵We will see later that by the 1970s, the term “non-consumptive” excluded any hunting or fishing and referred exclusively to watching wildlife and viewing landscapes, while current hunting regulations *require* that the edible portions of virtually all game be retrieved, so even trophy hunting is “consumptive” in the sense that the animal is eaten—even if that is not the prime motivation of the hunter.

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other hunting restrictions, and towards managing production through the protection, restoration or improvement of wildlife habitat. However, while this shift introduced variety into the toolkit used by wildlife managers, the fundamental mission of wildlife management remained focused on sustaining populations of game species.

In the last shift identified by Loo (2006), the habitat or ecosystem itself became the goal of management efforts. As examples of this shift, Loo points to Tommy Walker's attempts to preserve the Spatzizi wilderness from development, and Andy Russell's work on both rehabilitating the reputation of grizzly bears and encouraging people to think in more ecological terms and to become concerned with habitat protection for its own sake. To this, she added Farley Mowat's *Never Cry Wolf*, which heralded and encouraged a change from seeing wolves as vicious predators and competitors for game, to seeing them as social individuals and valued parts of a healthy ecosystem.

In general, the changes Loo (2006) identified in Canadian wildlife management echo changes identified more broadly in public attitudes. Kellert (1996) identified nine basic attitudes towards wildlife (utilitarian, naturalistic, ecologicistic, aesthetic, symbolic, humanistic, moralistic, dominionistic, and negativistic.) The utilitarian attitude remained the most prevalent in American society, but its prevalence declined steadily from 1900 to 1970, while the ecologicistic attitude remained less frequently expressed, but had increased in prevalence, especially since about 1960 (Kellert, 1996).

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A major recent survey of wildlife values in the western U.S. (Teel et al., 2005) identified three groupings of people with strong values towards wildlife: a utilitarian group saw wildlife as resources to be used by humans, a mutualistic group saw wildlife as extended kin, and a pluralist group strongly held both sets of values or views, in a strongly context-dependent manner. This context-dependence was also noted by Kellert (1996), as many respondents in that work held strongly humanistic attitudes towards or moralistic concern over treatment of, for example, pets, domestic and zoo animals, and some larger and more conspicuous wildlife, while simultaneously holding apathetic or even strongly negative attitudes towards pests, predators, and other species outside that charmed circle.

Aggregating these various dimensions of attitudes towards animals (and including dimensions of attitudes towards broader nature), Dunlap and Van Liere (1978) and Dunlap et al. (2000) defined a “New Environmental Paradigm.” This NEP recognised the interconnectedness of ecological systems and the importance of maintaining those systems’ functioning, both for their own sakes and because of the often unexamined and unknown reliance of humans on their continued stability and the services provided. The NEP was contrasted to an older, dominionistic and controlling attitude (see, e.g. White 1967). Others, however, have cautioned against such aggregation, pointing out that strong concerns about appropriate ways to treat animals have always existed alongside the more utilitarian and dominionistic attitudes, and that

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claims of a complete change from one to the other are overstated (Preece, 1999, 2005).

These shifts in public attitudes have also been discussed in the wildlife management and conservation biology literatures, as they affect the purposes or missions of those scientific fields. Soulé (1985) defined conservation biology as a new mission- or crisis-oriented discipline that derives its mission from this changing societal valuation of nature. He drew a distinction between fisheries biology, forestry, and wildlife management, which are focussed on *our* natural *resources*, and conservation biology, which is focussed on the developing broader concern and valuation of biodiversity and ecological complexity. More details are added by Callicott et al. (1999), Willers (2000), Hunter (2000) and Callicott et al. (2000), who debate a further distinction between a compositional conception of conservation, where humans are apart from nature, and a functionalist conception where humans are a part of nature. The challenge for conservation biology in the former conception is to prevent humans from destroying and defiling nature, whereas the challenge in the latter is to develop sustainable interactions between the various components of nature, of which humans are but one.

Despite the distinction Soulé (1985) drew above, the wildlife management profession also recognises and attempts to respond to these changing societal valuations. Decker et al. (1996), Gill (1996) and Riley et al. (2002) identified a fundamental broadening of the goals of the wildlife management profession in response to increasing concern over wildlife on the part of non-“client”

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stakeholders. [Decker et al. \(1996\)](#) suggested that prior to about 1970, the main focus of fish and wildlife management was to provide “product” (i.e., a harvestable surplus of fish, game species and furbearers) to “clients” (i.e., to anglers, hunters and trappers.) This relationship worked well until the 1970s and 1980s, when groups other than the traditional “clientele” of the wildlife management professions started expressing an emerging interest in environmental issues broader than the sustainable use of game species. As a response to this shift, [Decker et al. \(1996\)](#) called on the wildlife management profession to adopt a new paradigm and language, where “stakeholders” replace “clients.” [Decker et al. \(1996\)](#) also pointed out that there are varieties of stakes in wildlife management issues beyond the consumptive use of wildlife as resources. [Riley et al. \(2002\)](#) emphasised the role of stakeholder involvement in decision-making by pointing out that science can discover and quantify effects generated by human interactions with wildlife, but that it is stakeholders who “ultimately define and judge the relative importance of effects, thereby determining which effects will be the target of impact management” ([Riley et al., 2002](#), p. 588.). Likewise, [Gill \(1996\)](#) identified an over-valuation of the “biological dimensions” (by which he refers to using scientific information to provide sustainable hunting opportunities) and an under-valuation of the “human dimensions” (meaning an openness to study and incorporate emerging non-utilitarian stakes in wildlife decisions) by the wildlife management profession.

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These challenges have been taken up by an emerging Human Dimensions of Wildlife field. [Enck and Decker \(1997\)](#), for instance, examined assumptions about stakeholders that appear to them to have formed the bases for some wildlife management decisions—for example, the notion that these stakeholders divide neatly into consumptive users and “everybody else,” or that an expression of concern over the wellbeing of individual animals implies an opposition to the managing of wildlife. These and other assumptions are found lacking in empirical support. The work referred to earlier by [Teel et al. \(2005\)](#) was also produced as a direct response to the calls for wildlife managers to understand public attitudes towards wildlife. Meanwhile, in more specific case studies, [Lauber et al. \(2001\)](#) identified suburban deer management as “arguably an ethical problem: communities must make judgements about the *right way* to manage deer.” This paper made a distinction between management options aimed at reducing the deer population and those aimed at reducing the conflicts between deer and humans. They found variations in support for the two types of management options and in the number and types of value statements used as justification for that support. [Lauber et al. \(2002\)](#) studied attitudes towards urban goose populations, finding that the problem was not necessarily defined by all stakeholders simply as “too many geese,” and that controversy over management options could be reduced by understanding and educating stakeholder groups about the different existing views of what the problem was, and how different management options might mitigate it.

These examples all demonstrate that, whether approached from the perspective of sociological analysis of human values and attitudes, or from philosophical analysis of value, the specific management policies to be recommended depend on what the ultimate goal of such management is—and that in turn depends on what is important. In turn, what is considered important has clearly differed in different locations, cultures, and eras (even if the question has no simple and straightforward answer in any given location, culture, and era.) Subsequent chapters in this thesis will examine the question of “what is important” in the current era, in Western culture, and in the specific context of “non-consumptive” wildlife tourism. First, however, we need to recognise that in addition to recent historical shifts in our value orientations towards wildlife in general, the context of non-consumptive wildlife tourism differs in important respects from the more traditional forms of wildlife use (hunting, trapping, and fishing), and these differences are also relevant to determining how to set management policies.

2.2 Wildlife tourism vs. other wildlife use

There are a number of overlapping and inconsistently used terms describing various subsets of tourist activities. [Buckley \(1994\)](#) proposed a framework where “nature-based tourism,” “conservation supporting tourism,” “sustainably managed tourism,” and “environmentally educated tourism” are partially overlapping subsets of tourism as a whole, and the intersection of all

four forms a restrictive definition of “eco-tourism.” Orams (2000) suggested that some definitions of “eco-tourism” are so broad that anything might qualify, while others are so restrictive as to be impossible to achieve. Reynolds and Braithwaite (2001) modelled “nature-based tourism” and “rural tourism” as partly overlapping with “consumptive use of wildlife,” while showing “eco-tourism” and “wildlife-based tourism” as partially overlapping subsets of “nature-based tourism.” One might add the term “non-consumptive tourism” to Reynolds and Braithwaite (2001)’s model to encompass those parts of nature-based, rural, and eco-tourism that *do not* overlap with the consumptive use of wildlife (i.e., hunting, trapping and fishing,) or with the consumptive use of other resources (e.g., mushroom, flower, berry collecting.)⁶ The notion that such “non-consumptive” use of the landscape is entirely benign has long been laid to rest (see, e.g., Tremblay, 2001; Wilkes, 1977), with both longer-term impacts such as trail erosion, understory simplification, and landscape modification for access roads, campsites, or amenities, and shorter-term impacts such as visual crowding being readily identified.

Given the numerous and inconsistent definitions of the various forms of alternate/nature-based/wildlife/eco-tourism used, it is difficult to compile exact figures on the extent of these activities. Nevertheless, it is obvious that these activities have been increasing rapidly in recent decades, and are spreading to all corners of the globe. Headland (1994) identified Antarctic

⁶But note that this definition differs from that used by Loo (2006) in reference to the 1920s and 1930s, where trophy hunting was considered “non-consumptive”, to differentiate it from subsistence or market hunting.

tourism as starting in the early 1970s, and growing to over 3000 tourist-days by 1992. At the other extreme of latitude, [Mason \(1994\)](#) counted 22,000 visitors to the Svalbard Islands in the Arctic Ocean (population: 3300) in 1991. [Duffus and Dearden \(1993\)](#) gave numbers of whale watching tourists ranging from 30,000 estimated for Vancouver Island to 498,000 for the Gulf of Maine, with tourist operations starting as early as the 1960s for Southern California and the early to mid-1980s around Puget Sound and Vancouver Island. Worldwide, [Goodwin \(1996\)](#) estimated “Environmentally sensitive tourism” to have grown from a \$10bn industry in 1980 to \$300bn in 2000, while “Eco-tourism” grew from \$4bn to \$50bn and “Minimum impact tourism” from \$25mn to \$500mn over the same time period.

This rapid increase in the extent of eco-tourism (however defined) has led to concerns over habitat changes due to trampling by tourists, infrastructure development, and even clearing vegetation to provide better views of wildlife ([Ayres et al., 2008](#); [Davenport and Davenport, 2006](#); [Garcia-Frapolli et al., 2007](#); [Hunter and Shaw, 2005](#); [Razafimahaimodison, 2003](#); [Rossi et al., 2009](#)), pollution due to increased tourist populations without adequate infrastructure development ([Davenport and Davenport, 2006](#); [Giatti et al., 2004](#); [Meletis and Campbell, 2009](#)), concerns over social and cultural impacts on host communities ([Simpson, 2008](#); [Torn et al., 2008](#); [Tsaour et al., 2006](#); [West et al., 2006](#)), and concerns that the promised economic and other benefits to host communities do not always materialise ([Barkin, 2003](#); [Charnley, 2005](#); [Walpole and Thouless, 2005](#)), and that the commodification and marketing

of ecotourism can fail to reflect or encourage the intended increased environmental awareness or behaviour in tourists (Dorsey et al., 2004; Kruger, 2005).

In wildlife-viewing tourism, wildlife (and usually large, rare, and charismatic wildlife in particular) are subject to close and repeated, yet supposedly benign, interactions with humans. As a special case of non-consumptive tourism, wildlife-viewing tourism shares all the concerns listed above. In addition, these close interactions raise the possibility of various other impacts of concern. While some scientific work has been done to assess the magnitude of these impacts, much of the science comes from a tradition of wildlife management rooted in a hunting paradigm (as seen in [chapter 5](#)), where the ultimate concern is the sustainability of populations, and any other measurable indicators of human impact are of relevance chiefly or solely to the extent that they affect the populations. The deeper question (as described by [Rolston \(1990\)](#) above) of whether population sustainability is the only valid management concern in this context has not been addressed.

In this thesis, I will focus on types of tourism where a focal point of the activities is the viewing of wild, free-living animals. I will also focus my attention on the types of possible impacts or concerns that involve these wild, free-living animals (as opposed to impacts on habitat more generally, or on socio-economic or cultural impacts on host communities). In the following section, I will give some background details on a selected few wildlife viewing areas on the North American north-west coast as context within which to

understand the types of activities about which value content and societal concerns are explored in the following chapters.

2.3 Existing wildlife tourism management examples

The sheer variety of contexts in which wildlife viewing tourism occurs makes general analysis difficult; I will therefore restrict my attention in this section to a small number of examples. The first is the K'tzim-a-deen (Khutzeyma-teen) Grizzly Bear Sanctuary in northern British Columbia, where grizzly bear viewing takes place based out of small inflatable (Zodiac-type) boats. The second is the McNeil River State Game Refuge and State Game Sanctuary in southern Alaska, where grizzly bear viewing takes place from land-based observation stations. Both of these are relatively strictly regulated, with limits to the number of humans allowed in the area. Brooks River, also in southern Alaska, is a third grizzly-viewing, where human visitation is not as strictly controlled, and visitor numbers are an order of magnitude higher than at the previous two. Next, I will look at Johnstone Strait in southern British Columbia, where both commercial and independent whale-watching is conducted both from shore and from a variety of vessels. Lastly, I will look at the San Juan Islands and Gulf Islands, straddling the British Columbia/Washington border, where whale watching similar to Johnstone

Strait is conducted, but in closer proximity to larger cities, and with the added complication of cross-border jurisdictional issues.

2.3.1 K'tzim-a-deen

The K'tzim-a-deen (Khutzeymateen) Grizzly Bear Sanctuary is located 45 km north-east of Prince Rupert in northern British Columbia. The Sanctuary was created as a class 'A' provincial park (emphasizing conservation over recreation, while allowing First Nations⁷ access rights and resource use where compatible with grizzly bear conservation) in 1994, and is co-managed through a Memorandum of Understanding between the provincial government and Gitsi'is and other Tsimshian chiefs. Park lands encompass three Indian Reserves of the Port Simpson Band, with the remainder consisting of British Columbia Crown land ([B.C. Parks](#)). The park is managed jointly by B.C. Parks and the Tsimshian Tribal Council; during the tourist season, it is staffed by two Guardians ("acceptable to BC Parks and the Gitsi'is" ([B.C. Parks](#), p. 37)) with a dual mandate of interpreting park features and enforcing regulations and viewing guidelines. During shoulder seasons, these Ranger staff positions are replaced by volunteer Park Hosts.

The Khutzeymateen Sanctuary itself covers 445 km², and is located at the core of a larger 3850 km² grizzly bear no-hunting zone. Grizzly bear viewing is concentrated on a tidal estuary at the mouth of the Khutzeyma-

⁷The K'tzim-a-deen area is the historic territory of the Gitsi'is Tribe, which is part of the Tsimshian Tribal Council

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teen River at the head of the Khutzeymateen inlet. Unlike the typical fall salmon run characterizing many grizzly bear viewing areas, bear viewing at the Khutzeymateen occurs primarily in the spring, when bears are feeding on grasses and sedges within the tidal estuary; bear viewing tapers off for the season when this vegetation grows tall enough to hide the bears from view. There is a salmon run on the Khutzeymateen River, but there is no readily accessible single point where fishing bears congregate. No permanent facilities exist in the park; a floating barge is temporarily moored within parks boundaries at the head of the inlet to provide accommodations for parks staff and an interpretive area in which to welcome parks visitors.

Grizzly bear viewing has been conducted in the area since 1988 ([Himmer, 1996](#)), with two commercial tour operators bringing small groups (3–4 and 8–9, respectively) at a time. These groups are generally flown in from Prince Rupert by float plane, live aboard the tour operators' sailboats (generally outside the sanctuary's boundaries), and access the Khutzeymateen estuary by zodiac-type inflatable outboard-powered dinghies for bear viewing. These visits are limited to high tide periods, as the outboard motors require more water depth than remains in the channels at low tide. These two tour operators were instrumental in advocating for protection of the area, and are currently the only commercial operators permitted to bring tourists into the protected area. Very limited independent visitation to the area also occurs; a floating barge is towed to the area in the spring and houses the park

2.3. Existing wildlife tourism management examples

Guardians and volunteer Hosts, and any visitors wishing to enter the estuary must be accompanied by either a tour guide or Guardian (Himmer, 1996)

Planning and management documents I had available for the K'tzim-a-deen, based on field-work conducted in the area during my M.Sc. project, are a background document (B.C. Parks) prepared for B.C. Parks to guide the preparation of a master plan, an interim protection plan (B.C. Parks, 1994), and a wildlife viewing plan (B.C. Parks, 1993). In addition, I draw on personal experience of the park, having conducted research for my Master's thesis there (Pitts, 2001), and on a report of previous research assessing the changes in bear behaviour due to tourist presence (Himmer, 1996). The planning and management documents emphasize both ecological goals of protecting grizzly bears and their habitat, and cultural goals of ensuring traditional first nations activities are allowed (where possible) to continue. The Interim Protection Plan lists these as follows:

Objective 1: To establish specific measures that protect grizzly bears and the natural ecosystem of the Khutzeymateen (K'tzim-a-deen) and to identify issues to be addressed in the long term management plan.

Objective 2: To establish measures that protect the Stewardship of the Gitsi'is Tribe's traditional activities and cultural values, subject to the protection of the grizzly bears and their natural ecosystem

(B.C. Parks, 1994)

2.3. Existing wildlife tourism management examples

The specifics of exactly what the bears are to be protected against (and thus, how to assess whether the recommended protection measures are adequate) are vague. Disturbance and normal behaviour are mentioned in the Interim Protection Plan, suggesting that management should strive to avoid any changes in normal activities or in normal patterns of habitat use:

Disturbance of bears by people and motorized access result in displacement of wary animals from their normal activities and habitats. (B.C. Parks, 1994)

The Wildlife Viewing Plan, meanwhile, accepts that these short-term, behavioural reactions may not lead to population effects (implying that it is these population effects that are of ultimate concern), but then goes on to recommend that harassment should be avoided anyway, as being “unnecessary”:

There is no evidence that extreme reactions of grizzly bears to human harassment have a negative population effect, but harassment under most circumstances is unnecessary and should be avoided. (B.C. Parks, 1993)

A key recommendation of the Wildlife Viewing Plan is to allow visitation only when accompanied by a guide. This recommendation, however, appears justified primarily by appeal to visitor safety, rather than by appeal to grizzly protection:

There are enough hazards to public safety in the Khutzeymateen Valley that I believe only guided wildlife viewing will help ensure public safety. (B.C. Parks, 1993)

2.3. Existing wildlife tourism management examples

These hazards to visitor safety are further broken down into three groups: tidal mudflats, which make navigation (especially in deeper-keeled vessels) difficult; weather, including storms, tides, and heavy winds which may make return travel from the estuary (especially by rowed or paddled craft) difficult; and bears, especially where partially habituated bears' behaviour may be mistaken by visitors lacking the ability to “judge the disposition of the bear, particularly whether or not it may be aggressive.” (B.C. Parks, 1993) On this last point, the Interim Protection Plan adds that human visitation may lead to bear habituation and that while a habituated bear may approach humans without presenting an actual risk, tourists unfamiliar with the area and the bears within it may misinterpret such an approach as aggression—and if these tourists are armed to defend themselves, this misinterpretation may lead to unnecessary defensive actions and bear deaths:

The actions of mildly habituated bears may be misinterpreted by viewers not familiar with the individual personalities of the habituated bears, resulting in increased risk to the bear. If firearms are present, such encounters may result in the unnecessary killing of bears. (B.C. Parks, 1994)

The question of whether this bear habituation to human presence is desirable or undesirable is raised in the Khutzeymateen management documents. A distinction is drawn in the literature between habituation and food conditioning (Aumiller and Matt, 1994; MacHutchon and Wellwood, 2002a,b; Smith et al., 2005). Habituation is generally considered relatively neutral and consists of wild animals losing their “natural” (or, at least, pre-existing)

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wariness of humans, ceasing to react strongly to tourists. Food conditioning occurs when wild animals receive a food reward associated with human presence. Food conditioning is generally considered negative, as food-conditioned animals will tend to seek further food from humans, and often become aggressive in this pursuit (Aumiller and Matt, 1994; Gunther, 1994; MacHutchon and Wellwood, 2002a). Where the animals are large and powerful, this is an obvious danger to the tourist, and frequently results in management having to relocate or kill the “offending” animal.

The desirability of habituation *without* food conditioning is debated. On the one hand, animals habituated to non-consumptive wildlife viewing tourists may generalise this habituation to hunters, thus becoming more vulnerable to hunting pressure. Smith et al. (2005) draws a distinction between ‘habituation’, which implies a *change* in bear behaviour over time and is thus of concern to parks management, and ‘tolerance’, which merely implies pre-existing variation in how bears react to people, which is natural and therefore not of concern to management. On the other hand, reducing energetically costly and/or stressful reactions to human presence would improve the well-being of the animals being watched, as well as make them more readily viewed (Herrero et al., 2005).

All of these various considerations are raised in the Khutzeymateen Wildlife Viewing Plan. First, the concern is raised that bears habituated to wildlife tourism within the park may become easier targets for hunters outside the

2.3. Existing wildlife tourism management examples

no-hunting area surrounding the park. Some limitation of human presence is thought to reduce habituation, and mitigate against this concern.

If adult males become well-habituated to humans as a result of viewing activities, then they will be more vulnerable to hunting when they move outside the no-hunting area. Conversely, if adult males remain wary of humans because of their experiences outside the Khutzeymateen, viewing could disturb their foraging and mating activities while at the Khutzeymateen estuary. (B.C. Parks, 1993)

If adult males only experience humans periodically and for short periods of time I believe they will retain their wariness of humans when outside the protected area. (B.C. Parks, 1993)

Conversely, it is pointed out both above and in the quote below, that those bears that are less tolerant of human presence (whether due to variations in “natural” tolerance or due to habituation) are more affected by tourist presence—bears that ignore humans and do not change their activities in response to them do not need to pay the energetic or time-budget costs of responding to human presence.

Grizzly bears fearful or wary of humans undergo stress, and make temporal or spacial adjustments in their activity patterns in areas of human use. At feeding sites visited by people, bears fearful of humans may cease feeding and seek cover. Frequent interruptions may result in abandonment of prime habitat. Habituation to people can reduce the time and energy costs associated with fear responses to human activity. (B.C. Parks, 1993)

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This tension regarding the desirability or undesirability of bear habituation is only partially resolved, with the Wildlife Viewing Plan recommending that the habituation of bears be minimised while the Interim Protection Plan accepts a mild habituation of a few bears. This is more a difference in emphasis than management strategy, however, as neither document advocates widespread or heavy habituation of any bears:

I believe the best strategy for bear viewing in the Khutzeymateen is to minimize the number of bears that are heavily habituated and maximize the number of bears that are partially or non-habituated. (B.C. Parks, 1993)

The acceptance of a few mildly habituated bears allows for safe high quality wildlife viewing in a controlled environment. (B.C. Parks, 1994)

Food conditioning, on the other hand, is generally accepted to be undesirable in a wildlife viewing area⁸ (Gunther, 1994; MacHutchon and Wellwood, 2002a), and the Khutzeymateen is no exception. In other areas, past access by bears to food or garbage has led to problems with food-conditioned bears becoming aggressive towards humans, and to a need to protect human lives and property by destroying these bears (e.g. Yellowstone (Craighead et al., 1995; Gunther, 1994); McNeil River (Aumiller and Matt, 1994)). In the Khutzeymateen, no such history exists, and management attempted to

⁸At least, at the current time. Historically, intentional food conditioning has been used in, e.g. Yellowstone National Park to provide predictable wildlife viewing opportunities (Craighead et al., 1995).

2.3. Existing wildlife tourism management examples

avoid similar problems when creating the Sanctuary. This area therefore has no permanent, land-based human presence. Instead, a floating base camp for the park Guardians is towed in from Prince Rupert and moored within the park only during the summer months:

Land-based accomodation invariably leads to food-conditioned bears, at which time bear-human interactions become dangerous and unpredictable. The only facility that should be considered within the boundaries of the protected area is a floating camp to accomodate the guardians. The camp should be floating to eliminate the possibility of bears getting access to human food or garbage. (B.C. Parks, 1993)

The remote wilderness character of the Khutzeymateen Sanctuary and the quality of the visitor experience provide additional justifications for keeping both visitor facilities and bear habituation to a minimum. While the main purpose of wildlife viewing tourism is to interact with wildlife, such interactions are not always necessary for tourists to feel satisfied. Orams (2000), for instance, reports that 35% of whale-watchers report satisfaction with the whale-watching trip even when no whales were sighted. On the other hand, viewing wildlife is also not sufficient to explain why tourists would travel to remoter areas like the Khutzeymateen, rather than engaging in bear-viewing tours closer to urban centres; there is something satisfying about the fact that wild animals are *difficult* to see, and high levels of wildlife habituation may reduce that satisfaction by making the animal too easy to view. Likewise, part of the wilderness experience has to do with being in a wild,

2.3. Existing wildlife tourism management examples

un-“improved” area (see [Krakoff, 2003](#)). The Khutzeymateen Wildlife Viewing Plan explains that

Satisfaction has to do not only with people’s sense of reward in seeing a bear but also with the area’s scenic beauty, other wildlife and interpretative features, the feeling of being in grizzly bear country, and the sense of wilderness [...] Some believe that visitors gain a greater appreciation of wilderness and ecosystem relationships in a challenging setting like the Khutzeymateen than they would in areas where wildlife is relatively easy to see. ([B.C. Parks, 1993](#))

While the notion of “nature” is problematic academically (see, e.g., [Cronon, 1995](#)), it does seem obvious that that part of the wildlife viewing experience would be reduced by the presence of permanent ranger cabins, boardwalks, and viewing platforms.

In addition to recommendations for management policies, the Khutzeymateen planning documents also include recommendations for further research and monitoring of wildlife viewing activities within the Sanctuary, and of any negative effects these activities might have. These recommendations can be taken as an indicator of which negative effects might be of concern to parks management. The Wildlife Viewing Plan focuses on behavioural changes and spatial distributions of individual bears, while the Interim Protection Plan also adds recommendations for monitoring of other ecosystem components, such as the distribution of non-bear species, and trampling or other degradation of viewing sites:

2.3. Existing wildlife tourism management examples

Research into the impact of viewing on bear behaviour would help facilitate more effective management of viewing activities. This type of research could: compare bear use of the estuary when people are present versus when they are not, try to examine differences in behaviour of various age and sex classes when people are present versus when they are not, compare differences in the spatial distribution of bears when people are present versus when they are not, and try to gauge the variability in activity and age and sex class of bears that are not visible versus those that are active in the open, again when people are present and when they are not. (B.C. Parks, 1993)

Indicators such as apparent changes in bear behaviour and reduced use of estuary areas due to human activities will be monitored. Only mild habituation to humans shall be acceptable and human activity shall not result in decreased use of the estuary by bears. Other ecosystem components such as waterfowl disturbance or degree of site degradation may also be closely monitored. (B.C. Parks, 1994)

The inclusion of both site degradation and bear use of the estuary (which speak largely to an underlying concern with the sustainability of the park and the grizzly bear population over longer time scales) and changes to the behaviours of individual bears (which speak largely to an underlying concern with the well-being or welfare of individual bears over shorter time scales) agrees with the suggestions earlier in this chapter that management concerns are currently broader than the “classical” view of wildlife as a resource and of management being concerned solely with ensuring that use of this resource is not excessive.

2.3.2 McNeil River

McNeil River is located 340 km southwest of Anchorage, Alaska. Bear viewing is concentrated at a few rapids on the McNeil River and on the nearby Mikfik Creek. These rapids lead to an aggregation of migrating salmon, which draws a reliable concentration of grizzly (brown) bears. There is a campground approximately 2 km from these rapids; the bear viewing areas are accessed from the campground by foot. The McNeil River State Game Refuge and State Game Sanctuary Management Plan (Schempf and Meehan, 2008) identifies unregulated bear viewing during the 1960s and early 1970s (including inappropriate food storage and garbage disposal) as a contributing factor to observed bear declines, and the Alaska Department of Fish and Game began active management of bear viewing in 1973. The area was protected as a Wildlife Sanctuary in 1967, with the stated purpose of maintaining a bear population for the public to watch, photograph and enjoy:

The McNeil River State Game Sanctuary was established to maintain a high number of bears for the public to observe and photograph. Unrestricted public use of the McNeil River Brown Bear Sanctuary has reached a point where it endangers those values, which attract observers and photographers. The Department should therefore manage public use in an effort to perpetuate those intrinsic values which make the Sanctuary unique for public enjoyment (Schempf and Meehan, 2008)

In 1991, the Sanctuary was expanded, and a Refuge created to the north, further expanding the protected area. To the purpose of public observation,

2.3. Existing wildlife tourism management examples

scientific and educational purposes were added to the reasons to protect bears and other wildlife. Management of human use is still aimed at protecting bear viewing opportunities, and other non-consumptive and consumptive activities (fishing, hunting and trapping) are also condoned in the refuge, though not in the sanctuary:

1. The permanent protection of brown bear and other fish and wildlife populations and their habitats for scientific, aesthetic, and educational purposes;
2. To manage human use and activities in a way that is compatible with that purpose and to maintain and enhance unique bear viewing opportunities in the sanctuary;
3. To provide compatible opportunities for wildlife viewing, fisheries enhancement, fishing, temporary safe anchorage and other activities in both the sanctuary and refuge, and, in the refuge, for hunting and trapping opportunities if compatible with sanctuary management objectives

([Schempf and Meehan, 2008](#))

These goals are supported by a compatibility policy for both the sanctuary and the refuge. While the stated purposes for which the refuge and sanctuary were established (above) emphasize the protection of bear viewing opportunities, the compatibility policy requires that viewing and other activities within the refuge and sanctuary not “disturb or displace” bears or other wildlife. Whether or not these are synonymous is not clear; if disturbed or displaced bears are nonetheless viewable, then the compatibility policy may

2.3. Existing wildlife tourism management examples

be stricter than implied by the stated goal of providing a high number of bears to be watched:

Uses and activities may be allowed in the sanctuary and refuge when the uses and activities are compatible with the purposes for which the refuge and sanctuary were established and the goals and policies of the management plan. Uses and activities will be restricted as necessary to 1) prevent disturbance to or displacement of bears and other fish and wildlife, 2) prevent erosion, trampling, and other impacts to habitats; and 3) maintain public access to refuge or sanctuary resources. (Schempf and Meehan, 2008)

The management plan also calls for an educational or information-providing role. As with the compatibility policy, the educational policy goes beyond concern with the number of bears, and emphasizes the avoidance of impacts to “natural behaviour” with a specific policy to:

Provide information to refuge and sanctuary users regarding resource values and rules, especially information about avoiding impacts to natural brown bear behavior, and uses and activities occurring in the refuge and sanctuary. (Schempf and Meehan, 2008)

In practice, these policies and goals have been implemented through a permitting system, whereby no more than 10 visitors per day are allowed at bear-viewing areas, located around a kilometer upstream of a campground with a maximum capacity of 15. All visitors are accompanied by sanctuary staff, and management of visitor behaviour is aimed at encouraging habituation in bears while protecting personal space around visitors and the campsite

2.3. Existing wildlife tourism management examples

(Aumiller and Matt, 1994). Management at McNeil River is generally considered highly successful, and is held up as an example for other areas to follow, due to the absence of aggressive interactions between bears and human visitors. This success is credited to the separation of habituation (i.e., bears becoming tolerant of neutral human presence) from food conditioning (i.e., bears accessing human food or garbage, and associating humans with a positive food reward) (Aumiller and Matt, 1994). In contrast to the Khutzeymateen (subsection 2.3.1), habituation in the absence of food conditioning is encouraged at McNeil, and considered key to the success and safety of the bear viewing program. The role of sanctuary staff accompanying visitors is seen as key to maintaining the consistent human behaviour necessary to “train” the bears:

If we arbitrarily retreated from a curious bear one day and approached it on another day, we missed an opportunity to reinforce the appropriate behavior in that bear. We found that inconsistent behavior in interactions caused bears to avoid humans, whereas as [sic] consistently neutral behavior reinforced habituation. As with any other behavior modification scenario, it is important to give consistent responses in order to facilitate learning of the desired behavior. (Aumiller and Matt, 1994)

The understanding of the interactions between bear and tourist behaviour is the same in the Khutzeymateen and at McNeil River, especially as it relates to the process of habituation and the distinction between habituation and food conditioning. Yet the management conclusions are almost oppo-

site. At McNeil (possibly due to historical reasons: the campground was established well before the area became protected for the sake of the bears), land-based facilities are an acceptable incursion to the wilderness character of the Sanctuary, “training” wildlife to behave in acceptable ways around humans is an acceptable complementary strategy to training humans to behave in acceptable ways around wildlife, and managing for large numbers of highly habituated, easy-to-view wild bears is not considered incompatible with the mandate to protect wildlife populations.

2.3.3 Brooks River

Brooks River is located in the Katmai National Park, which encompasses approximately 16,000 km² at the head of the Alaska Peninsula. Bear viewing is concentrated around fall salmon runs at falls and riffles along the Brooks River. Infrastructure development for bear viewing is more extensive here than at McNeil River or the Khutzeymateen, with bear viewing platforms, camping facilities, and constructed walkways linking the two. While overnight use had been limited by existing facilities, no management limits had been placed on day-use visitor numbers, and increasing visitor numbers in the late 1980s spurred a need for planning future management. Unlike the previous two areas, Brooks River is a destination for sport fishing in addition to wildlife viewing, and a fishing lodge and campground pre-date the growth of bear viewing as a major recreational activity.

2.3. Existing wildlife tourism management examples

The Brooks River Development Concept Plan ([National Park Service, 1996](#)) laid out the goals and objectives of management and examined five alternative proposals in light of these goals and objectives. As in the two areas discussed previously, the first goal relates to bears; while the Khutzeymateen “protects grizzly bears” and McNeil River “maintains a high number of bears for the public to observe”, Brooks River “ensures the continued use of the area by bears”. In contrast to the Khutzeymateen, which is intentionally kept completely undeveloped, management at Brooks River is also tasked with providing facilities (campgrounds, a fishing lodge, and facilities for cleaning and packaging fish) for visitors. In contrast to McNeil River, where one of the roles of staff is to help “train” the wild bears to tolerate humans, at Brooks River both habituation and food conditioning are to be reduced:

The proposal and alternatives presented in this document address the needs to (1) ensure the continued use of the Brooks River area by bears and other wildlife, (2) reduce the extent of ongoing impacts on cultural resources, (3) provide facilities to adequately serve visitors and staff and maintain a quality visitor experience with minimum impact on critical wildlife habitats and significant cultural resources, (4) establish use limits and a monitoring program for the Brooks River area that would prevent overcrowding, (5) reduce human/bear encounters and conflicts in the area and (6) reduce habituation and food conditioning in the local bear population. ([National Park Service, 1996](#), p. iv.)

Also unlike both the Khutzeymateen and McNeil River, Brooks River is a popular sport-fishing destination. This introduces a number of potential

2.3. Existing wildlife tourism management examples

conflicts, including competition between bears and humans for fish, the risk of attraction of bears by refuse from cleaning and gutting fish, and problems of crowding or other conflicts between anglers and bear viewers:

A critical resource management issue in the Brooks River area is how to control the growing numbers of anglers, photographers, and bear viewers without severely impacting the natural dynamics of the local brown bear population, or degrading the visitor experience. (National Park Service, 1996, p. 3.)

Further, the fact that more facilities are provided at Brooks River than at either McNeil River or the Khutzeymateen generates an expectation that such facilities are adequate for the number of tourists accommodated. Growth in the number of visitors requires that the facilities provided keep pace:

The area has become so popular that existing facilities cannot accommodate visitor demands. The visitor experience has suffered from overcrowding, and serious concern has been expressed regarding the potential impacts this crowding has on the wildlife in the area, especially the local brown bear population. (National Park Service, 1996, p. iii.)

The Brooks River Area Development Concept Plan examined various options for how to develop the facilities in order to meet these increasing demands. To this end, it presented seven alternatives, including a non-action alternative. In order to judge between the alternatives, the Plan laid out a detailed set of “Desired Futures for the Brooks River Area”, which included the general goal of “protecting ecosystem functions” as well as more specific

2.3. Existing wildlife tourism management examples

goals related to fish spawning grounds, cultural resource sites, protection of the environment from the fuel used at the camp area, and educating visitors about the significance of cultural and historical features of the area. Specifically related to bear viewing was a general goal of protecting habitat in addition to specific goals related to the quality of recreational experiences, which should be unhurried, uncrowded, and safe, while avoiding interference with the wildlife's behaviours or uses of the area:

- Protect and maintain prime brown bear habitat
- Enhance high quality recreation experiences in the Brooks River area by maintaining low-to-moderate interaction levels between visitors; visits to the area should feature small groups, an unhurried atmosphere, and occasional opportunities for solitude
- Make brown bear habitat along Brooks River accessible for bear viewing and sportfishing in a manner as safe as possible for visitors and to the degree that it does not significantly interfere with wildlife use and behaviour

([National Park Service, 1996](#), pp. 10–11.)

As the Brooks River wildlife viewing areas is a small part of the much larger Katmai National Park, the goals of the broader park are also relevant. These goals include retaining a naturally regulated population of bears that is not adversely affected by humans and reducing food-conditioning of bears in order to minimize bear-human confrontations:

2.3. Existing wildlife tourism management examples

- Maintain the park and preserve as an area where brown bears can exist as naturally as possible with minimal adverse effects from humans
- The objectives of [...] bear management [...] are to retain a naturally regulated population of brown bears in the park and to preclude the food-reinforced attraction of bears to people and thereby minimize confrontations between bears and people.

(National Park Service, 1996, pp. 13–15.)

The different development options for the Brooks River area differ in terms of how much new infrastructure would be developed, which specific sites would be developed, and whether some or all of the existing infrastructure would be relocated to various new sites. Common to all options considered, however, are major goals to provide bear viewing and photography opportunities, to maintain a relatively uncrowded visitor experience, to maximise visitors' safety, and to avoid adverse impacts on the bear population:

Bear viewing and photography, and wildlife viewing in general, are encouraged as part of the visitor experience in each alternative. To maintain the quality of the experience, use limits in the core bear viewing area and on specific bear viewing platforms would be established. To ensure that fewer human/bear encounters occur in the future, and that bear viewing would not adversely affect the local bear population, the proposed approaches and locations of all bear viewing platforms were carefully chosen with respect to bear use along the river being the major locational factor. (National Park Service, 1996, pp. 22–23.)

2.3. Existing wildlife tourism management examples

As in other areas, aggressive or food-related human-bear encounters are a major concern at Brooks River. At Brooks River, the popularity of sport fishing raises additional concerns regarding human-bear encounters that were not raised at the areas discussed previously. The reason opportunities for bear viewing exist here is that the bears are feeding on salmon, and the salmon congregate in predictable locations. This means that the bears also congregate in predictable locations. By the same token, however, human anglers are chasing the same fish, and thus use the same locations:

Angling is the most intrusive human activity in this prime [bear] habitat because it requires that the person be in the river in direct competition for space with foraging bears. (National Park Service, 1996, p. 26.)

To reduce the incidence of “human/bear encounters, of bear food conditioning incidents (like bears stealing fish from anglers), of trespass incidents by bears through developed areas, and of excessive habituation of the local bear population” (National Park Service, 1996, p. 26.), the Development Concept Plan proposes the establishment of “bear-free zones” around campgrounds, lodges, and other infrastructure, and of “human-free zones” along some reaches of the river at certain periods during the season. While we saw earlier that habituation is less acceptable at Brooks River than at McNeil River (where staff trained bears to tolerate humans), the proposal to establish “bear-free zones” implies a requirement to “train” bears to avoid these zones.

2.3. Existing wildlife tourism management examples

A further problem introduced by angling is the attraction of bears to fish-processing wastes. It is proposed that fishing regulations be changed to catch-and-release only, which would eliminate these problems with waste created by fish cleaning.

As was the case for the Khutzeymateen, the Brooks River Area Development Concept Plan makes recommendations for monitoring the results of management efforts. The Plan distinguishes between indicators (such as the number of people on a viewing platform, or the number of times anglers run into other anglers) and standards (which give a maximum value for the variables defined as indicators.) However, variables regarding bear behaviour and presences are explicitly excluded as they are not amenable to direct management:

Indicators and standards that would be subject to the variables in nature were not included for the obvious reason that they could not be guaranteed to happen and could not, indeed should not, be managed directly. For example, indicators such as the number of bears at the falls per day or the number of sows with cubs visiting the cutbank per week would be impossible to guarantee. (National Park Service, 1996, p. 30.)

The tabulated list of indicators is separated into two categories: those concerned with the visitor experience (e.g., number of people at each viewing platform, number of angling encounters, average wait times for shuttles or access to viewing platforms, amount of time spent on viewing platforms), and those related to direct management of bears due to aggressive encounters (e.g., number of bear trespass incidents, of armed responses, of bears killed,

2.3. Existing wildlife tourism management examples

of fish stealing, of bluff charges, and of property damage incidents) ([National Park Service, 1996](#), p. 32.) Unlike the case for the Khutzeymateen, monitoring of the actual impacts of bear viewing (or other) activities on the bears themselves is explicitly excluded from this Development Plan. It is not clear why, for instance, stating that the number of bears trespassing into campgrounds exceeding a certain threshold should trigger additional management measures is acceptable, but stating that the number of bears using the falls each day dropping below some threshold should likewise trigger management measures is unjustified because the number of bears using the falls is subject to natural processes that management cannot guarantee.

2.3.4 Johnstone Strait

Johnstone Strait is located between the mainland and Vancouver Island, approximately 275 km north-east of Vancouver. The Strait is about 3–4 km wide, and the Vancouver Island side of it includes Robson Bight, which is characterised by pebble beaches on which killer whales engage in rubbing and resting behaviours. Robson Bight was protected as an ecological reserve in 1982, and is managed for the specific aim of being a “sanctuary for killer whales” ([Goulet et al., 1992](#)). Both independent boaters and commercial tour operators watch whales in Johnstone Strait, but most of this activity had occurred outside the area protected as the Robson Bight Ecological Reserve. Management recommendations for Johnstone Strait noted that no formal management infrastructure regulated whale watching activities, that

2.3. Existing wildlife tourism management examples

current whale watching charter operators tended to be more informed about whale watching techniques than the general public and were considered a very responsible group (though potential for growth and the entry of new, less experienced operators was noted), and that there was widespread public support for completely closing Robson Bight to whale-watching activities, increasing formal regulations of activities in the rest of Johnstone Strait, and encouraging land-based viewing to reduce the number of marine-based tourists (Goulet et al., 1992).

A B.C. Parks brochure about the reserve, aimed at educating the general public, states that “Ecological reserves are established for the benefit of wild species and their environment, not for the benefit of human recreation” (B.C. Parks, 2001), and refers to the *Fisheries Act*, under which the *Marine Mammal Regulations* (MMR, 1996) specifically prohibit the “disturbance” of whales, and to the Ecological Reserve Act regulations, under which “No person shall enter upon an ecological reserve for a purpose inconsistent with the Ecological Reserve Act. In addition, no person shall molest animals or discharge firearms within a reserve.” (B.C. Parks, 2001)

The whale watching guidelines themselves are detailed as concerns human behaviour near whales (and other marine mammals), with specific approach distances (no closer than 100 m), approach speeds (2 to 4 knots) and time limits (30 minutes within 200 m of whales):

2.3. Existing wildlife tourism management examples

- Approach whales slowly and from the side, not from the front or rear. Approach no closer than 100 meters and shift your motor into neutral or idle. Keep noise levels down: no horns, whistles, shouting or racing of motors. Limit the time spent with any group of whales to less than 30 minutes at a time when within 100–200 metres of them.
- Engage your motor only after the whales are more than 100 metres from your vessel. Leave the area slowly, gradually accelerating when more than 300 metres from the whale(s).
- Avoid disturbing groups of resting whales. Maintain steady, low speeds (2 to 4 knots) and constant direction if travelling parallel to whales.
- When more than one vessel is at the same observation site, avoid any boat position that [sic] would result in encircling the whale(s). Observe the 30-minute time limit (when within 100–200 metres) and move out to allow other vessels to good viewing positions. Charter operators should coordinate activities by maintaining contact and ensuring that all operators are aware of these whale watching guidelines.

(B.C. Parks, 2001)

These guidelines essentially re-state the “Be Whale Wise” guidelines co-produced by the Department of Fisheries and Oceans in Canada and the National Oceanic and Atmospheric Administration in the U.S.⁹. Other than a general exhortation to be familiar with “distances required and activities which will disturb or interfere with [whales]”, the Robson Bight guidelines do not offer much background or justification for why these distances should be required or what the consequences of approaching too close to the whales might be. The “Be Whale Wise” guidelines do define disturbance in terms

⁹<http://www.bewhalewise.org/>

2.3. Existing wildlife tourism management examples

of interfering with natural behaviours critical to maintaining healthy populations:

Disturbance is when we interfere with an animal’s ability to hunt, feed, communicate, socialize, rest, breed, or care for its young. These are critical processes, necessary for healthy marine wildlife populations. (DFO and NOAA, 2006)

This definition of disturbance focuses on non-interference with natural behaviours, yet the emphasis on healthy marine wildlife populations seems to appeal to a resource-based conception of wildlife, where it is the sustainability of the population that is of greatest concern. However, the specific recommendations in the same set of guidelines are introduced with a primary overarching recommendation to “Be cautious and courteous.” This notion of courtesy implies a conception of (at least some) wildlife that is far more empathetic to individuals than the focus on healthy populations suggests.

2.3.5 Gulf Islands/San Juan Islands

This area crosses the US/Canada border, and is in close proximity to several major urban centres (Vancouver, Victoria, Seattle). It is home to the southern resident killer whale population, which was declared *threatened* by COSEWIC (the Committee on the Status of Endangered Wildlife in Canada) in 1999. Whale watching in this area began around 1984, and has since grown dramatically, peaking at 81 commercial boats in 1997 and dropping to 73 commercial boats in 1994 (Koski and Osborne, 2005).

2.3. Existing wildlife tourism management examples

The published discussions of management in this area (Koski and Osborne, 2005; Osborne et al., 2001; Spradlin et al., 2001) focus primarily on the form of management, rather than on its content. This management is based on community-based self-regulation using an adaptive management approach. Rather than regulations set down by the respective government agencies, stakeholders (including commercial tour operators, private whale watchers, conservationists, and representatives of government agencies as well as non-governmental organizations) initiated the creation of voluntary guidelines to deal with issues emerging from the increase in whale watching activities:

Vessel-based whale watch management in the Salish Sea has followed this type of an adaptive management approach through the use of stakeholder initiated voluntary guidelines that are annually monitored and updated to meet current conditions. (Koski and Osborne, 2005)

The Whale Museum also conducted the *First Annual San Juan Islands Whale Watching Workshop* and held subsequent community workshops from 1988 to 1997 (13 workshops total). These workshops brought commercial, private and shore-based whale watchers, non-governmental organizations (NGO's) and scientists together to discuss emerging whale watching issues and techniques to reduce potential vessel impacts on the whales and shore-based whale watchers. (Koski and Osborne, 2005)

The authors of this report, however, do not mention what exactly the emerging issues are, nor what impacts vessels may have on either whales

2.3. Existing wildlife tourism management examples

or shore-based whale watchers. In fact, they cite a Canadian court case in which proving that whales had been harassed was considered an unreasonable burden of proof; the fact that voluntary guidelines were violated was sufficient for the court to conclude that the *Marine Mammal Regulations* of the *Fisheries Act* of 1985 (MMR, 1996, which, as quoted in [chapter 1](#), merely forbid “disturbing a marine mammal”) were breached.¹⁰ They go on to state that the nature and consequences of unacceptable behaviour are not clear:

While few would argue against the need for consequences for repeated ‘bad’ vessel behaviour around whales, defining what ‘bad’ behaviour is and what effects it might have on the whales has not been clearly defined. (Koski and Osborne, 2005)

Despite the lack of clarity on bad behaviour and its consequences, this stakeholder process is considered highly successful, and resulted in the “Be Whale Wise”¹¹ guidelines mentioned under [subsection 2.3.4](#). These guidelines appear to fill in some reasonable detail defining what ‘bad’ vessel behaviour is; what effects it might have on the whales, however, is still unclear. Nevertheless, in addition to the acceptance of the guidelines in court of law as surrogates for actually proving that an animal has been disturbed, the guidelines have received “buy-in” from the respective government agencies, in the form of co-funding for and partnership with a Soundwatch Boater Education Program, which consists of a patrol boat (the *Soundwatcher*) which patrols

¹⁰But see also [subsection 4.4.2](#), where one tour guide opines that the guidelines were meant as a “courtesy,” and that legal sanctions should be reserved for more severe violations where actual harm to the whale can be demonstrated.

¹¹<http://www.bewhalewise.org/>

2.3. Existing wildlife tourism management examples

the water to provide educational materials to wildlife watchers and to provide “a scientific platform to help characterize vessel activities and to evaluate the successes and failures of current guidelines” (Koski and Osborne, 2005).

In addition to using a stakeholder-driven and community-based process, Koski and Osborne (2005) emphasize that wildlife viewing management in the San Juan and Gulf Islands is based on an adaptive management paradigm. The key feature of this paradigm is that it is data-driven and objective-based: research and data collection are integrated into a cyclical process of refining the management guidelines. As an example of the experimental nature of the management, they mention “No Sound in the Sound Days” as an experimental approach to reducing noise impacts from vessels:

In 1994, as an experiment, The Whale Museum conducted two *No Sound in the Sound Days* to reduce the potential noise impact from vessels around the whales. Success of the *No Sound in the Sound Days* experiment was due largely to individual commercial whale watch companies operating in agreement as an industry and coordinating with the educational patrol vessels. Over 80 regional environmental organizations and businesses endorsed this effort, reaffirming public interest in addressing emerging whale watch issues. (Koski and Osborne, 2005)

The specific objectives of this management experiment were left implied rather than stated explicitly. It seems that the “success” of the experiment consisted of large buy-in from whale watchers, which was successful at reducing the amount of noise generated by vessels on those days. Whether reducing the noise was in itself the objective of the exercise, or whether re-

2.3. Existing wildlife tourism management examples

ducing noise was seen as a means of reducing (undefined) impacts on the whales is not clearly stated, but reporting on the success of the “No Sound in the Sound Days” focuses solely on the former; no mention is made about the latter.

The future of this so-far successful (however that success is assessed) community-based adaptive management approach, however, is at risk. Following COSEWIC listing of the southern resident killer whale population as *threatened* in 1999, interest in whale watching grew, the number of stakeholders increased, and the objectives of whale watching management and guidelines (which, as I have noted, were not clearly and explicitly stated) came into question:

[...]the mounting attention whale watching was receiving in the media, opened the door to more players, issues, government funding and larger repercussions regarding whale watch management. The new complexity began to overwhelm the community-based adaptive management process previously in place. The increased number of stakeholders and issues involved, threatened the current ‘*rational, data driven, objective-based management that previously linked research and management*’ because the objectives became suspect. The endless process of ‘*questioning existing assumptions, exploring alternative ones, envisioning potential scenarios for management, made experimenting with solutions*’ untenable. (Koski and Osborne, 2005)

In sum, it seems that detailed guidelines were created to define ‘bad vessel behaviour’ around marine mammals, with scant reference to what consequences such behaviour would have on the marine mammals (or to any

other rationale for why those particular behaviours are ‘bad.’) The success of these guidelines was assessed by seeing whether they were followed. This was considered a successful example of “rational, data driven, objective-based management,” and new stakeholders questioning whether the objectives were appropriate was seen as a threat to management success.

2.4 Need to make implicit values explicit

In the first part of this chapter ([section 2.1](#)), we saw an evolution in the scale of concern for the appropriate way to manage wildlife, moving from the concern with populations of furbearing and game animals to a concern with larger ecosystemic processes on the one hand, and to a concern with wellbeing or welfare on shorter, individual-animal scales on the other. It is clear that management of wildlife tourism involves more subtle potential impacts on wildlife than does managing solely the direct mortality effects of hunting, trapping or fishing. It is not clear from previous work how various concerns at different spatial and temporal scales, and originating from different fundamental moral orientations towards wildlife, can best be combined into specific management policies.

In the second part of this chapter, I examined a few representative examples of wildlife viewing management plans. In all cases examined (The Khutzeymateen, McNeil River, and Brooks River grizzly (brown) bear viewing areas, and the Johnstone Strait/Robson Bight and the transboundary San

2.4. Need to make implicit values explicit

Juan/ Gulf Islands whale watching areas), there is a concern with rapidly increasing numbers of wildlife tourists.

In the grizzly bear examples, there is a fair amount of discussion of what the specific management objectives should be, and how specific policies address these objectives. In addition, both the objectives and the policies differ slightly from one area to the next. Thus, for instance, in the Khutzeymateen, the “wilderness character” is valued, and to preserve it, no permanent facilities are constructed for tourists. At Brooks River, by contrast, “crowding” is a problem, and is addressed by constructing enough facilities to meet tourist demand without bottlenecks. McNeil River is intermediate between the two, with a campground and trails for tourists, but also with daily limits on how many tourists are allowed to access prime viewing sites. The views of bear habituation also differ between areas. In all cases, food conditioning (bears seeking out human food) is strongly discouraged, as it leads to bears *aggressively* seeking out human food. However, the treatment of habituation when not linked to food conditioning varies. In the Khutzeymateen, mild habituation is accepted, as it may reduce stress in bears, and provides good viewing opportunities, while strong habituation is discouraged, as it reduces the wilderness characteristics of the bears, and may even *reduce* viewing satisfaction as a highly habituated bear is no longer as wild and wary, and thus viewing it is less of a rare privilege. At McNeil, habituation is actively encouraged (indeed, a key role of staff is to “train” or habituate bears), as predictable behaviour by both bears and tourists reduces the risk of ag-

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gression. At Brooks River, habituation is in general discouraged, but bears are nonetheless “trained” to avoid designated “bear-free zones” around the human encampment.

In contrast to these, the whale examples seem less focussed on the whales themselves, and more focussed on consistency of regulations from one area to another, and with “buy-in” to the (mostly voluntary) regulations by tourists and tour operators. The Johnstone Strait Killer Whale committee’s recommendations were largely focussed on excluding tourists from a specific area (the Robson Bight Killer Whale Sanctuary), with management of viewing in the remainder of Johnstone Strait following the guidelines developed further south. The discussion of the management in the San Juan and Gulf Islands, meanwhile, focussed mostly on the successes in generating guidelines through discussion and consensus amongst stakeholders, and in having the guidelines generally adhered to by most tour operators and individual boaters.

In light of the changing values towards wildlife in general sketched out at the beginning of this chapter, it is necessary to make explicit the often-implicit values and goals driving management efforts. If wildlife is a resource to be used by humans, and the only relevant questions regarding management are what type of use is most “efficient” and sustainable, then management will take one direction. If wild animals are seen more as individuals with moral claims to be free from disturbance, fear or stress caused by tourism, then management efforts would need to take a different direction to guard against these potential harms. There is therefore a need to make explicit what goals

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and values are appropriate for the management of wildlife-viewing tourism. The first step in this project is to examine these and other views of wildlife as formulated by the literature on environmental and animal ethics, and to attempt to derive specific prescriptions for the management of wildlife viewing tourism from the various ethical theories offered by that literature.

Chapter 3

Ethicists' efforts to inform wildlife management

We have seen in the introduction and first part of [chapter 2](#) that attitudes and values towards wilderness and wildlife (broadly speaking) have changed over time, and that these changing values and attitudes have affected management strategies. In general, there has been a broadening of concern and management efforts from a concern with ensuring a steady supply of wildlife-as-a-resource for hunters, trappers and anglers, to a richer set of concerns including non-resource species, broader habitat and ecosystem scales, and welfare or well-being of individual animals.

When we examined specific management plans linked to “use” of grizzly bears by wildlife viewing tourists at British Columbian and Alaskan sites, we found that these plans also attempted to address more than sustaining the number of bears present: habituation of bears is either encouraged as it reduces stress in bears, or discouraged because it reduces “wildness”, while other management concerns are phrased in terms of avoiding disturbance, displacement, fear, stress, etc. to the bears—measures which are linked much

more closely to empathetic concern with the animals' experiences than to resource concerns over population stability.

Likewise, in the two whale-watching areas examined, there are concerns with noise impacting whales' communication and social behaviour, with tourists being "rude" or inconsiderate, and with excessively close or fast approaches and multiple boats encircling whales. Once again, these concerns are readily understood in terms of an empathetic understanding of whales as individuals with their own life projects that ought to be respected. Links between the whale watching guidelines and a resource-based conception emphasizing the continued viability of whale populations, on the other hand, are tenuous at best.

But if different values lead to different management policies, then determining the most appropriate policies will require first determining in what ways we *ought* to value wildlife. These are normative or ethical questions, and thus this chapter turns to the philosophical and ethical literature, and in particular, to theories of wildlife, animal, and environmental ethics.

My goal in this chapter is not to identify or defend a single valid, coherent, internally consistent and universally applicable theory of morals, values and ethics. Rather, I examine the major competing theories that claim to prescribe the proper way humans should interact with the non-human world (taken broadly) and attempt to follow the logic of each theory from its first principles to what behaviours it would prescribe in the specific context of non-consumptive wildlife viewing tourism. The notion that complex moral

questions can be settled by logically deducing a single answer based on a single foundational starting point may strike the reader as quixotic, and my attempts to do so as laboured. Yet this monistic notion is presented by several ethical thinkers as the appropriate way to make decisions: Regan (1983, p. 130) argues that a *moral* principle is one that requires all moral actors to act in accordance with it; Singer (1993, p. xi) concludes that preference utilitarianism allows us to apply one version of utilitarianism to both self-conscious and merely sentient beings, sparing us the less ideal approach of attempting to combine two versions of utilitarianism; Taylor (1986, p. 27) lists the formal conditions of a valid normative ethical system, which include generality and universal, disinterested applicability and an advocacy that all moral agents ought to adopt the principles proposed; and Callicott (1990) is a vocal opponent of any attempts to replace the monistic tradition of ethics with more pluralistic approaches. This monistic assumption is most explicitly summarised by its critics: “It is widely presumed, by implication when it is not made explicit, that the ethicist’s task is to put forward and defend a single overarching principle [...] and to demonstrate how it (the one correct viewpoint) guides us through all moral dilemmas to the one right solution.” (Stone, 1988, p. 143).

In general, relatively few attempts have been made in the literature to apply these monistic theories to specific cases. In addition, the real life puzzles that have been addressed previously tend to be broad, and, with few exceptions, to deal with death (e.g. hunting, fishing) and captivity (e.g. agri-

culture, research). In this thesis, I tackle a novel context (non-consumptive wildlife-viewing tourism) where neither death nor captivity are at stake. I attempt to use a few key environmental or animal-focused applications of different ethical theories to examine what ethical quandaries remain when these two ‘big ones’ are absent, and to determine whether detailed prescriptions for management of wildlife-viewing tourism can be derived logically from broader theories applied to animal or environmental ethics.

My goal in this chapter is also not to provide a full philosophical analysis of the broader development or history of general ethical theories. I have bounded my attention to the literature on environmental and animal ethics. Determining whether the problems I examine are fundamental to the theories themselves, or whether they are ‘merely’ problems arising from poor application of the underlying theories is beyond the scope of this thesis. Nevertheless, the central point remains: While managers could use these theories to generate operative reasons (*sensu* Raz, 1999) for management policies, many of the auxiliary reasons required to support or oppose any given policy cannot be generated through strict logical derivation from any monistic ethical theory.

A standard way of classifying ethical theories uses two dimensions. The first asks of each theory “Who matters?” In other words, who (or what) should be taken into account or considered when applying the ethical theory to a decision problem? The second asks of each theory how the interests

of those who matter are to be defined, identified, and taken into account in ethical deliberation.

Anthropocentric theories answer the first question (“who matters?”) by stating that humans, and only humans, “matter.” Variation may exist between specific theories about the considerability of future humans, neonates, humans with serious brain damage, or other boundary cases. In general, however, the anthropocentric answer to this first question is that all humans and only humans need to be considered when making decisions. Non-human animals, plants, populations, habitats, landscapes, eco-systems, rocks, rivers or skies enter into ethical deliberations only when, and to the extent that, affecting these leads to ethically relevant effects on humans.

Dissatisfied with the narrowness of anthropocentrism, several philosophers have attempted to broaden the scope of ethical considerability. Biocentric ethical theories extend considerability to non-human animals as individuals, while ecocentric theories include landscapes, ecological communities or evolutionary processes as entities that “matter.” As with the anthropocentric theories, variations exist between different theories under each of these umbrellas.

Some biocentric theories argue that all animals ought to be considered equally with each other and with humans, while others acknowledge ethically relevant differences between different taxonomic groups and suggest some form of graded consideration. However, in some ways these biocentric theories do not form a revolutionary departure from the anthropocentric the-

ories: for the most part, they are concerned with individual animals, which are seen as similar to individual humans, and the only point of departure is over which of these human and non-human individuals are taken into account. The standard 'machinery' of human ethics is then used to determine how these interests are taken into account and how decisions are to be made.

Ecocentric theories, on the other hand, attempt to extend moral consideration to non-individual entities. The Land Ethic values the stability and beauty of a mixed land community which includes humans, domesticated animals, wildlife, and the habitat they share, while a theory of natural value emphasizes "wildness", "naturalness" and the *absence* of human interference. Despite their differences, both these theories have to grapple with novel issues raised by the non-individual nature of the entities to which they extend moral consideration. The individualistic "machinery" of much of western ethics, which is used in both anthropocentric and biocentric theories, may not be up to the task of considering populations, processes, or ecosystems.

The second dimension used for classifying ethical theories focuses on how the theory determines what ought or ought not to be done to those entities that are morally considerable. In other words, once we have decided which entities deserve consideration, how, exactly, do we consider them? Consequentialist ethics refer to the outcomes of the action in question, and state that the action yielding the best outcome ought to be selected. Deontological ethics suggest instead that there are some basic rules of right behaviour,

which ought never be violated, even if such violation may in some cases lead to a desirable outcome.

In the sections below, I will treat Singer as a classic example of a biocentric, consequentialist utilitarian theory, Regan and Taylor as classic examples of biocentric deontological approaches, Leopold and Callicott as examples of an ecocentric consequentialism, and Rolston as an example of an ecocentric deontology. I will also treat briefly some anthropocentric ideas which might have application to wildlife viewing tourism (virtue ethics and enlightened self-interest.) For each classification, I will look at some previous attempts to apply the approach to specific problems (generally, relatively broad, such as sport hunting or animal agriculture), and then attempt to apply the approach to non-consumptive wildlife viewing.

However, the above ethics are monistic—they assume that the way to “do” ethics is to construct a single, rational, coherent and consistent theory which will start from a basic foundational premise, and develop from these a logical argument concluding in specific prescriptions for how one ought to act in any given situation. The locus of debate, in this approach, is the initial premises: once one has established that the assumptions in one’s theory are “correct”, the rest of the theory and the prescriptions derived from it follow logically.

This monistic approach has come under fire by recent pluralist and pragmatic philosophers, who argue that none of the monistic theories provide what they promise—that the real world is far too complex and multi-faceted

to be adequately described by any single theoretical framework. In a pluralist approach, theory-building exercises are taken as useful to the extent they draw attention to different aspects of the decision problem at hand, but in the final analysis, the debate must include questions of which (one, or several) ways of viewing the problem is most appropriate in context, not simply over which set of abstract premises is *a priori* universally true. The pragmatist tradition renounces foundational theory building as a useful approach to determining truth, arguing instead that moral answers emerge from interaction and engagement with lived experience and moral intuitions. I will conclude this chapter by applying this alternative view on how to “do” ethics to the context of wildlife viewing tourism, which will set the stage for continuing in the following chapter with an empirical study of how wildlife viewing is discussed in the societal discussions of the topic, and what moral intuitions appear to guide this discussion.

3.1 Biocentric consequentialist theory

Consequentialist theories, as the name implies, focus directly on the consequences of a moral decision. This decision can, of course, consist of setting up a rule to follow. It is not necessary that a consequentialist theory require moral agents to evaluate all the consequences of each action; some formulations analyse the consequences of expecting all moral agents to follow a rule of thumb instead.

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The most common form of individualistic consequentialist theory is utilitarianism. Utilitarianism starts from the notion that the point of ethics is to do as much good as possible, while doing as little bad. Hedonistic utilitarianism defines pleasure as good, and pain as bad. Hence, hedonistic utilitarianism holds that solving ethical problems consists of listing the possible courses of action, estimating how much pleasure or pain each affected party would receive under that course of action, adding up totals, and choosing the action with the biggest total. Preference satisfaction utilitarianism uses a broader definition of satisfying or frustrating preferences, to account for the observation that not everything that the individual wants or prefers is necessarily pleasurable in the hedonistic sense. Applying utilitarian ethics to animals is conceptually not revolutionary; all one has to do is include non humans in the category of “affected party,” while retaining the rest of the methodology of traditional utilitarianism. Arguments for doing so generally point out that animals (at least mature mammalian animals) are quite capable of experiencing, in their own way, pleasures and pains, and there is no valid reason to exclude these from the utilitarian calculus.

A major critique of utilitarianism is that, in practice, adding up the utility and disutility of any given action or rule is, except in rare and trivial cases, virtually impossible. In theory, pleasures and pains may be somewhat more commensurate than the satisfaction and frustration of a wide range of preferences, but in practice, and especially when non-human animals with different

and poorly understood cognitive and emotional capabilities are added to the calculus, assigning numbers to the outcomes of a decision is difficult at best.

3.1.1 **Singer’s hedonistic utilitarianism**

The most noted attempt to apply utilitarian thought to human-animal interactions was set out by [Singer \(1990\)](#), who argued, in brief, that there is no morally relevant difference between the pains or pleasures experienced by humans and those experienced by non-human animals, and that we therefore ought to treat non-human animals in accordance with utilitarian moral theory. In particular, after describing various horrors in modern agriculture, scientific research, and cosmetics testing, he concluded that the amounts of pain and suffering involved in the examples he describes could not possibly be outweighed by pleasures to humans accruing from these sectors, and so condemns them entirely.

Two objections present themselves to this line of argument. Firstly, there is question over whether the examples he describes are in fact reflective of standard, accepted, or best-practices, or whether they selectively show the worst cases. If the examples Singer described are selectively chosen for rhetorical effect, and would be condemned as wrong by most scientists or farmers, then the condemnation based on these vignettes would not transfer to the entire industry; best-practices (or even typical practices) may not share the features condemned. Singer accepted that utilitarian thought *may* not necessarily prohibit killing (see, e.g., [Deckers, 2009](#)), but left that aside, as the

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avowed purpose of his book was to condemn the horrors of current animal use in industrial agriculture and science.

More generally, this objection illustrates the difficulty of assigning exact value to pains and pleasures. It may be obvious that the pains imposed upon animals in current industrial agriculture are not outweighed by the benefits to humans of eating meat, but how ‘good’ would agriculture need to be in order for human carnivory to be acceptable? In later works, [Singer and Mason \(2006, pp. 248–269\)](#) again allowed that utilitarianism *may* allow some forms of meat-eating (e.g. humane, extensive agriculture, hunting, “dumpster-diving,”) but emphasised that these limited defenses of meat-eating do not apply to the vast majority of what is currently available. However, the conclusion that only a vegan diet is acceptable, which would follow from a strong premise that *all* agriculture is *intrinsically* unacceptable, does not necessarily follow from the weaker premises that current forms of agriculture impose more pain on the animals than they produce benefits (or preference dissatisfaction/ satisfaction respectively) to human consumers (but see, e.g., [Matheny and Chan, 2005](#), who argued against the “logic of the larder”—that agricultural animals would not exist if they weren’t used—by claiming that most do not, in fact, have lives worth living). [Singer and Mason \(2006, pp. 281–284\)](#) concluded that eating meat is, in general, not good, but also allowed that there is no need for fanatical devotion to veganism.

Secondly, Singer does not show that human-human interactions are *in fact* governed solely and in all cases by utilitarian thinking. His argument is that,

given the relevant similarities between humans and other animals, animals ought to be considered the same way humans are when making decisions. If, in fact, acceptable behaviour amongst humans, broadly speaking, can only be explained through a complex and subtle combination of multiple ethical frameworks rather than through strict adherence to utilitarianism, then equal consideration of animals' interests would lead to a similarly complex and multi-faceted analysis, rather than a strict following of utilitarian (or any other) theory.

3.1.2 Preference utilitarianism

An alternative formulation of utilitarianism replaces the hedonistic notion of simple pleasures and pains as the “utils” that need to be identified, summed, and maximised with a broader notion of “preference satisfaction.” [Singer \(1993\)](#) suggested that this differs from classical utilitarianism in considering not only pleasure and pain, but more broad interests of all those affected by an action, although he also allowed that classical utilitarians may have used ‘pleasure’ and ‘pain’ in a broad sense that includes the satisfaction of other interests rather than as a narrowly hedonistic concept, in which case the distinction would disappear ([Singer, 1993](#), p. 14).

3.1.3 Applications of utilitarian ethics

Aside from the applications sketched out by Singer himself (1990; 1993; 2006), hedonistic and preference-satisfaction forms of utilitarian thinking have been most prominently taken up as part of the basis for the field of animal welfare (see, e.g. Fraser, 1999; Fraser et al., 1997; Stafleu et al., 1996). This field does not, on the whole, subscribe to the idea that animals have a right to not be exploited by humans; instead, the field accepts that animal use (specifically focused on agricultural and scientific/educational use of captive animals, but also in various consumptive and non-consumptive uses of wild animals) does provide benefits to humans and will continue. Without necessarily trying to calculate a balance between these benefits and the harms to the animals thus being used, the field does attempt to determine what course of action will minimise the harms (Schuppli et al., 2004), whether by measuring stress (Jensen, 1996; Moberg, 1996) or by measuring and comparing the preferences of animals for various housing or feeding features (Dawkins, 1990).

Within the environmental ethics literature, Meaton and Morrice (1996) used John Stuart Mill's principle that only actions causing harm to others can legitimately be controlled by the state to argue that private automobile use is such an action, and further that the benefits of private automobile use do not outweigh the harms caused to others. This led to the logical conclusion that private automobile use ought to be banned, although the authors accepted that this proposition was unrealistic as an immediate goal, and would in addition be unfair to enact until adequate public transport options are in

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place. They therefore recommended merely that both fiscal and managerial restrictions of automobile use are justifiable (but that complete banning may become possible at some time in the future.)

List (2004) argued that the benefits (pleasures, preference satisfactions, goods) derived from sport hunting are no different in kind from those derived from subsistence hunting. Therefore, if subsistence hunting is accepted based on a utilitarian argument (and it generally is,) so should sport hunting. Luke (1997) analysed a composite “Sportsman’s Code” of hunting, and finds it paradoxical: the emphasis on quick kills, and on retrieving and using all game only makes sense if killing or causing suffering and pain are *prima facie* wrongs that must be both minimised and outweighed by benefits. Following the best ethical standards within hunting, therefore, implies that hunting is not ethical in the first place. The possibility that the goods produced by hunting might outweigh these *prima facie* wrongs was rejected, leaving (in Luke’s view) three options: embracing the paradoxical result, renouncing the Sportsman’s Code, or renouncing hunting.

Deleeuw (1996) examined angling, contrasting some elements of sport fishing to those of sport hunting. While sport hunting follows a code of conduct which emphasizes a clean, quick death, in angling, the ‘playing’ of the hooked fish is valued, with more vigorous escape attempts by the fish increasing the perceived quality of the angling. Since these escape attempts are clear evidence of pain and suffering in the fish, angling requires, in addition to the justification of killing which it shares with sport hunting, a justifica-

tion of the intentional infliction of pain and suffering. Unable to find such a justification, Deleeuw (1996) suggested that hunters and society at large ought to reject sport fishing as an immoral activity.

These examples further support the general difficulties in application discussed above by demonstrating that contradictory conclusions can be derived from the same basic premises. While Singer condemns animal agriculture on utilitarian grounds, the field of animal welfare does not, accepting that animal use will continue and focusing on minimizing the harms it does to animals. Meanwhile, List defends sport hunting while Luke rejects it, and Deleeuw counters a common perception that fish pain doesn't 'count' as much as mammalian pain by arguing that angling in fact needs *more* justification than does hunting.

3.1.4 A utilitarian view of wildlife viewing

Can we apply utilitarianism's simple rule to the complex real-world problem of how we ought to manage wildlife tourism? The theoretical simplicity (all we have to do is add up the pleasures and pains experienced by all concerned parties, and optimize the sum) breaks down because the pleasures and pains *cannot* be added up in a purely logical or objective way. The problem is far too multi-dimensional for such a simplistic calculus to be workable.

For instance, it is clear that the tourists derive some pleasure from engaging in wildlife viewing tours—if they did not, there would be no demand for such tours. It is also clear that the tour operators derive some benefit

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from offering the tours—if they did not, there would be no supply. Given that there is, in fact, a market for wildlife viewing tours, we can assume that both the tourists and the operators benefit, and we can even quantify that benefit in monetary terms.

But what of the wildlife? They may benefit indirectly, in that engaging in tourism may increase the public’s appreciation for wildlife, and indirectly lead to more environmentally-conscious behaviours in other spheres of life. This is certainly offered as one justification for encouraging wildlife viewing activities. It is not necessarily obvious that these benefits *actually* occur, and if they do, it is not clear whether they accrue to the *individual* animals (who are capable of feeling pleasure and pain, and thus morally considerable, according to utilitarian theory), or to the *community* of animals (which is not capable of feeling pleasure and pain, and thus cannot be included in a moral calculus of the sort suggested by utilitarian theory).

More direct conservation benefits may accrue from the tour operators lobbying to protect the wilderness setting in which their operations occur and on which they rely—for example, the K’tzim-a-deen Grizzly Bear Sanctuary (subsection 2.3.1) was protected from logging operations and bear hunting largely as a result of lobbying and publicity provided by the tour operators active in the area—but again it is not clear if the benefits accrue as pleasures to *individuals*.

On the other hand, wildlife may see human presence as a threat, which may lead to predator-avoidance behaviours. Increased predator-avoidance

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behaviour in response to tourism would necessarily reduce time spent in other behaviours. If we assume that animals' normal behaviour patterns are optimised through evolution, then any changes in behaviour pattern would be sub-optimal. Again, the causal chains are long, and it is difficult to quantify the size of the impact, but more crucially (from a strictly utilitarian perspective), it is even more indirect and difficult to quantify the extent to which these effects lead to pain and suffering in *individual* animals.

More directly, however, it may also be that predator-avoidance behaviours are linked to the activation of the cortisol stress system. Based on analogy to human experience, it is reasonable to presume that such activation is accompanied by fear, stress, and other negative emotional or affective states, which do fit within the pleasure-and-pain framework of utilitarian theory.

Preference utilitarianism faces the same problems as hedonistic utilitarianism, in terms of giving simple answers to complex questions. For our purposes, however, it does suggest that we ask what the preferences of animals would be, and whether the satisfaction of their preferences is being frustrated by tourism operations. One presumes that, all else being equal, animals would prefer to do what they in fact do in the absence of tourists: feed, rest, travel, etc. Thus we could assess changes to their behaviour, or to their use of preferred areas for these behaviours, as an indicator of whether the satisfaction of their preferences is impacted by tourism.

In sum, utilitarian theory can account for some of the many impacts that have been identified as possible consequences of excessive wildlife viewing

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tourism activities, but cannot provide a single answer to the question of how much tourism is acceptable, and how much is excessive. It is still far from clear how the pains experienced by wild animals, as indicated indirectly by activation of stress responses, are to be compared in anything resembling commensurate units to the pleasures experienced by humans, as indicated by their voluntary participation in a market transactions for viewing opportunities.

Nevertheless, utilitarianism does provide a useful lens through which to view some of the issues involved. Measures of stress system activation certainly exist: fecal cortisol metabolites can be measured non-intrusively; heart rate and blood pressure could be measured in instrumented animals (and one might even be able to measure heart rate in non-instrumented animals, depending on the environment and the technical qualities of parabolic microphones). If, all else being equal, minor tweaks to the details of how viewing activities are carried out by humans have a large effect on these indicators (especially if the tweaks have negligible effects on the human pleasures derived from the viewing, which can also be investigated through satisfaction surveys or economic value-elicitation methods), then it would follow from utilitarian thinking that we ought to conduct ourselves in such a way as to minimise the pains caused. This remains a valid insight, even if the more ambitious calculus of adding all considerations together continues to elude us.

3.2 Biocentric deontological theory

In contrast to consequentialist theories, deontological theories put the consequences of acts or rules into the background. While obviously the expectation is that in general, following rules of right action will lead to a better world, these theories hold that acting in the right way is the right thing to do, even in cases where that act leads to unfortunate consequences. Conversely, an action that is inherently wrong under a deontological conception remains the wrong thing to do even if, in some particular context it might have positive consequences.

3.2.1 Regan's rights ethics

Regan (1983) counters Singer's (1990) utilitarian view by pointing out that it would allow humane farming of animals combined with painless slaughter: in this case, the suffering of the animals during life would be minimised, as would the pain during slaughter, and thus the benefits accruing to humans from eating animals would outweigh the minimal pains to the animals (especially if one counts a steady food source and protection from predators and inclement weather on the benefits side of the ledger for farmed animals.)

However, Regan considers that farming animals is wrong, and therefore the fact that utilitarian arguments might allow it is a deficiency of utilitarianism. What is wrong with farming, in Regan's view, is not merely that the animals suffer, but that they are viewed as a means to an end, where that end

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is the farmer's pocket-book and the consumer's dinner-plate. Regan starts by arguing that (some) animals, like (most) humans, are subjects of an experiential life, and that fact grants them moral considerability. He then derives an ethic from the Kantian imperative to treat others as ends-in-themselves rather than as mere means-to-an-end, and this ethic would prohibit farming (as well as scientific, educational, entertainment, product-testing, and any other animal use), regardless of how much or little suffering was involved. Specifically, Regan makes appeal to the language of rights in order to buttress and flesh out the basic argument that "we are to treat those individuals who have inherent value in ways that respect their inherent value" (Regan, 1983, p. 248). By according rights to both humans and animals, and assuming that these rights are derived from the overarching right to be treated with respect, we would prohibit any treatment of either humans or animals which violates their rights by failing to respect their inherent value.

If we accept the argument that moral questions should be settled by recognising and respecting individual rights, the question becomes "what rights ought to be accorded to wildlife?" It seems obvious that the usual list of human rights (freedom of the press, of peaceable assembly, of political enfranchisement, of religion, etc.) cannot apply directly to non-humans. Whether or not the right to life applies in nature, red in tooth and claw, is debatable. Certainly it does not seem to apply as a *positive* right, carrying an obligation to protect deer from death-by-wolf, as this cannot possibly be squared with the similar obligation to protect wolves from death-by-lack-of-

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deer. Regan (1983, p. 357) proposes merely that wild animals have a right to non-interference, while Taylor (1986, p. 173) proposes a similar rule of non-interference. Both argue that this right or rule applies as a *negative* right or rule, meaning that moral agents are obligated simply to *not* engage in behaviours contravening it—there is no obligation to *engage* in behaviours to promote or protect wild animals' well-being. Regan (1992) and Callicott (1980) have argued that broader concerns about environmental issues are incompatible with a theory of animal rights, although Taylor (1996) and Callicott (1988) have attempted to reconcile the two. We will return to this debate under [subsection 3.3.2](#) below.

Regan (1983) emphasizes the right to be treated not as a resource, but as an end-in-itself. If this assertion means that even treating others *partially* as resources is wrong, one has to consider that the vast majority of human interactions in large, anonymous urban settings could easily be painted with the same brush. While obviously there are limits, both moral and legal, to how we treat others (and these limits may be so obvious and accepted we don't even think of them as limits), the fact remains that a large number of other individuals one interacts with on a daily basis are largely instrumental to some transaction or other, the conclusion of which is the end of the interaction. For example, any company of any size will have a department of human resources whose purpose is to consider current and prospective employees as resource. Or, if I purchase an item from a store, bar, or restaurant, I will have to admit that in most cases the cashier or server will be mostly

a means to the end of concluding the transaction. Certainly, if pressed, I will acknowledge them as an end-in-themselves, but for the purposes of our routine daily interactions, that acknowledgement is essentially irrelevant. It also seems that while this type of urban anonymity may be considered regrettable and unfortunate, it is hardly considered morally repugnant. Therefore, an honest appraisal of our human interactions suggests that we often do treat others largely instrumentally, while recognising in the background of our consciousness that they are *also* intrinsically valuable.

3.2.2 Taylor's respect for nature

Taylor (1986) starts from a similar premise to Regan (1983); while Regan derives moral considerability from being the subject of an experiential life, Taylor uses the term “center of a teleological life” (Taylor, 1986, p. 119), which broadens concern even wider than the animal kingdom—while plants are not subjects of an experiential life, and thus are not morally considerable under Regan's theory, they are centers of teleological lives, having a good of their own, and that good can be furthered or impacted. Although shying away from the language of moral rights due to the baggage the term carries (Taylor, 1986, pp.219–255), he argues that centers of teleological lives ought to have that teleology respected. In other words, since it makes sense to talk of things going well or poorly for a human, a non-human animal, or a plant, we ought to avoid doing things that interfere with these entities' life-projects. Taylor's theory is explicitly individualistic rather than holistic,

3.2. Biocentric deontological theory

however: populations, species, ecosystems, or other assemblages do not have a good of their own that is to be respected; they are merely composed of individuals who do have such a good.

Taylor (1986, p. 172–192) derives four specific rules of conduct from his premise of respecting nature: nonmaleficence, noninterference, fidelity, and restitutive justice. From the rules of nonmaleficence and noninterference, Taylor concludes that any killing or restraint of animals is immoral, thus condemning hunting, agriculture, and scientific use of animals. Taylor’s rule of fidelity prohibits any attempts to deceive a wild animal, or to abuse its trust. Taylor uses this as an additional reason to prohibit hunting and angling, where decoys, blinds, camouflage, baiting, and artificial lures are all seen as attempts to deceive an animal and encourage it to develop a trust which is then broken. Lastly, Taylor avoids the conclusion that humans are morally obligated to protect wild animals from each other, from inclement weather, or from disease by emphasising that the first three rules (nonmaleficence, noninterference, and fidelity) only imply *negative* duties: duties for moral agents to refrain from certain acts. Only the last rule, restitutive justice, carries a positive duty to engage in acts aiming to benefit others, and this rule only applies where others have previously been harmed by human actions.

3.2.3 Applications of deontological ethics

There are relatively few examples of attempts to apply these deontological ethical theories by deriving specific prescriptions. This is likely due to the focus on hunting, agriculture, and scientific animal use: if we accept either Regan's or Taylor's theories, then killing or confining animals is unacceptable. There is relatively little scope for debate or analysis, unless one adopts a more utilitarian framework where the benefits of these activities need to be considered, or a more pluralistic framework where one needs to consider whether the *prima facie* rights of (or duties to) animals can be overridden by other considerations.

The most obvious application of rights ethics is in the call for the protection of at least some large charismatic species from hunting. [Damato and Chopra \(1991\)](#) argued that there is an emerging societal recognition that whales, at least, have a right to life, and that the emergence of this moral right is mirrored in the history of legal protections afforded to whales. [Gillespie \(2003\)](#) likewise uses the language of rights to argue for the legitimacy of policies protecting whales from being used consumptively by humans, even if such use were to be conclusively shown to be sustainable.

In the context of agriculture, [Rollin \(2007, 2006\)](#) appeals to the notion of animals as teleological centres of life, not to condemn agriculture as a whole for violating Taylor's (1986) rules of nonmaleficence and noninterference, but to argue that agricultural and husbandry practices can be improved, from an animal welfare standpoint, by taking this teleology into account

and ensuring domestic animals have space and opportunity to fulfill their teleological requirements, even while accepting that these animals are being used (at least partially) as a means to an end.

3.2.4 A deontological view of wildlife viewing

In the context of non-consumptive use of free-living animals, the issues of killing and confinement are absent. [Regan \(1983\)](#) might condemn wildlife tourism activities as treating wildlife as a means to an end, where that end is either the profits of the tour operators, or the acquisition of a “trophy photograph.” More charitable views of tourism, on the other hand, may describe tourism as treating animal as an end-in-itself, such that the delight taken in, and motivation for, the tourism is the delight of being able to glimpse the animal, as an end-in-itself, pursuing those ends, with as little interference from the tourists as possible. [Taylor \(1986\)](#) might also accept this view of tourism as respecting wildlife as teleological centres of life. His more specific rules regarding nonmaleficence and noninterference would lead to the questions of whether wildlife tourism constitutes a harm or an interference, or whether it constitutes a benign and respectful interaction. The ethical theories provided, however, underdetermine this question.

Of particular interest to the context of wildlife tourism is Taylor’s rule of fidelity. We saw earlier ([subsection 2.3.1](#)) that habituation of wildlife is a major concern in the management of wildlife tourism. One aspect of this concern is that habituated animals may be more vulnerable to hunting in

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areas adjacent to wildlife viewing areas, as their natural wariness of humans is lost. This would be a clear violation of Taylor’s duty “not to break a trust that a wild animal places in us (as shown by its behaviour) [..., and] to uphold an animals’ expectations, which it has formed on the basis of one’s past action with it” (Taylor, 1986, p. 179). This does not, of course, necessarily say that there is anything wrong with wildlife viewing activities that lead to habituation if there is no hunting pressure within the expected range of the individual animals being viewed.

It is less clear what, if any, specific prescriptions can be derived from Regan’s rights-based theory. Beyond the right to life, and to non-interference, are there other rights that apply to wild animals? Regan does acknowledge that non-human animals, due to undeniable differences, may not have exactly the same rights as humans. Specifically (as mentioned earlier), the rights to vote, to assemble peaceably, to freedom of expression and of religion, clearly do not apply to non-humans. It is less clear whether, for instance, the right to privacy applies. If it does, then the concerns we will see in the next chapter about behaving like “paparazzi” or violating the privacy of dolphins (section 4.4.3) find a basis in this ethical theory. If the right to privacy (like the rights to vote) does not apply to non-human animals, then these concerns may not be valid. While not entirely determined by the fundamental premise of respecting animals as ends-in-themselves, I am inclined to suspect that most wild animals’ ends do not necessarily include an expectation of privacy; the worst excesses of paparazzi-like harassment

would still be deprecated by the rights view as a violation of a right to non-interference, while mere privacy-violation done from a distance, using telephoto lenses or remote microphones, would not constitute interference. The theory provides scant guidance, however, regarding how one would determine what distance constitutes the threshold between the two cases.

3.3 Ecocentric consequentialist theory

Attempts to extend consequentialist ethical theories to entities other than individuals will, perforce, need some other formulation of consequentialism than utilitarianism. Non-individual entities (whether human, non-human, or mixed communities, populations, nations, ecosystems, or something else) clearly do not have pleasures, pains, or preferences. However, if these assemblages (or rather, features of these assemblages, such as their integrity or stability) have value, and if this value is morally considerable, then we ought to act in ways that have the consequence of enhancing, rather than destroying, this value.

3.3.1 The Land ethic

The ethics behind conservation biology and modern wildlife management can be traced back to the writings of Aldo Leopold in the 1940s ([Leopold, 1949](#)). Leopold emphasized the communitarian aspects of ethics, describing both the cooperation and competition in communities:

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All ethics so far evolved rest upon a single premise: that the individual is a member of a community of interdependent parts. His instincts prompt him to compete for his place in that community, but his ethics prompt him also to co-operate (perhaps in order that there might be a place to compete for). (Leopold, 1949)

Leopold saw his land-ethic not as a revolutionary new idea, but merely as a small evolution in ethics, which simply includes a few more entities (namely, soil, water, plants and animals) in the community within which we compete and co-operate. This focus on the enlarged moral community leads to the oft-cited dictum

A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise. (Leopold, 1949)

3.3.2 **J. Baird Callicott**

Leopold's land ethic has more recently been taken up by J. Baird Callicott's attempts to formalise the land ethic as a complete and monistic ethical theory.

The holistic communitarianism inherent in Leopold's dictum to preserve the integrity, stability and beauty of the land community implies that the rights of individual members (whether human, livestock, or wildlife) are overridden by community interests. In a much-quoted, and since-regretted paper, Callicott (1980) argued that while animal ethics (whether Singer's utilitarianism or Regan's rights-based view) and environmental ethics (specifically,

3.3. *Ecocentric consequentialist theory*

Leopold's land ethic) are superficially similar in that they argue for an extension of ethical thought to cover human-animal interactions, they are essentially incompatible, being based on very different metaphysical and meta-ethical foundations.

The individualistic ethics promoted by [Singer \(1990\)](#) and [Regan \(1983\)](#) are based on an atomistic reductionism, where decisions about right action are reduced to an analysis of their effects on individuals. In Singer's utilitarianism, the individual effects are summed; in Regan's rights ethic, some entities are protected against some classes of intrusion. In either case, however, it is the individual who has intrinsic value, whose utility is counted, who bears rights.

The Land Ethic, however, is based on a holistic communitarianism, where the good of the community is considered independently of, and, in [Callicott \(1988\)](#), taken to *override*, the effects of an action on individuals composing that community. These different metaphysical and meta-ethical foundations lead to different ethical frameworks and often conflicting prescriptions.

Thus, for instance, we have seen that the rights view (at least, as interpreted by [Regan \(1983\)](#)) categorically prohibits an omnivorous diet: non-human animals have intrinsic value, this value ought to be respected by treating individuals as ends-in-themselves, and eating an animal treats it as a means-to-an-end. Utilitarian theory might be more lenient in prohibiting omnivory only when the pleasures derived from a varied diet outweigh,

3.3. *Ecocentric consequentialist theory*

considering human and animal interests alike, the sufferings imposed upon livestock or wild game.

The land ethic, on the other hand, if followed as strictly as [Callicott \(1988\)](#) does, would ignore arguments based on individual rights, preferences, or sufferings. What is important, in terms of this strict land ethic, is the good of the whole community. And it is possible, or even likely, that a mixed landscape of both plant and animal agriculture will be more beautiful, stable, and integrated, by coming closer to a “natural” closed-loop ecosystem, than one from which livestock have been removed entirely. It is also the case, according to [Leopold \(1949\)](#), that humans have, for better or for worse, removed or reduced predator populations in many places. Having had that impact on the community, it is now better for humans to take over the niche through sport hunting than to leave it vacant¹² allowing predator populations to increase to ugly, unstable, integrity-threatening levels.

Therefore, [Callicott \(1988\)](#) concludes, the land ethic not only allows omnivory, it in fact prescribes it. Given Callicott’s monistic leanings, the conclusion from analysing two different ethical theories with different metaphysical bases and contradictory conclusions can only be that one theory is wrong and must be discarded, in its entirety. Therefore, utilitarian and rights theories are wrong, and communitarian land ethics are right, whether it is humans, pets, livestock or wildlife that are at issue. Therefore, [Callicott \(1988\)](#) comes

¹²Note, of course, that it may be better yet to re-introduce predator populations, where possible.

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to the extreme conclusion that an ethic is only “environmental” to the extent that it is misanthropic and prescribes the sacrifice of individuals (animal or human) for the good of the environment.

In more recent work, Callicott has retreated from the intentionally extreme and provocative stance laid out in [Callicott \(1988\)](#), and has argued following Leopold’s own wording that the Land Ethic is an accretion to, rather than a replacement for, other ethics. Under this formulation, [Callicott \(1999b\)](#) states that moral obligations stem from community co-membership, where different communities give rise to different obligations. In order to arbitrate between conflicting obligations thus produced, Callicott defines two “second-order principles”, the first of which prioritises more intimate and venerable communities, and the second of which overrides the first and prioritises obligations to protect stronger as opposed to weaker interests.

These priorities allow Callicott to counter critiques of his earlier paper. The first critique is that the ethic is eco-fascist: by elevating community stability above considerations of the welfare of individuals, and accepting that most threats to the stability and integrity of the land community can be traced to human over-population, we would conclude that we are required to sacrifice some large proportion of human individuals to protect the land community. Callicott escapes this charge by claiming that the human community is more intimate and venerable than the land community, and thus basic human rights are not simply trumped and made irrelevant by environmental issues. This, taken on its own, however, opens the revised theory

to charges of toothlessness: by claiming that the human community trumps the ecosystemic one, we are never required to make *any* sacrifices to safeguard the environment. The second principle avoids this by allowing *stronger* environmental claims to require sacrifice of *weaker* human ones. However, Callicott never provides guidance as to how one objectively assesses either the intimacy and venerability of a community, or the strength of an interest.

3.3.3 The mixed community

Midgley (1983) pointed out that a simple picture of nested communities is a drastic oversimplification, and that a truer picture would have shifting, overlapping communities where it is far from clear which is “closer to the moral heartwood.” Also, the obligations and duties generated by those communities are generally incommensurable, overlapping, and impossible to order in a simple way based on “importance.” In some cases (especially domestic animals and pets,) it *is* clear that animals are dependents in a relationship which does engender duties of care, and that the closeness of this relationship may well generate duties that override duties to distant humans. It is not clear how a Leopoldian land community would fit into this type of scheme, however.

3.3.4 Applications of communitarian ethics

As with the previous ethical theories covered, farming domesticated animals and hunting wildlife are the more commonly considered practical applications. [Anthony \(2003\)](#) and [Lund et al. \(2004\)](#) built on the notion that ethical obligations stem from community co-membership and reconceptualised organic agriculture as a partnership between the farmer and the farm animals. This view of agriculture departs from a traditional ecosystem-functioning view, and allows for the discussion of other obligations—brought about by the contractual nature of the partnership—that do not find an expression in the ecosystemic view of the farm.

[List \(1997\)](#) defends hunting in view of Leopold’s land ethic, although this defense inserts a middle layer of ethical rules or community standards (similar to the Sportsman’s Code discussed earlier by [Luke \(1997\)](#)), where the manner in which hunting is conducted is the “thing” evaluated in light of the Leopoldian dictum, while individual acts by individual hunters are evaluated in light of this middle-layer ethic.

3.3.5 A communitarian view of wildlife viewing

We will turn now once again to the question of how this ethic applies with respect to wildlife tourism. According to Callicott, our moral duties and obligations towards wildlife in non-consumptive recreation situations would derive from our co-membership in a community. But what community? How

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should it be described? What duties and obligations does it engender? Neither Callicott's basic theory of ethical sentiment based on community membership, nor his two second-order principles for prioritising competing duties and obligations, offers much guidance.

On the one hand, humans and wildlife broadly speaking belong to the land community, so the Leopoldian dictum of preserving the beauty, integrity and stability of the community should apply. On the other hand, the description of the land community in terms of energy flows from stomach to stomach appears to not be the most appropriate way to describe our relations with the particular wild animals in this particular context. However, even if energy flows and feeding relationships do not really describe the tourist-wildlife interaction particularly well, we can still pay attention to the Leopoldian dictum of preserving the integrity, beauty and stability of the land community. In this case, the integrity and stability, at least, might be affected if tourism activities lead to unsustainable changes in the wildlife population's dynamics, and this might be indicated by measuring population parameters such as feeding efficiency, body condition scores and reproductive success. If these measures are difficult to measure and, due to their long-term integrative nature, difficult to correlate to short-term human disturbances, then behavioural or physiological measures of stress might be used as proxies. However, unlike the utilitarian ethics detailed earlier, these measures would *only* be relevant to the extent that they indicate long term effects on the population parameters, rather than being relevant directly because they

indicate effects on the individuals. It is less clear what preserving the beauty of the land community might entail. It seems a rather broad category, into which almost any human preference could be slotted. If beauty is in the eye of the beholder, and if some beholders find beauty in wild, skittish animals, while others find beauty in animals that are more easily observed, it is not clear how one would go about preserving the beauty of the wildlife viewing system.

3.4 Ecocentric deontological theory

Like the ecocentric consequentialist theories above, ecocentric deontological theories see value in assemblages greater than the individual. The consequentialist theories interpret this value in terms of a (theoretically, if not in practice) measurable quantity (such as stability or integrity) that can be increased or decreased. Deontological theories use a more abstract formulation (wildness, natural value) that can be respected or disrespected.

3.4.1 Wilderness values

[Rolston \(1994a, p. 109\)](#) argues for a distinction between domesticated and wild, free-living animals. Domesticating animals generates a duty to be “humane.” However, in taking animals into our care and generating that duty, we have also taken away the wildness of the animals (see also [Klaver et al., 2002](#), where the process of de-domesticating animals in ecological restoration

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is considered). Rolston sees value in this wildness; a value that is neither explained by nor overridden by the notion of individual rights:

We might at first think that there are “rights” behind each of the pairs of eyes that we confront. But that is not so; what is there is a fierce “wildness.” The value of that is indisputable, even though it is a value that is not carried adequately by the concept of rights. There is an independent integrity in the wild life, and humans ought not to violate this without justification. [Rolston \(1994a, p. 110\)](#)

[Rolston \(1994a\)](#) then details several case studies where park management (specifically, Yellowstone National Park) refused to intervene to either rescue or euthanise suffering wildlife (where the cause of suffering was “natural,”) where they did euthanise road-injured animals (because the cause of suffering was anthropogenic,) and where they rescued individuals of a small and endangered population (because the value of maintaining the population outweighed the value of respecting wild nature.) In these cases, he concludes that not only is there no duty to act in a humane way towards wildlife, there is a duty to let nature run its course, even if such hands-off management clearly involves suffering:

[T]he ethic of compassion must be set in a larger context, recognizing the function of pain in the wild. While intrinsic pain is a bad thing whether in humans or in sheep, pain in ecosystems is instrumental pain, through which the sheep are naturally selected for a more satisfactory adaptive fit.” [Rolston \(1994a, p. 112\)](#).

3.4.2 Applications of ecocentric deontology

The ethic of respecting that which is natural shows up, again, in the discussion of whether hunting is a moral or immoral activity. [Hettinger \(1994\)](#) points out that, as formulated, Rolston's ethic gives more protection to plants than to animals:

Rolston's theory includes a strong consequentialist principle that must be satisfied before one can take plant life [...], his principles protecting animals are weaker deontological ones, requiring only that we act in the right sort of way and for the right reasons. ([Hettinger, 1994](#), p. 8)

While suggesting that the consequentialist non-loss of goods principle be extended to cover animals as well, [Hettinger](#) does not find that this extension prohibits hunting: "When based on a desire to participate in carnivorous predation (when that desire is nature respecting), hunting and meat eating do conserve value while causing the least harm necessary to achieve this legitimate goal." ([Hettinger, 1994](#), p. 20). [Moriarty and Woods \(1997\)](#) counter this defense of hunting by arguing that, in light of the numerous laws and regulations surrounding hunting, the technology used by modern sport hunters, and the fact the meat is generally transported out of "nature" and into the hunter's home for cooking and consumption, human hunting and natural predation differ in morally significant ways. Since hunting as currently practiced is a cultural rather than natural activity, [Moriarty and Woods \(1997\)](#) conclude that they can value natural predation while condemning hunting without committing an inconsistency.

Loftin (1985) discussed the medical treatment of injured wild animals. Following from preferred ethical principles placing the locus of value at the level of the population, rather than that of the individual, he concluded that wildlife hospitals are based on biological illiteracy, and that “[w]hile it is not wrong to minister to wildlife, it is not right either [...] The genuine concern of those who doctor to wild animals should be channeled in to more constructive directions.” (Loftin, 1985, p. 231).

On the other hand, if it is legitimate to extend rights not only to individual animals, but to populations, species, and ‘nature’, then it is also legitimate to extend rights not only to individual *humans*, but also to groups and cultures. Aaltola and Oksanen (2002) consider the rights of a minority culture to continue their tradition of hunting the spring migration of waterbirds, while Hawkins (2001) consider the rights of an indigenous culture to revive a cultural tradition of whaling. In neither case, however, are the cultural or group rights of humans found to be sufficient justification for overriding the need for international accords to protect wildlife populations from exploitation.

The distinction between the ‘natural’ (which is valued) and the ‘cultural’ (which is not) is brought into focus when degraded environments are restored or rehabilitated. The question there is whether these restored environments are natural or human artefacts (see, e.g., Cowell, 1993; Cronon, 1995; Katz, 1992; Michael, 2001; Westra, 2001). Similarly, Krakoff (2003) argued that technological “improvements” to wilderness areas (e.g. roads, trails, wildlife

viewing platforms and boardwalks), while making it easier for more people to experience some types of interaction with nature, reduce the value of wilderness and make impossible some other (and truer) types of interaction.

3.4.3 An ecocentric deontological view of wildlife viewing

[Rolston \(1994a\)](#) does mention non-consumptive wildlife use, but only to explain that wildlife viewed in the wild is more interesting, pleasing, and valued than wildlife viewed in zoos, art, or nature programs on television, lending intuitive support to his theory of value in ‘wildness’. Again, we are on our own in trying to interpret what this ethical principle might have to say about how to conduct non-consumptive wildlife interactions. Managing for habituation could be seen as a first step on the road of domestication and taming, and if we are to respect the wildness of wildlife, would thus be undesirable. Whether stressing animals through viewing is an anthropogenic stress that should be minimised through management, or a natural response to life events that should be celebrated is unclear. Perhaps it is both, and we should try to conduct viewing activities in such a way that minimises anthropogenic stress, yet should not encourage the wildlife to “get used to” such activities.

If we follow [Krakoff \(2003\)](#) in valuing natural areas without infrastructure, we would prefer wildlife viewing areas such as the Khutzeymateen, with no permanent facilities, over ones such as MacNeil or Brooks River, with their

campgrounds, trails, and viewing platforms. It is unclear whether this idea amounts to a universalisable principle, however. Finding value in areas that lack infrastructure may mean that we ought to retain *some* areas without development; it does not necessarily follow from this that *no* areas should be developed.

3.5 Anthropocentric theory

3.5.1 Virtue ethics

A further line of ethical thought bases moral acceptability not on the consequences for those affected, nor on according rights to those affected, but on looking at the motivations of the actor. As long as actions are taken for virtuous reasons, those actions would gain approval, regardless of their actual effects. [Olsen \(2003\)](#), for instance, defended sport fishing against the charge that it is a sadistic activity, on the grounds that inflicting pain on fish may *happen*, but it is not the *intention* of the angler to inflict such pain. Several authors have characterised Leopold's land ethic as a virtue ethic ([Cafaro, 2001](#); [Frasz, 2009](#); [List, 2005](#)), focusing on Leopold's passages about the benefits of outdoor leisure in terms of cultivating the proper attitude towards nature. Similarly, [List \(1997\)](#) defended hunting (and particularly, Aldo Leopold's advocacy of hunting) as a promotion and manifestation of the virtues of sportsmanlike conduct, woodcraft, and connection to the land; the actual impacts of hunting on wildlife as individuals or populations is

considered secondary. Pollan (2006) described his decision to learn to hunt as an extension of his quest for a connection to the source of his food—the fact that such a connection would likely result in demand for more humane treatment of domesticated animals is a happy corollary, but does not seem to be the main motivating force behind Pollan’s quest.

Like the rights ethic covered earlier, a virtue ethic is non-consequentialist. This makes developing indicators (i.e., measuring the consequences of alternative management strategies) difficult in the context of this ethic.

However, some tourists could be characterised as trophy-chasers, concerned mostly with snapping a photograph of rarer or more inaccessible species, while others could be characterised as nature students, keenly interested in and delighting in learning about both the details and life projects of the targeted species, and about the whole system in which the target animal lives. If these different views of the tourist lead to different levels of moral approbation of the viewing activities, then it would seem legitimate for management to attempt to foster the latter attitude and/or discourage the former.

3.5.2 Enlightened self-interest

Lastly, we might see wildlife tourism management simply as a matter of enlightened self-interest: we want the tourism operations to be sustainable, so we should manage them in a way that protects the quality of the viewing experience. This would suggest that the effects wildlife viewing might have on the wildlife would be primarily of concern to the extent that they lead

to the wildlife becoming either scarcer or more difficult to view. The former concern would lead to the use of various population measures, while the latter would lead to investigation of either spatial or temporal avoidance of areas where viewing is conducted. Under this conception, habituation of animals to tourist presence might be a *desirable* effect of management policies (as it might be under a stress-and-fear conception of the problem, but would not be under a preserving-wildness conception.) On the other hand, habituation might also be an undesirable outcome, if and where it is the wild wariness of un-habituated animals that draws tourists to an area.

3.6 Pluralist and pragmatic theories

Despite their differences, the theories covered above are all monistic in nature. [Stone \(1987\)](#) offers a critique of the monistic approach and the deterministic promise of many traditional ethical theories. He points out that not only does ethics, and especially environmental or animal ethics, need to deal with dramatically different types of entity (individuals vs. assemblages, humans vs. non-humans,) it also deals with various different tasks (deciding on a course of action, evaluating past event, judging human character,) and there doesn't seem to be a strong reason to expect that these varying tasks and contexts would best be served by attempting to interpret everything in terms of a single theoretical construct identifying a single locus of value and a single method for 'doing' ethics. Instead, [Stone \(1987\)](#) proposes an analogy to

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mapping: different maps may draw attention to different features of the landscape (topography, soils, vegetation, political boundaries, cultural features,) without a need for any one map to be ‘correct’ to the exclusion of others. Which map is the most appropriate for a given task is determined based on the task, rather than on *a priori* theory. Stone (1987) also takes exception to the (often implied) promise that monistic ethics is deterministic: once the fundamental premise is accepted, there will be, for any given problem, one correct solution. Instead, he proposes that there may be various different ‘moods’ indicating a more subtle gradation of better or worse decisions or outcomes. The analogy used here is that legal injunctions of the form ‘Thou shalt not kill’ and ‘Thou shalt not park here’ (Stone, 1987, p. 158) may share a superficial similarity in form, but that the attached penalties make clear that one is made in a much more severe mood than the other. However, for ethical quandaries, Stone proposes only three ‘moods’: obligatory, permitted, and prohibited. To these, we can add the mood of ‘supererogatory’ for actions which are morally laudable, and to be encouraged, but are not morally *required* (Michael, 1996; Raz, 1999). We will see later (subsection 4.4.2) a case in which this mood of ‘laudable-but-not-obligatory’ is suggested as appropriate for wildlife viewing guidelines, and where the courts are criticised for taking guidelines intended in that mood and interpreting them as legally mandatory.

Stone’s pluralism has been debated. Callicott (1990) describes two versions of post-modernism, the one (“constructive post-modernism”) being a

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mere place holder to signify that our previous metaphysical world view has been found lacking, but we have yet to develop the next one, so can't name it in more detail. This, Callicott sees as his project, and an appropriate one for philosophers to tackle. The other (“deconstructive post-modernism”) holds that there is to be no new comprehensive world view, and [Callicott \(1990\)](#) criticises Stone's pluralism as deconstructive in this sense. [Callicott \(1999a\)](#) also differentiates between pluralism at the level of moral theory, which he rejects, and pluralism at the level of moral principles, which he embraces (see also [Wenz \(1993\)](#) who elaborates on this distinction). Callicott also differentiates between the intra-personal moral pluralism Stone describes, where each actor chooses from amongst a “grab-bag” of moral theories the one that seems appropriate at the time, and an inter-personal moral pluralism, where each actor remains committed to a preferred moral theory, but these commitments can be debated in a public democratic forum when it comes time to implement social policies. The major criticism of theory-level and intra-personal moral pluralism is that it requires the actor to hold mutually inconsistent notions of what is right and good. This, it is implied, is necessarily a bad thing, and would further allow an unscrupulous actor to pick that theory that best justifies what the actor wants to do, rather than using the theories to determine what the actor ought to do—although [Callicott \(1999a, p. 502\)](#) also admits that this grab-bag would “afford pluralists of good will a wider range of opportunities for performing virtuous actions.” In response to these criticisms, [Stone \(1988, p. 145\)](#), for instance, argues that

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“monism’s ambitions, to unify all ethics within a single framework capable of yielding the one right answer to all our quandaries, are simply quixotic.” Instead, Stone (1988, p. 148) suggests that “moral thought is a service when it is populating and clarifying the range of morally creditable alternatives.” Likewise, Varner (1991, p. 179) argues that “to insist on giving a monist account of what are distinct and incommensurable moral realms is not parsimony but dogmatism.”

Another alternative to monistic ethical approaches is the pragmatic approach advocated by Minter (1998); Minter and Manning (1999); Minter et al. (2004) and Light (2002); Light and De-Shalit (2003); Light and Katz (1996) as an application of the American Pragmatist philosophical tradition advanced by Dewey and others. Unlike Stone’s pluralism, which retains some foundational beliefs or assumptions as intuitive starting points (while rejecting that there is only *one* such belief) and occupies itself with discovering what realms and contexts the various different foundational beliefs can be applied to, the pragmatic approach rejects the entire notion that there are intuitively obvious bedrock principles from which truth can be derived or deduced. Instead, the pragmatic tradition holds that truth emerges from lived experience in a recursive process, and that usefulness in making sense of the world is a better measure of conclusions than absolute truth. Under this conception, moral quandaries would be approached by first examining the way in which the questions emerge, and the ways in which they are discussed or

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debated¹³; abstract moral principles may be drawn in to help make sense of these discussions or debates, but would not be treated as a framework from which a single correct answer would emerge.

As a last theme under the pluralist and pragmatic heading, [Norton \(1991\)](#) proposes a ‘convergence hypothesis’ (more recently discussed in a collection of papers edited by [Minteer \(2009\)](#)), namely that in many real ethical quandaries, philosophers starting from different monistic foundations nevertheless come to the same conclusions about what we ought to do in practice. [Light \(2004\)](#) proposes that in these cases, we employ what he initially termed a ‘metaphilosophical environmental pragmatism’ but, deciding that was too unwieldy a term, changed to ‘methodological environmental pragmatism’ ([Light, 2004](#), p.121). This approach holds that, in those cases where different foundational beliefs converge on the same conclusion, philosophers should argue for that conclusion based on whatever foundational beliefs are most likely to resonate with the public or with policy makers, even if it is not their preferred personal foundational belief. This, however, appears to be more of a rhetorical suggestion for use in those cases where it is sufficiently obvious what the right course of action is that even monistic ethicists will find a way to derive it from their preferred first principles, as no philosopher wants to advocate an ethical theory that leads to abhorrent conclusions. In

¹³Recent research in moral psychology may form an alternate starting point for such enquiry. See, e.g., [Haidt \(2001\)](#); [Hauser \(2008\)](#); [Kazee \(2010\)](#).

cases where it is less clear what the best course of action is, this suggestion offers relatively little guidance for analysis.

3.6.1 Applications of pluralistic or pragmatic ethics

A pluralistic analogy to animal welfare is provided by [Fraser \(1995\)](#) who describes “safety” as a similarly complex, multidimensional problem, yet one where we are quite capable of making intelligent decisions about increasing safety, without getting bogged down in abstract debates about unifying theories of what “safety” is. While it may be impossible to quantify “safety” as a single number, and while it may be impossible to determine whether a building with a good sprinkler system but insufficient fire escapes is “safer” than another building with easy exit routes, but poor warning and suppression systems, we do not consider these problems to mean that safety inspectors cannot contribute usefully. They can, and do, tell us that the first building would be improved by adding escape routes while the latter can be improved by installing alarms and sprinklers. Similarly, whether in the agricultural systems considered by [Fraser \(1995\)](#) or the tourism considered here, it may be relatively easy to identify ways to improve along a number of dimensions, without having an unambiguous single measure of how ‘good’ or ‘bad’ things are.

[Klaver et al. \(2002\)](#) and [Swart \(2005\)](#) used a pluralistic framework to attempt to differentiate between duties to wild and domesticated animals. [Swart \(2005\)](#) found existing theories inadequate to explain why there should

3.6. Pluralist and pragmatic theories

be a duty of care to domesticated animals, where no such duty exists with respect to wild animals. In particular, he argued that there *is* a duty of what he terms ‘non-specific’ care towards wild animals; this care is generally directed at the population or ecosystem, and may include both restricting hunting as well as allowing hunting in order to prevent starvation due to overpopulation. This type of care, however, does not prevent ‘natural’ suffering. The distinction between the types of care owed hinges in Swart’s analysis on the different types of relationships between the animal and the humans giving the care, but there is no real unifying principle available from which the different forms of duty-of-care can be derived. [Klaver et al. \(2002\)](#), on the other hand, discusses the de-domestication of animals in the context of ecological restoration. Here, the duty of care to the domesticated animals exists, but is essentially withdrawn as the animals are re-introduced to the wild. On the one hand, this would violate either a contractarian obligation to domestic animals or a principle of fidelity requiring us to remain true to the animals’ expectations of us. It would also involve some avoidable pain and suffering to the animals. On the other hand, in the long term, it would contribute to creating, if not a fully and ‘authentically’ natural ecosystem, at least a self-perpetuating, sustainable, and biodiverse one, thus increasing natural value. None of the individual theories drawn on in their analysis, however, was able to make firm prescriptions for how to treat animals as they are moved from one communitarian circle to another, and [Klaver et al. \(2002\)](#) concluded that they are unable to provide any kind of “ethical hand-

book” for how to act in novel situations, but intend only to reflect on the frameworks within which one might be able to discuss which principles apply to such a situation.

Loftin (1992) examined the collecting of wild animals for scientific purposes, starting from a premise that both the utilitarian animal liberation ethic and the Leopoldian land ethic are initially appealing, and attempting to follow Mary Anne Warren’s attempts to reconcile the two. This effort is in vain, as he concludes that “We might say, charitably, that [Warren’s] theory underdetermines the decisions that we need to make. It is more accurate to say, frankly, that we do not get any guidance at all.” (Loftin, 1992, p. 261). Having failed to derive from ethical theory any criteria for determining when scientific collecting is or is not justified, Loftin then proceeds to propose his own, presumably based on his considered ethical intuitions as an ornithologist, and including considerations of the importance of the knowledge gained, the impossibility of gaining it without killing a specimen, the long-term impacts of the killing on the population, and a requirement for a quick and painless death of the individual.

3.6.2 A pluralistic view of wildlife viewing

There may be multiple ways in which wildlife viewing tourism could be improved (e.g., limiting the number of tourists and making sure the animals have escape options, if they choose not to be viewed; monitoring fear and stress indicators, and attempting to minimize them; avoiding types of tourism

3.6. Pluralist and pragmatic theories

that affect population parameters such as feeding efficiency, body condition, and reproductive output; ensuring that tourism operations are sustainable over the long term; or encouraging more “ecological” tourist attitudes.) Where a management alternative affects primarily one of these dimensions, the better alternative can be chosen, without any need to appeal to unifying moral theories. Where a management choice sets up a trade-off between incommensurate dimensions, we need to resolve the trade-off, and arguing over which unifying moral theory to use generally doesn’t help.

It may be impossible to quantify how “good” the management of wildlife tourism is in a particular setting, and it may be impossible to compare two different settings. It is, however, both possible and more useful to suggest a variety of indicators that can be monitored to see if further improvements in the management *within* each setting are possible and appropriate.

In keeping with the pragmatist argument, however, we should start a search for ethics in a given context by interacting with lived experience of that context, and examine how people actually conceptualise the various possible values, duties, obligations, rights, or harms that may be relevant. The following chapter will therefore perform a content analysis of media reporting regarding wildlife tourism, in order to determine whether any or all of the factors identified in this chapter seem reasonable and acceptable as actual justifications for restrictions on the human liberties to pursue wildlife tourism in any intensity and manner desired.

3.7 Need to interact with moral intuitions

I have argued that monistic approaches to ethics start by choosing a single, unifying theory as “correct,” and rejecting competing theories as “flawed.” The context in which a specific decision is to be made is then described in terms of the features the chosen theory considers relevant. In practice, however, the details of this description hinge on myriad of other assumptions and values that are not given by the theory’s starting premises. Thus, for example, if we choose an ethical theory focusing on individual rights, we might describe wildlife affected by viewing tourism as individuals with their own life projects, whose rights may be infringed upon by the operation of the tourism activities. In detail, however, the decision of which rights are relevant and reasonable to consider depend not solely on the decision to use a rights theory, but on one’s more specific views of the life experiences of wild animals. On the other hand, if one chooses an ethical theory based on community membership and on valuing ecological processes, then the wildlife would be described as members of a population, species, ecosystem, etc., where the continued operation of the ecological relationships within that community may be altered by tourism activities. Again, however, in the details, we run into questions not well addressed by the broad strokes of the theory: Which features of the community are most important (valued)? Is a skittish wildlife-hunter community better or worse than a habituated wildlife-photographer community? In these and the other examples detailed,

3.7. *Need to interact with moral intuitions*

the promised simplicity of monistic approaches breaks down once the details of a specific decision problem are analysed.

On the other hand, pluralistic and pragmatic approaches to ethics pay more attention to context. Stone's pluralism focusses on which of the multiple acceptable foundations apply in a given context, while a Deweyan pragmatic approach rejects foundationalism and focuses on how ethical or moral quandaries arise in their contexts, emphasizing moral intuitions rather than abstract theories. The details of the context or the moral intuitions that lead to identification of a problem may suggest relevance for one or more ethical theories, which are pressed into service as ways to assist in describing the context and the details relevant to the decision. Again, the details are messy, but under these approaches, the messiness can be dealt with through informed and democratic discussion and debate, so that the resulting conclusions are in line with actual lived experience of the society in which the decision is taking place, and is justified by reasons that the members of the society find compelling enough to accept any restrictions on their behaviour. This approach would find aspects of wildlife viewing tourism that may fit within each of the theories detailed in this chapter, without forcing all details to fit within a single one. It would accept that there might be community co-membership engendering specific obligations (though it may remain to be discussed exactly how the community ought to be conceptualised, and exactly *what* duties it engenders;) that wildlife are individuals with life projects that ought not unduly be interfered with (though the ex-

3.7. *Need to interact with moral intuitions*

act level of interference at which “unduly” comes into effect remains to be debated;) that wild animals are capable of feeling fear, stress, and pain, and that all else being equal, these ought to be minimised (yet without stating *a priori* that they ought to be eliminated;) that wilderness and wildness has value that ought to be preserved, at least in some contexts and to some extent (again, leaving open for debate the question of which contexts should be kept wilder and which could/should be more domesticated or habituated;) and that tourism operations should be sustainable and provide for a desirable tourist experience.

The pragmatic approach, then, calls for extensive interaction with the real lived experience of society as a way to ground the details of its prescriptions. I make my contribution in the next chapter, by analysing the content of daily and periodical media writings related to wildlife viewing tourism, with a view to determining how wild animals, and specifically their relationships with wildlife tourists, are described, and how these descriptions reflect the various ethical themes described in this chapter.

Chapter 4

Value expressions in public discourse

In the previous chapter, I examined various ethical theories and frameworks, and their prescriptions for the context of non-consumptive wildlife viewing tourism. There are valid arguments in favour of treating at least some non-human animals as rights-holders; there are valid arguments in favour of considering the total net utility (pleasure minus pain) of human and non-human parties as a guide to determining the proper course of action; there are valid arguments for treating non-human nature as a whole as either a rights-holder or an entity with utilities to consider; and there are valid arguments for treating non-human nature as a system where the largely individualistic ethical theories used for decisions affecting humans may not apply, and entirely new principles are needed. What seems to be lacking is any objective way of determining which of these abstract principles is most relevant to a specific, detailed context, or of determining how best to describe the details of such a context in a manner relevant to one or more of the ethical theories. In this chapter, I follow the suggestion made by ethicists in [section 3.6](#), that ethical

analysis may best guide real decision-making by engaging more closely with societally held values, rather than concerning itself solely with theory.

Previous work using both open-ended interviews and structured surveys (summarized below) has attempted to describe and characterise societal values, both in general and with particular respect to environmental issues. Structured questionnaires (e.g. [Kellert, 1996](#)) reveal strong support for a wide variety of value orientations towards the non-human world, coupled with support for prescriptions regarding how we ought to behave with regard to the environment in general, or to specific parts of it. Where open-ended interviews are used (e.g. [Bellah et al., 1985](#); [Kempton et al., 1995](#)), studies consistently find a wider range of both values and prescriptive statements existing in the consciousness of individuals than would be predicted from any single theorist's attempts to describe a coherent and internally consistent moral framework. An examination of societal values and understandings of wildlife-viewing tourism specifically, which is the aim of this chapter, does not appear in the previous literature.

After considering some weaknesses of both survey and interview methods (specifically, the difficulty of framing the questions in such a way to avoid biasing the answers,) I chose to examine societally held values as expressed in pre-existing writings culled from the last five years of Canadian newspapers and periodicals. In agreement with previous work on characterizing social values, I find that these lay writings are rich both in morally relevant descriptions of the details of what the context *is*, and in specific values or

concerns about how the context *ought* (or *ought not*) to be managed. These lay expressions of moral concern, however, generally do not form the comprehensive, internally consistent, and logically coherent overall ethical theories or world-views which the ethical literature calls for and expects to find. In other words, we find a rich variety of very specific statements about how wildlife is seen (e.g., as a resource, as anthropomorphised individuals, or, contrastingly, as separate and different from humans, as totemic¹⁴, spiritual symbols, or as a hazard and danger towards humans,) as well as specific statements about how we ought to conduct ourselves in terms of wildlife tourism (either as individual tourists, or in terms of how the industry ought to be managed.) However, the links between the two types of statement are generally implicit rather than explicitly stated, and it is not uncommon that entirely contradictory prescriptions are derived from the same description of wildlife, or that similar prescriptions are derived from entirely contradictory descriptions.

¹⁴It is often unclear exactly what is meant by according animals a totemic status in these excerpts; the term originates from the use of totem animals as indicators of clans or like affiliations among some aboriginal groups. While often associated with new age spiritualities, it is unclear whether the speakers fully embrace either meaning, or whether they use the term as a handy short-hand for something less fully defined

4.1 Environmental values in wildlife management

A major effort to characterise societal values in general is represented by [Bellah et al. \(1985\)](#), who used wide-ranging interviews to examine how we conceptualise the “good life” and how we answer the question “how ought we to live?” The specific issues raised are mostly concerned with interactions between the individual, the institutions within which she lives, and the culture within which the institutions function. They do not, therefore, offer much guidance for the specific questions of this thesis regarding how we ought to interact with non-human wildlife which do not live in the same institutions or culture. However, a recurrent theme throughout Bellah’s work is the finding that people in general are eager to discuss questions about how we ought to live, and have definite and detailed values and opinions to contribute, but lack a vocabulary or framework (and perhaps a need or desire) to fit those values and opinions into a comprehensive ethical theory. There is thus a disconnect between the ethics literature, which emphasises the internal consistency and logical coherence of such theories, and the social values literature, where such theories are of minor importance if any.

[Kempton et al. \(1995\)](#) set out to describe the way lay (non-specialist) people generate mental models of the environment, and the extent to which those mental models are shared as cultural models common to Americans from various walks of life. They make a distinction between *beliefs*, which

are empirical statements about what the world is like, and *values*, which refer to what is “moral, desirable, or just” (Kempton et al., 1995, p. 12). Further, the beliefs may exist incorporated into cultural models, or may exist as stand-alone “isolates” (Kempton et al., 1995, p. 12). They also made the crucial point that they do not intend to imply that specialist models are better than lay models; indeed, “Ordinary people’s reactions to current environmental issues sometimes remind us of fundamental values or plain wisdom that can be forgotten in “sophisticated” policy analysis.” (Kempton et al., 1995, p. 2).

Dunlap and Van Liere (1978) contrasted two competing world views: a ‘dominant social paradigm’ emphasizing science, technology and economic growth, and a ‘new environmental paradigm’ focusing on limits to growth, sustainability, and the ability of human actions to upset the balance of nature. They proposed a survey instrument (further discussed and updated by Dunlap et al., 2000) to measure respondents’ agreement with these two views, and found broad-based support for the ‘new environmental paradigm’ (NEP) among the general public.

Ellis and Thompson (1997) and Lockhart (2001) argued that there are real cultural divergences, rather than the consensus identified by Kempton et al. (1995) or by Dunlap and Van Liere (1978) and Dunlap et al. (2000). Instead, these authors refer to a theory of cultural bias which suggests four major orientations towards social and political life: egalitarian, individualistic, hierarchical, and fatalistic (Ellis and Thompson, 1997, p. 885). Under

this theory, people would construct mental models of how the environment works in such a way as to support their basic outlook on political life. Thus disagreements over environmental policy decisions reflect not simply differences of opinion over how best to achieve an accepted goal, but more fundamental differences over how the problem is conceptualised and what goals or solutions are supported (Lockhart, 2001). Similarly, Butler et al. (2003) argued against a simplistic interpretation that attitudes towards wildlife are changing over time from a ‘utilitarian’ view to a ‘protectionist’ one, identifying instead four broad themes (social benefits, communication benefits, problem tolerance, and traditional conservation) influencing and making up attitudes towards wildlife.

Van Den Born et al. (2001) refined the notion of mental models of ‘nature’ by asking respondents to rate various items on a scale from ‘no nature’ to ‘real nature’ and extracting not one, but six separate categories of nature: arcadian (e.g. ‘lambs in the meadow’), wild (e.g. ‘the wind’), penetrative (e.g. ‘weed in the garden’), domesticated (e.g. house-plants), utility (e.g. ‘a grain field’), and lastly ‘the rain forest’ as its own category (Van Den Born et al., 2001, p. 70). Respondents’ ratings of these categories suggested to the authors that the principle of self-organization dominates over the absence of humans as an organising principle for these views of nature. Buijs (2009) argued that an even finer resolution, distinguishing between different types of ‘arcadian’ nature, is necessary to inform nature conservation efforts in the Netherlands. Vining et al. (2008), on the other hand, concluded that their

respondents generally conceptualise nature as places from which humans are absent, while paradoxically considering themselves as part of nature. This conflicted view of ‘nature’ has been considered from an applied perspective in terms of wilderness management and ecological restoration, as was discussed in [section 3.4](#).

[Kellert \(1996\)](#) focused more specifically on values related to wildlife, generating a typology of nine basic value orientations (Utilitarian, Naturalistic, Ecologicistic-scientific, Aesthetic, Symbolic, Humanistic, Moralistic, Dominionistic, and Negativistic.) Kellert then focused in detail on the similarities and variations in how these basic orientations are expressed in different cultures, by different groups within these cultures, and with regard to different species of wildlife.

Much work has attempted to identify determinants of the variation in value orientation towards the environment in general or to wildlife in particular. Suggested determinants include rural versus urban residence ([Berenguer et al., 2005](#); [Kennedy et al., 2009](#); [Lowe and Pinhey, 1982](#)); profession ([Freudenburg, 1991](#)); participation in outdoor recreation ([Dunlap and Heffernan, 1975](#); [Oh and Ditton, 2008](#); [Teisl and O’Brien, 2003](#); [Theodori et al., 1998](#)); ethnic or racial identity or background ([McCarthy and Hague, 2004](#); [Mohai and Bryant, 1998](#)); gender ([Dietz et al., 2002](#); [MacDonald and Hara, 1994](#); [Momsen, 2000](#); [Stern et al., 1993](#)); age ([Buttel, 1979](#); [Geisler et al., 1977](#)); and educational level ([Geisler et al., 1977](#)). The results from this work are

conflicting, with some authors emphasizing commonality across different demographic groups, and others emphasizing differences between them.

In addition, it is debatable how strong a link exists between environmental concern or wildlife value orientation as indicated by Dunlap's NEP or Kellert's typology of wildlife value orientations and actual pro-environmental behaviours (e.g., [Blake et al., 1997](#); [Huddart et al., 2009](#); [Kaiser et al., 1999](#); [Lopez and Cuervo-Arango, 2008](#)).

Both Kellert's typology of wildlife values and Dunlap's proposed 'New environmental paradigm' have also been used to investigate public attitudes towards large carnivores in particular ([Kaltenborn et al., 1998](#); [Kellert et al., 1996](#); [Roskaft et al., 2007](#); [Schwartz et al., 2003](#)). The focus in these studies tends to be on determining whether different groups show different attitudes towards carnivores. Thus [Kaltenborn et al. \(1998\)](#) found that Norwegian sheep farmers tend to score slightly higher on the anti-NEP questions, while also expressing more negativistic, utilitarian, and dominionistic attitudes than did wildlife managers or scientists. [Kellert et al. \(1996\)](#) and [Roskaft et al. \(2007\)](#) examined public attitudes towards several species of carnivore (wolves, mountain lions, grizzly bear, wolverines, and lynx), with a general finding that negative attitudes increased with age and proximity to wildlife habitat, amongst farmers (who experienced a financial loss) and amongst Norwegian—but not American—hunters. Positive attitudes, on the other hand, tended to increase in larger urban areas and with higher education levels.

Other studies have focussed on variation in environmental value orientations within populations, making the point that these orientations are not mutually exclusive, and that the focus on determinants of differences encourages stereotyping and fails to appreciate the richness and variety of environmental and wildlife valuation (Hunter and Brehm, 2004; Zinn et al., 2002). Batt (2009) asked respondents for a single rating of how much they “liked” 40 different species, and found that the ratings for each species correlated to a similarity-to-humans score based on multiple behavioural and physiological attributes of each species. Similarly, Kaltenborn et al. (2006) looked at conflicts between humans and wildlife and found that, where only minor or moderate problems to humans are at stake, those affected are less likely to support lethal management of ‘likeable’ species, whereas where human life is threatened, there is no link between species preference and support for various management options.

More detailed examinations of public values and beliefs with respect to specific, contextual wildlife management problems also exist. Many of these centre around the management of locally increasing or overabundant populations of animals such as deer (Christoffel and Craven, 2000; Lauber et al., 2001; Lischka et al., 2008; West and Parkhurst, 2002); elk (Lee and Miller, 2003); goose (Lauber et al., 2002); beaver (Jonker et al., 2006); black bear (Ryan et al., 2009); wolf (Bisi et al., 2007; Decker et al., 2006); cougar (Manfredo et al., 1998; Riley and Decker, 2000); koala (Wilks, 2008); feral horses (Nimmo and Miller, 2007); or domestic cats (Ash and Adams, 2003). As with

the less case-specific examinations of attitudes towards predators discussed above, there is a general trend in these studies that negative attitudes towards these animals (and support for lethal management options) increased amongst those who had suffered financial or other losses to the animals. Knowledge of the animals sometimes increased positive attitudes towards them, but in other cases appeared correlated with proximity to (and thus losses from) the species in question. In some cases, the human dimensions inquiries explicitly refer to uncertainty or dissension regarding the end goals of management:

The particular outcomes respondents wanted were diverse, however. They included: reduction of the goose population; reduction of goose-related problems; protecting the welfare of the geese; protecting human health and safety; low monetary impact; and others. It is clear that all respondents were not defining the problem to be solved in the same way. Common goals—even a common understanding of each other’s goals—could not be assumed. (Lauber et al., 2002, p. 588)

In other cases, however, the contribution of human dimensions research is seen merely as a way to increase success at meeting traditional objectives of wildlife management, such as increasing hunter or angler satisfaction (Hutt and Jackson, 2008; Schroeder et al., 2006), or predicting how hunters (seen as the primary tool for managing populations) would react to changing regulations (and thus, how these regulations would impact the wildlife population) (Stedman et al., 2004).

These previous findings are consistent with the argument I make in this chapter, namely that there is, in society at large, a broader range of moral concern and held values than can be adequately contained by any single ethical framework. There is, in addition, a general lack of evidence to support J. Baird Callicott's (1990, p. 115.) opinion that "I think, however, that we human beings deeply need and mightily strive for consistency, coherency, and closure in our personal and shared outlook on the world and on ourselves in relation to the world and to each other." The lay expressions of value and concern examined in this chapter appear to be quite happily expressed without any particular need to make recourse to the consistency and coherency Callicott presumes a need for.

4.2 Analyzing value expressions

Several methods have been used in previous literature to elicit environmental values. One approach is to ask respondents to assign a monetary value they would be willing to pay (WTP) to protect an ecosystem feature or service, or alternately the amount they would be willing to accept (WTA) as compensation for the loss of features or services. These approaches are problematic where the respondents' value amounts are symbolic purchases of 'moral satisfaction' (Kahneman and Knetsch, 1992) rather than market valuations of specific features or services, or where respondents are unable or unwilling to consider trading off 'protected' values in monetary terms

(Baron and Spranca, 1997). In terms of this thesis, however, even to the extent WTP/WTA valuations may have validity, they fail to address more subtle questions of how to manage activities that do not lead to wholesale loss of environmental features or services.

Elicitation of environmental values or preferences in non-economic terms has also proved problematic. Fischhoff (1991) suggested that only a relatively small number of ‘basic values’ are stable and well defined; for most questions, ‘articulated values’ are derived by combining basic values with features of the context in which the values are to be articulated. This means that the values elicited are sensitive to the framing of the questions asked, and has led to suggestions for more realistic policy-forum or decision-based elicitation tasks (Gregory and Wellman, 2001; Keeney et al., 1990; Satterfield, 1997), or for richer and more explicitly affective narrative valuation tasks (Satterfield, 2001; Satterfield et al., 2000; Shanahan et al., 1999).

Given that the aim of this chapter is to explore the breadth and diversity of different conceptions of wildlife in the wildlife tourism context, and of conceptions of how this wildlife tourism ought to be managed (specifically, what ends should such management strive to achieve or avoid,) closed-end survey methodologies were rejected as unable to capture the rare outliers which the survey designer would not be able to predict. In-depth surveys were initially considered, but due to logistical difficulties and to concerns over influencing the responses through the framing of the questions and the expectations of the interviewer, an analysis of existing secondary sources was

preferred. Several types of secondary source were identified: media reporting on controversies surrounding wildlife tourism, op-ed and letters-to-editor discussion of such controversies, travel writing reporting on wildlife viewing trips taken by the reporter, reports on seasonal wildlife migration relevant to planning wildlife viewing trips, and popular media treatments of research into wildlife tourism or wildlife research relevant to tourism areas. Extensive databases exist of Canadian daily newspapers and periodicals, and, without necessarily restricting the geographical extent of the tourism reported on, these databases were used to bound the “population” studied to the Canadian context. While interviews or surveys might have been advantageous in some sense, the use of pre-existing writings of this sort avoids the framing issues present in interview-based work. Analysing this type of data allows the discussion to be framed as it arises in society, much (though, as letters to the editor are included, by no means all) of the writings will be by professional or free-lance reporters. To the extent that these writers differ in socio-economic or other ways from the population as a whole, there may be biases towards the sorts of concerns that are considered news-worthy or interesting to write about. This type of analysis should certainly not be taken as quantitatively representative of the extent to which different values or norms predominate, but the intent of my research and the conclusions drawn from it rely on describing the breadth and variety of these values and norms, rather than their relative or absolute frequencies within a representative sample of a defined population. Limiting the data set to Canadian sources allowed me to read

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every article in the database related to wildlife-viewing tourism, which would not have been possible had I taken a random sample of articles from a less bounded indexing service.

I started by searching the “Canadian Newsstand” indexing service, which covers Canadian daily newspapers. Initial searches for “wildlife tourism” generated relatively few hits, but cursory examination of the hits found suggested synonyms and specific species to add to the search string. I searched for the keywords (whale or bear or dolphin or shark or wildlife) occurring within five words of the keywords (watching or viewing or tour*), on the 10th of August, 2007. This yielded 15456 matches. The search terms used picked up many articles unrelated to wildlife viewing tourism (e.g., sports teams using animal names or mascots, or TV shows that might “bear watching”) However, rather than risk excluding relevant content by modifying the search terms until a suitably small number of matches was returned, I elected to quickly scan through the titles as a coarse manual filter which would retain all articles relevant to wildlife-viewing tourism while excluding most of those using the keywords used in other contexts. Limiting myself to the five-year period between August 1st, 2002 and August 10th, 2007, I retained approximately 10% of the titles scanned.

I then searched the “Canadian Periodicals Index”, on the 14th of August, 2007, for the keywords “ecotour* OR wildlife viewing OR wildlife tour*”, which yielded a further 838 records, which were added to the database. Again, synonyms were picked based on a cursory examination of initial re-

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sults. Articles in this database tended to be longer and more general examinations of issues, rather than specific descriptions of particular trips or contexts (compared to the daily newspapers), so more general terms occurred in the text, and adding specific species names to the search seemed to result in excessive hits related to wildlife issues other than the non-consumptive wildlife viewing tours of interest.

I next scanned the 1800 records in my database, using the titles and abstracts as a second manual filter, to determine which were of relevance, flagging 959 records for analysis of the full text. Of these, for various reasons (e.g., database errors, lack of UBC subscriptions, smaller newspapers that do not retain full-text records), a hundred did not have full text accessible, 200 were duplicate articles (sometimes due to errors in importing the records into my own database, often due to wire articles being published in multiple newspapers, sometimes due to the respective databases considering the same source both a “daily” and a “periodical,”) and a further hundred were eventually deemed not relevant once the full text was looked at (e.g., the title referred tourists surprised to see bears on downtown streets but the text made it clear they were referring to painted fiberglass bear statues.)

I analysed the full text of 570 articles, finding relevant values content in 209. Articles without relevant values content might, for instance, merely report that the grey whales were migrating past Tofino this week, or that a new bear-viewing company had started up in Revelstoke. Any content reflecting any form of moral valuation of wildlife, or any normative suggestions re-

garding how wildlife should be treated or how humans should behave around wildlife was extracted and used as an eligible note and added to my database. In all, I extracted 373 notes related to these articles (see [Appendix 7](#) for a full listing.)

The coding scheme used for analysis of the articles was developed initially by reference to the types of value expected based on the ethical analysis in [chapter 3](#) and a general knowledge of the types of measures of human disturbance used in the scientific literature (see [chapter 5](#).) and refined through a pilot study of 40 articles. Based on this pilot study, the language of formal ethical theories was found less prevalent in the lay literature, so the final codes used mirror the latter’s language. Coding of the final corpus of data was semi-closed; a few additional sub-codes were added as unexpected issues (e.g., protecting the privacy of wildlife) emerged in the analysis. The final coding schema is presented in [Table 4.1](#) and [Table 4.2](#). The key questions I asked of each source were: “What should we do about wildlife tourism?” (content relevant to this question coded as ‘prescription’); “What should we measure to see if we’re doing it?” (coded as ‘measure’, with sub-codes); and “Why is this measure important?” (coded as ‘justification’, again with sub-codes). In addition, where wildlife tourism was presented as a good thing for wildlife (or as a better thing than other alternatives,) these presentations were coded as ‘benefits.’ In the pilot study, many expressions of values in or attitudes towards wildlife emerged without a strong tie to the three questions above (and this lack of strong tie between expressions of value and

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prescriptions becomes a central theme of my results,) so a ‘valuation’ code (and sub-code) was added to catch these. Lastly, a catch-all ‘summary’ code was used where the gist of the article was relevant enough to keep, but no clear fit between specific extracts and the codes above was obvious.

Two major themes emerge from the analysis of these data. First, we find a wide variety of both value-laden descriptions of wildlife (as a resource; as individuals; as a hazard) and of prescriptions for human behaviour with respect to animals (use them freely (as long as the use is sustainable); respect them for their own sake (though it is often unclear precisely what this entails); leave them alone; manage viewing carefully to habituate animals and reduce risks to humans; manage viewing carefully to *avoid* habituation so animals remain “wild”; manage viewing carefully to avoid stress, fear, injury, disease, suffering.) Second, we find that there is no simple correspondance between the descriptions of wildlife on the one hand and the prescriptions for human behaviour on the other. The logic linking the two is generally implicit, or perhaps even absent. Further, contradictory descriptions can lead to the same prescription: If animals are just like humans, we should leave them alone, because it would be annoying if *we* were followed around constantly and subjected to constant noise and disturbance. On the other hand, if animals are completely different from us, we should leave them alone so that they don’t get too used to our presence and lose their characteristic wild nature. In other cases, the same description can lead to contrary prescriptions: As above, if wildlife are essentially similar to humans, we should

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Keyword	Definition
Benefits	Discussion of potential benefits of wildlife viewing; sub-divided into direct benefits to conservation (including the notion that non-consumptive wildlife tourism is “less bad” than other uses), increased awareness of (and, thus, implicitly, commitment to) conservation issues, and economic benefits (either funds raised from wildlife tourism fees are directly earmarked for conservation programs, or wildlife tourism provides an economic argument in favour of not disturbing wildlife habitats)
Measure	Discussion of specific negative outcomes that could be measured or used as indicators that tourism activities are excessive or overly intense; subdivided into non-animal-centered (landscape changes, pollution), population-centered (reproduction, survival), animal-behaviour-centered (flight, vigilance, feeding, vocalisation, time-budget, other behaviour), and animal-health-centered (disease, heartrate, hormones, injury)
Justification	Any explanation or examination of <i>why</i> the suggested indicators should be considered to indicate that tourism is <i>excessive</i> ; some sub-divisions are similar to those for measures (stress, fear, and disease are bad; normal behaviours, reproduction, and population dynamics are good; habituation may be either), while others focus on the tourist experience (crowding and loss of the wilderness “feel” of an area are bad) or tourist motivation (wildlife viewing motivated by “proper” attitudes is preferable to that motivated by more “base” attitudes)
Valuation	More general discussion of how wildlife is or ought to be valued; subdivided into economic and legal valuations on the one hand, and moral or emotional claims on the other
Prescription	Any claims regarding how tourism ought to be managed or limited, or how tourists ought to behave in the presence of wildlife
Summary	These are notes summarising parts of the article that do not fit into the remaining classification scheme

Table 4.1: Definitions of keywords used in analysis of secondary sources

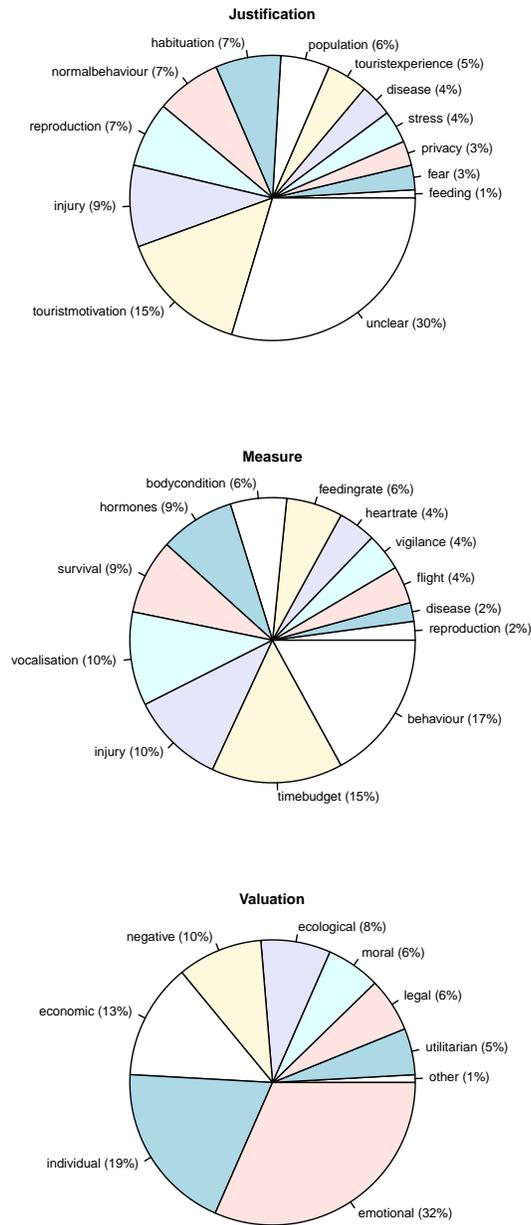
4.2. Analyzing value expressions

Keyword	Subkeyword	Count	Subtotal
Benefits	Other	1	14
	Conservation	4	
	Awareness	4	
	Economic	5	
Measure	Reproduction	1	47
	Disease	1	
	Flight	2	
	Vigilance	2	
	Heart Rate	2	
	Feeding Rate	3	
	Body Condition	3	
	Hormones	4	
	Survival	4	
	Vocalisation	5	
	Injury	5	
Justification	Time Budgets	7	108
	Other Behaviours	8	
	Feeding	1	
	Fear	3	
	Privacy	3	
	Stress	4	
	Disease	4	
	Tourist Experience	5	
	Population Health	6	
	Habituation	8	
	Normal Behaviour	8	
	Reproduction	8	
Valuation	Injury	10	114
	Tourist Motivation	16	
	Unclear	32	
	Other	1	
	Utilitarian	6	
	Legal	7	
	Moral	7	
	Ecological	9	
Negative	11		
Prescription	Economic	15	60
	Individualistic	22	
	Emotional	36	
	Summary	46	
	Summary	46	

Table 4.2: Breakdown of annotations made by keyword and sub-keyword. Percentage breakdowns for the most common keywords are presented in [Figure 4.1](#).

4.2. Analyzing value expressions

Figure 4.1: Distribution of sub-keywords for the Justification, Measures, and Valuation keywords. Numbers are listed in Table 4.2. Percentages may not add up to 100% due to round-off errors.



leave them alone. But, on the other hand, if wildlife are essentially similar to humans, then they might be as interested in us as we are in them, and the interaction would be essentially benign or even positive.

4.3 Conceptions of wildlife

Five major conceptions of wildlife emerged from the data analysed. First, we have what might be considered the “traditional” view of the wildlife management profession, that wildlife are a natural resource to be managed for the greatest sustainable benefit. This conception of wildlife naturally leads to prescriptions for right action centered around the sustainability of the resource (see [subsection 4.4.1.](#)) Second, there are anthropomorphic and empathetic conceptions of wildlife as being “like us.” We saw in the previous chapter that this observation of similarity is the basis for theoretical attempts to extend moral consideration to non-humans. How this conception leads to specific conceptions of right action, however, depends on the details of which similarities are noted, and how one determines right action should be decided between humans. Third, there are conceptions of wildlife as being distinct from the human sphere. These conceptions lead to the prescriptions to keep wildlife wary of humans ([section 4.4.1.](#)) or more vaguely to ‘respect’ the wildness and ‘other-ness’ of wildlife ([section 4.4.3.](#)) Fourth, we have a notion of spiritual value or totemic status of (some) wild animals, but it is unclear from the quotes in this section exactly what prescriptions would

follow from this status. Or, rather, the proponents appeal to a totemic status, spiritual value, or undefined ‘morality’ as support for a specific prescription, but it is unclear why *that* prescription and no other would follow. Lastly, we have a less positive conception (echoing Kellert’s (1996) “negativistic” attitude) that emphasised the potential for harms to humans resulting from interactions between humans and wild animals.

4.3.1 **Wildlife as resource**

The conception of wildlife as a resource to be used (but used sustainably and wisely) is explicitly expressed in a ‘debate’ over whether we should continue hunting wildlife, or switch to a ‘non-consumptive’ use on the grounds that the latter is clearly more sustainable. The first two quotes focus on the relative economic contributions of the two ways of using wildlife, implying a conception that a) ‘using’ wildlife is perfectly acceptable, but b) we should use wildlife in such a way as to gain the greatest benefits from the use.

“Crossroads: Economics, Policy and the Future of Grizzly Bears in British Columbia,” completed by the Centre for Integral Economics, found that grizzly bear viewing is worth \$6.1 million annually to the province—almost twice the value of hunting them for sport, \$3.3 million. (Eustace, 2003c)

Hunting contributions to the economy—less than \$50 million—pale in comparison to the amount brought in by wilderness tourism—more than \$900 million. (Anonymous, 2007)

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On the other hand, while the aggregate contributions may be overwhelmingly higher for ‘non-consumptive’ use, at an individual level where a guide needs to decide what kind of guiding is most profitable, the difference between a high-margin, low-volume hunting outfit, and a low-margin, high-volume viewing tour is less clear-cut:

He’s thinking of giving it a go himself, he said, and even has a website set up for Bella Coola Grizzly Tours Inc., but he is still struggling with the numbers.

“The bottom line is, bear viewers won’t pay the \$25,000 that a non-resident hunter would to have the right to hunt a bear,” he said.

“Bear viewers come in volume. They want to pay \$100 a day. So, with the price of diesel and given the distances you have to go on the central coast, it makes it a pretty tough proposition.”
([Hume, 2005](#))

Further, the two activities may conflict: managing primarily for hunting would require allowing as much harvest as is sustainable; managing primarily for viewing would require managing for the highest population number the habitat can support. One ex-hunting guide turned wildlife viewing tour operator holds that hunting is, in fact, reducing the wildlife population to the point where viewing becomes impossible:

Sewid quit the business in 2000 when he realized there was more money to be made from people who wanted to look at bears. The problem, he and other eco-tourism operators say, is that so many bears—black and grizzly—have been killed by hunters there aren’t enough left for eco-tourists to view. ([Read, 2005](#))

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However, the B.C. Minister of Water, Land and Air Protection has proposed that consumptive and non-consumptive uses of wildlife are not mutually exclusive (as neither watching spawning salmon nor hiking and backpacking result in calls to ban hunting), and that the ‘debate’ between the two is therefore false. The minister also dismisses the economic arguments seen earlier in this section, and any pressure from advocacy groups (presumably, those wishing to reduce or eliminate hunting of certain specific species, such as the grizzly bear), claiming that instead, the government makes decisions based on science. Yet it is not clear *which* scientific questions are relevant to the government—it would be just as “scientific” to manage for the highest sustainable *population size* (for the benefit of wildlife viewing) as to manage for the highest sustainable *hunting mortality* (to provide hunting opportunities).

Each year tens of thousands of British Columbians and visitors to our province attend the Adams River Salute to the Sockeye festival, thousands watch the return of salmon in Goldstream Park on Vancouver Island, and many more thousands hike and backpack to view wildlife of all kinds. All of these activities create an economic benefit for the province. Yet none of these activities result in calls for the banning of fishing or hunting. Wildlife viewing, hunting and fishing all have impacts that need to be managed. This government makes decisions about the conservation of wildlife based on science, not on economics, and not in response to pressure from advocacy groups.

Joyce Murray

Minister of Water, Land and Air Protection (Murray, 2003)

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While the British Columbia government claims to make decisions based on science, Rolston argues that: “[...]urging scientific management is an instrumental, not an intrinsic, value judgment. To instruct managers to be scientific is to set only strategic not ultimate goals for them” (Rolston, 1990, p. 243). These ultimate goals are not provided by science (though they are not provided by economics, either, and while advocacy groups may contribute to the discussion through which they are established, they cannot be said to be *provided* by pressure from such groups.)

In a last example, a group of belugas are trapped by ice near a northern settlement. The community has already harvested enough meat to see them through the winter, and are trying to help these whales escape. However, the possibility is open that if they are unable to help the whales escape, they will instead harvest them and use the meat, with the justification that:

“If they [belugas trapped by ice] get frozen in, they’re going to be in one hole, popping up and down and taking turns (breathing),” Jacobson said. “That’s not right, seeing the whales suffer like that.” (Anonymous, 2006)

This problem refers to two mutually exclusive, if not contradictory, frameworks for thinking through questions of right and wrong. On the one hand, this community sees whales as a resource to be harvested and used over the winter, but only to the extent needed. Since the community already harvested sufficient whale meat during the regular hunting season, the first choice is to help these whales escape. This could still be compatible with a

strict resource view of wildlife: helping a small number of individuals escape and survive will mean a healthier population to harvest next year (if the population is large, and the number of individuals small, a scientific view might consider the impact negligible, but the action is compatible with a view of wildlife purely as resources.) On the other hand, animals are also seen as individuals with value, and allowing them to suffer is wrong. If the only way to prevent suffering is to kill and use the animals, that is better than letting them die slowly. Perhaps both these views could be reconciled under a utilitarian framework: where whale meat is needed to meet human needs, those needs outweigh the costs to the whales of being slaughtered. Where the whales are not needed, helping to free them would increase total utility. If they cannot be freed, a quick death, balanced by the minor gain in utility from a surplus of meat, is better than a slower death not so balanced. However, this seems a more subtle application of utilitarian logic than Singer's outright rejection of any animal use. It is more likely that the conclusions follow from an application of both a resource view and an individual empathy view, than from a single complicated utilitarian calculus.

4.3.2 Wildlife as 'furry people'

Other empathetic valuations of wildlife may equate human and non-human life as more or less fully identical or equivalent. There are obvious similarities between humans and non-human animals. Whether those similarities extend beyond gross morphology, physiology, and cellular architecture, however, is

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more often debated. As seen in the previous chapter ([chapter 3](#)), if humans and non-humans are essentially similar in those attributes justifying moral treatment of other humans, then consistency would require similar moral treatment of non-human animals. On the other hand, there are also obvious differences between humans and non-human animals, and it is nonsensical to ascribe, for instance, freedom of religion to wildlife (although, as we will see later in this chapter ([section 4.4.3](#)), something akin to a right to privacy does emerge with respect to at least some wildlife.) Some ethical theories resolve this by suggesting that the similarities require similar *consideration*, but the differences mean that this consideration does not necessarily lead to identical *treatment*. In this section, we will look at several expressions of the opinion that animals do share basic emotions and, at least qualitatively, a similar internal life with humans. Later in this chapter ([section 4.4](#)), we will return to the questions of whether there is any link between these similarities and the moral consideration or behavioural prescriptions that are expressed by the general public.

Bears, in general, tend to be solitary animals. However, naturalists have observed that at certain times of the year, in certain places, due to food concentration or other factors, they are able to live in closer proximity to each other, and to form social structures and bonds more usually seen in group-living mammals. Such times and places, for obvious reasons, are of interest to the wildlife tourist, and to the commercial tour operator, as they allow a higher chance of viewing wildlife. One such time and place occurs

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every fall around Churchill, Manitoba, when polar bears migrate from their summer grounds ashore to their winter grounds on the pack ice. The bears tend to arrive at the shoreline early, and wait until freeze-up before being able to move off-shore. This provides an opportunity to view them in predictable groups:

“The more you watch them [polar bears], the more you realize that they’re pretty much their own bear. They’re individuals. Every one has a different temperament and character.”

“[...]you see the human-like qualities, like the friendship you see between these two guys. [...] When the ice freezes up and they go hunt seals, I guess they go back to the beasts they are. But for now they’re pretty animated and pretty cool to look at.”
([MacLennan, 2005](#))

What the naturalist might dispassionately describe as the difference between the solitary bear out on the ice floes chasing a widely-dispersed food source and the gregarious bear living in close proximity to conspecifics due to limited habitat, food, etc., this tour operator describes as the difference between the normal beastly nature of bears, and a more human description of their individuality. However, this individuality is not linked explicitly to any moral consideration; it merely means that the bears are “pretty cool to look at”.

Grizzly bears also tend to be more gregarious on the British Columbia and Alaska coastlines than they are in other localities, possibly because of the abundance and richness of food sources such as saltwater marshes in the early spring and salmon runs in the fall. These concentrations of bear

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populations provide good opportunities for tourism, much of which is done from small inflatable outboard-engine boats, which allow close approaches to shore and can navigate the shallow water of the marshes:

The young bear kept a careful eye on the inflatable boat where I sat with a half-dozen grizzly admirers no more than a few metres away. A magical bond was created, as neither the bear, nor our small quiet group felt any danger. (Hayward, 2003)

While less explicit than the previous quote, this description of an encounter suggests at least some common ground and shared emotions between the bear and the humans. Whether the magical bond is truly two-sided or not, at the very least, the bear is capable of feeling danger, and further, the way in which a bear would express a feeling of danger is obvious enough that a human tourist can assess that this bear, at this time, does not feel any.

The projection of human traits onto animals is not limited to the lay population. A Dr. Allen uses DNA profiling to study both the numbers and the familial relations between black bears surrounding the resort town of Whistler, B.C.

“Their social life is like a soap opera,” said Allen of his ursine actors. “Everyone sleeps with everyone and so you don’t know who is true or not.” (Ogilvie, 2003)

Not only does this attribute a complex social life to non-human animals, implying that the bears, at least, recognise each other as distinct individuals,

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it uses human notions of monogamous fidelity to interpret the evidence in terms of being “true or not.”

Whales are another major target of wildlife tourism along the west coast. Whales are intelligent mammals with complex social structures. The attraction to whales is not only because of their beauty and grace, but because there is a feeling of two-sidedness to the relationship; the fact that the whales only interact with humans when they choose to and can afford to is seen here as evidence of this two-sidedness:

“They’re beautiful and graceful animals, but I think our attraction to them is because it’s a two-sided relationship,” says Macri. “There are times when they’re calving and feeding when they can’t afford to spend the time with us, but when they can, they do.” (Jeffery, 2007)

However, tour operators, tourists, and scientists alike appear to be more self-conscious about expressing this empathy with respect to whales than they were with respect to the bears discussed above. The following scientist’s careful admission that whales might be seeking interaction with humans is interpreted by the reporter (perhaps incorrectly) as a reluctant breaking of a professional code which would normally compel scientists to be less empathetic:

Being a scientist, Black is reluctant to acknowledge a personal bond with the animals.

“But they might recognize us,” she confesses quietly, as if violating a professional code. “They seem almost as curious about

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us as we are about them. We think they might be seeking interaction.” (Thomas, 2004)

Likewise, the following tourist would like to avoid anthropomorphising, but seems almost forced into acknowledging that the whales’ behaviour can best be interpreted by supposing that they might be curious about the whale watching tourists:

Much as I’d like to avoid anthropomorphizing the whales, they genuinely seemed inquisitive about the raft and its odd surface-bound appendage. It was the same in the boats and kayaks: they approached without fear, sometimes speeding by, other times slowing down to take a good, long look. (Jeffery, 2007)

And tour operators, excited by the arrival of a new calf in the whale pod, think the whales were equally excited, but add a disclaimer that they might be reading into the whales’ behaviour human-like characteristics and emotions that aren’t actually there:

Radios crackled with excited chatter when whale watchers and researchers saw the first new calf. “It seemed like it was exciting for the whales as well,” said Balcomb. “There was an increase in vocalization and more exciting sounds. Maybe we read into it.” (Dickson, 2004)

In contrast, the town barber seems perfectly willing to anthropomorphise Luna, the young whale separated from its pod and spending time in (overly?) close proximity to human settlement. However, the conclusion from this

anthropomorphising recognises that the whale is not *actually* human, and will soon leave to seek his own kind—this lay voice seems perfectly able to anthropomorphise to better understand the whale as *similar* in some ways to humans, without advocating that we treat the whale as if it were *fully* human.

The town’s only barber has his own ideas on the situation. “Leave him alone,” Harry Curtis said Wednesday. “He’s going to get horny and leave soon anyway. He has never hurt nobody. He’s gentle, just a big kid. I’m not a marine biologist but do the marine biologists know what they’re talking about anyway?” (McCulloch, 2004)

This general reluctance to acknowledge an essential similarity between humans and whales, or between humans and *foraging* polar bears (the human-ness of *staging* polar bears on shore is described as an aberration) contrasts sharply with the basic premise of two of the major ethical theories treated in the previous chapter (Regan, 1983; Singer, 1990), which emphasise the essential similarity between *all* animals, and the absence of any morally relevant differences which could justify differential ethical treatment of different species.

4.3.3 Wildlife as wild, free, and not-human

On the other hand, wildlife are, by definition, not human. In fact, the very non-human-ness and wildness of wildlife are in many ways the driving force behind non-consumptive wildlife viewing tourism; if they were not, we could

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sit around town and watch people, or we could go to the zoo and watch captive animals. We don't, and the motivation for this hinges on the fact that experiencing wildness and wilderness is emphatically different from our everyday, urban lives.

This motivation for wildlife tourism is obvious in the following description of the essential alienness and non-humanness of a mountain gorilla, which leads initially to uncertainty and apprehension. However, this feeling of apprehension or fear gives way to a sense of “strange privilege” when the animal declares its intentions (or at least, lack of aggressive intentions) in a way that is thoroughly comprehensible to us, despite the fundamental communications barrier separating “us” from “other”:

Uncertain of how this wild animal would react, I crouched, steadied my footing and prepared for a possible attack. Instead of charging, the silverback gently reclined, stretched out among bamboo shoots and farted—loudly.

Our group snickered, feeling strangely privileged to have witnessed a flatulent mountain gorilla in its natural habitat. (Dimon, 2006)

Again, however, there is no particular link from this understanding of wildlife-as-other to any discussion of the proper behaviour with respect to said wildlife. Such a link is at least implicit in the following distinction between the way in which townsfolk and biologists characterise (by naming) the young whale separated from its pod and interacting with people on the B.C. coast:

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Townfolk and tourists have dubbed the three-year-old whale Luna, and often come to the water to visit with him.

Biologists, who prefer to call him L-98, wish everybody would just leave the whale alone before he forgets his roots. (Paterson, 2003)

However, the contrast between this and the previous quote from Harry Curtis illustrates the lack of one-to-one correspondance between different *descriptions* of wildlife and different *prescriptions* of our behaviour towards it. In this quote, the empathetic, anthropomorphic description of the whale as Luna leads to an acceptance of human interaction with him, while the non-anthropomorphic description of the whale as L-98 leads to the prescription that it should be left alone. In contrast, Harry Curtis (subsection 4.3.2) starts with an anthropomorphic description of the same whale as a big, gentle, horny kid yet also concludes with the prescription that he should be left alone. These subtleties of lived moral experience are inadequately captured by the more formal ethical theories in the previous chapter, where it is assumed that if we simply recognise a more accurate description of animals, then the proper behaviour towards them can be derived from first principles.

4.3.4 Wildlife as totem

As with the wildlife-as-resource theme, the notion of wildlife as totemic or spiritually valuable came up mostly in the debate over hunting versus viewing wildlife. We saw that part of that debate centered over which use (assuming them to be incompatible, which was questioned) was more “efficient”, in

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terms of either economics or other measures of utility. A counter-argument to that framing of the debate is that hunting (some) wildlife species is wrong, on some completely different basis than the efficiency of using the resource in that manner:

The time has come to bring the morality of killing grizzly bears into the debate and give it a prominent place. As a progressive society, let's say loudly and clearly that we don't need scientific facts or economic rationale to protect our grizzly bears—that morality alone is reason enough. Let's learn from the French who have killed all their bears and relegated them to folk sayings. ([Bachrach, 2004](#))

Or, to put it more succinctly:

[Grizzly bears] are B.C.'s totem animal and they should not be hunted. ([Eustace, 2003a](#))

It is far from clear from these quotes exactly what the basis for condemning hunting is. The first quote suggests that “morality” is sufficient reason to cease hunting (echoing the “moralistic” orientation found by [Kellert \(1996\)](#)), but we saw several different moral theories in the preceding chapter, and these were not equivocal in condemning hunting. There are no details here with respect to which of these moral theories is appealed to. The suggestion to learn from the French might be taken to indicate some flavour of existence value: that bears should continue to exist outside folk sayings. But is that due to the intrinsic value of the bears, or due to human use values, or due to something else? These details are unexamined: the prescription that bears

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should be protected simply *is*. In the second quote, the notion of totemism is adopted from native spirituality, but as [Preece \(1999\)](#) describes, the gulf between native spirituality and native practice is no narrower than that in Western culture—and totemic status accorded to specific animals did not, in native practice, afford protection from hunting.

On the other hand, opposition to hunting grizzlies and whales does not necessarily imply an outright objection to any animal use—it is only some (large, beautiful, intelligent) species that should not be used for food:

But the anti-whaling lobby simply cannot bear to see these large, beautiful and seemingly very intelligent creatures killed for food. The intelligence is the key: many people have a strong emotional conviction that while killing animals to eat them is justifiable, we should not kill anything that too closely resembles ourselves—and whales' apparent intelligence puts them within that charmed circle. ([Dyer, 2003](#))

These large, beautiful, and intelligent species are only protected from hunting because they resemble ourselves so closely, raising the question of how closely a species would have to resemble us to be placed in the charmed circle of non-resources. We have seen the notion of “circles” of moral concern in both [Callicott's \(1988\)](#) and [Midgley's \(1983\)](#) ethical theories, although neither suggested apparent intelligence as the criterion for inclusion in one circle or another. In fact, [Singer \(1990\)](#) and [Regan \(1983\)](#) specifically exclude intelligence and similarity to ourselves as a criterion for any moral decision-making; the former (as a utilitarian) focusing on the ability to feel pleasure

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and pain as the only valid criterion, and the latter arguing that privileging certain species (our own, those that resemble us closely) above others is “speciesism” and no less odious than racism or sexism.

To ecological and economic reasons for ending the grizzly bear hunt, the following opinion adds a third based on “moral” concerns which refer amongst other factors to the “culturally cherished” role of grizzly bears:

There is, however, a third compelling argument upon which we cannot place a dollar value. This argument is a moral one: The argument that we should end the grizzly hunt because it is simply wrong to kill one of our most culturally cherished species for fun and profit. The argument that grizzlies have intrinsic worth, distinct from their ecological role or economic contribution. The argument that our children have a right to witness the magic of seeing a bear in the wild. (Bachrach, 2004)

Having referred to *one* argument, this opinion then lists three: one based in a virtue-vice ethic (it is the frivolous reasons for killing that are prohibited), the second on some form of intrinsic worth (the details are left unexamined), and the third on an anthropocentric argument based on the rights of future generations. It is not clear whether these objections to hunting would be at least partly addressed by ensuring the hunt is sustainable (thus leaving a viable bear population for future generations.) Nor is the implicit claim that respecting the intrinsic worth of grizzlies is incompatible with hunting them: Preece (1999, 2005) certainly argues that various non-western conceptions of animal spirituality and totemism, far from *protecting* animals from hunting,

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are used to *justify* the hunt, and, as we saw in [section 3.4](#), ethical theories of respect for wildness can also be used to justify hunting.

This spiritual or moralistic valuation, of course, is not uniformly shared. In particular, the notion that Luna, the killer whale separated from its pod and spending time near a coastal village, is the embodiment of the spirit of a first nations' leader from that village who had recently passed away, after claiming an intention to be reincarnated as an orca, is not received kindly by this non-native barber:

Curtis dismisses the theory that Luna embodies a first nations' spirit. "There's no way in hell he's a spirit—it's just a fish."
([McCulloch, 2004](#))

Nevertheless, it is clear from these quotes that there is a widely if not uniformly shared spiritual valuation of wildlife, which is not rooted in the specific consequences of particular management decisions, and is thus less amenable to scientific measurement or to sustainable use arguments than the resource valuation discussed in the first section. It is less clear whether this spiritual valuation would have much to offer in terms of specific strategies for managing non-consumptive wildlife viewing; it appears not to be followed much further than the level of saying that at least some animals are special, and ought not to be hunted, but ought to be watched non-consumptively instead.

4.3.5 Wildlife as hazard

The last type of attitude towards wildlife I will cover here echoes Kellert's (1996) "negativistic" valuation of wildlife. Many of the wildlife animals sought out in wildlife tourism are interesting because of their rarity, large size, and conspicuousness. These large, conspicuous animals also tend to be top predators in their ecosystems (e.g. bears, sharks), or, even if not, their large size and strength makes them potentially dangerous to humans.

Once again, Luna figures in this category. In this case we have seen the entire spectrum (barring the resource view) expressed with respect to a single, individual, named animal. Luna is an inquisitive and curious neighbour, a big horny kid, a scientifically described member of pod L who really should go back to the "wild", the spirit of a deceased chief, a big "fish", and now, a damned menace:

"That whale is a damned menace," snapped one man, standing at the float plane dock, a few metres from where Luna and the children played their game of tug-of-war. "I want it out of here. It doesn't belong here." (Hutchinson, 2004)

Here, it appears that the menace is not so intrinsic to the whale, as due to its presence in the wrong place, and the way humans interact with it. Presumably, if it were to return to its pod, the risks of it overturning a boat or causing other trouble would be minimized. Again, however, despite the different understanding of the whale, the prescription is the same: leave the whale alone.

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More frequently, the risks arise from excessively close approaches by humans to wildlife, rather than from the wildlife deciding to stay “unnaturally” close to humans. Both grizzlies and sharks are top predators within their ecosystems (which likely contributes to the interest in seeing and photographing them,) and are both powerful enough to cause serious injury to humans.

Lake Louise is within Banff National Park in the Canadian Rockies. Unlike the three grizzly bear viewing areas discussed in [chapter 2](#), this park is crossed by a major highway, and tourist access and behaviour is thus far less controlled than in the more remote areas. This often leads to “bear jams” (traffic on the highway slowing to a crawl as motorists slow or stop to view road-side wildlife), and to tourists leaving their cars for better pictures—which may not be good for the bears, and certainly presents a risk to the tourists:

Few things stress out Hal Morrison more than the sight of a grizzly bear sow and cubs virtually surrounded by picture-popping tourists. Sometimes the veteran Parks Canada warden isn’t sure whether he’s protecting the Lake Louise tourists from the bears, or vice versa. “They just abandon their vehicles on the highway and come running up,” the 47-year-old warden says with an air of resignation. “Some people have walked into the ditch to get pictures. Then other people get in front of them. Sometimes I don’t think they even think they are in danger.” They are. A frightened, surprised or angry bear is a very powerful and dangerous animal. Approaching a bear is always risky. Approaching a bear with cubs is just plain dumb. [\(Barrett, 2005\)](#)

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Shark viewing at least is, by nature, a more dedicated and specialised activity: nowhere can one step out of one's car while travelling by, and become an almost accidental shark tourist. Also unlike grizzly viewing, where food conditioning is universally regarded as a bad thing (see [chapter 2](#)), chumming (providing food to attract sharks) is used by some dive operators, leading to increased concern for diver safety in places such as South Africa:

“The local diving and surfing community has rightfully become increasingly concerned about shark attacks,” said the Shark Concern Group, whose members include a shark attack victim and environmentalists. The risk of attacks may be increasing “as a result of how humans are interacting with sharks, for example, using shark cage diving and chumming.” (Cohen, 2005)

More locally, divers are attracted to Hornby Island in the northern Strait of Georgia to dive with six-gill sharks—and dive operators do not use bait or other attractants. Perhaps not coincidentally, diver safety is a lesser concern, and guidelines to avoid excessively close approaches to these sharks are justified by a concern for the sharks' “comfort” instead:

In the past three decades, he's never known a sixgill to take a bite out of a diver. If anything, divers are asked to remain two or three metres from the slow-moving sharks for the animals' comfort, not their own. (Dedyna, 2003)

In both of these cases, the danger posed by wildlife to humans is acknowledged as a crucial consideration in terms of how wildlife viewing is conducted; in both, however, there is also a consideration that while large,

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predatory wild animals may pose a danger to humans, there is *also* a need to protect the wildlife from humans, although it is not clearly defined exactly what the potential detrimental effects of excessively close wildlife tourism on the animals might be.

In sum, the first half of this chapter examined a variety of ways of conceptualising what wildlife are and how they behave, including seeing wildlife as a resource to be enjoyed by humans, as essentially similar to humans, as fundamentally different from humans, and finally as a menace to humans. What conception a person has of wildlife has some influence on how wildlife ought to be treated, but the relationship is not simple. For instance, we saw that seeing Luna as essentially human (“a big horny kid”) and objecting to seeing him in such humanising terms (“Biologists, who prefer to call him L-98...”) both lead to the same recommendation: that he or it be left alone so that he or it returns to socialise with other whales. In the remainder of the chapter, I will shift to focus on the question of how we ought to treat wildlife in the context of conducting wildlife watching activities.

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Conceptions of how we ought to behave with respect to wildlife are, of course, not completely divorced from the conceptions of wildlife detailed above. But neither is there a clear one-to-one correspondance between the two. For

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instance, there is a general unease regarding excessive tourist activity, which is not clearly linked to any of the five conceptions of what wildlife is like:

Whale-watching Zodiacs, little rubber boats stuffed full of life-jacketed tourists, and fishermen’s skiffs quickly changed course to follow the whales. A floatplane swooped low.

“What a zoo,” sighed a bearded local, watching the motorized uproar. The eco-flotilla could seem excessive if you’re from this remote community on B.C.’s rugged Pacific coast. (Jackson, 2002)

This quote provides a clear flavour of the general feeling that there is *something* wrong with “too much” wildlife viewing or eco-tourism, even if it is unclear what, exactly, that wrong is, or why it is wrong, or how one would even begin to assess how much tourism is too much. This echoes the general findings of Robert Bellah’s (1985; 1991) work, which explored expressions of value and policy goals in the broader and more general context of American society, and found strong and detailed expressions of specific values and prescriptions, but also found a lack of any vocabulary or framework available to anchor these specific expressions and make sense of them in terms of any abstract underlying moral theory.

In the remainder of this section, I will explore specific suggestions regarding how we ought to conduct ourselves with respect to wildlife while engaged in wildlife viewing activities, whether in terms of preferred individual behaviours, or in terms of management options or prescriptions. Four general groups of prescriptions emerged: that we ought to use resources sustainably, that we ought to safeguard the welfare of individual wild animals, that we

ought to respect wildlife, and that we ought to behave in a virtuous manner. As suggested in the previous section, these prescriptions, while often detailed in their own right, are generally not well connected to any of the general conceptualisations of wildlife seen in the previous section, nor to any of the formal moral theories seen in the previous chapter.

4.4.1 Sustainable use

One group of prescriptions for right action is relatively clearly linked to a specific conception of wildlife: if one believes that the most important factor in managing wildlife is to use resources in a sustainable manner, it is highly likely that one views wildlife (at least within the context of that management belief) primarily as a resource. While some authors (White, 1967) have argued that the Western, Judeo-Christian¹⁵ attitude towards wildlife as a resource over which humans have dominion entails the right to use the resource with no obligation to use it sustainably, nor any duties to wildlife as anything *other* than resources, others (Preece, 1999, 2005) have pointed out that a more nuanced analysis of both historical and current attitudes towards animals betrays a far more complex picture. This more nuanced analysis suggests both that the biblical language of “dominion” can readily be interpreted as recommending a wise-use, sustainable “stewardship” of animals, and that historical attitudes reflect an on-going societal concern with

¹⁵While this classification is too broad to be useful and has been rejected as insufficient by many, I mention it for its reference to White’s classic thesis

both sustainability of resource use and with a need to respect (in some way) the interests of animals-as-individuals (yet without necessarily condemning human use of animals-as-resource).

The results of my analysis echo this more complicated view of ‘society’s’ attitude towards wildlife. Certainly, there is scant support for the notion that humans may appropriately use wildlife without any limitations, while the notion of sustainable use is strongly present throughout. How this sustainable use is to be understood, and specifically how it applies to non-consumptive use, however, varies. Concerns expressed over unsustainability of wildlife tourism actions in this particular context can be broken into three types. First (and most commonly expressed), there is a concern that excessive tourism might lead to a decrease in wildlife population numbers. Second, there is a concern that excessive tourism changes the nature of the wildlife. Third, there is a concern that excessive tourism makes wildlife less ‘useful’ to wildlife tourism. For the purposes of presentation, I attempt to separate out those concerns relating to sustainable-use from those requiring some form of consideration for the interests of animals as something other than a resource. We shall see, however, that the various concerns co-exist in society, often in the same speaker, and sometimes even in the same sentence.

Keep individuals and populations healthy

The approach to sustainable use that focuses on maintaining population numbers is probably the most traditional one in the context of wildlife manage-

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ment. Classically, wildlife management deals with managing game species (section 2.1). The key question for this type of management is to ensure that the ‘take’ by hunters is smaller than the reproductive capacity of the population to replace the taken animals. Transposing this to non-consumptive wildlife viewing, there is no intentional ‘take’, but subtle effects of human presence might either decrease the reproductive capacity of the population to replace ‘natural’ mortality, or might reduce individual fitness and survival in a way that increases the number of animals that need to be replaced. Management of wildlife tourism should, under this conception, focus on these subtle impacts, and specifically (or solely?) on the extent to which they cascade to changes in population parameters relevant to the continued sustainability of the wildlife population.

Population-level wildlife concerns are sometimes expressed without getting into any particular details regarding why and how human harassment might be leading to the changes:

Scientists say the reason for the whale population’s stagnation remains a mystery, but pollution and human harassment remain leading possibilities. (Peritz, 2007)

[Time budget] changes in behaviour “are potentially serious for the population” says Gordon Hastie, a marine mammal expert at the University of British Columbia in Vancouver, Canada. (Ananthaswamy, 2004)

Not only is it not clear from these quotes why and how human presence might be leading to changes at the population level, it is not clear how one

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might go about determining the difference between benign human presence and detrimental harassment. Human harassment might be a possible reason for population stagnation, but the mechanism is unclear. Changes in behaviour are *potentially* serious, but it is not clear which changes *are* and which changes *are not*. It is not even clear in these examples how one would go about trying to decide such questions. Other quotes, however, do start to fill out some of the details:

“It is especially important for sows and their cubs to feel comfortable to feed on the shores,” says Palmer. “When they wake from hibernation, they need to eat a lot—for 14 hours in a day, they’ll eat grass.” (Eustace, 2003b)

As context to this observation, bears (especially sows) waking from hibernation are facing the energetic demands of lactation coming on the heels of the drains on body reserves during the winter. In order to meet these energetic demands, they spend most of the day feeding on relatively low-energy plants, as the higher-energy berry and salmon food sources are not yet in season. This suggests one mechanism through which time budget changes might affect populations: if the sows spend less of their time feeding and more time responding to tourists (through vigilance, moving away, etc.), they might not be able to take in enough food energy to meet those demands while replenishing reserves¹⁶. This in turn might lead to poorer growth in the current

¹⁶Even this link is not necessary, however; it could be possible for bears to feed less efficiently, but ‘make up for it’ by feeding for longer each day. The question is whether animals ‘need’ 24 hr/day to meet their needs for food, rest, etc., or whether they have ‘free time’ that could be reallocated without detriment.

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offspring, or decreased ability of the sow to reproduce in the following year¹⁷. However, even where the expressed concern is derived from such a mechanistic understanding of behaviour and energy physiology, it is expressed in terms of the bears “feeling comfortable”, which speaks to a recognition of the bears having an internal, affective life, whether this life is important in its own right, or merely a more convenient way of assessing whether human presence is having an impact: it is easier to determine empathetically whether an animal is comfortable than it is to measure scientifically their total caloric intake.

In addition to taking up time which could be used for feeding, responding to wildlife tourism through vigilance or avoidance also directly uses energy. Avoidance of humans through travel, especially rapid flight or travel through deep snowpacks, is clearly energetically demanding. This extra energy demand needs to be met through increased feeding, which will then lead to less time available for resting, mating, and social interactions. In some cases, such as the polar bears that are viewed around Churchill, Manitoba, increased feeding is not an option. Unlike grizzly bears, which are generally most amenable to wildlife viewing when they are brought together in higher densities due to a rich and concentrated food source, polar bears “stage”

¹⁷In this particular case, however, it also turns out that in some areas, sows and cubs feel *more* comfortable on the shores when tourists are present, because they know that the large, dominant males tend to avoid the tourists. Thus, in this particular case, tourist presence may be *beneficial* to the population. In other cases, however, if tourist presence reduces the animals’ comfort levels, and thus feed intakes, there could be a detrimental effect

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along the shorelines of northern Manitoba in the fall, waiting for the winter pack ice to form and give them access to their winter feeding grounds. This means they are unable to compensate for the increased use of energy needed to respond to wildlife tourism, and will simply be left in poorer body condition for it:

Polar bears in Manitoba are coping in October and November with upwards of 20,000 tourists, desperate for a glimpse of the white giants. It’s the time of year when the animals should be resting. Instead, the bears go on alert any time a vehicle comes by, using up valuable fat stores, critical for hunting and defending themselves later in the year. (Garrett, 2007)

Others point out that, in addition to the decreased food intake, one might observe physiological stress responses, which also affect reproduction and offspring survival. The physiological stress response tends to divert the body’s energy stores away from long-term survival (e.g. energy storage, immune system, etc.) and reproduction, and mobilise those energy stores for immediate use in either fight or flight. Even if this mobilisation is not actually necessary, the diversion still reduces the amount of energy used for the longer-term survival and reproductive efforts. This concern is repeatedly raised in the articles I studied, generally in the context of summarising or reporting on biological research into the impacts of wildlife tourism:

Tourists on wildlife-watching holidays may be threatening animals’ long-term survival, say biologists. Studies on dingoes, dolphins and polar bears, among other species, show that the prox-

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imity of humans interrupts animals’ behaviour patterns and daily routines, causing stress levels and heart rates to increase.

The most worrying potential impact is on reproduction. Stress can reduce the size of litters or individual offspring and lower the chances of conception. (Tucker, 2004)

Tourist traffic elsewhere has caused dolphins and nesting birds stress, putting both health and reproduction at risk. (Tourtellot, 2005)

Researchers there found that in areas restricted to tourists, 50 percent of hoatzin nests held at least one chick. In tourist zones, though, that number fell to just 15 percent. (Anonymous, 2004c)

However, while it is reasonable to argue that stress may affect individual fitness, reproduction, and population sustainability, it is exceedingly difficult to determine exactly *how much* stress leads to *what level* of effect on any of these three. It is more difficult by far to determine exactly how much stress leads to *unacceptable* levels of effect. We will revisit this difficulty as a matter of expert technical judgement in the subsequent chapter (subsection 5.2.5.) The details of the difficulty are not covered in the lay writing analysed here. The fact that physiological or behavioural measures may not be significant is raised, leading to the conclusion that tourism should be stopped if (but only if) signs of population decline are detected:

Some effects are subtle and their significance is not clear. A little more stress or bursts of unnatural behaviour may not harm individual animals or the well-being of their species. [...]

At the first sign of population decline, tourism should stop and experts should investigate. (Anonymous, 2004a)

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In occasional cases, more acute injuries may occur to wildlife, either due to injuries sustained in fleeing from tourists, or, in this case, due to collisions between wildlife-viewing vessels and the wildlife:

A series of deep marks on a male killer whale in Johnstone Strait is leading some watchers to speculate that a boat propeller ran over the animal.

The whale, a member of the threatened northern resident population, has been keeping up with other members of his pod. Area residents with a special interest in whales are watching over him.

This incident is a reminder that boaters should be extra-cautious in areas where there are large numbers of whales, Symond said. (Wilson, 2003)

Aside from the mention that the whale is a member of a threatened population, it is not made explicit whether it is the injury (pain, etc.) to the *individual* whale that is ultimately of concern, or the ability of that injured whale to contribute to the *population*.

It has also been observed that travel increases disease transmission in humans. It stands to reason, then, in cases where diseases are transmitted between humans and wild animals, increased contact between the wildlife and ecotourists (who, in turn, may have travelled half the globe to be there) could lead to instances of human-transmitted diseases in the wildlife under observation:

“Transmission of disease to wildlife, or subtle changes to wildlife health through disturbance of daily routines or increased stress levels, while not apparent to a casual observer, may translate to

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lowered survival and breeding,” says Philip Seddon of the University of Otago in Dunedin, New Zealand. ([Ananthaswamy, 2004](#))

Again we find that, while specific problems and details are well conceptualised (it is obvious that disease or injury is bad, and ought to be avoided) the links between these details and more abstract theories of moral concern (whether the moral concern is at the level of the diseased individual or at the level of its reduced contribution to the population, for instance) tend to not be well expressed.

It must be borne in mind, however, that tourism and wildlife viewing are not necessarily all bad from a resource-sustainability point of view. First, there is a definite (if not very detailed) supposition that eco-tourism and wildlife viewing serve to increase environmental awareness and concern, and that, presumably, increased awareness and concern will lead to behavioural change or other benefits:

Ecotourism also changes the way people view the gorillas and creates a broader awareness of their plight. ([Keesling, 2002](#))

Kukat believes that the best way to ensure all ocean creatures are there for future generations is “to share the splendour of nature so that as many people as possible will get excited about it and do their part to protect it.” ([Haysom, 2003](#))

How and whether this awareness and concern translates into specific benefits to the population is debatable, however, but beyond the scope of this thesis.

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A more measurable benefit comes in the form of tourist dollars spent on wildlife viewing. If either the tourism operations are structured to funnel the money spent by the tourist directly into conservation programs, or if it is simply more profitable for locals to conserve a population to be watched than to exploit wildlife or its habitat in less sustainable ways, then tourism may well contribute to sustainability:

“If done properly, wildlife-watching tourism can be a win-win situation,” says Hammer. “People have a unique experience while contributing to conservation directly. Local people and habitats benefit through job creation, research and an alternative income. Local wildlife benefits from our conservation and research work.” ([Amodeo, 2004](#))

Political support for protecting habitats relies on ecotourism’s economic benefits, as in the Galapagos, whose iguanas, incidentally, display no stress hormones from frequent human visits. As for whales, responsible whale-watching rather clearly causes less harm than hunting, and it supports whalers-turned-tour-guides. ([Tourtellot, 2005](#))

This supposition that watching causes less harm than hunting contrasts with the prospective tour guide quoted in [subsection 4.3.1](#) who observed that wildlife viewing is a low-margin, high-volume operation, as opposed to the low-volume, high-margin case of guiding hunters. This guide called into question whether tourism operations are necessarily economically viable, due to the lower prices paid by each tourist. However, the same observation could also call into question whether the aggregate impacts from the high

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numbers of relatively benign interactions are necessarily minor compared to the relatively smaller number of individuals affected by hunting. For an individual whale, certainly being viewed (even viewed frequently) is likely ‘better’ than being killed by whalers. But for the population of whales, constant harassment that leads to, say, a 10% decrease in reproduction may or may not be ‘better’ than a harvest of, say, 1% of whales.

Still, if wildlife viewing is conducted at reasonably low levels, one can hope that the interactions between wildlife and tourists might be minimal, and that as only a fraction of the animals’ time is affected by tourist presence, the benefits of awareness and funding for conservation might outweigh the impacts of the tourists:

Murray figures that only a small fraction of the whales’ lifespan is spent in the company of whale-watch boats, and is hopeful that ultimately the good outweighs the bad.

“When they’re surrounded by boats, there could be negative effects,” she concluded. “But on the positive side, there is increased public awareness and, maybe, more money for conservation.” (Pynn, 2006)

The question, then, comes back to how many boats, and what fraction of the whales’ lifespan, are small enough that the good does outweigh the bad. Without a clearer conception of what the negative effects are, and some way of comparing them to public awareness and, maybe, money, we are no further ahead in terms of determining how to approach actual management decisions.

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Lastly, there is one example of wildlife tourist presence having a tangible and measurable *benefit* on wildlife. As discussed above, grizzly bears (especially lactating sows) coming out of hibernation need to spend most of their time feeding to meet energetic requirements. It turns out that the biggest stressor on female grizzly bears are large, dominant male bears, who sometimes kill cubs in order to bring the sow back into oestrus. The biggest stressor to large, dominant male bears, however, turns out to be wildlife tourists. Therefore, the theory goes, the females avoid large males by spending time near tourists. This theory is borne out by observation of interactions between grizzly bears and tourists:

“I really didn’t expect to see a positive impact, but there is this really strong benefit for the females with cubs,” he said. “And since they are the ones doing the reproduction, it has a really strong positive impact for the population.” (Munro, 2004)

However, while there may be uncertainty and debate over the extent to which wildlife tourism does or does not impact population sustainability, as conceptualised in this section, it is generally agreed that we *ought* to manage our activities so as to protect population sustainability. While there may be divergent views on *why* protecting population sustainability is important (i.e., because populations have rights; because future generations of humans have rights; or because whole ecosystems have value,) and while these abstract reasons do not find much public expression in the literature examined in this section, there is near-universal consensus that sustainable

use of wildlife *is* important. This echoes a suggestion by [Norton \(1995\)](#), arguing that philosophers can make progress on practical issues by finding widespread consensus on specific management issues, even where the underlying ethical theories are neither fully worked out nor universally agreed-upon. If there is disagreement over the underlying view of wildlife as a resource, it centers mostly on whether we ought to be using wildlife *consumptively* by hunting it. The question of whether “using” wildlife non-consumptively by watching it treats wildlife as a means-to-an-end or as an end-in-itself may be crucially important to ethical theorists such as [Regan \(1983\)](#); such abstract distinctions, however, do not figure in the “lay” ethics examined here.

Keep populations wild and wary

In addition to the concern expressed above about the *number* of wild animals left in a population, there is a concern about the *quality* of these animals. It is considered “normal” for wild animals to be wary of humans, and therefore, if they habituate to human presence, that would constitute an “unnatural” impact of wildlife tourism:

Wapusk camping will have to be carefully managed to make sure the bears do not become habituated to humans, which would change their behaviour. ([Fallding, 2005](#))

The habituation story is complicated, however, by food conditioning, which we saw in [chapter 2](#) as a major consideration in the management of grizzly-bear viewing in the Khutzeymateen, at Brooks River, and at McNeill

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River. To put it simply, the “normal” behaviour of an animal is to consider human presence at least mildly aversive or threatening. The animals would then tend to avoid humans, or at least show signs of vigilance. If animals habituate to humans in the absence of food or garbage access, they simply ‘get used’ to humans, and stop avoiding or acting vigilant around them, but there is no reason to expect aggressive or violent behaviour on the part of the bears. If, however, animals obtain a *positive* reward (typically, food) from their interactions with humans, they may start seeking out humans (or, rather, the associated food), which leads to conflict (as both the bear and the human want the food), and where large and predatory wildlife are concerned, this “food conditioning” poses risks to human property and safety:

Bear reports in Whistler don’t simply consist of bears getting into garbage, but bears are breaking into cars, houses and even fridges, according to [conservation officer Chris] Doyle.

“This doesn’t happen anywhere else in the province—it’s a Whistler thing,” Doyle said.

He attributes the unnatural behaviour to the high concentration of bears in Whistler and the fact bears are developing bad habits because of their frequent exposure to the public.

“They are so habituated that they have no fear of people,” Doyle said.

“They are finding garbage or people are feeding them and they don’t get any negative conditioning to do otherwise. [Their] behaviour just seems to have deteriorated.” (Fitzgerald, 2004)

As at Lake Louise (where bears near public highways led to “bear jams” and incidental tourists endangering themselves by leaving their cars and approaching dangerously close in order to photograph the bears), limiting the

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number of tourists or tightly controlling their behaviour in order to reduce habituation may not be an option in Whistler. There are public education campaigns in place to attempt to change residents’ behaviour so that garbage is harder for bears to find, and so that people do not feed bears. But in cases where bears are already so food conditioned that they are entering peoples’ houses and opening the refridgerator, it may be too late to prevent food conditioning. While no solutions are proposed in the article from which this excerpt is taken, this lack of wariness on the part of the bears is considered a bad thing (“Their behaviour has deteriorated”), as well as being unique to Whistler.

On the other hand, it could be argued that the “normal” wariness shown by wildlife is simply a natural, normal response to the history of hunting wildlife. If we change our behaviour and cease *being* a threat, it is normal, natural, and unproblematic that the wildlife ceases to *react* to us as if we were a threat:

Neither the autumn downpour nor the boatloads of tourists in glaring yellow slickers faze the bears. Since the late 1990s these animals have become used to being gawked at and photographed. [...]

There’s no question the Glendale bears are habituated to people, but it’s debatable whether this is bad for either species. Nobody feeds the Glendale bears, so they don’t associate humans with free meals. Unlike so-called “problem bears,” they have no reason to beg or be aggressive toward viewers. Essentially, the two species just watch each other. (Obee, 2002)

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Some observers have pointed out that habituation in wildlife might become overly generalised, putting them at risk of increased hunting mortality where and when hunting co-exists with non-consumptive tourism¹⁸:

Some even fear that the presence of boats around the sharks may lead to habituation, making them more vulnerable in areas where they’re hunted. (Leniuk, 2003)

The problem, Templeman said, is hunters shooting from boats. “So the bear looks up and thinks, ‘Oh, here comes a boat—it’s going to watch me.’ That’s what the bear is used to and the hunter takes advantage of it.” (Niosi, 2004)

Whether this concern is over population sustainability (hunters taking advantage of this increased vulnerability may over-hunt the population) or over “fair-chase” considerations (hunters taking advantage of animal habituation is a violation of Taylor’s “fidelity principle”) is unclear from the two quotes. Whether the former concern is actualised may depend on the hunting regulations: if there is an open season, increased hunter success may lead to a higher take, and shortening seasons is a rather crude tool for correcting a subtle change in hunter success. Where the hunt is regulated through a lottery-draw type system, there is already a “success probability” factor used to decide how many tags are offered for draw, so it may be easier to correct for a changing success probability. The latter concern about whether

¹⁸but see Craighead et al. (1995) who describes a program of intentionally harassing bears near Yellowstone highways failing because bears quickly learned to recognise the difference between uniformed rangers in marked patrol cars (who harassed the bears) and tourists (who might possibly feed them).

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hunting habituated bears is “fair chase,” however, is less amenable to management intervention, other than by shutting hunting down over large swaths of terrain, or by ensuring that animals do not habituate to humans.

Unlike the previous section (where it is generally agreed that affecting populations is bad, and the only question is the extent to which wildlife viewing tourism *does* have such an impact), we have here some divergence of opinion both over the extent to which wildlife viewing leads to a decrease in the “natural” wariness of wildlife, but more fundamentally, over both why and *whether* such a decrease is a negative impact of excessive wildlife tourism, or whether it is merely a normal and perfectly acceptable response by the animals.

Keep wildlife ‘viewable’

Lastly, we have concerns that excessive tourism might make wildlife less ‘useful’ to tourist operators. By this, I refer to the fact that what many commercial wildlife tour operators are selling is a particular type of experience, which includes conspicuous (but, in some cases, not *too* conspicuous) wildlife. Any effects that tourist behaviour may have on the wildlife that reduce their viewability, whether because the population is smaller, or simply because they shift their activities to areas with more cover or times when tourists are absent, affects the quality of the experience the tour operators rely on:

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It is also important to the guides to be stewards of the wildlife—without a healthy animal population in the area, they are out of business. (Niosi, 2004)

A notion of stewardship of the wildlife population could of course fit under the earlier heading of keeping populations healthy—in fact those are the words used in the above quote. However, the justification here is to do specifically with the sustainability of *tourist operations*, reflecting an instrumental valuation of wildlife to those operations, rather than a more intrinsic valuation of wildlife populations. This distinction is made clearer by a dolphin-watching tour operator. Careless watching behaviour leads to dolphins avoiding the tour boat on the next tour—this may not affect the broader dolphin population’s stability, but has repercussions on the ability to run dolphin-watching tours:

We learn Magee runs a sustainable dolphin-watching operation, ensuring the cetaceans are watched with the least disturbance. His company follows a voluntary code of conduct set by the Shannon Dolphin and Wildlife Foundation. “It’s not in your interest to be careless,” Magee explains. “If you tick the dolphins off, they’ll avoid you next time.” (Storm, 2004)

Tourist operations are in the business of providing a tourist experience. This experience, as discussed in the context of the Khutzeymateen Grizzly Bear Sanctuary’s management (subsection 2.3.1,) may include more than simply seeing wildlife; the experience of pristine wilderness can be a selling point even if wildlife are not seen. Palmer is one of the tour guides operating

in the Khutzeymateen area; he attempts to follow viewing guidelines even when outside the park, where park regulations do not have jurisdiction:

“The area outside the park is not regulated,” Palmer explains to me quietly. “I keep a distance and stay very quiet because this is meant to be a pristine experience where we can observe the bears.” [...]

“Bear viewing could grow as an industry but it would need to be regulated,” says Palmer, steering his boat back to the dock. “If guides are not trained and they disturb a bear, the bear will just leave.” (Eustace, 2003b)

Like the dolphin-watching operator above, however, part of the justification here for avoiding disturbance to the bears is that, if disturbed, the bears go elsewhere or avoid the tourists the next time, which makes for a less interesting (and thus less sellable) tourist experience. However, this is not the sole reason for concern; I quoted Palmer earlier arguing the importance of bears feeling comfortable because they need to feed in order to replenish energy reserves and nurse their young, and thus be able to contribute to the population, and I quote him again below emphasizing the affective states (feelings) of animals.

4.4.2 Animal welfare

While the sustainable-use ideas above (especially [section 4.4.1](#)) traditionally are applied to the management of hunting of wild populations, the animal welfare ideas in this section are traditionally applied to domesticated animals.

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With captive animals, whether used in farming or research, questions over the sustainability of the animal population are moot, as both reproduction and mortality are controlled by humans. Questions of how we ought to manage these operations tend, therefore, to center on the quality of life the animals experience during their lives. Two major approaches to evaluating the quality of life of animals may find application to wild and free-living animals in the context of wildlife tourism. The first is concerned with feelings such as pain or fear experienced by the animals, and evidenced through behaviours indicative of such affective states. The second is concerned with physiological responses to stressors, and measured through indicators such as heart rate or stress hormone levels. In the public literature analysed in this chapter, however, stress is conceptualised as an affective state evidenced by behaviours, and is discussed in those terms. Stress as a physiological state evidenced by physiological or hormonal measures will emerge in the analysis of the scientific literature in the next chapter ([subsection 5.2.8.](#))

One advantage of using the affective state of an animal as a guide to our behaviour and interactions with wildlife is that this measure is relatively accessible to a lay audience. It is not anthropomorphising to attribute human characteristics (such as fear, stress, aggravation) to non-humans, if these characteristics are not *uniquely* human and actually exist in non-humans. While disagreements may exist among scientific experts regarding the precise interpretation of subtle behavioural changes, it seems relatively obvious to an untrained eye if an animal (especially a large mammal) is frightened,

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disturbed, etc. This makes it an easy justification and measure for tour operators to use in coaching clients:

“Try not to talk or make any sudden movements,” says Palmer.
“We don’t want to scare the bear or disturb it.” (Eustace, 2003b)

Both of the following similarly prescribe viewing “from a distance” as the appropriate behaviour, and imply that the tourists themselves should be able to assess whether or not they are getting “too close”, simply by observing the behaviour of the animals:

“The wildlife have adjusted to the presence of vehicles,” he says,
“But when people get out and move toward them, the animal’s comfort zone is encroached upon and they become scared and stressed. The goal is to observe from a distance. If you get too close, you will disturb the natural behaviour of the animal—and in the park that is considered harassment of the wildlife,” said Duck. (Matyas, 2003a)

Another vital piece of equipment is a pair of binoculars or a camera’s telephoto lens. [...] High-powered binoculars allow you to keep your distance from animals, which you should never approach or get too close to, in case they become nervous and flee, or worse, become aggravated. (Amodeo, 2004)

The first defines harassment (which, presumably, is undesirable and against park rules, although that is not explicitly stated here—it is left implicit in the statement that these things are “considered harassment”) as disturbing the natural behaviour of the animal. The second mentions the animal fleeing as a possible negative outcome of overly-close approach, but significantly, the

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possibility that the animal becomes “aggravated” is considered even worse. While it is unclear whether concern over the animal fleeing refers to affective states, to sustainability of continued viewing opportunities, to habitat use and population health, or to something else, the concern over “aggravation” clearly appeals to an internal affective state of the animal as being relevant to decisions about the right way to behave, with no appeal to whether these affective states accumulate to have an impact at the level of the population’s continued sustainability.

A common concern with whale-watching arises from the noise generated by boats. Noise is a particular concern due to the design of many boat engines, which vent exhaust gases underwater in order to muffle the amount of noise perceived by the humans on the boat. This has the side effect, however, of increasing the amount of noise directed underwater, potentially disturbing marine life. The concern is further amplified by the fact that many marine mammals use sound extensively for echolocation and social communication, so noise may affect them more than it would affect terrestrial wildlife. Further, water conducts noise far better and further than air does, so any generated noise will affect wildlife over a wider area than may be immediately obvious to tourists and tour operators who have more experience with sound conduction in air. These physical differences between land and water environments affect the way whales and other marine species live and experience their environment. We are only beginning to understand the implications of such differences for what it is to be a whale (or other marine

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creature) and for the proper interpretation of the impacts of our behaviours on these animals. While the links from the concern over this noise pollution to a specific affective state in the animals is unclear, the concern does seem to speak to an empathetic concern with the quality of the animals’ lives, rather than to a quantitative, population-level sustainability concern:

As a result, the boaters get too close and the whales get little rest, according to Hamilton, which he believes can subsequently cause stress, a well-known health risk.

“They can’t rest. It interrupts their foraging. It interrupts their social life. It’s a continuous interruption of their lives.” (Westell, 2004)

But Trites believes the sound of the whale-watching boats may interfere with their ability to communicate and even make it more difficult to find food.

He said research shows whales leave areas because of the whale-watching boats, rest less and swim faster to avoid the human intrusion.

“It’s an extremely noisy environment, one where they can never let their guard down, just turn it all off and get some real rest,” Trites said. (Anonymous, 2002)

More evidence is emerging that ecotourism is not as benign as it first appeared. Killer whales are calling for longer in a bid to overcome the cacophony produced by tourist boats (Anonymous, 2004b)

“It’s like walking into a noisy bar,” Fisheries and Oceans Canada researcher Veronique Lesage explained. “The belugas have to repeat themselves, or talk louder to be heard.”

“Or they just shut up.” (Carroll, 2002)

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The sound of boat engines to whales is like holding a hair dryer to your ear all day, [Trites] said. (Theodore, 2002)

The general concern with boat traffic and especially boat noise is repeated throughout these quotes: Hamilton phrases it as an interruption of the whales’ lives, Trites as preventing real rest and “turning it all off,” the reporter in the third quote considers a change in the duration of whale vocalisations to be evidence that tourism is not benign, Lesage refers to noisy bars and having to repeat yourself to be heard, and Trites is quoted a second time, comparing boat noise to living with a hair dryer by your ear all day.

The first of these quotes mentions scientifically-measurable changes such as stress, or the duration and volume of calls made by the animals, but the justification for why noise pollution is a moral or management concern focusses on less measurable wrongs, such as the constant interruption of their lives or the notion of “real rest”. The later quotes do not mention any objective harms to animals, but the comparisons to noisy bars or hair dryers would not be made in the absence of an underlying logic stating that noise levels annoy us, so we presume that they annoy wildlife, and further, there is something wrong with annoying wildlife. This is best understood as a concern over their individual welfare or life experiences, rather than, say, the sustainability of the population.

A concern over wild animals’ quality of life has been given some legal force. We saw in [chapter 1](#) and [subsection 2.3.5](#) that the laws relating to both marine mammals and terrestrial wildlife prohibit “harassing” animals, but

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that the text of the legislation does not define “harassment” in any detail. However, the fact that wildlife viewing guidelines (which are intended to prevent harassment) were not followed was considered in a legal case to be sufficient evidence of wrongdoing; proving actual harassment was considered an unreasonable burden of proof (Koski and Osborne, 2005). In reporting on this court case in the local newspapers, Westad closes by providing evidence as to the whale’s feelings:

One of the orcas slapped its tail in the second incident, a sign that can mean it feels a threat. (Westad, 2003b)

In contrast, Balcomb, a whale researcher testifying for the defense in this case, claimed that the 100-m published guideline is just that, and is neither meant to be a legal regulation, nor is it based on *actual* impacts on the whales:

Balcomb said that he “fully appreciates the spirit of the guidelines” asking whale watchers to keep 100 metres away from whales. But he said that guideline is a “courtesy,” and not based on the behavioural response of whales. (Westad, 2003a)

Recall from section 3.6 Stone (1987)’s concept of moral ‘moods’: that there are more subtle gradations of moral judgement than ‘prohibited’ and ‘obligatory.’ In particular, Raz (1999) and Michael (1996) discuss the concept of the ‘supererogatory:’ actions which are laudable but not obligatory. This case suggests that the whale-watching tour operators and (at least some)

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researchers consider the published whale-watching guidelines to fit in this mood, rather than a legally-enforceable mandatory mood. Legal sanctions should be reserved for more serious harassment, where the the behavioural response of the whales makes clear that there is some impact (however defined) to the whale.

Other whale-watching guides concur with this assessment, adding that it is impossible to know for certain whether or not an animal is disturbed—but this implies that the animal’s state of mind is, in fact, the relevant criterion for deciding between right and wrong:

Whale-watchers say the regulations are evolving and subject to interpretation and different views of science. Several of the many whale-watching guides filling the courtroom questioned just how one can divine when a whale is disturbed. (Westad, 2003a)

This contrasts with the quotes opening this section, where impacts on the affective states or feelings of wildlife were readily observed by observing the animals’ behaviour and interpreting it based on basic empathy with no need for advanced training or scientific measures. The contrast might be due to the higher similarity between humans and bears than between humans and whales, at least as far as body language and expressions of fear, stress, etc. are concerned. It may also be due to the different context or mood in which the judgement is being made; the burden of proof for a legally sanctioned prohibition would be expected to be higher than that for a morally supererogatory guideline.

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The ready empathetic access to the emotional lives of animals by a non-expert audience can also be used as evidence by tour operators to reassure clients or others that tourist activities do not have an adverse effect on the wildlife. If tourist activities *were* disturbing the animals, they would simply leave. Therefore, the fact that the animals do not leave the area is taken as evidence that the tourist activities are benign.

In response to a question on a whale-watching tour in Newfoundland, a biologist friend of the reporter offers reassurance that since the boat is not chasing the whales, and since the whales have not left the area, concerns about “bugging” can be dismissed:

Two ancient, giant, water-slapping primordial monsters who spray and sink and rise, roll over and cry out, lifting a fin and a tail.

“Are we bugging them, Holly?” I ask.

“We’re not chasing them,” she says. “If we were, they’d be out of here.” (Moore, 2003)

Likewise, an outfitter running charters to snorkel with seals near Victoria, B.C. assures the travel writer that the seals living in such close proximity to urban areas are habituated to humans, and that if they were uncomfortable with snorkelers, they would let us know by leaving:

“There’s so much traffic out here, and so much fishing, they’re used to humans,” Hall tells me later. “If they’re uncomfortable or don’t want to be bothered, they’ll just swim away.” (Bennett, 2003)

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The research referred to in the following quote found increased signs of vigilance in Manitoba polar bears approached by the tundra buggies used to transport bear-viewing tourists near Churchill. As in the research on grizzly bears (see [subsection 4.4.1](#)), Dyck also found a sex difference, with female bears potentially using the buggies as a safety buffer because they are avoided by male bears who, in polar bears as in grizzlies, sometimes kill unrelated cubs. Nevertheless, the policymaker is reassured by the notion that if the tourist-laden tundra buggies are bothering the bears, they can just leave, and thus has no plans to institute further limitations on tourism as a result of this research:

Manitoba Conservation helped fund Dyck’s research, but has no plans to set rules for how closely tundra buggies can approach the bears, wildlife protection director Jack Dubois said.

“If (the bears) are bothered by the buggies, they can simply leave the area,” he said. [\(Falding, 2004\)](#)

In all three quotes above the possible adverse effect is clearly at the level of the animals’ affective states: the question is whether the animals are ‘bothered’ or ‘bugged,’ and we are assured that they are not, because if they were, they would simply leave. This reassurance may, however, be false: animals will only go ‘elsewhere’ if there is an elsewhere to go to that has fewer tourists, if the costs of going there are not too high, and if there isn’t some pressing reason (e.g. food sources, etc.) for them to be where they are in the first place ([Gill et al., 1996, 2001](#)). Nevertheless, these quotes do demonstrate

that the notion of ‘bugging’ wildlife does appear as a potential impact of wildlife viewing, and one that we ought to avoid as much as possible.

4.4.3 Respect for animals

While the previous sections dealt with concerns that, broadly speaking, reflect consequentialist ethical thought (albeit with variations in *which* consequences are of concern, and in how or even whether they can be measured objectively or scientifically), there is also widespread support for non-consequentialist trains of thought. The links between these expressions and specific forms of non-consequentialist ethical theory are even less clear than for the consequentialist concerns above. Some form of respect for animals is implied by the tour operators’ pep talks or pre-trip instructions to their tourists:

The first morning, Tom gives his bear talk. We stay in the bus or in one of the blinds that he has built, except for an occasional guided walk. The idea is to view but not to intrude. Should a bear approach, he puts himself between it and us. “I’ll do the talking to the bear,” he advises. Okay, we all nod. What would one say to a grizzly anyway? He asks that we avoid pointing at the bears and no flash is used when photographing. (Lees, 2005)

David’s pep talk was quick, enthusiastic and peppered with his deep respect and commitment to the industry code of ethics. The tour may be a two-hour adventure through the bays and channels of the West Isles, but he stressed that it is not a zoo or a theme park. Watching whales is a privilege and not a right, and we must

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show respect for the marine mammals and their habitat. (Matyas, 2003b)

The first of these gives two specific prescriptions, although it is not clear what links there might be between pointing at bears and using flash photography and any more abstract conception of ethical behaviour. On the other hand, the second does at least use the language of respect, rights, and privilege, which does reflect a more abstract conception of how to decide about proper behaviour. As with the formal ethical theories based on respect (section 3.2), however, it is less clear exactly what boundaries on behaviour this conception calls for. The injunction to not point may be justified as respectful, but it is harder to say whether it necessarily follows from being respectful. Likewise, respecting marine mammals and their habitat as something other than a theme park or zoo does not lead clearly to any specific restrictions on behaviour. In other cases, following the guide’s instructions is phrased as an *additional* to-do item, and justified more by the safety concern than the admonition to be respectful of nature. What, exactly, being respectful of nature entails is left unexamined:

“You must be respectful of nature,” says Colin Bell, director of Wilderness Safaris, an award-winning responsible tour operator. “You should also listen to your guide and not push to go closer. A good guide will remind you of what not to do, but it’s worth bearing in mind that safety is the key at all times.” (Amodeo, 2004)

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Some behaviours, however, are clearly beyond the pale; although even here, it is not spelled out what these behaviours are. They are perhaps implicit in the images (in the quotations below) of “people all over,” “rowdy kids” and especially “drunken people all over,” but beyond that, the details are vague, as are the offered prescriptions. “Learning to live with the bears” is almost as vague a prescription as “respecting wildlife,” and could be used to justify a wide variety of specific actions. “Not bothering” or “not harassing” the elephant seals may be slightly more specific, but again it becomes unclear how one would decide what level of visitation is respectful enough to not bother the animals.

“There were drunken people all over and rowdy kids. [Police] should have just left the bear alone and gotten the tourists out of there. This was [the bear’s] home first. We should learn to live with the bears.” (Fitzgerald, 2004)

Friendly volunteer guides are at the rest stop daily to provide information to visitors and to make sure they don’t bother the potentially dangerous beasts.

“There used to be people all over the seals—it was harassment,” says Bill Johnson, president of the volunteers’ group Friends of the Elephant Seal (Rider, 2003)

While it may not be clear in any detail exactly what sorts of behaviours “being respectful” would allow or prohibit, such detail may be unnecessary for judging the appropriateness of behaviours. The next two quotes consider the showing of respect to be a sufficient guarantee that wildlife tourism activities are acceptable:

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Seeing how the tour operators in Churchill respect the animals gave me an assurance that they weren’t being exploited or harmed in any way. (Jeffery, 2007)

As long as whales are given respect, an increase in cruise ships should not be a problem. (Eustace, 2003d)

It seems doubtful, however, that these assurances are sufficient to cover all the possible concerns raised about wildlife tourism. It is quite possible that there might be unwitting, unintended negative consequences on the population, the individual’s welfare, or on any of the other values/concerns covered in this thesis. Of course, if one adopts a strictly non-consequentialist ethic that *defines* showing respect as the *only* moral requirement, then these potential consequences would be irrelevant by definition. As seen in [section 3.6](#), however, a strict monism of that nature is untenable, and more than one single concern should be recognised. In this case, it may be reasonable to say that being disrespectful is cause enough to say that there is a problem. It does not follow from this that not being disrespectful is sufficient evidence to say that there are no problems along any dimension of moral concern.

Respect for ‘wildness’

We saw in [subsection 4.3.3](#) a conception of wildlife as distinctly “other” than human. This leads naturally to a concern that we ought to respect that “otherness” or wildness, and that “taming” wildlife in order to make it more viewable fails to demonstrate that respect.

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Making wildlife viewing “easier” by using food or calls to attract wildlife is problematic under this conception, because it fails to respect and preserve the wild and free character of the animals concerned—instead, it alters nature to suit the convenience of wildlife tourists:

SEX, FOOD, AND FEAR: profitable material for TV, yes, but also for nature-tour guides. Just whistle a mating song, set out food, or play a recorded alarm call, and out pops the pheasant, reef fish, lemur, whatever, for your viewing pleasure. Problem is, the guide isn’t showing you nature, he’s altering it. It’s the dark side of ecotourism, whose premise is pro-conservation. ([Tourtelot, 2005](#))

A more respectful way to conduct wildlife viewing is evidenced by a guide who is careful to emphasize that he sees his job as *showing* nature without *altering* it in any way for the benefit of tourist viewing opportunities:

Rafael’s concern is shown from almost the moment you board his boat. “This is not a show,” he announces quietly. “This is an experience to share. What you will see is unorchestrated. We will not disturb any creature for any reason. We are privileged to share this space.” ([McCall, 2004](#))

This notion of respecting the wildness of wildlife was in evidence in [section 2.3](#), in the differing conclusions over whether to encourage or discourage grizzly bear habituation. The notion that habituated bears were “unnatural” or “tame” reflects an underlying worldview that values the wild and natural (see also [Rolston, 1994b](#)).

Respect for privacy

As an unexpected finding, there is also, in the popular media analysed, a concern over the privacy of wildlife. We saw in [section 3.2](#) that ethical theories based on respect for animals do not argue that animals should have all the same rights as humans. While these theories do not list the right to privacy amongst those that can sensibly be applied to wildlife, the general public appears far more liberal in their use of the concept. The first example does not actually use the terms “right to privacy,” but describing tourists as “paparazzi” clearly implies it: celebrity-chasing paparazzi are generally not condemned because their actions prevent celebrities from feeding or reproducing, but because they do not properly respect the privacy of those celebrities.

Boats carrying these “eco-paparazzi” are now being cited for following too close to whales, chasing whales, interfering with mother-and-calf pairs, and all for the almighty dollar. ([Nielsen, 2007](#))

Others are more explicit in their use of the concept of privacy as the measure of what is wrong with the proposal. The above quote at least mentions interfering with mother-calf pairs, which could be a measurable consequence of following too closely. In the case of an Irish cellular phone provider proposing to set up a “Dolphinline” allowing customers to dial in to hear dolphin calls recorded by underwater microphones, no tangible negative consequences to the dolphins can be imagined; this is non-intrusive wildlife observation at

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its finest. Yet the scheme is not welcomed, and the fact that it intrudes upon the privacy of the dolphins is offered as a reason why:

Ireland [has] gone half-mad. Vodafone is on the point of installing a network of hydrophones on the floor of the estuary.

That is the plan: a year-round Dolphinline, which you will be able to ring from anywhere in the world, at a premium rate, to hear the Shannon dolphins going about their daily business, unaware, I suppose, that their privacy has been blown to the four winds. (Nicolson, 2003)

In this example, there are almost certainly no negative effects on the dolphins (who are not merely un-harmed, but un-aware that they are being “eavesdropped” upon), under any conception of what effects might be of concern, and the right or duty of non-interference is not violated since remote microphones can hardly be considered an interference in the dolphins’ lives. The enterprise is condemned here for failing to respect the dolphins’ privacy.

4.4.4 Human character

The condemnation of the Dolphinline continues, however, with a concern not over the dolphins, but over what such a thing says about us as humans, and about the development of our characters. The fact that there’s a market for calling a hotline to hear dolphin vocalisations is taken not only as a violation of the dolphin’s right to privacy, as described above, but as disturbing evidence for the degeneracy of human character and of society as a whole:

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And, more disturbingly, what about the customers for this strange new service? What on earth will anyone get out of that?

Dolphin-watching you can understand. It feels, though, that we have all arrived at some degenerate corner, where we need to ring up dolphins to feel OK. (Nicolson, 2003)

A concern with human character traits is particularly evident in some condemnations of the more “consumptive” alternatives for how humans interact with wildlife. The conclusion of Marcinov’s letter below is the economic argument covered in [subsection 4.3.1](#): that the loss of revenue to Inuit hunting guides, resulting from listing the polar bear as endangered and closing the hunt, could more than be made up (in fact, he argues it could be increased ten-fold) by fostering eco-tourist bear watching instead. To help make this point, however, Marcinov feels it necessary to denigrate the hunt as “un-evolved” behaviour demonstrating the degenerate human character traits of bloodthirstiness, machismo and/or cowardice, and a frivolous attitude towards the hunter’s quarry:

Such “hunts” are normally set up by outfitters in the south who get most of the economic benefit. A ‘hunter’ has to be really brave to have an Inuit corner a bear with his dogs in the vast Arctic expanse and then have the American hunter shoot the animal with his semi-automatic rifle. In the case of nervous shooters, the Inuit guide even has to shoot the animal for him. The conquering hunter then brings back only the bloody pelt to hang on the wall or floor of his mansion. What a rush! Outfitters report a three-year queue for this manly sport. (Marcinov, 2007)

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But the “trophy mentality” denigrated above may also exist in non-consumptive users, as suggested below by reference to the pressure for the “perfect photo.” The preoccupation with the quality of photographs taken home is evidenced by [Lott \(1992\)](#), who studied mountain goat disturbance and found that the best predictor of the extent to which tourists caused measurable disturbance to the goats was the focal length of their camera lenses; shorter lenses required closer approaches to get the same photograph. If wildlife tourism is “all about” returning home with the perfect photograph, the ecological sensitivity and educational or awareness-raising benefits may be missed, and non-consumptive wildlife tourism degenerates into trophy hunting, at least as far as the tourist’s motivations and character development are concerned.

But even with policies in place, he says that sometimes rules get broken due to pressure from tourists wanting the perfect photo or experience, which tempts guides to go beyond what they should do in order to get a better tip. ([Garrett, 2007](#))

A more virtuous way to experience wildlife, then, might be to resist the focus on the trophy photograph, put the camera away, and emphasise the experience itself:

Sometimes you just have to know when to leave the camera dangling around your neck and instead absorb a scene in the old-fashioned way, taking from it no physical souvenir, but a sense of well being, of peace, of gratitude for having experienced it and a memory that will last a lifetime. ([Amodeo, 2004](#))

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As a counterpoint, the *least* virtuous way to experience wildlife encountered in my analysis is described by a veterinarian who watches a driver intentionally “bump” bighorn sheep to enjoy watching them lose balance.

I saw the driver slowly roll his window down and was surprised to see he was approaching the sheep close enough so he could purposely hit the sheep with the side of his car. He delighted in watching the sheep temporarily lose its balance and tumble forward when the car thudded its hind end. [...]

I am often embarrassed to be a human. (Langelier, 2004)

While this behaviour seems so far beyond the pale that one would hope to find it unique and unprecedented, the veterinarian does refer in his letter to a study where the investigator placed rubber snakes and turtles on the road. While most motorists would either swerve to avoid these, or take no evasive action, the study found that about 10% of motorists actually intentionally swerved to hit the wildlife.

This is likely a good example of the ethical convergence mentioned in [section 3.6](#): the behaviours described here would be condemned as wrong no matter what ethical theory is taken as a starting point. However, what is notable here is that it is not condemned because the pain suffered by the sheep outweighs the pleasures experienced by the “tourist”, or because the effect of being bumped by a car might have on a sheep’s reproductive output, or because bumping a sheep with a car violates a principle of non-interference. Such things are unnecessary; it is the mere fact that the “tourist” would enjoy this interaction that is embarrassing and condemned out of hand.

4.4.5 Commercial viability

In this final section, we will look at two sets of anthropocentric or prudential, as opposed to moral, reasoning over the possible impacts of wildlife tourism. This was touched on to some extent earlier ([section 4.4.1](#)), where one interpretation of “sustainability” focused narrowly on whether tourism operations could continue to reap benefits from wildlife viewing; any impacts of those operations that would make wildlife scarcer or more difficult to view would affect the sustainability of the tourism operations, and would be against the enlightened, long-term self interest of the tour operators. Here, we return to similar concerns with the continuation of the industry, first with concerns over the public relations impressions the industry has on consumers, and second with concerns about the quality of the tourist experience.

Public relations

This tour operator emphasises that the industry is tightly regulated, and that the tour operators follow the regulations, because the customers expect and require them to do so:

While whale-watching is a growth industry, Thompson said it’s tightly regulated. If they’re tailing a pod, operators must stay 300 metres away from the group. If sitting idle, the vessel’s engines and locating sonar must be switched off.

“All whale-watching companies are aware of how important this is to the public,” Thompson says. (Beutel, 2003)

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This, of course, is reassuring, but in no way helps assess whether the regulations are *good*, in any sense related to potential impacts on wildlife or other considerations.

In the next quote, we have an assurance that the tourists will keep the operators in line. Note the contrast between this, and the concern expressed earlier (subsection 4.4.4) that pressure by the tourists looking for the “perfect photograph” might lead the operators to approach wildlife more closely than they know they should:

Operators have to be aware of the modern sensibilities toward ecology the tourists bring with them.

“You know who our best policing agents are? Our guests sitting behind our drivers,” he said. (Redekop, 2004)

We saw earlier (subsection 4.4.3) an assurance that the respect demonstrated by tour operators guarantees that no harms occur to the wildlife. Here, we are assured that the tourists themselves will ensure that the tour operators will follow guidelines, and live up to ‘modern sensibilities toward ecology.’ In both cases, however, it may be true that respect and sensibility will be sufficient to avoid egregious bad behaviour, but there may be subtle impacts of wildlife tourism that are not immediately obvious to either respectful tour operators or ecologically sensitive tourists. It is unclear how appeals to either respect or ecological sensibility will help identify, quantify, or enact policies to minimise these more subtle impacts.

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A slightly different concern related to public relations returns us to the debate over hunting versus non-consumptive use. The potential concern here is that resuming bear hunting will give Canada a bad name, and lead to tourist boycotts:

Let’s say the spring hunt resumes. If there is even one cub orphaned and caught on tape, the animal rights activists will use it the same way they used pictures of baby seals being clubbed to death. Bear hunters may return, but other tourism will plummet as potential visitors see repeated gross images that convince them all Northerners are bloodthirsty barbarians. What the tourism folk ought to be doing is embracing the opportunity to change from shooting bears with a gun to shooting them with a camera. (Anonymous, 2003)

It is notable that there is no argument about whether or not (or on what grounds) orphaning bear cubs is “bad” in its own right if not caught on tape: the concern expressed here is that if there is physical *evidence* of it happening, that might be used for public relations purposes and lead to a boycott of the province. This concern may not be entirely conjectural; it is reported elsewhere that a similar boycott of sorts *did* in fact occur when Iceland resumed whaling:

Tourists are turning their backs on Iceland because the country is resuming commercial whaling, a tour operator claims. Whale watching is one of Iceland’s main tourist attractions but bookings have fallen 25 per cent in the two weeks since it has resumed hunting. (Smith, 2006)

This concern is only indirectly related to the management of wildlife viewing tourism itself, but does provide another mechanism through which hunting and non-consumptive viewing may interact negatively.

The tourist experience

Lastly, we have concerns related to the tourist experience. We encountered some of these earlier when discussing concerns that changing animal behaviour through either habituation (reducing the “wild” character of the wildlife, which is the key draw for the tourists—see [section 4.4.1](#)), or that reducing their viewability over the long term might affect commercial tour operations (see [section 4.4.1](#).) Here, we will examine concerns over more immediate, short-term effects on the animal, which may not “matter” to the animal, but do directly affect the quality of the viewing experience:

We’ve been instructed to keep our voices to a whisper because unnatural noises might cause the bears to flee. ([Gray, 2007](#))

Again, causing the bear to flee can be a concern under many of the various conceptions covered in this chapter. However, without elaboration, it sounds here that the bears’ flight would terminate the viewing experience, and there is a self-interested motivation to prolong that experience as much as possible. The following makes an explicit appeal to the quality of the tourist experience, while also referring to both the animal’s quality of life (the animal is afraid) and the human-character-based ethics (the notion of being cruel) seen earlier.

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Tourists and sport fishers need to learn to respect the whales: “Just educate the public to leave the whales be. If the whales are not stressed, they dive deeply and when they blow it is a real squirt, worthy of a picture. If the would-be viewer comes too close, the animal is afraid and dives before it is ready. Then when it reappears it only gives a small squirt. It is being tortured. That is cruel.” (Griffith, 2004)

Clearly, “being cruel” would fit best under the virtue-vice conception of right action (subsection 4.4.4). Note the contrast, however, between this quote, where unintentionally stressing the whale is considered cruelty, and Olsen (2003, cited in subsection 3.5.1), who argues that because anglers’ intention is merely to ‘play’ the fish and the pain and suffering is an unintentional (though predictable) side-effect, it is inappropriate to condemn angling as cruel. The animal “being afraid”, on the other hand, could be understood as a pleasure-pain concern over the individual animal’s quality of life (subsection 4.4.2.) However, a major emphasis in this quote is the size of the ‘squirt,’ and with how photogenic the unstressed animal is. This seems a more prudential than ethical reason for less intrusive wildlife-viewing behaviour: avoid stressing the wildlife in order to get better photographs.

In addition to photogenic animals, a major draw to (at least some) wildlife tourists is the solitude that can exist in wild spaces. An increasing number of wildlife tourists can directly reduce the experience of solitude, as well as indirectly reducing the numbers of photogenic behaviours of wildlife:

“It used to be that you could go out there—even four or five years ago—you could be out there paddling by yourself watching whales. Now it’s rare to be out there without a number of whale-watching boats around you. The whales are more scarce because of the boat noise. I know from talking to biologists there that it’s definitely changed the behavior of the animals.” (Davidson, 2003)

This again refers to several of the concerns covered in this chapter. The scarcity of whales speaks to a concern with population sustainability, while the altered behaviour may be understood as an indicator of quality-of-life or natural-behaviour concerns. However, again, most of the emphasis seems to be centered around issues of crowding versus solitude, and the concern that this crowding is affecting the natural attractions of an area (which includes, but is not necessarily limited to, the wildlife itself.)

4.5 **Overlap between lay and professional ethics**

This chapter has shown that a wide variety of moral conceptions and environmental values relating to wildlife tourism exist in society and are expressed in the lay media, but that strong links between how wildlife are described or conceptualised, abstract ethical ideas, and specific conceptions of how we ought or ought not to treat wild animals are less evident.

The notion that wildlife experience pleasures and pains (such as fear, stress, etc.) is prevalent, as is the idea that wild animals have at least some

rights (possibly a right to life, though that is less relevant to non-consumptive activities; certainly a right to live that life without undue interference; possibly even a right to privacy.) There is certainly a notion that pristine environments should be protected as pristine, that wild animals' normal behaviour should not be altered, and that reducing the reproductive output in a population (endangering its sustainability) should be avoided.

All of these themes also emerged in the previous chapter looking at formalised conceptualisations of the ethical theories and the moral landscape of human interactions with the non-human world. However, while the previous chapter emphasised logical relationships between each suggestion and underlying abstract principles, we have echoed in this chapter Bellah's (Bellah et al., 1985, 1991) findings that non-expert moral discourse lacks a vocabulary and, in most cases, even an attempt to tie the various strands together into a coherent, consistent, rational whole. Violating dolphins' privacy is seen as inappropriate without appeal to a formal ethic of rights and a fully worked-out vision of what rights are relevant or not to specific rights-holders. Concerns can be raised over an unfair chase where animals are hunted after habituation to human presence without a fully worked out theory of fairness or fidelity arising from a framework of respect for individuals as ends-in-themselves rather than means-to-an-end. Changes to animals' "normal" behaviour are worrying even without a fully worked out ethical theory that states exactly why "normal" behaviour is preferred to that witnessed in the presence of wildlife tourists. Instead, these disparate potential problems are

identified individually as significant issues, whether the ethical theories that might best explain them are consistent or mutually contradictory.

While it is not surprising that the lay public does not use the formal language and logic of ethical theories, it is notable that these theories and the lay understandings covered in this chapter are not fundamentally talking past each other. The ethical theories in the previous chapter are not merely abstract, academic philosophising: all the considerations identified also find expression in the lived experience and lay understandings of right and wrong. Conversely (with the possible exception of the concern over dolphin privacy being affected by a telephone company's Dolphin Line), the concerns expressed by the lay public are not random sentimentality: all their concerns can find justification and support in one or another of the ethical theories.

However, while this concordance between values expressed by the lay public and those justified by the ethics literature suggests these domains could be used to generate objectives for management, the domain of knowledge most appealed to by management is that of scientific or empirical work. This raises the question of whether the existing body of scientific work also reflects the range of values expressed and supported in the previous two chapters, or whether it reflects a narrower conception of what objectives it is aiding management to achieve. In the next chapter, I will analyse the output of scientific experts, to see what potential problems their work attempts to assess and quantify. I will pay particular attention to whether the professional scientists demonstrate as wide a breadth of concerns as shown both by the lay public

4.5. Overlap between lay and professional ethics

and by ethical theorists, and to whether they emphasise internal consistency of the theories explaining these concerns as much as do the professional ethicists.

Chapter 5

On the consilience of wildlife science and human values

Previous chapters focussed on ‘expert’ ethicist ([chapter 3](#)) and ‘lay’ public ([chapter 4](#)) conceptions of how humans ought to behave with respect to non-consumptive wildlife viewing tourism, and how such tourism ought to be managed. We saw that both trained ethicists and the lay publics demonstrate a variety of differing opinions about what ultimately matters, and what the end goals of management efforts should be. We also saw at least one clear expression of the notion that management decisions should be “based on science” ([subsection 4.3.1](#)), and the counterargument that scientific input can only inform management on questions about means (*how* to achieve a given end), but cannot necessarily decide on which ends management should strive to achieve.

In this chapter, I turn my focus to the scientific literature that attempts to provide empirical information relevant to wildlife-viewing tourism management. In particular, I focus on the extent to which the scientific literature is able to provide measures or indicators that address the variety of manage-

ment objectives identified in the previous two chapters. My goal is to identify whether there are valid management objectives identified above that are not well addressed by the existing scientific work. If there are, then new indicators will need to be developed and taken into account in setting management policies.

I start by deriving a composite model of the ways in which animals might respond to events. These responses include a variety of measurable changes in individual animals' behaviour or physiology as well as changes in population-level parameters such as survival or reproduction. In the remainder of the chapter, I analyse a body of scientific literature to determine how the various measures comprising this composite model are used to assess how animals are responding to wildlife-viewing tourists, and how these responses are justified as being, or not being, a concern that management ought to address.

I find a general, implicit assumption that the “real” impact of concern is at the population level, by which I mean that only changes affecting the size or viability of the wildlife population are considered relevant to management. However, behavioural and physiological responses in individual animals tend to be used as indicators, because these responses can be measured over short time periods, and thus linked to the presence or absence of tourists. There is a recognition that not all measurable changes are “important,” but this recognition frequently leads to an appeal to a concept of “biological significance,” without a real analysis of what that term means or how it might

be used to link scientific measurements to societal concerns or management goals.

I will then use these findings to address, in [chapter 6](#), how we might link indicators to goals. Depending on the thresholds for management action proposed, behavioural and physiological measurements are in fact relevant not only to population-level concerns but also to both consequentialist concerns over the quality-of-life experienced by individual animals and to questions of whether animals' freedom and 'wildness' are being respected by wildlife-viewing tourists. I further argue in [chapter 6](#) that the question of thresholds at which changes in measured parameters ought to lead to management action are in general poorly established, and neither the existing scientific work analysed in this chapter nor the ethical and societal expressions of value covered in the previous chapters offer sufficient guidance to set such thresholds.

5.1 Analyzing the scientific literature

To generate the set of articles analysed in this chapter, I used the 'Web of Science' database published by the Institute for Scientific Information¹⁹. The search terms "ecotourism", "nature-based tourism", "sustainable tourism", "wildlife tourism", and "wildlife viewing" generated a total of 871 matches. A manual scan of titles and (where needed) abstracts refined this total to 119 relevant articles. Given the questions raised by the contrast between individ-

¹⁹available at <http://www.isiwebknowledge.com/>

ualistic and holistic ethics identified in [chapter 3](#), I focussed on articles assessing impacts on what are colloquially known as “charismatic megafauna”, or, at the least, on species where talk of impacts on individuals would make sense, whether or not the article addressed such impacts. Thus, assessments of impacts such as trail compaction, understory simplification, silting or mechanical damage to coral reefs, etc. were excluded from further analysis, while assessments of impacts such as noise and chemical pollution as it affects marine mammals, bird population surveys, behavioural changes or reproductive success in mammals, birds, or reptiles were all included.

After reading and annotating the 119 articles deemed relevant in the first scan, I was left with 181 notes pertaining to 75 articles. As scientific writing is far more formalised than the lay media discussed in [chapter 4](#), the notes fell much more clearly into two categories reflecting the two questions posed in this chapter: 79 notes related to the justification of why the impacts measured are a concern, while 84 concerned the indicators measured. On the other hand, 13 notes referred to potential (or measured) benefits accruing from wildlife tourism operations. The full list of keywords used is shown in [Table 5.1](#), and a breakdown of subkeywords for the justification and indicators categories are presented in [Figure 5.1](#) The Valuation category used in the previous chapter was not used here, as there were few general expression of value in this body of literature.

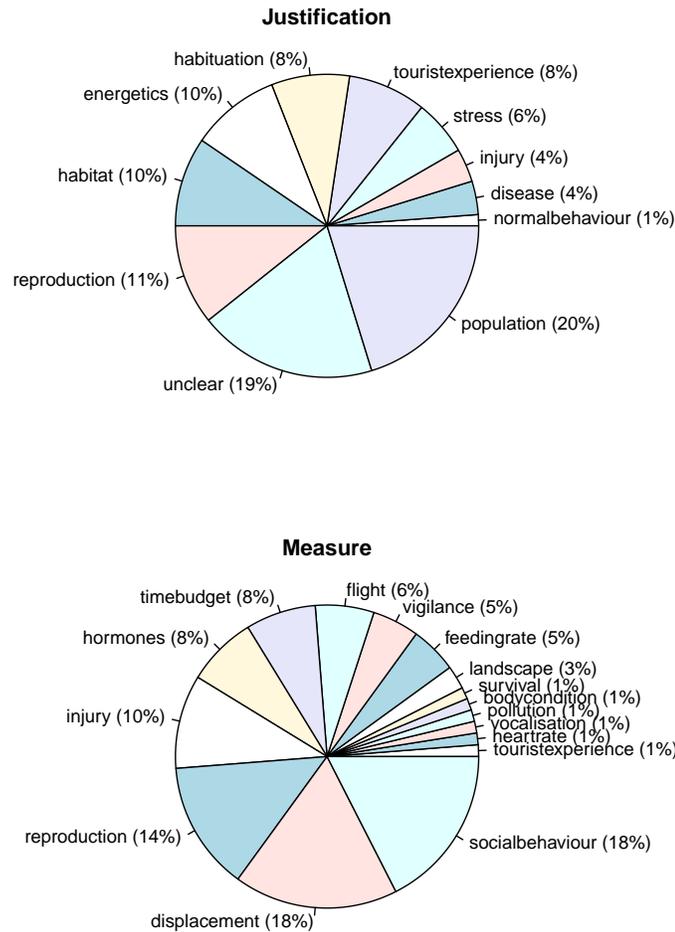
5.1. Analyzing the scientific literature

Keyword	Subkeyword	Count	Total
benefits	conservation	6	13
	economic	7	
definition	definition	1	1
justification	normalbehaviour	1	84
	disease	3	
	injury	3	
	stress	5	
	touristexperience	7	
	habituation	7	
	energetics	8	
	habitat	8	
	reproduction	9	
	unclear	16	
measure	population	17	79
	touristexperience	1	
	heartrate	1	
	vocalisation	1	
	pollution	1	
	bodycondition	1	
	survival	1	
	landscape	2	
	feedingrate	4	
	vigilance	4	
	flight	5	
	timebudget	6	
	hormones	6	
	injury	8	
reproduction	11		
displacement	14		
socialbehaviour	14		
other	survival	1	1
summary	summary	10	10

Table 5.1: Number of annotations made by keyword and sub-keyword. Percentage breakdowns for the most common keywords are presented in [Figure 5.1](#).

5.1. Analyzing the scientific literature

Figure 5.1: Distribution of sub-keywords for the Justification and Measures keywords. Numbers are listed in Table 5.1. Percentages may not add up to 100% due to round-off errors.



5.2 Implicit and explicit goals of existing scientific work

The most obvious contrast between the scientific writings analysed in this chapter and the lay writings of the previous chapter is the formalised style in which scientific results are written. A scientific paper typically has an introduction chapter, in which the problem is defined, a methods section describing exactly what was measured, and a discussion or conclusion section which details how the measurements performed reflect on the problem as defined. Despite this, only with respect to the measurements taken as indicators of problems with wildlife tourism can the scientific papers be said to be uniformly more clear and explicit than the lay writings.

In terms of the measurements and indicators used, the scientific writings are perforce quite explicit. While lay writings may raise a concern about, for instance, “stressing” wildlife, a scientific paper will have to operationalize the conception of “stress” being used, and define it in terms of actual measurable and measured variables (e.g., fecal corticosteroid levels, specific behavioural changes.) Despite this, in many cases, the links between the concerns raised in the introduction and the measures described in the methods section are implicit, vague, and undefended. For instance, many papers describe a litany of physiological, reproductive, and population-level “potential” problems that might accrue from disturbance to animals due to excess wildlife tourism, but then go on to measure (specific and well-defined) behavioural or physiolog-

ical indicators with little explicit linking between the two. This echoes the process found by [Stafleu et al. \(1996\)](#) in the animal welfare literature, where the scientists' attempts to formalise an operational definition that lends itself to generating specific indicators to measure have the effect of divorcing that definition from the broader societal concerns implicit in less detailed definitions.

Further, as with the lay writings, there is scant reference to any broader or more abstract theories of moral concern when listing the potential problems with wildlife tourism. Unlike the lay writings, there is an often implicit—but sometimes explicitly stated—assumption that *only* population level changes are of concern.

There is some evidence of a grappling with the issue of whether *any* measurable change is evidence of a problem. This, however, is generally couched in terms of the concept of “biological significance,” which is generally presented in opposition to “statistical significance.” Statistical significance is a technical, mathematical concept: in brief, if the difference between two groups is substantially larger than the variation within each group, the difference is said to be statistically significant. In contrast to this, biological significance is used in many animal welfare studies to put the magnitude of the difference into a context of relevance to the animal—often by comparing to a third group subjected to conditions which are known or presumed to be “bad” (according to whatever conception of “bad” is used in the study). In many of the studies examined in this chapter, on the other hand, “bi-

ological significance” is used with reference to translating a behavioural or physiological effect into the “common currency” of energetic impacts. It is not entirely clear, however, why it is easier to interpret the importance of a given change to a whale’s energetic budget than to interpret the importance of a given change to the whale’s dive times.

5.2.1 **Benefits of wildlife tourism**

Two groups of benefits were discussed in this literature: direct conservation benefits, and economic benefits which are presumed to eventually benefit conservation indirectly.

One direct conservation benefit consists of using tourist encounters to assess population status in the same way “catch per unit effort” would be used where harvesting records are used to assess population size.

A second direct benefit is represented by the original research reported on in several newspaper articles in the previous chapter, showing that young, female, and subordinate grizzly bears preferentially use food sources near tourists during tourist presence, as the dominant, old, male bears tend to stay away.

Lastly, there may be potential benefits in that ecotourists are by nature more concerned with details of the ecosystem, and thus require that local human populations, who benefit economically from tourist visits, safeguard sustainability in order to continue attracting ecotourists. These are less frequently measured and perhaps less measurable.

Economic benefits tend to fall into the same category as the last, in that they are theorised to exist, but difficult to assess directly. Or, to be more precise, the economic benefits can be quantified, but whether this benefits wildlife in any particular way is more difficult to track.

5.2.2 A composite model for human-wildlife interactions

I will attempt in this section to sketch out a “composite model” of how wildlife (in general) reacts to a noxious or threatening stimulus. I will attempt, to the extent possible, to keep this discussion “value-neutral.” In the following sections, I will refer to this model in discussing which segments of this standard model are a) measured by scientists, and b) appealed to as management concerns justifying the measures used (and thus becoming imbued with a value component.)

In the first instance, a wild animal will perceive the presence of human wildlife viewers. We will, for the present, presume further than the animal interprets this perception as indicating a potential threat, or at least an unpleasant state of affairs (without making a judgment at this point over whether this unpleasantness is of any moral concern). If the events are perceived/ interpreted by the animal as an acute threat, the physiological stress response will be activated ([Moberg, 1996](#); [Munck et al., 1984](#)). This may be presumed to be linked with negative affective states (feeling

stressed/frightened) in the animal ([Jensen, 1996](#)), although unlike the released stress hormones, affective states cannot of course be measured directly. If the animal chooses to escape from tourists, overt behaviours (moving away from the stimulus) follow. In other cases, behaviours may be more subtle (e.g. interrupting foraging to maintain vigilance towards the threat,) or absent. If the events are perceived/interpreted as a less acute threat, the animal may continue to make behavioural decisions based on (or at least consistent with) a cost-benefit assessment weighing the benefits of remaining in the area to reap food or other benefits versus the costs of locomotion and lost opportunity in leaving the area ([Frid and Dill, 2002](#)). If events are perceived/interpreted by the animal as merely unpleasant, strong physiological responses may not occur, but negative affective states may lead to the animal choosing to avoid the wildlife viewers (though this may also be explained by a cost-benefit calculation as above.) These negative affective states are treated here, for the present, as a “value-neutral” evolutionary signalling system, but see [Broom \(1996\)](#) and [Duncan \(1996\)](#), who argue that negative affective states are in themselves a welfare concern.

Stress physiology, locomotion away from the source of disturbance, and lost foraging opportunities all have repercussions for the energetic balance of the individuals concerned ([Gill et al., 1996, 2001](#)). With less energy coming in, and/or more energy being expended, fat stores are depleted or not accumulated. This effect on body condition, in turn, may have implications for the likelihood of winter survival and/or successful reproduction (i.e., for

the individual fitness of the disturbed animals.) If the population's fitness is equal to the sum of its members' individual fitnesses, then this in turn could affect the population's size or viability.

Further, many animal populations are postulated to be limited by the quantity and quality of available habitat. If animals choose to move away from prime habitat to less ideal areas in order to avoid humans, the quality of habitat used decreases on average. Even if the two areas are equivalent, the quantity of habitat available to the population decreases where individuals choose not to use some of it due to disturbance.

5.2.3 Value “hooks” to composite model

5.2.4 Animal perceives humans

The simplest possible effect of wildlife-viewing tourists is that the animal perceives the presence of the humans. In this case, any measurable change to the animal's behaviour or physiology shows that the animal has perceived human presence. (Note that the converse is not true: an animal could perceive human presence without betraying that perception to scientist observers.) However, the mere perception of human presence, without other consequences, would not generally be considered a harm that management ought to try to minimise²⁰. In many cases, however, scientific work merely determines that some difference exists between conditions when tourists are present and

²⁰Except, of course, by the author of the op-ed piece quoted in the previous chapter, condemning the Dolphin Line as a violation of dolphins' privacy

when they are not—in other words, that we can scientifically detect that the animal has detected us. This work frequently fails to explicitly link the animal’s perception of human presence to any particular moral or management concern:

Measurements of behaviour have often been used to evaluate the effects of disturbance. Woodland caribou and Asian rhinos were shown to spend less time feeding and more time alert when visited by ecotourists. The foraging behaviour of bighorn sheep was also disrupted by tourists. Therefore, changes in resting, foraging and vigilance behaviour could indicate disturbance of wildlife by ecotourists. (Duchesne et al., 2000)

Perhaps this is because it is immediately obvious to a most casual bystander that these changes in resting, foraging, and vigilance are actually significant, and thus the point does not need to be insisted upon. The question remains as to how big a change is significant, and whether some small changes, while measurable, may in fact be non-significant. This may depend on the specific reasons why these changes are a concern, which, as we have seen in [chapter 3](#) and [chapter 4](#), are not obvious to a most casual bystander. Even the author quoted above goes on to argue that there are other important consequences to these changes in behaviour. What these consequences are, however, is still left implicit:

Beside changes in behaviour, displacement of animals from their preferred habitats to less profitable environments could have important consequences. (Duchesne et al., 2000)

5.2. *Implicit and explicit goals of existing scientific work*

Here, the reference to “important consequences” shows that the changes initially described are merely easily-observed indicators of something else, rather than necessarily being moral concerns in their own right.

These easily-observed behavioural and physiological changes might, of course, not lead to any important consequences. In particular, animals might alter their behaviour to adapt to human presence, and still able to fulfill all of their needs, thus leaving no impact on, for example, their reproductive output or the population:

The idea that changes in behavior associated with human activity could be an adaptive response instead of a negative consequence has only recently been considered. (Rode et al., 2006)

Other studies base recommendations on a notion that whatever animals would do in the absence of humans is “natural,” what is natural is good, and therefore any deviations from “normal” and “natural” behaviour are, in and of themselves, negative impacts to be avoided:

However, it is not known if birds behave the same on the undisturbed side of a protective barrier compared with an undisturbed location. If birds do not act as they would in an undisturbed environment, the barrier has not eliminated human impacts.(Ikuta and Blumstein, 2003)

While this is, of course, technically true, it illustrates that the central question of this thesis is not even recognised as an issue: Which human impacts should we concern ourselves with? Are all human impacts equally “bad”?

Lastly, some changes to wildlife due to tourist presence can be interpreted in light of the tourist experience itself (see [section 4.4.5](#)):

The primary purpose of a wildlife viewing site is to provide a satisfactory viewing opportunity with minimal impact. Consequently, it was necessary to determine whether the act of viewing may reduce the opportunity to view moose. ([Silverberg et al., 2003](#))

If the behaviour of tourists causes wildlife to retreat or hide, then wildlife cannot be viewed. This is detrimental to the tourists, whether or not the effects on the wildlife are of concern under any moral, as opposed to prudential, reasoning.

5.2.5 **Biological significance**

Several papers referred to “biological significance” without stating what biological significance is or how it may link to specific management goals or to factors that are relevant under any given moral theory. The notion of “biological significance” grew as a contrast to “statistical significance,” based on the observation that simply because a change in some behavioural, physiological, or other parameter is measurable and is larger than the variation within the treatments being compared (i.e., is statistically significant, according to the definitions used in statistical theory,) it does not necessarily follow that this change is of any real significance to the animal or to the population. Presumably, the definition of real applied significance will depend

5.2. *Implicit and explicit goals of existing scientific work*

on the aims of the study. If a study is focused on the welfare of a captive animal, and defines welfare in terms of, say, internal affective states (discomfort, fear, etc.) then a given observed change in behaviour or physiology might be assessed for biological significance by comparing it to changes observed in response to some event that we can safely presume to be uncomfortable or fear-inducing. If the study aims to assess the breeding health of a population, then a given observed change in behaviour or physiology might be assessed for biological significance by determining whether the change is of a magnitude that is likely to have cascading effects at the population level, or whether it is of a magnitude that the animal can cope with and compensate for. In the present case, where the studies aim to determine whether wildlife tourism is detrimental, and where “detrimental” is not clearly defined, then appealing to “biological significance” appears to be equally ill-defined as a useful standard for interpreting any changes measured.

In some cases, however, the concept of biological significance is used simply to say that the researcher doesn’t know the importance of the findings:

The long-term biological significance of these findings is, as yet, unknown but surely worthy of further research. ([Higham, 1998](#))

Similarly vague is the following pronouncement that debate should ignore the extent to which different wildlife species “tolerate” tourism (the definition of “tolerance” is left implicit) and should instead focus on the long-term “biological consequences” of tourism:

5.2. *Implicit and explicit goals of existing scientific work*

It is probable that most wildlife species will demonstrate some degree of tolerance when human engagements take place within the wildlife setting itself [...] Tolerance, though, should not enter deliberations on this subject. Rather, debate should center on the long-term biological consequences of tourism. (Higham, 1998)

Other uses of the term do add some useful definition, however. For instance, biological significance in the following discussion is equated with effects on parameters (reproduction, survival, and numbers of individuals) relevant to population stability:

Unfortunately, it is seldom possible to infer biological significance based on short-term behavioral change. It is rarely known whether, and in what ways, short-term responses translate to longer-term change in reproduction, survival, or population size (Bejder et al., 2006)

In contrast, the following quote equates biological significance to the energy budget of the animal:

One important issue that is beginning to be addressed concerns the biological consequences of observed avoidance responses. What are the consequences if a dolphin spends 10 s longer underwater on average when a boat interacts with it? It is necessary to relate the effects of the responses observed to standardised parameters such as the energetic budget of the species to assess their biological significance. (Lusseau and Higham, 2004)

But it is far from clear how relating effects to a standardised parameter actually resolves the question: what are the consequences if the observed 10 s change in dive times lead to a 10kJ change in energetic budgets? It is possible

that there is an underlying presumption that wildlife populations in general are limited by energy flows through the ecosystem, and if this presumption is correct, then a focus on energy budgets may be appropriate. On the other hand, the measurements of time budgets is based on a presumption that an individual's energy acquisition is limited by foraging time, and if *that* presumption is correct, then the increased dive time would be more appropriate as a measure. Appealing to a nebulous concept of "biological significance" does not appear to advance our understanding much. A more useful approach, if the animal's quality of life is the relevant issue, might be to put the observed changes into the context of the animals' life by measuring changes in response to other events in the animals' life (e.g., encountering conspecifics, finding food, escaping from predators.)

5.2.6 Animal perceives humans as a threat

A more refined attempt to understand animals' responses to tourists uses the language of risk tradeoffs. Life in the wild is risky. Both predators and conspecific competitors may pose risks to wild animals; remaining in hiding or safer habitats may reduce these risks. On the other hand, these safer habitats may not provide opportunities for feeding or courtship. A wild animal's life, then, is a constant trade-off of the risks of predation and/or competition versus the need to rest, eat, and reproduce. By understanding how animals respond to "natural" risks, one might be able to glean some insight into the meaning of their responses to wildlife tourism (see, e.g., [Frid and Dill, 2002](#)).

In this case, the observed changes to a wild animal's behaviour are held to indicate not merely that the animal has perceived the human presence, but that the animal has interpreted it as a potential or actual threat. This in turn may be considered relevant either because fear is a negative affective state which reduces the quality of the animal's life, or because responding to that threat requires trading off feeding and reproduction.

Two types of measures follow from this idea. First, scientists might look at overt vigilance behaviour, either as an indicator of fear or as an energetically costly behaviour. Second, scientists might look at total behavioural time budgets—the fraction of an animal's time spent in various activities—on the grounds that increased time spent vigilant and dealing with a threat means less time available for feeding or other activities necessary to the animal's body condition, survival, breeding success, etc.

Of course, the two are linked. For instance, a study of polar bear tourism near Churchill, Manitoba used overt vigilance behaviours as a measure, but justified this use as an indicator of time budgets and energy balances:

Vigilance behaviour conflicts with other activities, such as sleeping, feeding, grooming or fighting. As such, it is costly because it requires limited resources of time and visual attention. Continued stimuli that are perceived as threats (e.g., predator presence) can elicit a hormonal chain reaction resulting in increased cardiac output, increased levels of “stress hormones” (e.g., glucocorticosteroids and corticosterone), and the formation of glucose at the expense of protein and fat. (Dyck and Baydack, 2004)

5.2. *Implicit and explicit goals of existing scientific work*

These impacts are further discussed solely in terms of effects on body composition: polar bears at this time are easy to view because they are concentrated on the coast, waiting for freeze-up and access to hunting grounds—they are thus living off fat reserves and losing body mass. Increased vigilance at the expense of resting might therefore accelerate that body mass loss. However, this loss of body condition is not measured directly; it is used as a justification for measuring the overt vigilance behaviours and time-budget changes that can be assessed more easily, less intrusively, and over a shorter time.

Vigilance behaviours were also the key measure of human disturbance in the following two bird studies:

In addition, we examined parent and chick behaviour to determine if more subtle responses occurred, for example, if adult birds spent less time attending nests or chicks were more vigilant in areas closer to the WVA [Wildlife Viewing Area]. (Skagen et al., 2001)

Categories were: 1) no apparent response, 2) at least one bird lifts head, 3) at least one bird moves away from dike, 4) at least one bird leaves the area, 5) at least one bird vocalizes, 6) at least one bird stops foraging. (Stolen, 2003)

In the former case (Skagen et al., 2001), disturbance (as indicated by vigilance behaviours) is a concern as it may lead to nesting or fledgling failure, and affect the viability of the population. The study attempted to observe nesting and fledgling success directly, but the results were inconclusive, as

they are confounded by the loss of nearly half the nesting trees to windfall during the course of the study. If population size or viability is the ultimate concern, then fledgling success would be close to a “gold standard” of measurement of human impacts. However, if logistics preclude direct observation of fledging, then other measures of disturbance which are presumed to lead to lowered fledging success may be necessary. In the second case (Stolen, 2003), the negative impacts of vigilance behaviour occurs because a vigilant animal is not feeding, so increases in vigilance decrease the foraging rate. This depression of feeding rates is “expected to reduce the net rate of energy intake by the birds,” although the authors caution that they did not measure the duration of the depression in feeding rate. Presumably, a short-lived change would have less effect on total energy intake (or may even be compensated for by foraging for longer each day,) whereas if rates remain low for a long time after the tourists approach, effects on total energy intake may be greater.

On the other hand, a study of caribou in Quebec measured time budgets directly:

We assessed the impact of ecotourist visits during winter on woodland caribou *Rangifer tarandus caribou* time budgets in the Charlevoix Biosphere Reserve, Canada. We compared the behaviour of caribou during and after ecotourist visits with their behaviour during days without visits. (Duchesne et al., 2000)

5.2. *Implicit and explicit goals of existing scientific work*

The discussion of this time-budget measure is mostly in terms of energetic considerations, although the link between the observed increase in vigilance behaviour and its consequences is left rather implicit:

Time devoted to the main activities of caribou during winter, namely foraging and resting/ruminating, were both reduced in the presence of ecotourists. The impact of ecotourists appeared similar for all age-sex classes, although yearling females rested less than other age-sex classes in all situations. Winter foraging activities are costly for caribou because they must dig feeding craters to reach terrestrial lichens covered by up to 150 cm of snow. (Duchesne et al., 2000)

The authors also tracked whether caribou herds moved to different areas in response to tourists. They attempted to interpret the results by comparing the caribou's response to humans to their response to the known threat of wolves.

Human presence did not drive the caribou out of their wintering range but the presence of wolves made caribou move long distances on two occasions. Thus, the impact of ecotourists appeared rather benign compared to the effect of wolves, but it was likely additive to that of predators. (Duchesne et al., 2000)

From the observation that caribou spend less time foraging when tourists are present, and the discussion of the energetic demands of both foraging and moving away from tourists (or wolves) in deep snow cover, the authors reach the recommendations that:

First, the scale of the activity should be controlled to ensure that animals do not leave high quality habitats for marginal ones.

Second, the foraging activities and energy-saving resting periods must not be disrupted for long periods of time in order not to jeopardize the energy budget and eventually the survival of caribou. (Duchesne et al., 2000)

This research does suggest that at current tourism levels, the first recommendation is being met, but the paper does not link the two explicitly. On the second recommendation, there is no discussion of how long or short a disruption is problematic, nor is there any interpretation of whether the current tourism levels and the observed behavioural changes fall within it. Nevertheless, the authors conclude that:

with proper precautions the population of woodland caribou in Charlevoix can tolerate ecotourist visits. (Duchesne et al., 2000)

5.2.7 **Animal finds human presence aversive**

The notion that wildlife tourism ought to avoid frightening animals is clear in the previous two chapters (see [subsection 3.1.1](#) and [subsection 4.4.2](#).) The scientific literature, however, does not acknowledge that disturbance might be bad simply because it causes fear in the animals. Something of the notion appears in a single quote, which attempts to put the observed measurements into some sort of context:

We attempted to put the corticosterone effect of a tourist visit in context by comparing it to corticosterone secreted in response to capture and restraint, a novel event most likely perceived by these

penguins as a severe stressor, similar to a predation attempt. (Walker et al., 2006)

Like the earlier quote where the lack of flight in response to humans is compared to the observed flight in response to wolves, this author interprets their results by comparing the stress response elicited by tourist presence to that elicited by something we can presume the animal finds aversive of threatening. However, this is formalised into language that obscures the fact that the author is talking about how the animal feels about things, couching it instead in the language of “perceived as a severe stressor”.

5.2.8 Stress response activated

Perception of human presence (or any other stimulus) as aversive or threatening may lead to a physiological stress response. In brief, this response has the effect of diverting energy away from the longer-term needs of the animal (e.g. storage and the reproductive, digestive, and immune systems) in order to mobilise it for immediate use by the muscular system to enable the animal to respond to the immediate threat. The following excerpt suggests that studying these physiological changes is a distinct change from the focus on historically studied demographic effects:

Historically, studies on the effects of anthropogenic activities on wildlife focused on changes in demographic effects. Only recently have studies begun to examine how internal physiological factors are modified in free-living animals exposed to anthropogenic disturbances. Quantifying behavioral and physiological responses

and their variations in individuals is important. For example, appearance of external “calm” may not be indicative of significant internal physiological changes in an individual. (Walker et al., 2006)

However, the same paper goes on to justify the importance of these internal physiological changes in terms of the same demographic effects:

Furthermore, although factors such as breeding success may not be affected immediately by human activities, long-term consequences due to physiological effects of chronic stress (Johnson et al. 1992; Wingfield 1994) have the potential to affect individuals far into the future, long after a study is terminated. (Walker et al., 2006)

This logic justifying the measurement of stress-physiology parameters is further elaborated in a previous paper by the same author:

Chronically elevated levels of glucocorticosteroids, however, can cause immunosuppression, muscle wasting, reduced growth rates, and, ultimately, death (Sapolsky 1987; Johnson et al. 1992; Wingfield 1994).

High levels of glucocorticosteroids can be particularly harmful in young because they are incapable of escaping from a perturbation (i.e., altricial species—Starck 1993). Furthermore, young subjected to stressors and/or reduced parental care shortly after birth or hatching can suffer negative consequences later in life. (Walker et al., 2005a)

In this elaboration, the justification is in terms of individual fitness and health, but the link between that and breeding success is implicit. That link is made explicit (though as a reasonable possibility, rather than an established consequence) in other papers:

Effects on survival or breeding success are often seen as the ultimate criteria for identifying adverse effects. However, even subtle impacts of human disturbance on physiological parameters, such as increased heart rate, stress hormone levels and energy expenditure, may reduce individual fitness and can eventually have population-level consequences. (Ellenberg et al., 2006)

Lastly, the same author from whom we drew the first two quotes in this section provides an explicit listing of the various possible effects of tourist presence, but specifically and explicitly dismisses the importance of these measures unless they actually reduce population size or viability:

- Physiological effects such as increases in heart rate without overt changes in behavior—except perhaps increased vigilance. Nisbet (2000) points out that this response should not be considered as adverse unless it decreases survival or reproductive success.
- Moving away from a nest, territory, feeding site etc. and then returning after the disturbance ends. Again, Nisbet (2000) points out that this should not be considered adverse unless the movement results in loss of nest, status, food resources etc.
- Permanent movement away from a nest, territory, feeding site or other resource (i.e., abandonment or “desertion”). This may likely have adverse effects.
- In colonial/group living species, abandonment of a colony, home range or even larger scale distribution. Unless the population is able to relocate successfully, then adverse effects will result. Even if relocation is possible, the new site may not be ideal and reduced survival and reproductive success may result.

- Disturbance results in direct reduction of reproductive effort either by loss of eggs and/or young, failure to reach reproductive maturity, attract a mate or find a suitable nest site.
- Disturbance results in an increase in adult mortality in local, regional or total populations. (Walker et al., 2005b)

It is interesting that, having dismissed the importance of physiological measures that do not decrease survival or reproduction, Walker then proceeds to measure physiological changes. To put the measures in context, Walker compares them to the stress of capture and handling (which we covered earlier as an “aversive” experience), rather than attempting to quantify the actual effect of the observed physiological changes on survival and reproductive success. This is understandable, given how difficult quantifying that actual link is. It does, however, demonstrate the disconnect between what is considered important (population-level effects) and what is measured to assist management decisions (physiological changes, which are considered of no real consequence in themselves unless they lead to population level effects)

5.2.9 **Animal flees**

The above discussion focussed on the more subtle indicators of stress response activation. In this section, we will focus on more obvious behavioural reactions of flight or attack. We have seen self-interested reasons for avoiding behaviour that leads to overt flight (section 4.4.1) or attack (subsection 4.3.5.) The scientific treatment of flight treated in this section focuses on flight as an indicator of detrimental effects to the wildlife.

Flight can involve overt, immediate flight, or a longer-term avoidance of areas with heavy tourist presence.

Overt flight

Overt flight from tourists presumably involves both feelings of fear and an energetic cost to the animal. This is true of overt flight at high speeds, as observed in lizards, or merely increased animal movement when tourists are present, as in the caribou study:

Many lizards respond to people as if they were predators, by readily escaping to refuges. However, an increase in the frequency of these antipredatory strategies can lead to a loss of body condition, which may have important consequences for short and long term fitness. [\(Amo et al., 2006\)](#)

Increased movements could entail high energetic costs, especially when caribou have to walk in deep snow, and eventually affect body condition and survival. [\(Duchesne et al., 2000\)](#)

In both cases, the effect of flight or movement on body condition is the concern, as body condition affects both survival and reproduction.

In addition to the direct energy costs of flight, there is a loss of feeding time, and a longer-term disadvantage of moving to poorer feeding grounds to avoid tourists. On the other hand, as seen above, remaining near tourists and engaging in more vigilance behaviour can also reduce feeding rates and energy intake, so there may be an energetic cost to tourist activities, whether the animal stays or flees.

5.2. *Implicit and explicit goals of existing scientific work*

This study sought to identify the stimuli bears utilize to assess risk and to determine whether fleeing or staying in the presence of bear viewers had significant fitness effects, via impacts on nutrition and condition. (Rode et al., 2006)

Understanding exactly what stimuli cause different bears to respond in different ways to tourism at different times, and also what the impacts of different choices by the animal are, would presumably allow managers to minimise these impacts. In this case, the impacts are energetic and population considerations, and the general recommendation is to increase the predictability of human activities:

While our conclusion is that our well managed, controlled tourist activities had no significant negative impact on this bear population, effects can still be observed on individual bears. Wildlife managers will therefore have to determine whether individual responses are an issue of concern, and if so, mitigate by reducing risk associated with humans by improving the predictability of human activity in time and space and/or providing sufficient alternative locations and times for less-habituated bears to access resources free of human activity. (Rode et al., 2006)

This quote leaves open the possibility that these individual responses by bears may be of management concern, even in the demonstrated absence of a significant population effect, and explicitly leaves that decision to the decision-makers, as it is beyond the scope of the scientific study.

Altered habitat use

Animals may also avoid humans without overt flight behaviour, simply by choosing not to move into areas where humans are present, or by leaving those areas sooner than they would otherwise have done, but without an obvious flight reaction. In this case, no overt flight behaviour will be observed, but there may still be a longer-term change in the way in which animals use habitat.

Disturbance may force the animals to leave a suitable foraging site to look for another one that could be of lower quality. [...] Beside changes in behaviour, displacement of animals from their preferred habitats to less profitable environments could have important consequences. (Duchesne et al., 2000)

If human activity on the refuge is displacing migratory birds to other areas during the early winter, the refuge is not meeting its primary objective of providing habitat for over-wintering waterbirds. (Klein et al., 1995)

It is feared that harassment, particularly in the vicinity of some warm springs winter refugia, can drive manatees away to less favorable areas, thereby increasing the risk of cold-related illnesses. (King and Heinen, 2004)

Managers were concerned about humans displacing bears and whether bears had sufficient access to salmon to continue concurrent sport fishing and bear viewing in a safe environment. (Tollefson et al., 2005)

5.2. *Implicit and explicit goals of existing scientific work*

These quotes illustrate this concern, both with respect to general habitat (leaving suitable foraging sites, displacing to other areas) and with respect to specific, high-value habitat features (warm springs, salmon-bearing streams.) The latter may be a particular concern because specific, high-value habitat features also tend to concentrate wildlife numbers and thus lead to particularly good wildlife viewing opportunities. However, while Klein’s quote explicitly states that the purpose of the refuge is to provide habitat, so reducing habitat fails to meet that purpose, it is not clear whether cold-related manatee illnesses are a concern primarily because of the suffering individual manatees may experience, or due to the reduction in reproduction and survival that such illnesses may entail. Duchesne’s quote merely refers to “important consequences”, remaining vague on what these consequences may be, and while Tollefson mentions safety (presumably, of the sports fishers—see [subsection 2.3.3](#)), the reason for concern about displacing bears is not explored.

Other studies also stress the reduction of habitat quality or quantity if wildlife reduce their use of the parts of their habitat where wildlife viewers are present:

The study provided evidence that sustained disturbance associated with footpaths, roads, and railroads reduced local habitat quality for waterbirds and the carrying capacity of estuaries. ([Burton et al., 2002](#))

Displacement generates gaps in resources for birds [...] Such gaps force birds to meet their needs elsewhere, which may include less-

preferred habitats. Gap formation in habitats is a common process that leads to habitat fragmentation. (Gutzwiller and Anderson, 1999)

While these quotes do not elaborate, one may presume that the concern over habitat quality refers to the conservation goals of maintaining population size and viability, rather than to other possible objectives such as individual quality of life, respect for wildness, respect for individuals.

5.2.10 Health effects

The last effect that tourism might have on wildlife, according to the body of scientific literature analysed, is on health and disease incidence. Health, of course, is itself rather vague, and may encompass or lead to the various physiological stress parameters and/or reproductive measures detailed above. In some studies, health implications are used as a justification for measuring behavioural changes:

The goal is to determine if dietary, ranging, and grouping patterns of tourist gorillas differ from wild populations and what health implications, if any, these differences may have. (Goldsmith, 2000)

A number of other papers looked at the incidence of human (or livestock) diseases in wildlife. These papers tended to assume that disease itself is of direct management concern, without reference to any impacts at other temporal or spatial scales.

5.3. Science's contributions to management

All scibiotic [mange-infected] gorillas described in the present study originated from the Nkuringo group which is at an advanced level of human-habituation. (Graczyk et al., 2001)

Expansion of ecotourism-based industries, changes in land-use practices, and escalating competition for resources have increased contact between free-ranging wildlife and humans. Although human presence in wildlife areas may provide an important economic benefit through ecotourism, exposure to human pathogens may represent a health risk to wildlife. This report is the first to document introduction of a primary human pathogen into free-living wildlife. (Alexander et al., 2002)

In the veterinary and parasitology literature, ill-health is typically assumed to be a concern without further justification in terms of animals' quality of life or of population size. On the other hand, health effects might be a good example of Norton's convergence hypothesis: avoiding ill-health may be a means-objective under all reasonable conceptions of the appropriate underlying ends-objective, in which case debating the relative merits of these ends-objectives would be less relevant than addressing the issues of ill-health in the wildlife populations being managed.

5.3 Science's contributions to management

A much narrower range of values, ethics, and possible management goals emerge from this analysis of the scientific literature than we saw in either the expert ethics literature (chapter 3) or in the lay publics' expressions of

value and concern ([chapter 4](#).) A major focus in the ethics literature is the formal defense and debate of fundamental first principles. This focus on first principles can lead to a glossing over of contextual details, which rise to prominence in the actual lived experience of considering what is and isn't appropriate in a specific context. The lay public expressions of value and concern tend to focus on these contextual details. Often, however, the lay public's concern with details exists without explicitly linking these details to any underlying principles. Also, the lay public appears far more willing than expert ethicists to entertain conflicting or contradictory positions. For example, the welfarist attempt to free trapped whales to relieve their suffering was coupled with the resource-use idea that if the rescue attempt is unsuccessful, the animals will be harvested so that they don't go to "waste."

The focus in the scientific literature is on measurement. This leads to an obvious and unsurprising alignment with consequentialist ethics rather than with non-consequentialist concerns. Specifically, scientific methods excel at quantifying changes in behaviour (vigilance, feeding, resting) and physiology (heart rates and stress hormones) in response to human presence. They also allow quantification of animals' avoidance of tourists, either in the short term (the animals run, fly, or swim away) or in the medium-long term (animals spend less time in parts of their habitats where tourist activities occur,) and of reproductive and survival parameters relevant to the long-term stability of the population—though there is much technical uncertainty regarding how to

link changes in response to short-term tourist activities to these longer-term wildlife population processes.

Despite the formal structure of scientific writing, which always included a description of the problem, a description of the methods used, and a discussion linking the two, the actual links between measures and societal concerns were often weak and implicit. The consequentialist ethical theories (which are in principle amenable to a scientific quantification of the consequences of concern) covered in [chapter 3](#) are Singer's utilitarian theory based on the suffering of individual animals, Leopold's land ethic based on the integrity, stability, and beauty of the biotic community, and a form of enlightened anthropocentric self-interest based on the continued existence and "viewability" of the target wildlife. The types of scientific measures that could be used to reflect each of these ethics are overlapping: many indicators of animals' suffering or discomfort (increased vigilance, escape, physiological stress, disease or injury) also indicate at least the potential for impacts on the stability of the population (stress and disease leading to lowered reproduction, vigilance or avoidance behaviours lowering food intake and leading to poorer body condition, reproduction and survival) or for reductions in the "beauty" of the biotic community and the continued viability of wildlife viewing operations (both highly habituated, non-"wild" wildlife and highly disturbed wildlife that avoid humans completely lead to lowered visitor satisfaction with the viewing experience's "beauty.") Thus the existing scientific work could in

fact give insights to management reflecting a broader range of values and goals than is apparent from the discussion sections in this work.

In addition to these consequentialist ethics, which are in principle amenable to scientific input, however, we also covered in [chapter 3](#) a number of non-consequentialist ethics, which even in principle are not as amenable to a scientific quantification, since the ethically relevant questions do not hinge directly on consequences. These theories are Regan's theory of (individual) animal rights, Taylor's principles of respect for individuals, Rolston's theory of natural values, and various expressions of a theory where human virtues are encouraged and vices discouraged. These non-consequentialist ethics also found expression in the lay publics' attitudes covered in [chapter 4](#); expressions of spiritual or totemic valuation of wildlife covered in [subsection 4.3.4](#) go as far as to state explicitly that "we don't need scientific facts" to justify the protection of wildlife.

In [subsection 4.4.3](#), we saw expressions of concern reflecting both Regan's notion of respecting animals as individuals and Rolston's idea that there is something specific about wild, as opposed to habituated or "tame," animals that is worthy of respect and protection in its own right. The call to respect the privacy of the Irish dolphins went beyond what even the most radical rights philosophers call for as a requirement, and in [subsection 4.4.4](#), we saw condemnations of the trophy mentality in hunting or photography. None of these ethics or values surface in the scientific literature. If human virtues or respect can be defined in enough detail to yield empirical indicators, these

would likely focus on the behaviour of the tourists, rather than the behaviour, physiology, or reproduction of the wildlife.

In sum, there are several problems with the notion that we can or should make “decisions about the conservation of wildlife based on science” (Murray, 2003). First, there are theoretically valid and societally supported objectives that are not covered by the existing body of scientific work, and may not be amenable to any scientific quantification. Second, there are multiple objectives that may be more or less relevant in different contexts, or may need to be traded off against each other. Scientific work is unable to determine which of these objectives ought to be pursued in a given context. Third, even where objectives are clear and relevant scientific work exists, it is often not clear whether any measurable change is of management concern, or whether there is some threshold below which minor changes do not constitute a detrimental effect.

If we conclude from this that management and regulation are *decision* problems, rather than purely *scientific* or purely *ethical* questions, we will have to turn to decision-making frameworks in order to impose some order on the complexity.

Chapter 6

Decision analysis

I argued in [chapter 3](#) that, while ethical theories tend to underdetermine real-world problems, there are several frameworks for animal and environmental ethics that could shed light on the question of how wildlife-viewing tourism ought to be regulated. In [chapter 4](#), I found mutual support between these ethical theories and expressions of value and concern in the public consciousness (as expressed in daily and periodical media coverage of wildlife tourism.) In [chapter 5](#), I determined that there is also an existing body of scientific literature using metrics of impact that speak to many (but not all) of these concerns. What is generally lacking, however, are clear links between the various values or moral concerns, the scientific indicators, and actual management decisions (or thresholds at which changes to the indicators call for management action.)

In this chapter, I will use the framework provided by the literatures on structured decision making and value-focused thinking to think through these links critically. The individual domains of inquiry analysed (ethics, values, and science) can readily be combined to generate indicators of different impacts of wildlife-viewing tourism, but that relatively little guidance is avail-

able from any of the domains of knowledge examined as to the thresholds at which management action ought to be taken.

The individual monistic ethical theories examined in [chapter 3](#) each draw attention to different aspects of the problem such as the suffering of individual animals, the sustainability of populations, or the intrinsic value of ‘wildness.’ Specific prescriptions were difficult to derive from individual monistic ethical theories, as the theories in general are underdeterminate, and variations in the (value-judgment-laden) description of the specific decision context allowed different prescriptions to be derived from the same initial premises. In response to these challenges, pragmatic and pluralistic approaches to ethics recommend a closer engagement with the lived experience and real, contextual judgements of these detailed questions.

I took up this challenge of interacting with societal expression of value in [chapter 4](#). I found that there is widespread expression of morally relevant content in a 5-year sample of writings about wildlife-viewing tourism in daily and periodical media sources. While the lay public did not use the language or appeal to the formal theories of ethics, all the specific concerns these theories draw attention to were also expressed in society. In particular, there was expression of public concern that wildlife-viewing tourism might cause stress or fear in wildlife, that it might disrespect animals, animals’ privacy, or their ‘wildness’, that it might affect the stability or survival of wildlife populations over the long term, and that it might be motivated by the wrong sorts of reasons (such as the motivation to obtain a perfect trophy

photograph.) These concerns led in general, though usually poorly explored, ways to suggestions that we should be respectful, that we should leave wildlife alone, or that we should monitor various impacts and limit tourism as needed based on the results.

In contrast to the wide variety of concerns expressed by the public and supported by ethical theories, the scientific literature analysed in [chapter 5](#) tended to focus (unsurprisingly) solely on the monitoring of various impacts, with the generally unstated assumption that it would be obvious how and when the results would call for changes to wildlife-viewing tourism management strategies. Most often, the impacts studied were short-term behavioural or physiological changes; these changes are the ones most readily linked causally to the short-term presence of wildlife-viewing tourists. However, these measures were, when justified at all, justified as potentially leading to long-term detriments to the stability of wildlife populations. The short-term measures used, however, may also (and, in fact, more directly) reflect public and ethical-theory concerns over individual-animal-level utility or respect.

What was lacking from the body of work in each of these separate domains of knowledge, however, is a framework for integrating the contributions from ethical inquiry, scientific knowledge, and social values elicitation, and linking them explicitly to eventual management decisions. In particular, I expect many of the management decisions to share the form “If indicator x exceeds threshold y , then take action a .” This means that not only do we need to examine which indicators to use in order to reflect societal and ethical

concerns, we also need to decide how much of an impact is acceptable along each dimension identified.

In this chapter, I look at three possible frameworks for aiding management decisions as possible ways to integrate these three domains of knowledge and link the findings of previous chapters to the problem of wildlife-viewing tourism management. I decide that adaptive management approaches are too focussed on empirical uncertainty, privilege the domain of scientific knowledge, and offer scant assurance that the goals to which management is working are well founded. Public deliberation approaches, on the other hand, tend to focus on procedural issues and privilege the domain of social values, and may not guarantee that simply involving more stakeholders will lead to better decisions. A structured decision-making (SDM) framework offers a way to break complex decision tasks into smaller, more manageable constituent parts, and draws attention to each part individually so none is overlooked or treated as a given without examination. SDM approaches can be used either in conjunction with public deliberation or in more expert- or individual-driven decision contexts, and emphasise the combination of ethics, values, and empirical knowledge to produce guidelines for decision-making. I conclude this chapter by revisiting the management examples presented in [section 2.3](#) and using the SDM framework to highlight areas where existing knowledge can be used, and areas where significant knowledge gaps exist.

6.1 Adaptive management

Adaptive management ([Holling, 1978](#); [Walters, 1986](#)) initially emerged as a framework to deal with the uncertainty of technical or empirical judgements related to managing complex natural ecosystems. The basic premise is appealing and intuitive: that we can try different management approaches while monitoring the effects of that management, and adjust the management as necessary based on an increased understanding of both the functioning of the ecosystem and the effects of the management options being tested. As such, many environmental plans and policies at least claim to the use of adaptive management. It is unclear how meaningfully adaptive management is actually implemented in these plans ([Gregory et al., 2006b](#)), and relatively few of the claimed uses of adaptive management result in actual field experimentation ([Sabine et al., 2004](#); [Walters, 1997, 2007](#)). Further, actual uses of adaptive management often do not lead to enhanced learning about the ecosystem being managed, nor to a shared understanding of the management problem amongst stakeholders ([McLain and Lee, 1996](#); [Sabine et al., 2004](#)); frequently it is not even clear what learning is intended ([Gregory et al., 2006b](#); [Stankey et al., 2003](#)).

Most crucially, in terms of the need identified by this thesis to combine the contributions of different domains of knowledge, adaptive management is a way of dealing with technical or empirical uncertainty. It is not a method for focussing attention on non-empirical elements of decision-making, and

has been critiqued for discounting non-scientific forms of knowledge (McLain and Lee, 1996), for blurring the distinction between the roles of scientists and decision-makers (Lee, 1999; Rogers, 1998), and for assuming that management is an objective or scientific problem and failing to address fundamental conflicts over underlying ecological values or goals (McLain and Lee, 1996; Walters, 1997).

6.2 Stakeholder involvement and conflict resolution

A second attempt to improve decision-making in environmental management focuses on improving public participation in a democratic, deliberative process. Involving the broader public in decision-making is expected to lead to better decisions by allowing a broader range of values, goals, and contextual knowledge to be incorporated (Kasperson, 2006; Lawrence et al., 1997). Incorporating public consultation or stakeholder involvement into a broader framework for aiding decision-making (either explicitly, or implicitly by having a ‘good’ mediator guiding the process) should allow these benefits to be realised, but the critiques below suggest that, on its own, stakeholder involvement does not necessarily form such an aid to decision-making.

Healy (2009) found that even within a public deliberation context, scientific knowledge tends to be privileged as ‘fact,’ while lay contributions are marginalised as ‘values.’ Sanders (1997) likewise found that public de-

liberation expects all stakeholders to be equally proficient at framing their views in rational terms; as this expectation is rarely met, public deliberation tends to privilege the views of those most able to articulate arguments in the expected form—and these people or groups are precisely those who are already the most politically enfranchised. This is echoed by [Kasperson \(2006\)](#)'s findings that public deliberation tends to privilege the voices of those with *material* stakes in the decision outcome, while marginalising local values and the interests of future generations and marginalised peoples. On the other hand, [Lawrence et al. \(1997\)](#) argued that, whether or not the decisions made through public deliberation were 'better' in terms of the decision outcome, these methods were beneficial in meeting the requirements of procedural justice and fairness, and in addressing issues of historical mistrust of managerial authorities.

[Gregory et al. \(2001\)](#) further characterised much of the stakeholder participation tradition as a negotiated dispute resolution mechanism seen primarily as an alternative to litigation. He cautioned that such a focus on dispute resolution sets the process up for an adversarial tone which is not conducive to creative thinking about alternative management options.

Further, a confidence that simply by bringing stakeholders together will result in better decisions appears misplaced. [Gregory et al. \(2001\)](#) argued instead that, without a structured process, people in general are relatively poor at making decisions. Real-life decision-making is less rational and more intuitive ([Haidt, 2001](#)) than often supposed, and is susceptible to bias in-

roduced by framing effects (Arvai et al., 2006; Bateman et al., 2002; Stroll, 1998), social influence (Haviv and Leman, 2002; Krebs et al., 1997), and the use of decision heuristics (Finucane et al., 2000; McDaniels et al., 2003; Wilson et al., 2008). Unless some measures are taken to identify and avoid these biases and think critically and systematically about the decision problem, merely bringing a group of stakeholders together is unlikely to lead to better decisions.

6.3 Structured decision making

Decision analysis, structured decision-making frameworks or value-focused thinking approaches (Arvai, 2003; Arvai et al., 2001; Gregory et al., 2001; Hammond et al., 1999; Keeney, 1992; National Research Council, 2001) attempt to minimise the influences of the above biases and heuristics by formalising the decision-making process and decomposing complex problems into their constituent parts. While the number and names used for these constituent parts vary somewhat between these authors, the general framework focuses on defining the problem and setting objectives or goals to achieve (and measurement indicators, scales and thresholds to use in tracking the extent to which they are achieved), identifying available decision options, assessing the consequences of each option in terms of the objectives, and focusing on trade-offs between objectives. These approaches are often used in conjunction with stakeholder participation workshops (Gregory, 2000; McDaniels,

1999), but can also be applied to more expert-driven decisions or applied research (Gerwing and McDaniels, 2006; Wilson and McDaniels, 2007), or personal decisions as opposed to those involving public policy (Hammond et al., 1999).

Structured decision-making frameworks have been used most widely in environmental decision contexts, such as the restoration and clean-up of specific areas (Arvai, 2003; Gregory, 2000), environmental impact assessment for infrastructure projects (Failing et al., 2004; Gregory et al., 1992, 2006a), development of climate change policies (Wilson and McDaniels, 2007), protected areas creation and management (McDaniels, 1999), and salmon aquaculture (Galland and McDaniels, 2008; Gerwing and McDaniels, 2006; Hamouda et al., 2005).

Some attempts have been made to assess the success of structured decision making by comparing public deliberation processes structured around value-focused information to those structured around technical information (Arvai, 2003) or around alternative-focused information (Arvai et al., 2001). In both evaluations, structuring decision-making around value-focused information was found to aid participants in making thoughtful and well-informed decisions. On the other hand, Wilson and Arvai (2006) point out that decision quality is an elusive concept, and especially relying on decision-makers' self-assessments is problematic.

Nevertheless, the structured decision-making framework does emphasise the interplay of values, ethics, and empirical knowledge. The decision prob-

lem is broken down into its constituent parts; some of those parts relate to the goals or objectives of the decision (i.e., ethical and values questions), while other parts relate to our understanding of the system, and of the effects of different alternatives on that system (i.e., scientific or empirical questions.) In the remainder of this chapter, I revisit the question of wildlife-viewing tourism management using the examples presented in [section 2.3](#). I apply the framework of structured decision making to integrate the insights from ethics ([chapter 3](#)), social values ([chapter 4](#)), and science ([chapter 5](#)) and to identify existing knowledge and knowledge gaps from these three domains. I am able to find existing indicators that speak to each of the objectives or goals identified, but determining thresholds at which changes to these indicators should lead to changes in wildlife-viewing tourism activities remains a major knowledge gap to be filled.

6.4 A decision analysis of wildlife viewing

For the purposes of this thesis, I defined the decision problem as broadly as possible: How should we manage wildlife-viewing tourism? As seen in [section 2.3](#), more detailed and contextual problem definitions differed between areas. At Brooks River, the immediate problem was how and where to upgrade and improve infrastructure for tourists. At McNeil River and in the Khutzeymateen, the problems centred around how many tourists to allow into the area, and how these tourists should behave when close to the

bears. In the San Juan and Gulf Islands and in Johnstone Strait, the lack of access control and the voluntary nature of the whale-watching guidelines meant that the problem definition focuses on how tourists ought to behave around whales—although much emphasis in the San Juan/ Gulf Islands case was also on how to manage the stakeholder engagement process, rather than how to manage whale-watching itself.

6.4.1 Goals and objectives

The focus of this thesis, however, is at the level of objectives, goals and the assessment of the extent to which these objectives and goals are met. What, exactly, do we want wildlife-viewing tourism management to achieve? What problems should it attempt to minimise? What values would be impacted by unregulated or unlimited wildlife viewing? How can we assess the extent to which these goals are being met and impacts being avoided? What can we measure to aid in this assessment?

In terms of existing management documents, I found a strong—but by no means exclusive—focus on goals and objectives involving the future existence, size, and sustainability of wildlife populations. An overarching priority in both the grizzly bear and whale watching examples examined in [section 2.3](#) is the protection of the bears or the whales, usually with an implied rather than explicit assumption that this means the *population* of bears or whales. Nevertheless, concerns with tourist safety, habituation versus “normal” behaviour valued in its own right, opportunities for solitude and appreciation of

“wilderness character,” noise levels condemned as an annoyance to individual animals, and other individual-level impacts also come through in the current management recommendations for three different bear-viewing areas and the justification for these. In the two whale-watching areas considered, however, the major focus seems to be on stakeholder participation and the process of generating guidelines, rather than on the exact content of these guidelines and the actual impacts different ways of doing whale-watching might have on the whales. This relative lack of focus on the impacts on the whales appeared to me to be driven largely by the idea that the whale-watching guidelines were meant as a precautionary approach to define “courteous” or “polite” behaviour towards the whales, as opposed to preventing actual demonstrable harm to them, either as individuals or as a population.

The environmental and animal ethics literature is, unsurprisingly, the most explicitly normative or prescriptive of the three domains of knowledge examined, and makes clear claims about what is right and wrong, or good and bad in reference to human behaviour towards non-humans. However, various authors within the field hold conflicting positions: some hold an individualistic focus, where only individual animals have rights, or utility, or value, whereas others hold a more communitarian outlook, where species, populations, and landscapes serve as the locus of value. Ethicists also differ in their opinions about whether right and wrong are decided by analysis of the goodness or badness of potential outcomes (i.e., forms of consequentialism),

or whether they are decided by appeal to rules of right and wrong, or of respecting some underlying value or autonomy (i.e., forms of deontology.)

The lay public, as represented by the non-technical media analysed in [chapter 4](#), expresses a wide variety of concerns and world-views about wildlife and wildlife-viewing. The key concerns of the scientific literature (with measurable consequences of human presence on wildlife behaviour, physiology, and reproduction) all figure prominently in this analysis, as do concerns reflecting the various ethical theories (i.e., concern over the continued viability of populations, over the pleasures and pains of wild animals, and over whether appropriate “respect” is shown.) [Table 6.1](#) summarises, in the first two columns, the objectives suggested by the various ethical theories and supported by the analysis of social values. In the third and fourth columns, I propose relevant indicators and thresholds that reflect each objective; these will be discussed further in [subsection 6.4.2](#), below.

Ethic	Values	Indicators	Thresholds
Utilitarian	Quality of life	Animal behaviour/ animal physiology	Compare to 'normal' life events
Animal rights/ Respect for animals	Right to non-interference	Animal behaviour/ animal physiology	Any deviation from normal state
	Respect/ courtesy	Tourist behaviour (criteria to be decided)	Any behaviour deemed disrespectful
	Right to privacy	Tourist behaviour	Any wildlife viewing or surveillance
Land ethic	Population/ecosystem sustainability	Animal behaviour/ animal physiology	Effects on reproduction and survival
		Reproduction and survival	Long-term impacts on population
Respect for wildness	Non-habituation	Change in tolerance over time	Depends on context
			Trade-off between animal welfare and hunting susceptibility concerns
Virtue ethics	Trophy mentality	Tourist motivation	?
Public relations/ tourist operations sustainability	Self-interest	Tourist experience; tourist concerns	?
Fairness/ democracy	Procedural issues	Stakeholder participation and acceptance	?

Table 6.1: Summary of possible objectives, indicators, and thresholds for management of wildlife viewing tourism. While animal behaviour and physiology are heavily used in existing scientific literature, the thresholds at which management action is required may differ depending on which objective is at issue. For concerns based around respect, the definition of specific indicators and thresholds for action remains a major knowledge gap. Likewise, concerns deriving from virtue ethics, public relations, and procedural issues were strongly expressed by the lay public, but it remains to be determined how these should be incorporated into management plans.

In some cases, the concerns expressed in the popular media are less detailed and formalised than those in the technical literatures analysed. Where scientific work is being reported to a lay audience, the technical details may remain, except to the extent that formal jargon is avoided; on the other hand, where concerns are expressed over impacts without direct reference to specific studies, many of the details may have receded into a much vaguer mental model of consequences.

On the other hand, especially where the popular literature expresses concerns reflective of non-consequentialist ethics, we can find much more detailed and context-specific concerns than the abstractions of the ethical theories. For instance, [Regan \(1983\)](#) exhorts us to treat those individuals who have inherent value in ways that respect that inherent value and [Taylor \(1986\)](#) to treat individuals in ways that respect them as teleological centers of life. Both derive from these fundamentals a duty of non-interference with wildlife, but it is not clear what interactions do, or do not, constitute interference. On the other hand, we saw very specific examples of how to be respectful in [subsection 4.4.3](#): tour operators ask that tourists not point or use flash photography, tourists should listen to their guides and not push to approach wildlife closer than recommended, altering nature by baiting or attracting wildlife is reproached, and even a clearly non-interfering proposal to install microphones is condemned as failing to respect wildlife's privacy.

The management documents related to the grizzly-bear viewing areas examined in [section 2.3](#) do tend to implement this step of the decision-making

process by explicitly listing the goals they are attempting to achieve. These goals vary slightly between settings, with the protection of bears' wildness and natural behaviour (as part of the general wilderness character of the area) expressed most strongly in the Khutzeymateen, and the goals of visitor safety and services being emphasised more at Brooks River. All three areas, however, list the protection of the bear population as a key and overriding goal. The most obvious differentiation between the three areas is in their goals with respect to bear habituation: in the Khutzeymateen, some mild habituation is reluctantly accepted; at MacNeil River, habituation is explicitly encouraged and bears are 'trained' to tolerate visitors; and at Brooks River, strong habituation is avoided, but aversive conditioning is used to 'train' bears to avoid tourist infrastructure.

In the whale-watching areas examined, much of the discussion of the viewing guidelines focussed on the process of their generation, rather than on the specific goals or objectives. Parts of the guidelines themselves, however, as well as comments by tour operators suggest that the idea of respecting whales by acting in a courteous manner is a key objective of the guidelines—but may not be an appropriate objective for a legal regulation of tourism activities. Likewise, in the bear examples, the notion of respecting the bears is seen more in informal instructions from tour operators to their clients than in the formal management documents.

6.4.2 Impact assessment and thresholds

It is unsurprising that the scientific literature contained the most explicit and detailed focus on indicators for assessing the effects of different management alternatives, listed in the third column of [Table 6.1](#).

Some of the management documents examined contained explicit calls for specific outcomes to be measured in support of specific objectives. In the Khutzeymateen, these included bear behaviour as an indicator of fear, stress or disturbance, habituation as an indicator of whether the bears' wildness was being preserved, bears' use of the estuary as an indicator of whether the population was being displaced from their normal habitat, as well as monitoring of other ecosystem components. At Brooks River, in contrast, indicators and standards related to bears' behaviour or numbers are specifically excluded because these variables cannot be adjusted directly by management, and thus are "impossible to guarantee" ([National Park Service, 1996](#), p. 30).

In contrast, much of the scientific work analysed in [chapter 5](#) is vaguely unsatisfactory in this respect. While most of the work is justified in terms of concerns over population sustainability, the link between the measures used is generally implicit, and remains a possibility rather than a demonstrated cause-effect relationship. On the other hand, the measures used could be justified quite readily in terms of the other concerns raised in [chapter 3](#) and [chapter 4](#), especially where behavioural measures of vigilance or physiological measures of stress could be linked to concerns over fear or annoyance, but these justifications are rarely made, and often dismissed as irrelevant.

None of the three domains of knowledge used, however, generated much guidance as far as the thresholds for management action proposed in the fourth column. Fraser (1985) identified this lack of thresholds as a major problem with wildlife biology in general, when compared to agricultural research. In the latter, Fraser argued, pre-existing management rules call for specific actions in response to indicators passing thresholds; only those indicators with thresholds requiring action are actually measured. In wildlife management, in contrast, Fraser suggests that indicators are measured in hopes that somehow, decision rules will eventually become clear. This is particularly clear in chapter 5 where the concept of biological significance is appealed to in vague ways to at least raise the issue that it is often not clear what specific changes to measured indicators “mean” in terms of the life of the animal, and what implications these changes have for management.

What is notable in Table 6.1 is that the measurement of animal behaviour and physiology (which covers the measures most commonly used in the scientific literature) reflects three separate concerns: it may indicate a loss of quality-of-life for individual animals, which is a concern under utilitarian ethical thinking, it may indicate that the animals’ lives have been interfered with, which is prohibited under the deontological theories put forth by Regan and Taylor, and it may warn of or lead to a decline in population viability or sustainability, which is the key concern under ecosystemic consequentialist thinking. The thresholds I have proposed at which changes in animal behaviour or physiology would lead to management action (i.e., further re-

restrictions on tourist access or behaviour) differ, depending on which values are at stake. If a deontological ethic calls for “non-interference”, it may be that *any* change constitutes an interference, or it may be that some small changes will be deemed evidence of an interaction, but not of a problematic interference. If a utilitarian ethic calls for minimising harms, suffering, or preference frustration, then comparing changes observed in response to tourist presence to changes observed in response to other events in the life of the animal (e.g., finding a rich food source, encountering a dominant conspecific, predation attempts) may give some insight (though not necessarily a clear answer) into which changes amount to harm, suffering or frustration. If a land ethic focuses solely on population-level impacts, then the relevance of short-term behavioural or physiological changes would be determined by the extent to which those changes lead to serious changes in survival or reproduction.

Other indicators suggested include both measurements of wildlife responses, and quantification of tourist behaviour itself. Under a land ethic concern with population viability, it is in some cases possible to measure reproduction and survival impacts directly (e.g. in nesting bird colonies where fledgling success differs between unvisited and heavily visited colonies.) In many other cases, it is difficult or impossible to attribute changes in long-term population measures to very short-term events during tourist visits, and the animal behaviour and physiology measures will offer only indirect evidence of an impact of concern. Where habituation is a concern under a

conception that the wild wariness of un-visited populations is a natural value to be preserved, measuring changes in tolerance over time would be needed to establish whether tourism activities are leading to habituation. On the other hand, under a conception where wildlife is to be ‘respected’, it may be unclear exactly what consequences a lack of respect would have on the wildlife, but it may be possible to define respectful behaviour in terms of how tourists act. Likewise, under a virtue ethic where “trophy photography” is less desirable than a more virtuous motivation for tourist-wildlife interactions, it would be the motivations of the tourists (possibly, but not necessarily, reflected indirectly in their behaviours) that would serve as an indicator of the extent to which the objectives are being met.

In all cases, however, deciding how big a change in each indicator is allowable, and when impacts become unacceptable, remains a judgement that needs to be made. If this judgement is made by scientists, it is worth separating the judgement from the measurements made. If it is claimed that this judgement is left to managers, it is still worth recognising that the choice of measures used, and especially the choice of “other” events to which it is compared (if such a comparison is made) make implicit judgements which should also be made explicit.

6.4.3 Tradeoffs

In many cases, achieving the various goals suggested in this thesis will be accomplished by very similar management strategies, although the level of

restriction of tourist behaviour required may depend on which goal is being considered. The most major trade-off required is that between allowing (or encouraging) tourist access to wildlife-viewing opportunities and restricting tourist access or behaviours in order to protect the wildlife (in the various ways identified above.)

More specific to the context of wildlife viewing tourism is the tradeoff seen in [section 2.3](#) and [section 4.4.1](#) between habituating wildlife to tourists and maintaining a “natural” wariness. Habituating wildlife makes them more readily viewable and reduces the stress and disturbance to the wildlife, so counts as a positive in terms of animal welfare goals. On the other hand, habituation may decrease the value of the viewing experience (because it is more of an accomplishment or privilege to view wildlife that is challenging to view because of its wariness), and would impact the “wildness” of wildlife, which is (or can be) valued in its own right. The resolution of this tradeoff may be context-dependent, with more remote and inaccessible areas managing for less habituation, and more heavily used areas managing for more habituation. As with the identification of thresholds, however, this decision should be made explicit and linked to the various objectives being traded off.

Lastly, there may be tradeoffs that are specific to particular viewing contexts or wildlife species. We saw one of these in [section 4.4.1](#), where it was observed that while large, dominant, male grizzlies tended to avoid tourist groups, smaller females (especially with cubs) were attracted to, and increased foraging rates near, tourist groups, because they tended to avoid,

and be harassed by, the larger, dominant males. Because females with young are obvious contributors to population health, this effect means that (at least at some levels) tourism may *benefit* wildlife populations, but at the cost of altering the social dynamics of the population, which may or may not be undesirable in its own right.

6.4.4 Management alternatives

The alternatives available to management obviously depend on the context in which wildlife tourism takes place. In a park setting, especially one not served by any roads, such as the Khutzeymateen Grizzly Bear Sanctuary, it is possible to set absolute limits on the number of tourist/ groups allowed access, to limit the amount of time they spend within the Sanctuary, and to require groups to be accompanied by a guide with extensive knowledge of bears, including the individual bears using this area, with their differing personalities and tolerances for human approach. In areas much closer to, and accessible from, major urban centres, such as Johnstone Strait the Gulf Islands and San Juan Islands, voluntary guidelines covering how to behave while approaching whales, backed up to some extent by legal language prohibiting “harassment” of wildlife, might be as much restriction as can realistically be attempted.

That said, in either case, the exact content of the various limitations available to managers needs to be considered. Whether it is a question of how closely the guidelines allow vessels to approach whales, or of how many

tour groups per day be allowed to access a viewing estuary, trail, or platform, these decisions need to be (and, in the cases studied, have been) made, on some basis. This process is most clearly seen in the Development Concept Plan for Brooks River, where several alternative infrastructure development options, along with the management of wildlife tourism that would go along with that level of infrastructure, are considered in light of relatively explicit goals and objectives for the management of the area.

A further issue to discuss under the heading of management alternatives is a question of links between the moral ‘moods’ of the various objectives and available policy instruments. [Stone \(1987\)](#), [Michael \(1996\)](#) and [Raz \(1999\)](#) discuss the idea that, while ethical theories tend to treat actions as either mandatory or prohibited, real-life quandaries often require a more nuanced view. [Stone \(1987\)](#), in particular, points out that legal, as opposed to moral, injunctions are always accompanied by a penalty for transgression which sets the ‘mood’ of the injunction; a long prison term is clearly a more severe prohibition than a small fine. [Michael \(1996\)](#) and [Raz \(1999\)](#) do discuss a moral ‘mood’ of the supererogatory, for acts which are morally laudable but not morally required. Even these additions, however, do not seem to fully account for the variety of concerns identified in this thesis. This was most obviously illustrated by the discussion of a court case involving a whale-watching guide fined for ‘harassing’ wildlife, based on his transgression of the wildlife viewing guidelines established by tour operators and other stakeholders. Other tour operators felt that this conviction was inappropriate, because harm to the

whale had not been demonstrated, and the viewing guidelines were meant as a ‘voluntary’ courtesy, rather than a legal definition of harassment. This is not captured by the concept of the supererogatory, as failure to abide by the ‘voluntary’ guidelines is not considered morally permitted; the guidelines are intended to be followed by all operators, but the intended sanction for failure to abide by them seemed to be social disapproval rather than legal punishment.

A further knowledge gap or judgement that remains to be made is to determine whether different moral moods, sanctions, and policy instruments could be applied generally to the different objectives in [Table 6.1](#), or whether these decisions are more contextual and site-specific. It may be, for instance, that respecting privacy or virtuous motivations are truly supererogatory, while respecting a right to non-interference or wildness is a weak moral duty to be addressed through policies of public education and persuasion, but that affecting welfare or population dynamics (beyond some thresholds) by causing demonstrable harms to individual animals, populations, or habitats is a more serious issue that ought to be addressed through legal or regulatory statutes.

6.5 Management options

Applying a decision analysis framework does not generate a clean, simple answer to the question of what the appropriate goals of management should

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be in the context of non-consumptive wildlife tourism, except perhaps by pointing out that it is not a clean, simple question. In particular, to state, as the Minister of Water, Land and Air Protection in British Columbia does, that “This government makes decisions about the conservation of wildlife based on science, not on economics, and not in response to pressure from advocacy groups” (Murray, 2003) is problematic. This implies that the only valid goals for management are based on a consequentialist ethic²¹ and that the extent to which different management alternatives meet the goals can be quantified scientifically. In contrast, this thesis has demonstrated that there are a wide variety of relevant goals or outcomes to management efforts that should be taken into consideration. Some of these may well be economic, or may be advocated for by special interest groups; it is difficult to see why these should be *a priori* discounted.

I have attempted in this chapter to provide some suggestions as to possible management options and the tradeoffs that might become necessary, but these details are largely context-specific and will need to be determined for each wildlife viewing area. The management options available will depend on the landscape (both human and natural) surrounding the wildlife viewing opportunity, because that landscape is a key determinant of how tourists travel—on foot? in vehicles? by sea? behind concealment? in the open?—and how the wildlife behave in response to humans and how they are affected

²¹Or, at least, based on consequentialist rules: in cases such as Taylor’s right to non-interference, there may be scientific measurements that are relevant to determining whether such a rule has been violated.

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by human presence—do they have cover? alternate habitats they could use? is the viewing at a feeding ground? resting area? other resource? Depending on the local context, management options may include limiting the number of tourists present at a given time, the speed and distance with which they approach, or constraining human presence to specific and predictable times of day or trails and observation areas.

The impacts these management options will have on the various aspects discussed will also depend on the species being viewed, the resources they are accessing at the viewing location, the availability of alternate habitats, etc. If the benefits wild animals glean from using a specific area (e.g. food, rubbing beaches) are readily available elsewhere, at low travel cost, in places less accessible to tourists, then continued use by wildlife of the areas where viewing takes place could be taken to indicate that the animals are not negatively affected (whether in terms of food acquisition, reproductive ability, stress physiology, emotional states such as fear, etc.) by human presence. However, they might still be habituating to humans, which, if generalised to areas where hunting pressure exists, could constitute a negative impact by increasing vulnerability to hunting. On the other hand, if no alternate habitats are available to which the animals could move in order to gain needed resources, then they would be expected to continue using the wildlife viewing areas, even at some cost to themselves (whether in terms of lowered resource access due to higher time spent vigilant, or due to “putting up” with the stress and fear associated with human presence in order to gain needed re-

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sources), and in this case habituation may be a benefit, as it would reduce these costs.

In addition, there may be outcomes of management options that are not quantifiable as actual impacts on wild animals. If wild animals are held to have a right to privacy, or not to be “harassed”, or to be treated with appropriate respect, then the assessment of whether these rights are respected will be based on how the tourists behave or think, rather than directly on the responses of the wildlife. If we value “wildness” for its own sake, we may prefer to avoid habituation, whether or not it may be “good” for the animals themselves. [Keeney and Gregory \(2005\)](#) categorise indicators into three groups: natural, proxy, and constructed. Natural indicators are obvious, well-accepted, and reflect directly on the underlying objective of concern. In this thesis, the use of animal behaviour and physiology measurements to reflect quality-of-life concerns would be examples of natural indicators. Proxy indicators do not measure the underlying objective directly, but are related indirectly. In this thesis, the use of animal behaviour and physiology measures to reflect long-term, population-level concerns are examples of proxy indicators. Constructed indicators, in [Keeney and Gregory \(2005\)](#), are constructed from multiple dimensions or scales where no natural indicator exists. In this thesis, various assessments of tourist behaviour and motivation could be used to construct indicators reflecting underlying objectives related to respect, to wildness, or to human virtues and character development. Critically

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thinking through ways to define operationally these non-consequentialist values, objectives and goals remains a major knowledge gap to be filled.

Lastly, the relative importance of various values will likely depend on context. In more remote areas, “wildness” may be more valued, and habituation avoided. In areas close to human civilisation, “wildness” may already be irretrievably lost, so management may focus on other values.

Ultimately, decision making as it relates to the management of wildlife-viewing tourism remains a difficult problem, and we need to address the large gaps between the domains of ethical, social-values, and scientific knowledge. In order to do this, we need to make clear distinctions between ends-objectives, which are value judgements about what we want the outcomes of management efforts to be, and means-objectives, which can be empirical judgements about how different management options can get us there. This thesis has shown that there exists an extensive and mutually supportive set of ethical theories and social values to guide the setting of ends-objectives in a given context, and that there is also a rich empirical literature assessing how different tourism management regimes affect some of these ends. Identifying appropriate indicators for other ends-objectives (especially, “respecting wildlife”), and identifying thresholds or rules of thumb to determine when management action or restrictions should occur in response to monitoring of these indicators, however, remain as knowledge gaps to be filled.

Chapter 7

Conclusion

This thesis argued that concerns over the impacts of too much tourism, or excessively intrusive forms of tourism, can best be seen as a decision problem, rather than strictly as a data problem. I investigated the interplay of ethical theories, social values, and scientific considerations as inputs to decisions regarding the management or regulation of non-consumptive wildlife viewing tourism. I found ethical theories focussed on the abstract, to the exclusion of contextual details, while socially held and expressed values focussed on contextual details to the exclusion of justification for concerns raised. However, combining the two allows the lived experience and expressed values to contextualise the ethical theories, while the ethical theories provide justification for the concerns raised. I found the scientific attempts to inform management tended to assume that only population-level, long-term impacts were of ‘real’ concern, while often measuring short-term, individual-level changes in response to wildlife viewing tourism. However, both the ethical and societal inputs to the decision problem suggest that these short-term, individual-level changes *do* reflect real concerns, and could be used to justify management

intervention in a much more direct way than currently suggested by the scientists.

Many disagreements or debates over management or regulation, both in the context of non-consumptive wildlife viewing tourism and in the broader context of managing wildlife more generally, stem from fundamental differences in the values underlying different groups' conception of the problem. These differences lead to fundamentally different outlooks with respect to the desired outcomes of management, yet the debate is often framed in terms of the scientific uncertainty about the empirical facts of the case, and exclude consideration of these underlying values.

This is clearly seen in the debates over grizzly bear hunting and whaling (subsection 4.3.1 and subsection 4.3.4,) where we saw expressions both of economic or wise-resource-use considerations, and fundamental objections to *any* use of certain species (those falling within a “charmed circle” (Dyer, 2003).) These fundamental objections to the use of certain key species—which do not make any reference to how many bears or whales there *actually* are—seem to be the source of controversy over bear hunting and whaling. However, much of the debate over the grizzly bear hunt and over whaling (see, e.g., Butterworth, 1992) does focus on population numbers. This leads to a politicization of the population estimates, with hunting or whaling opponents preferring lower estimates, hunting or whaling proponents preferring higher ones, and/or both sides assuming and accusing the other of prefer-

ring a particular population estimate because it supports the objective they support.

In the context of non-consumptive wildlife viewing regulations, we saw in the three grizzly bear viewing areas covered in [section 2.3](#) that the management plans did recognise slightly different desired outcomes: in the Khutzeymateen, the emphasis on “wildness” and the unmodified status of both the landscape and the bears led to recommendations to avoid widespread or heavy habituation of bears, and to a policy of not building any permanent infrastructure within the Sanctuary. At McNeil River, an emphasis on human safety, viewing opportunities, and reducing stress or disturbance to the bears led to recommendations to “train” the bears to avoid campgrounds and other infrastructure, and to intentionally habituate bears to tolerate human tourist presence.

In the whale-watching examples covered, there were less clear links between specific viewing guidelines and fundamental objectives. Much of the published discussion of management and regulations here focussed on the process of generating voluntary guidelines, rather than on their content. In this case, the situation was also complicated by legal considerations—existing laws forbid the “harassment” of marine wildlife, without defining “harassment” in any detail. Tour operator suggested that the voluntary guidelines agreed upon were meant as precautionary and developed based on a genuine desire to respect the whales and be “polite” to them. This goal is much more restrictive of human behaviour—and contravening it by doing

something “rude” is a much less serious offense—than the legal language of “harassing” wildlife. Thus, tour operators seemed surprised and put out that a court case would use a breach of voluntary guidelines—meant as a “courtesy”—to come to a guilty finding under the law prohibiting “harassment.”

These examples all point to a need for an explicit examination of the various values and objectives underlying the regulation and management of wildlife-oriented activities. I took an interdisciplinary approach to this examination by combining an application of ethical theories with an analysis of expressed values in the lay or popular media and an analysis of the relevance of methods used to assess impacts in the scientific literature to the various ethics and values raised in the previous two parts. I then used the methods of structured decision-making frameworks to fit these different inputs into the process of making decisions regarding the regulation of non-consumptive wildlife viewing activities.

I found that the application of first principles proposed by ethical theories to specific contexts is more problematic and less straight-forward than implied by some of these ethical theorists. While Singer’s utilitarian ethics, Regan’s advocacy of animal rights, Taylor’s respect for individuals, Rolston’s theory of natural value, or Callicott’s conception of communitarian obligations are all defensible in the abstract, all suffer from serious problems of under-determinacy when we attempt to apply them to a specific context.

For instance, applying the same general utilitarian theory leads [Luke \(1997\)](#) to condemn sport hunting while [List \(2004\)](#) defends it. [Regan \(1983\)](#) and [Taylor \(1986\)](#) condemn sport hunting on the grounds that it fails to respect the individual, while [Hettinger \(1994\)](#) defends it to the extent that it is motivated by a nature-respecting desire to participate in natural carnivorous predation, and [Leopold \(1949\)](#), [Callicott \(1988\)](#), and [List \(1997\)](#) defend, or at least allow, hunting on the grounds that it does not decrease, and may in fact increase, the value or sustainability of natural systems.

No previous efforts at applying these ethical theories to the context of non-consumptive wildlife tourism were found in the literature, and my attempts to generate such applications were characterised by the same sort of under-determinacy found in previous analyses of consumptive wildlife use. Utilitarian thought would consider wildlife viewing acceptable if any costs to the wildlife were outweighed by benefits to tourists, tour operators, and to the wildlife themselves. Measuring and comparing these costs and benefits, however, is not feasible in practice, although modifying tourism activities to increase benefits and reduce costs is a useful prescription from utilitarian thought. Deontological theories might condemn wildlife viewing as an interference in wild animals' lives, or might allow or defend wildlife viewing as a human pursuit of happiness that is done with proper respect for wild animals and for nature, and which does not interfere unduly with their lives. Communitarian ethical theories offer relatively little guidance in terms of determining what sort of community relationships might exist between wildlife

and wildlife-viewing tourists and what sorts of duties, obligations or rights that particular community might generate.

These examples pointed to general difficulties with applying ethical theories to real problems, which have been noted by several ethicists and philosophers. As an alternative, they advocate a more pragmatic and democratic approach to “doing” ethics, by using ethical theories to interpret and understand expressed societal concerns, or to help give a language and structure within which to express and debate those concerns. I do this by turning to an analysis of newspaper and periodical articles focussing on expressions of either how wildlife is conceptualised and valued, or of how humans ought to behave in their interactions with wildlife.

I found a wide range of rich expression of both wildlife valuation and concerns about right action. These expressions covered all of the considerations raised by the various ethical theories (and some that are not), but with very little emphasis on linking these various valuations to each other or to an underlying, first-principles, monistic and universally applicable ethical theory. Indeed, several individuals quoted in [chapter 4](#) appear to have relatively little trouble holding entirely conflicting moral outlooks simultaneously, such as the village that values ice-trapped whales as individuals and tries to help them escape, while also seeing them as a resource and declaring that, should they be unable to free the whales, they will instead slaughter them, as it would be wrong to let that resource go to waste.

I also found in this analysis an explicit statement by government that decisions regarding wildlife use are to be made based on science alone. This points to a need to better understand what inputs science can and does make to management decisions. I found that the scientific literature focuses (unsurprisingly) on those ethical considerations that involve quantifiable impacts of different alternative actions. Scientific methods are less obviously relevant to ethical considerations that are explicitly based on factors *other* than measurable consequences of an action, such as the respect-based ethics where the key is to treat others as ends-in-themselves, or virtue ethics where the key is to do what is done for virtuous, rather than frivolous or inappropriate reasons. Even within the realm of consequentialist ethics, however, the scientific literature heavily emphasises consequences at the level of the population (e.g., reproduction, fitness, survival), related to ethical concerns around the sustainability of wildlife as a resource for humans, or the stability of ecosystems as valued in themselves. I found much less emphasis on measurable consequences at the level of the individual (e.g., fear, stress) related to ethical considerations around the harms and benefits to, or rights of, animals as individuals. Somewhat paradoxically, however, it is these latter *measures* that are most commonly used (as they are more tractable, and easier to link to short-term human presence or activity,) and the links between the measures used and the consequences ultimately considered relevant are implicitly assumed to exist, but not frequently demonstrated.

I finish by characterising wildlife tourism management not as an adaptive management experiment calling for better science and ongoing experimentation and monitoring, nor as a stakeholder involvement process where merely consulting stakeholders will somehow result in the correct answer, but as a decision problem where value-focussed thinking and a structured decision-making framework will help demonstrate where ethical, values-based, and scientific inputs are relevant and required. This framework helps demonstrate that we do, in fact, have a fair amount of useful empirical information about how wildlife tourism impacts wildlife. On the other hand, there are also social and ethical concerns about wildlife tourism that focus attention more on assessing the extent to which behaviour of tourists is ‘respectful’ rather than focussing on assessing the impacts on wildlife. It is less clear in these cases what metrics or indicators would determine the impacts of different management alternatives.

Overall, I find that no single source of values or goals provides sufficient guidance for the development of comprehensive wildlife viewing policy. A combination of ethical principles, citizens values, and scientific information, however, can offer guidance, especially if focussed on specific cases.

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Appendix A: Values analysis data

Values analysis data

<i>keyword</i>	<i>subkeyword</i>	<i>note</i>
benefits	awareness	"Kukat believes that the best way to ensure all ocean creatures are there for future generations is "to share the splendour of nature so that as many people as possible will get excited about it and do their part to protect it."
benefits	awareness	"Ecotourism also changes the way people view the gorillas and creates a broader awareness of their plight."
benefits	awareness	Vasquez's lifelong love of the sea, marine life and fish spurred him to seek a new way of delivering an ecological tour to educate tourists about marine life, thereby helping protect it. In the low season, he takes local children on free educational tours. "There are more creatures in this world than those outside the sea," he points out.
benefits	awareness	Murray figures that only a small fraction of the whales' lifespan is spent in the company of whale-watch boats, and is hopeful that ultimately the good outweighs the bad."When they're surrounded by boats, there could be negative effects," she concluded. "But on the positive side, there is increased public awareness and, maybe, more money for conservation."
benefits	conservation	"If done properly, wildlife-watching tourism can be a win-win situation," says Hammer. "People have a unique experience while contributing to conservation directly. Local people and habitats benefit through job creation, research and an alternative income. Local wildlife benefits from our conservation and research work."
benefits	conservation	"Wikelski points to the carefully controlled tourism of the Galapagos Islands, which brings in money for conservation and preservation of species such as marine iguanas. "Ecotourism is one of the main factors keeping the Galapagos safe," he says. In a study of levels of the stress hormone corticosterone in marine iguanas in the Galapagos, Wikelski found that the reptiles are not stressed by humans."
benefits	conservation	"One of the often-used arguments in support of ecotourism is the cash it brings into support wildlife conservation programmes (6 March, p 6). The flaw in this view is that these programmes often appear to be speciesist in the extreme, aimed at conserving large, cuddly or exotic species of mammal in order to attract ever more tourists."
benefits	conservation	Enter ecotourism. As island management increased protection of its main attraction, poaching declined. [...] the increased survival of females that came with the end of poaching wasn't the whole story. Male iguana numbers declined as ecotourism increased, they say.Part of the problem, the researchers argue, is that the males tend to be aggressive and interact more with human visitors than females do. Some of the 54,000 people who visit the area each year feed the iguanas hazardous material such as spoiled food or Styrofoam, which can kill them.But Iverson and Smith found some of the missing males at nearby islets that iguanas couldn't have reached themselves. This displacement led the researchers to suspect that ecotourism guides had removed many of the large, aggressive male iguanas from the most visited sites.Moving the iguanas could have ecological ramifications, Iverson says. For example, some of the displaced iguanas were found at sites that are home to an endangered species of seabirds called Audubon's shearwaters. Because the iguanas and the birds require similar nesting territories, the iguanas might crowd out the shearwaters, he says.
benefits	economic	(Tourism is BC's second largest industry; forestry largest) Which is humdinger news because tourism is truly the industry from heaven; totally renewable, non-polluting, a magnet for foreign dollars and an upbeat way to make money[...]it would be counterproductive to allow the despoiling of more old-growth forests and creation of additional clearcuts. Taxpayers also need to work on being less resistant to provincial spending on transportation infrastructure, heavily used by tourists.And government authorities should develop a greater awareness of the need to nurture the province's wildlife wealth. Instead of hunting B.C.'s bounty, the focus should be on cherishing and showing off the diversity of creatures living in our midst.

Appendix A: Values analysis data

Values analysis data

benefits	economic	"The solution turned out to be revenues from ecotourism: a regular stream of income from foreign tourists who paid a fee to visit the animals in their natural habitat. Currently, it costs U.S. \$250 per person, which is a significant amount in a country with a per capita income of \$273 (in 1999). While this may sound horribly commercial, the fact is that money paid to the park department motivates the local people to protect the mountain gorillas as guards and guides, rather than poach them."
benefits	economic	"Although the term is overused, 'ecotourism' allows tourists both to see and help wildlife. This encouraging development within the wildlife-tourism industry offers an added hope for the future of many endangered species, as money from clients is often given directly to conservation organisations."
benefits	economic	"Political support for protecting habitats relies on ecotourism's economic benefits, as in the Galapagos, whose iguanas, incidentally, display no stress hormones from frequent human visits. As for whales, responsible whale-watching rather clearly causes less harm than hunting, and it supports whalers-turned tour-guides."
benefits	economic	Reports on conflict in Gold River "The town is split between those who see broken rudders on sailboats and fishing and make veiled threats to shoot Luna, and those who see a gentle giant looking to share a little company during a longer-than-expected sojourn from nature."Suggests Luna be seen as economic opportunity instead: "What no one in that dying little village with the shut-down mill and no future sees is the godsend that Luna represents. A van full of Japanese visitors showed up at the end of the road, obviously alerted by someone that Luna was in town. They wet their pants, they were so excited."
benefits	other	(Female grizzly feed when tourists present to avoid big males. Also leave cubs near viewing platform to feed without them—"babysitting". Feed intake increases from 27 to 45kg/day in presence of tourists, and cub mortality decreases)
justification	disease	"As a result [of using radio contact to coordinate], the boaters get too close and the whales get little rest, according to Hamilton, which he believes can subsequently cause stress, a well-known health risk."
justification	disease	"Transmission of disease to wildlife, or subtle changes to wildlife health through disturbance of daily routines or increased stress levels, while not apparent to a casual observer, may translate to lowered survival and breeding," says Philip Seddon of the University of Otago in Dunedin, New Zealand. "
justification	disease	"Fears are growing that ecotourism and ecological research could be harming wildlife by spreading human diseases to animals."
justification	disease	"[...]researchers in Botswana have identified the first cases of human tuberculosis crossing the species barrier to affect African wildlife [banded mongoose][...] The culprit [...] is ecotourism. The animals probably caught the disease from tourism employees working in bush camps and lodges."
justification	fear	"Try not to talk or make any sudden movements," says Palmer. "We don't want to scare the bear or disturb it."
justification	fear	"Prof. Hal Whitehead of Dalhousie University runs a whale research lab that has looked into the effects of seismic testing. He said the blasts pose two main dangers to sea life.The sounds might hurt them physically, by breaking their eardrums for example, but the major fear is that they will be scared from their feeding grounds and migratory routes."
justification	fear	(concerning seismic oil exploration) "I'm concerned about the whales," said Rodney Donovan, who runs whale-watching tours off Cape Breton in the summer and fishes crab the rest of the year. "A blast like that, they can hear that quite a ways away and if they are near it's going to scare the [bleep] right out of them."
justification	feeding	However, the love that sightseers feel for the orcas may be overwhelming the bus-sized mammals. As many as 100 tour boats can be on the water at once, all jockeying for a good look at the animals, and researchers are concerned that the in-your-face attention is harassing orcas and keeping them from their prey.Researchers said the orcas are suffering from declining salmon runs, pollution and general vessel traffic, but also from the effects of the thriving whale-watching industry. At a recent U.S.-Canada symposium on how to help the population, University of Washington researcher David Bain reported declines in foraging of more than 30 per cent when boats were present.
justification	habituation	And like whale watching, bear viewing raises concerns about observers inadvertently harassing wildlife. There's no question the Glendale bears are habituated to people, but it's debatable whether this is bad for either species. Nobody feeds the Glendale bears, so they don't associate humans with free meals. Unlike so-called "problem bears," they have no reason to beg or be aggressive toward viewers. Essentially, the two species just watch each other.
justification	habituation	"The tourists toting cameras want to get pictures of bears and the eco-tourism operators often get them to within 100 metres of the animals as they forage on the beach. The bears get used to boats, which makes them easy targets for hunters.[...]"I'm not totally against a hunt that's sustainable, but you want to see it done in a proper way – it's not humane shooting them off the beach," Henkel said."
justification	habituation	As it stands, DFO is warning boaters to watch out for a hazard they really can do nothing about. If Luna wants to play, he can outrun almost anything afloat and even a gentle caress from the giant mammal can make a pretzel out of a rudder. But even without malice, Luna is a threat to people in boats. He is now so accustomed to humans that simply relocating him so he can be reunited with his pod may not be enough.As with bears that learn to like dining out on garbage, Luna may now have habits that will make him a menace wherever he goes.

Appendix A: Values analysis data

Values analysis data

justification	habituation	The first charge of disturbing Luna, the young orca, is in the works as police try to stop people from touching and feeding the lonely whale living off Vancouver Island's west coast. Get Luna too used to people and it hurts the three-year-old's chances of ever being able to reunite with his pod.
justification	habituation	"Remembering the big lumber camps we've seen in this area, I wonder: How long does it take for a fishing bear to turn into a garbage bear, given the chance to dine on dumpster fare? Having become a scavenger of human garbage, will he remember how to fish, when the lumber camp moves on?"
justification	habituation	"Some even fear that the presence of boats around the sharks may lead to habituation, making them more vulnerable in areas where they're hunted. As a result, guidelines are in place to prevent boats from getting too close. Large boats must maintain a distance of 250 metres, while Zodiacs may approach no closer than 30 metres. But until their movements are known, it is impossible pinpoint the effect the fishing is having on the sharks."
justification	habituation	Unfortunately, there isn't much they can do to protect the bears and in recent years the bear population has been dwindling. The problem, Templeman said, is hunters shooting from boats."So the bear looks up and thinks, 'Oh, here comes a boat - it's going to watch me.' That's what the bear is used to and the hunter takes advantage of it."
justification	habituation	"Neither the autumn downpour nor the boatloads of tourists in glaring yellow slickers faze the bears. Since the late 1990s these animals have become used to being gawked at and photographed."
justification	injury	"Having boats any closer is dangerous to the whales, prosecutor Norm Fraser said. Not only does it affect their feeding and socialization habits, but the running propellers can lacerate the whale, possibly killing it."
justification	injury	"[...]the guides may cut corners." By this, Matthews means endangering the lives of the animals that the tourists have come to appreciate and perhaps even endangering the tourists themselves."
justification	injury	(re: seismic testing)"Let's look at this issue from the point of view of the whales. Where, really, is their main threat, other than the big whaling fleets? Whale watching tourism would have to rank very high. There have been instances of whale flesh being ripped by outboard motors. What's more, the decibel level generated by clusters of boats chasing down whales is far greater than that of compressed-air testing. Even more noise is generated by icebreakers, which routinely make 12,000 trips through the Gulf every year. In comparison, a single seismic vessel working for two to three weeks is far less threatening."
justification	injury	" Research in Europe in recent weeks has suggested an even more dire effect - that whales can be killed by loud noises.Scientists found whales in regions of military testing often died of "the bends," or decompression sickness, when they surfaced too quickly to avoid the noise. There's also a theoretical possibility, Whitehead said, that the intense noise itself causes bubbles to form in the whales' blood."
justification	injury	So far, no whales or porpoises have been reported stranded, Mr. Balcomb added Tuesday. He described the sonar sound as "intense." It could possibly "deafen or damage some of the individuals, especially the young ones," he said.
justification	injury	"In 2000, eight whales died after 16 whales and two dolphins beached themselves in the Bahamas. The U.S navy was using sonar in the area at the time. Hemorrhaging was found around the brains and ear bones of the dead whales.In other cases, bubbles have been found in the bodies of beached whales, similar to bubbles found in decompression sickness in human divers.In May 2003, concerns were raised over the U.S. navy's use of sonar in Haro Strait, between the San Juan Islands and the Saanich Peninsula, when 11 porpoises were found dead throughout the region. But later studies found no conclusive evidence that sound trauma caused the deaths."
justification	injury	But as benign as the adventure [snorkelling with seals in Nanaimo Harbour] seems, it is fraught with controversy. Scientists, environmentalists and government bureaucrats call it an unnecessary and dangerous intrusion into the habitat of wildlife."These are wild animals. Any time you have wild animals interacting directly with people, it can lead to bigger problems. We don't hand feed bears anymore," says Peter Olesiuk, a veteran seal and sea lion researcher at the federal Pacific Biological Station in Nanaimo.He says the intrusion will tame the seals and lead either to their death - perhaps getting shot near a fish farm - or to a swimmer getting bitten.
justification	injury	A series of deep marks on a male killer whale in Johnstone Strait is leading some watchers to speculate that a boat propeller ran over the animal.The whale, a member of the threatened northern resident population, has been keeping up with other members of his pod. Area residents with a special interest in whales are watching over him.This incident is a reminder that boaters should be extra- cautious in areas where there are large numbers of whales, Symonds said. In the summer, Johnstone Strait is a gathering place for killer whales feasting on the thousands of salmon heading through the area to spawn in rivers.
justification	injury	"A variety of regulations govern how whale-watching guides operate on the water, particularly regarding distance from the whales. Being too close can hurt the whales, from a propeller clipping them, to pollution, to interfering with their ability to forage for food."
justification	injury	"The boat started moving and that concerned me because whales were still around the boat," Jansen testified. She worried about the propellers hitting the mammals.
justification	normalbehaviour	"They can't rest. It interrupts their foraging. It interrupts their social life. It's a continuous interruption of their lives."
justification	normalbehaviour	"There is concern the rapidly growing bear-watching industry will harm the grizzlies and disrupt their feeding and mating."
justification	normalbehaviour	"Having boats any closer is dangerous to the whales, prosecutor Norm Fraser said. Not only does it affect their feeding and socialization habits, but the running propellers can lacerate the whale, possibly killing it."

Appendix A: Values analysis data

Values analysis data

justification	normalbehaviour	"A variety of regulations govern how whale-watching guides operate on the water, particularly regarding distance from the whales. Being too close can hurt the whales, from a propeller clipping them, to pollution, to interfering with their ability to forage for food."
justification	normalbehaviour	WAIKOLOA – Clients wishing to swim and physically interact with dolphins in Hawaii should know that the Dolphin Quest education centers at the Hilton Waikoloa Village here and Kahala Mandarin Oriental Hawaii in Oahu are the only places they can do that legally. The Marine Mammals Protection Act requires people to observe wild dolphins and other marine mammals at a respectful distance, so as not to potentially disturb their natural behavioral patterns, including migration, breathing, nursing, breeding, feeding or sheltering.
justification	normalbehaviour	But Trites believes the sound of the whale-watching boats may interfere with their ability to communicate and even make it more difficult to find food. He said research shows whales leave areas because of the whale-watching boats, rest less and swim faster to avoid the human intrusion. "It's an extremely noisy environment, one where they can never let their guard down, just turn it all off and get some real rest," Trites said.
justification	normalbehaviour	"the animals should be resting and waiting for Hudson Bay to freeze over so they can start hunting seals. But often the bears are not resting as they should. Markus Dyck and Richard Baydack of the University of Manitoba, Winnipeg, have found that signs of vigilance among male bears increased nearly sevenfold when vehicles were around. Just one vehicle could disturb the bears (Biological Conservation, vol 116, p 343). "
justification	normalbehaviour	(responding to Trites' concerns about disturbance:) "But members of the whale-watching industry say other factors such as pollution and the decline in their food supply are more likely culprits."
justification	population	"[time budget changes] changes in behaviour "are potentially serious for the population" says Gordon Hastie, a marine mammal expert at the University of British Columbia in Vancouver, Canada."
justification	population	Some effects are subtle and their significance is not clear. A little more stress or bursts of unnatural behaviour may not harm individual animals or the well-being of their species. But we can't be sure. With ecotourism rocketing, even tiny effects could have huge impacts. What should we do? Ideally, we want to know which human activities do real harm and stop them. That means costly, long-term research. In the meantime, at the very least, we need to monitor animal numbers. At the first sign of population decline, tourism should stop and experts should investigate.
justification	population	"Scientists say the reason for the whale population's stagnation remains a mystery, but pollution and human harassment remain leading possibilities."
justification	population	"Even though thousands of people visit the country's biggest panda reserve, Wolong, in Sichuan, both habitat and wild panda populations have declined there since the reserve was created in 1975, especially due to fuel-wood cutting. Why? People living in the reserve—a common practice in China—are poor ethnic minorities not subject to China's one-child-per-family rule. Since 1975 the number of households has almost doubled, yet residents receive so little from tourism that they can't afford more expensive alternate fuels. Real ecotourism is supposed to benefit local people, but so far, that's not happening in Wolong."
justification	population	"SOMETHING weird is happening in the wilderness. The animals are becoming restless. Polar bears and penguins, dolphins and dingoes, even birds in the rainforest are becoming stressed. They are losing weight, with some dying as a result. The cause is a pursuit intended to have the opposite effect: ecotourism."
justification	population	"Evidence is growing that many animals do not react well to tourists in their backyard. The immediate effects can be subtle—changes to an animals' heart rate, physiology, stress hormone levels and social behaviour, for example—but in the long term the impact tourists are having could endanger the survival of the very wildlife they want to see."
justification	privacy	"Bears, I recently learned, consider it extremely poor form to watch another bear eating. So those folk who enjoy throwing food to the bears and watching them eat could be in for a nasty shock."
justification	privacy	"Boats carrying these "eco-paparazzi" are now being cited for following too close to whales, chasing whales, interfering with mother-and-calf pairs, and all for the almighty dollar."
justification	privacy	Ireland [...has] gone half-mad. Vodafone is on the point of installing a network of hydrophones on the floor of the estuary. That is the plan: a year-round Dolphinline, which you will be able to ring from anywhere in the world, at a premium rate, to hear the Shannon dolphins going about their daily business, unaware, I suppose, that their privacy has been blown to the four winds.
justification	reproduction	"Tourist traffic elsewhere has caused dolphins and nesting birds stress, putting both health and reproduction at risk. "
justification	reproduction	"I really didn't expect to see a positive impact, but there is this really strong benefit for the females with cubs," he said. "And since they are the ones doing the reproduction, it has a really strong positive impact for the population."
justification	reproduction	"Kukat claims that, in spite of the human proximity, local resident whales are reproducing and doing better than those in more remote coastal waters"
justification	reproduction	Tourists on wildlife-watching holidays may be threatening animals' long-term survival, say biologists. Studies on dingoes, dolphins and polar bears, among other species, show that the proximity of humans interrupts animals' behaviour patterns and daily routines, causing stress levels and heart rates to increase. The most worrying potential impact is on reproduction. Stress can reduce the size of litters or individual offspring and lower the chances of conception.
justification	reproduction	"The tourist visits could be increasing the animals' heart rates and metabolism when they ought to be conserving their energy, and this could be reducing their body fat and individual fitness"

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justification	reproduction	"Researchers there found that in areas restricted to tourists, 50 percent of hoatzin nests held at least one chick. In tourist zones, though, that number fell to just 15 percent."
justification	reproduction	"Transmission of disease to wildlife, or subtle changes to wildlife health through disturbance of daily routines or increased stress levels, while not apparent to a casual observer, may translate to lowered survival and breeding," says Philip Seddon of the University of Otago in Dunedin, New Zealand. "
justification	reproduction	"Transmission of disease to wildlife or subtle changes to wildlife health through disturbance of daily routines or increased stress levels, while not apparent to the casual observer, may translate to lowered survival and breeding," says Philip Seddon, director of the Wildlife Management Program at the University of Otago in New Zealand."
justification	stress	"In extreme climates such as Antarctica animals need to conserve every scrap of energy. Even taking a few steps sideways to avoid a persistent photographer could make the difference between life and death."
justification	stress	(Whalewatchers use radios to share info) "As a result, the boaters get too close and the whales get little rest, according to Hamilton, which he believes can subsequently cause stress, a well-known health risk."They can't rest. It interrupts their foraging. It interrupts their social life. It's a continuous interruption of their lives."
justification	stress	While their flight from danger may appear dramatic, it is actually moderate – no more than is needed to get to safety. It's something their bodies are designed to do. But if the threat does not go away, [animals ...] will continue to run at great speed for considerable distance, completely panicked. In winter, this places them in great peril. Heart rate and blood pressure go up, adrenaline pumps, and the race is on. Mammals are designed to do this, and survive, for a short time and within reasonable limits. Any animal that pushes itself too hard and too long, suffers ill effects. A white-tail deer may go into shock, suffer a heart attack. The risks are compounded in winter when it's tougher to get an adequate diet, when malnourishment takes a great enough toll on the population.
justification	stress	Friendly volunteer guides are at the rest stop daily to provide information to visitors and to make sure they don't bother the potentially dangerous beasts."There used to be people all over the seals - it was harassment," says Bill Johnson, president of the volunteers' group Friends of the Elephant Seal, who chuckled when I said my wife and I had considered trying to "save" one of the bruisers.
justification	touristexperience	Chalmers, an avid skier and kayaker who grew up on Vancouver Island and in Vancouver, says the same can be said for Johnston Strait. "It used to be that you could go out there – even four or five years ago – you could be out there paddling by yourself watching whales." "Now it's rare to be out there without a number of whale-watching boats around you. The whales are more scarce because of the boat noise. I know from talking to biologists there that it's definitely changed the behavior of the animals."
justification	touristexperience	"But there is also a large number of what Mr. Lemelin calls "deep wildlife visitors" and "pro-fauna visitors" who want to do more than ride in tundra buggies. They complained of being bored with the tundra buggies after three days."
justification	touristexperience	While whale-watching is a growth industry, Thompson said it's tightly regulated. If they're tailing a pod, operators must stay 300 metres away from the group. If sitting idle, the vessel's engines and locating sonar must be switched off."All whale-watching companies are aware of how important this is to the public," Thompson says.
justification	touristexperience	We learn Magee runs a sustainable dolphin-watching operation, ensuring the cetaceans are watched with the least disturbance. His company follows a voluntary code of conduct set by the Shannon Dolphin and Wildlife Foundation. "It's not in your interest to be careless," Magee explains. "If you tick the dolphins off, they'll avoid you next time."
justification	touristexperience	"It is also important to the guides to be stewards of the wildlife – without a healthy animal population in the area, they are out of business."
justification	touristmotivation	And, more disturbingly, what about the customers for this strange new service? [a 24-hr phoneline broadcasting dolphin vocalisation from hydrophones] What on earth will anyone get out of that? Dolphin-watching you can understand. It feels, though, that we have all arrived at some degenerate corner, where we need to ring up dolphins to feel OK. Even watching them from a boat, [...] left me only with the sensation that they were living their lives coherently, deliberately, even brutally – there are no porpoises in the Shannon, almost certainly because the dolphins kill them – but that those of us on the boat, in our windbreakers and our woolly hats, were limp, pale creatures, not living but watching life being lived, as if we were nothing but spectators at the circus.
justification	touristmotivation	"Environmentalists are hypocrites if they believe this is a "humane" way of observing nature at its finest. I'm all for observing whales at a distance, and have done so many times on the coast. But I have never had any interest in chasing them down for the perfect picture."
justification	touristmotivation	"Olesiuk, who has studied seals for 20 years, believes the public needs to be educated on seals' behaviour, mating habits and diet "but I don't think you need to swim with them or feed them or pet them to educate. In fact, part of the education should be that these are wild animals and we are better off keeping some separation from them."
justification	touristmotivation	"David's pep talk was quick, enthusiastic and peppered with his deep respect and commitment to the industry code of ethics. The tour may be a two-hour adventure through the bays and channels of the West Isles, but he stressed that it is not a zoo or a theme park. Watching whales is a privilege and not a right, and we must show respect for the marine mammals and their habitat."

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justification	touristmotivation	Human harassment of belugas, which have been the object of fascination since P. T. Barnum captured them for display in 1861, remains a problem. In an attempt to curtail the effects of tourism on the whales, federal regulations in 2002 forbade viewing belugas at closer than 400 metres. However, individual boaters at the popular Saguenay St. Lawrence Marine Park routinely breach the rule, said Jean Desaulniers, the park's manager of research conservation. He said he's seen pleasure crafters plow directly into groups of belugas. "Some people either don't want to know the rules or couldn't care less, or say to themselves, 'I just want to see the belugas,'" Mr. Desaulniers said. "It happens regularly."
justification	touristmotivation	"Rafael's concern is shown from almost the moment you board his boat. "This is not a show," he announces quietly. "This is an experience to share. What you will see is unorchestrated. We will not disturb any creature for any reason. We are privileged to share this space."
justification	touristmotivation	"It's worth remembering that we're guests in a strange environment and are duty-bound to limit our impact."
justification	touristmotivation	"You must be respectful of nature," says Colin Bell, director of Wilderness Safaris, an award-winning responsible tour operator. "You should also listen to your guide and not push to go closer. A good guide will remind you of what not to do, but it's worth bearing in mind that safety is the key at all times." You should steer clear of animals with young and never get between a predator and its prey. With apes, avoid prolonged eye contact because to them it is a sign of aggression.
justification	touristmotivation	Sometimes you just have to know when to leave the camera dangling around your neck and instead absorb a scene in the old-fashioned way, taking from it no physical souvenir, but a sense of well being, of peace, of gratitude for having experienced it and a memory that will last a lifetime.
justification	touristmotivation	Such "hunts" are normally set up by outfitters in the south who get most of the economic benefit. A 'hunter' has to be really brave to have an Inuit corner a bear with his dogs in the vast Arctic expanse and then have the American hunter shoot the animal with his semi-automatic rifle. In the case of nervous shooters, the Inuit guide even has to shoot the animal for him. The conquering hunter then brings back only the bloody pelt to hang on the wall or floor of his mansion. What a rush! Outfitters report a three-year queue for this manly sport.
justification	touristmotivation	Beckmann, aboard a high-powered Fisheries vessel, has also spotted the boat. He races over and talks to the operator. Emery has seen it all before. When people are on the water they think they can do whatever they want, she says. "They're not concerned about the whales. They're concerned about themselves. We're really lucky to live in a place where the whales come every year. This is their home, but they're definitely under stress."
justification	touristmotivation	"As long as whales are given respect, an increase in cruise ships should not be a problem.
justification	touristmotivation	"Seeing how the tour operators in Churchill respect the animals gave me an assurance that they weren't being exploited or harmed in any way."
justification	touristmotivation	"But even with policies in place, he says that sometimes rules get broken due to pressure from tourists wanting the perfect photo or experience, which tempts guides to go beyond what they should do in order to get a better tip."
justification	touristmotivation	As far as whale-watching being considered a more humane sport than hunting, I say enough to a sport that allows high-powered boats to interfere with whales' movements. Boats carrying these "eco-paparazzi" are now being cited for following too close to whales, chasing whales, interfering with mother-and-calf pairs, and all for the almighty dollar. Environmentalists are hypocrites if they believe this is a "humane" way of observing nature at its finest. I'm all for observing whales at a distance, and have done so many times on the coast. But I have never had any interest in chasing them down for the perfect picture.
justification	touristmotivation	"Seeing how the tour operators in Churchill respect the animals gave me an assurance that they weren't being exploited or harmed in any way."
justification	unclear	"Going as far as petting them is probably not a good idea but I don't see a real problem in swimming with them," she says. "If it brings a greater understanding of what the marine ecosystem is all about, and its fragility and its richness, that's good. We're not imprisoning them in a zoo so they can always swim away."
justification	unclear	Two ancient, giant, water-slapping primordial monsters who spray and sink and rise, roll over and cry out, lifting a fin and a tail. "Are we bugging them, Holly?" I ask. "We're not chasing them," she says. "If we were, they'd be out of here."
justification	unclear	"Immediately, a stampede of other snorkellers overtook me. Their fins thrashed through the water in fast pursuit. I saw the whale shark descend rapidly to the depths. One of the other snorkellers had got too close and kicked the shark in the head, causing it to dive."
justification	unclear	"Ben Chalmers, manager of Baker Street's ROAM Shop and the Roam The Kootenays Kayak Company says local tourism supporters need look no farther than the coast to see how holiday hordes and poor planning can harm a destination's natural attractions. "Whistler hasn't handled it very well," says Chalmers, noting that wildlife in and around the mega-resort has been "hugely impacted" by the community's tourism boom over the past 15 years."
justification	unclear	Not everyone approves. "The local diving and surfing community has rightfully become increasingly concerned about shark attacks," said the Shark Concern Group, whose members include a shark attack victim and environmentalists. The risk of attacks may be increasing "as a result of how humans are interacting with sharks, for example, using shark cage diving and chumming."
justification	unclear	John Ford, a federal marine mammal scientist, said it is difficult to assess the impact of the USS Shoup sonar, but there is definitely cause for concern.

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justification	unclear	VICTORIA - The U.S. Navy is reviewing an incident in which a pod of endangered killer whales began behaving strangely when a nearby destroyer blasted powerful sound waves into the waters off Victoria. The sonar blasts, which could be heard above water, are also being blamed for unusual behaviour in porpoises and a Minke whale. Worries about the impact of sonar on whales – who rely on underwater sound for navigation, finding food and communication – is a growing concern in the wake of whale strandings in various parts of the world.
justification	unclear	Chris Nelson, a student at NWCC is more skeptical. "Everything has an effect on the whales – if a boat passes by, it has an effect."
justification	unclear	"Balcomb said that he "fully appreciates the spirit of the guidelines" asking whale watchers to keep 100 metres away from whales. But he said that guideline is a "courtesy," and not based on the behavioural response of whales."
justification	unclear	"And as far as the environmental impact is concerned, in our case it was minimal. We didn't step out of the boat at any time and the bears appeared unaware of our existence as they foraged on the shore at a safe distance. The difference between our experience and that of the high-priced hunters is that no bears died as a result of our quietly watching them through binoculars. We'd do it again in a heartbeat."
justification	unclear	The idea is to view but not to intrude. [...] He asks that we avoid pointing at the bears and no flash is used when photographing.
justification	unclear	Few things stress out Hal Morrison more than the sight of a grizzly bear sow and cubs virtually surrounded by picture-popping tourists. Sometimes the veteran Parks Canada warden isn't sure whether he's protecting the Lake Louise tourists from the bears, or vice versa. "They just abandon their vehicles on the highway and come running up," the 47-year-old warden says with an air of resignation. "Some people have walked into the ditch to get pictures. Then other people get in front of them. Sometimes I don't think they even think they are in danger." They are. A frightened, surprised or angry bear is a very powerful and dangerous animal. Approaching a bear is always risky. Approaching a bear with cubs is just plain dumb.
justification	unclear	In the past three decades, he's never known a sixgill to take a bite out of a diver. If anything, divers are asked to remain two or three metres from the slow-moving sharks for the animals' comfort, not their own.
justification	unclear	"I'm dead certain shark tourism and cage-watching has had no effect on a shark's behaviour towards humans," Wilfred Chivell, a leading marine environmentalist, said. He runs whale and shark-watching businesses out of Gansbaai, the country's undisputed shark-watching capital. He said: "If the great white wanted to feed off humans, then there would be carnage in our waters. Compare the figures on water usage – how many people in the water – to the number of attacks. The accusations just do not measure up. They just feed the human primeval fear of sharks as an apex predator."
justification	unclear	"People say, 'The whales came to us,'" says Pakenham. "But that's not really happening. People thought that if you were entirely shut down and the whales approached your boat, you were not really causing any kind of disturbance. But that approach has been called into question by DFO scientists." One boat in the path of whales probably doesn't have any measurable effect. But when you take the cumulative effects of hundreds of boats a day, repeatedly parking in the paths of the whales, then the whales are exerting more energy. It probably disturbs their prey." Pakenham has counted 120 boats around the whales at one time. "Sometimes you could almost walk from vessel to vessel, and that's where it's really a cause for concern."
justification	unclear	SEX, FOOD, AND FEAR: profitable material for TV, yes, but also for nature-tour guides. Just whistle a mating song, set out food, or play a recorded alarm call, and out pops the pheasant, reef fish, lemur, whatever, for your viewing pleasure. Problem is, the guide isn't showing you nature, he's altering it. It's the dark side of ecotourism, whose premise is pro-conservation. Ecotourist dollars are intended to provide a local incentive to protect what tourists are coming for.
justification	unclear	Barrett-Lennard also worries about Victoria's whale-watching boats. Underwater, transients use stealth to sneak up on their equally quiet prey. It's a chess game, with the slightest sound alerting the other to its location. A noisy boat motor wrecks the hunt. That's not the case with resident orcas. They don't need the water to be quiet to gobble salmon.
justification	unclear	Industry figures have told newspaper reporters that their activities have no effect on the whales. "From the whale's perspective," said one Victoria operator, "we're just a fly on the ceiling." In fact, there is no scientific proof that boat noise harms whales. However, we know that orcas use a form of sonar to locate prey; they communicate among themselves with a language of whistles and tones so advanced that different families use different dialects. And we know that when they are surrounded by boats, or with the boats overhead, the orcas' communication is drowned out.
justification	unclear	Tim Cyr, owner of Nootka Island Fishing Lodge, said he and others are questioning the move to give Luna a quiet zone. "It's not even the area the whale normally goes," he said. The ban will not dramatically affect fishing in Nootka Sound, but it begs the question of where to draw the line, Cyr added. "These kinds of decisions should be based on science. This is totally out there," he said. "Where does it stop? Do we shut down B.C. Ferries because there are killer whales in the Strait of Georgia? It's a knee-jerk reaction and everyone should remember the whale can swim."
justification	unclear	"Things are happening there that could promote adverse conditions for wildlife."

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justification	unclear	Shocking headlines serve to capture the reader, but can detract from co-ordinated conservation efforts by redirecting attention to outdated practices or inconsequential issues. The sheer human density of the Pacific Northwest causes concern for the long-term health of the entire coastal marine ecosystem. Human activities that may affect the killer whales range from small-scale individual actions, such as the use of non-biodegradable household products transported to the ocean via sewage and runoff, to the large-scale industrial shipping lanes that provide for international commerce. Somewhere amongst all these concerns and activities is a local industry trying to make a conservation difference: This industry is whale watching. Crew and passengers alike share concerns about the health of the ecosystem. Of particular importance are the sound levels generated by boats – all boats, not just those engaged in whale watching. To address this, a guideline was implemented by the operators' association to reduce vessel speed near whales. In summary, whale watching may still be a dirty word to some, but to many more it represents an industry fundamentally committed to education, conservation and killer whales. Please visit www.nwwhalewatcher.org for more information. (Anna Hall is the executive director of the Whale Watch Operators' Association Northwest and a PhD candidate in marine biology with a specialty in marine mammals.)
justification	unclear	"There's a lot of boats out there," he said. "The festering question is whether that's good for the whales or not. Together they create a lot of underwater noise. Does it jam the whales' echolocation used to catch food?" Ford said. "We're trying to encourage behaviour that encourages slow movement around the whales, partly for noise and partly to reduce the risk of collision." He emphasized that whales need a straight open passage of water to allow them to move and feed without distractions.
justification	unclear	The boats lined up parallel to the shoreline creating an effective fence for the whales. Some of the boats were within nine metres of the whales and the shoreline.
justification	unclear	But Trites believes the sound of the whale-watching boats may interfere with their ability to communicate and even make it more difficult to find food.
justification	unclear	The sound of boat engines to whales is like holding a hair dryer to your ear all day, he said.
justification	unclear	"It's like walking into a noisy bar," Fisheries and Oceans Canada researcher Veronique Lesage explained. "The belugas have to repeat themselves, or talk louder to be heard." Or they just shut up."
justification	unclear	Belugas in the St. Lawrence River seem to be having a hard time hearing and communicating over the sound of passing whale-watchers, ferries and freighters. The noise overload could drive the belugas deaf, says Robert Michaud, director of Group for Research and Education on Marine Mammals, a non-profit organization based in Tadoussac. "It's like the fridge in your kitchen - the ear acclimatizes itself to the hum, until you don't hear it any more. You become deaf to it," Michaud explained. "If a beluga is exposed to high levels of noise over a prolonged period, it could develop temporary or prolonged hearing loss."
justification	unclear	I am also against exploitation of wildlife and wild country. Oddly, environmentalists are now more to blame for messing up the local eco-system than the average deer hunter. Commercial bear watching, whale watching, and the guiding of hunters and fishers is as damaging to our ecology as some logging practices. I believe they should be actively discouraged. British Columbians should wise up. If we stopped exploiting wildlife for economic gain and instead allowed people to enjoy it in a non-disruptive way, all living things would benefit. More humans would understand that we are part of nature and not its master.
justification	unclear	Whale-watching Zodiacs, little rubber boats stuffed full of life-jacketed tourists, and fishermen's skiffs quickly changed course to follow the whales. A floatplane swooped low. "What a zoo," sighed a bearded local, watching the motorized uproar. The eco-flotilla could seem excessive if you're from this remote community on B.C.'s rugged Pacific coast.
justification	unclear	Although the effect of the divers on the sharks is unknown, government guidelines are designed expressly to minimize any impact on the sharks. [...] All operators require government licences to run interaction tours and must strictly adhere to the industry code of conduct. Under that code, divers must not approach closer than three metres from the head and four metres from the tail of the shark. Boats must not approach closer than 30 metres, and a maximum of 10 people are allowed in the water at a time. [...] Riding was halted as soon as government regulation began in 1992. "We err on the side of caution," Coughran says. "By dropping people far forward of the shark, they're able to swim to one side, out of the shark's way, lessening the disturbance." Consultation with the industry is ongoing and changes are made when necessary. "Our goal is management for maximum contact with minimum impact," he says.
justification	unclear	"Rather than infringing on the seals, Hall says it is an opportunity to educate people about them and their underwater habitat."
justification	unclear	"I'm disturbed to hear that people are deliberately trying to get so close to these animals," says Laurie MacBride, executive director of the Georgia Strait Alliance, a Nanaimo-based environmental group. "It could be very disruptive to the seals in the long run."
measure	behaviour	"One of the orcas slapped its tail in the second incident, a sign that can mean it feels a threat."
measure	behaviour	"Marine mammal scientists and environmentalists are watching for any unusual whale or porpoise behaviour off the west coast of Vancouver Island during naval exercises."
measure	behaviour	"research shows whales leave areas because of the whale-watching boats, rest less and swim faster to avoid the human intrusion."

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measure	behaviour	Using harpoons and relatively harmless suction cups, they tag the whales with time-depth recorders that measure, minute by minute, the mammal's depth and speed and the water temperature.[...]Next year, hydrophones will be attached to monitor noise levels at different depths, and the information will be correlated with the mammals' behaviour patterns.
measure	behaviour	"Evidence is growing that many animals do not react well to tourists in their backyard. The immediate effects can be subtle—changes to an animals' heart rate, physiology, stress hormone levels and social behaviour, for example—but in the long term the impact tourists are having could endanger the survival of the very wildlife they want to see. "
measure	behaviour	"They always dived when we rode them," Edwards recalls. A sudden dive is an indication that a shark has had enough. Other signs include a visible shiver during which their whole body shakes, and a flickering of the nictitating membranes over their eyes, after which they pick up speed and dive. "They don't like divers close to their heads," he adds."
measure	behaviour	"I used to fish at the mouth of the Fraser River," says Obayashi, who fished commercially for 25 years before investing in Wild Whales Vancouver three years ago with three other fishermen. "There were hundreds of boats and the whales didn't seem bothered, although I suspect there was some impact."
measure	behaviour	Anna Hall of the Victoria-based whale-watching company Prince of Whales said she saw killer-whale families very close together, and frequently change directions at the time the sonar was in use. "If I had to use a word, it would be confused," she said.
measure	bodycondition	"Seddon's study of yellow-eyed penguins in the Otago peninsula showed that chicks in heavily touristed areas weigh about 10 percent less than chicks in less-visited locales."
measure	bodycondition	"Yellow-eyed penguin chicks in New Zealand weigh less in areas where there are frequent tourists and are less likely to survive than their fatter, healthier counterparts in less disturbed areas."
measure	bodycondition	"chicks in areas frequently visited by tourists weigh on average 0.76 kilograms less than chicks in an area not visited, a fall of over 10 per cent. "
measure	disease	"Sometimes the damage is insidious. Researchers in Africa report that meerkats and mongoose have caught tourist-borne diseases. Africa's mountain gorillas now suffer from such human diseases as polio and the flu."
measure	feedingrate	The presence of boats affects whales' behaviour – for example, they'll spend less time on feeding dives, resulting in lower weight gain and may not survive the winter as well.I felt guilty, but was relieved to learn strict rules govern how close whale-watching boats can go.
measure	feedingrate	"The team observed that the penguins delay coming to shore after foraging at sea when humans are visible on the beach. The scientist suggest it is possible that the chicks' parent digest some of the foot they would normally have regurgitated while waiting for the beach to clear."
measure	feedingrate	"Free from the threat of infanticide, the females eat an additional 18 kilograms of salmon a day when the tourists are around, which should translate into healthier cubs and bigger litters, says Owen Nevin"
measure	flight	"There's so much traffic out here, and so much fishing, they're used to humans," Hall tells me later. "If they're uncomfortable or don't want to be bothered, they'll just swim away."
measure	flight	Two ancient, giant, water-slapping primordial monsters who spray and sink and rise, roll over and cry out, lifting a fin and a tail."Are we bugging them, Holly?" I ask."We're not chasing them," she says. "If we were, they'd be out of here."
measure	heartrate	"merely observing animals' behaviour is not enough to show whether ecotourism is taking a toll, Mullner says. In a study of adult hoatzins, she and her team examined how close they could get to birds sitting on their eggs before the birds fled. They found there was no noticeable difference between the tourist and restricted areas, which might suggest that the birds had adapted to human presence. However, when the researchers placed microphones in the nests, they found that though the birds did not flee, their heart rates increased. "There is a physiological reaction in the adult too," she says. But its need to protect the nest forces it to stay. "
measure	heartrate	"Evidence is growing that many animals do not react well to tourists in their backyard. The immediate effects can be subtle—changes to an animals' heart rate, physiology, stress hormone levels and social behaviour, for example—but in the long term the impact tourists are having could endanger the survival of the very wildlife they want to see. "
measure	hormones	Tourists on wildlife-watching holidays may be threatening animals' long-term survival, say biologists. Studies on dingoes, dolphins and polar bears, among other species, show that the proximity of humans interrupts animals' behaviour patterns and daily routines, causing stress levels and heart rates to increase.The most worrying potential impact is on reproduction. Stress can reduce the size of litters or individual offspring and lower the chances of conception.
measure	hormones	"chicks in these [tourist-zones] areas had double the levels of corticosterone—a major indicator of stress—of chicks in restricted zones, the scientists speculate that tourists may scare the chicks into jumping from the nests."
measure	hormones	"Evidence is growing that many animals do not react well to tourists in their backyard. The immediate effects can be subtle—changes to an animals' heart rate, physiology, stress hormone levels and social behaviour, for example—but in the long term the impact tourists are having could endanger the survival of the very wildlife they want to see. "
measure	hormones	"Transmission of disease to wildlife, or subtle changes to wildlife health through disturbance of daily routines or increased stress levels, while not apparent to a casual observer, may translate to lowered survival and breeding," says Philip Seddon of the University of Otago in Dunedin, New Zealand. "

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measure	injury	Federal scientists are mapping the sound levels experienced by the animals, fearing the constant din of whale-watching boats and commercial freighters might cause permanent damage. Belugas have been nicknamed canaries of the sea because of their frequent vocalization. Experts say even partial deafness could be catastrophic as hearing is their primary sense in a murky world.
measure	injury	Why the sudden surge of whale strikes? It may simply be that with more eyes on the water, collisions are being recorded, said Straitwatch's Nic Odeluk. More likely is the increase in boat traffic, though the recovery of the humpbacks may also be a factor.
measure	injury	In 2005, there were no incidents reported of whales nearly colliding with vessels inside the park, about 100 kilometres northwest of Juneau. However, there were several incidents in 2004, including the death of a calf found beached on a Glacier Bay island. The calf likely was hit by some type of vessel. A necropsy found severe dislocation of six ribs on its right side.
measure	injury	Stories abound of whales being struck by the boats full of people there to admire them.
measure	injury	"In Australia, nearly 350,000 tourists a year visit Fraser Island off the Queensland coast, many hoping to see the island's dingoes. But in April 2001, after two dingoes attacked and killed a 9-year-old boy, the authorities culled 31 of the dogs in an effort to prevent further attacks (Tourism Management, vol 24, p 699)."
measure	reproduction	"In 2003, the only year that Ellenberg's group studied Chanaral, the penguins there bred an average of 1.34 chicks. On Choros, the average was just below one chick in both 2002 and 2003. But on Damas, female penguins produced, on average, a little less than half a chick in 2002, and the birthrate dipped well below a quarter of a chick in 2003, Ellenberg's team reports online and in the November Biological Conservation."
measure	survival	"It's more than coincidence that bear sightings have dropped off in areas where hunting is taking place, said Henkel, who took 1,000 people last year on wildlife and whale-watching excursions. "We have people who want to go out and see bear and we're not seeing bear," he said, adding, "We just kind of put two and two together."
measure	survival	Enter ecotourism. As island management increased protection of its main attraction, poaching declined. [...] the increased survival of females that came with the end of poaching wasn't the whole story. Male iguana numbers declined as ecotourism increased, they say. Part of the problem, the researchers argue, is that the males tend to be aggressive and interact more with human visitors than females do. Some of the 54,000 people who visit the area each year feed the iguanas hazardous material such as spoiled food or Styrofoam, which can kill them. But Iverson and Smith found some of the missing males at nearby islets that iguanas couldn't have reached themselves. This displacement led the researchers to suspect that ecotourism guides had removed many of the large, aggressive male iguanas from the most visited sites. Moving the iguanas could have ecological ramifications, Iverson says. For example, some of the displaced iguanas were found at sites that are home to an endangered species of seabirds called Audubon's shearwaters. Because the iguanas and the birds require similar nesting territories, the iguanas might crowd out the shearwaters, he says.
measure	survival	"The Centre for Integral Economics, a Victoria-based social policy and environmental research organization, found that British Columbia's ongoing grizzly hunt could ultimately reduce bear numbers to the point where it hurts the ecotourism bear-watching industry."
measure	survival	"The tourists appear to be affecting the chicks' survival. The researchers found that 50 per cent of nests in restricted areas had at least one fledgling, while the number dropped to just 15 per cent in tourist zones. In a paper, again to be published in Biological Conservation, Mullner speculates that tourists may be scaring the chicks—which nest on branches overhanging water—into jumping into rivers and lakes infested with predators such as piranhas, caymans and anacondas. "
measure	timebudget	"Transmission of disease to wildlife, or subtle changes to wildlife health through disturbance of daily routines or increased stress levels, while not apparent to a casual observer, may translate to lowered survival and breeding," says Philip Seddon of the University of Otago in Dunedin, New Zealand. "
measure	timebudget	"the animals should be resting and waiting for Hudson Bay to freeze over so they can start hunting seals. But often the bears are not resting as they should. Markus Dyck and Richard Baydack of the University of Manitoba, Winnipeg, have found that signs of vigilance among male bears increased nearly sevenfold when vehicles were around. Just one vehicle could disturb the bears (Biological Conservation, vol 116, p 343). "
measure	timebudget	"Hastie and his team have found that dolphins in the Moray Firth in Scotland spend significantly more time surfacing synchronously in the presence of boats than they do otherwise (Marine Mammal Science, vol 19, P 74). This could lead to the animals resting more at night, possibly reducing the time they spend socialising and foraging."
measure	timebudget	"In an upcoming paper in Biological Conservation, they report that the dolphins become increasingly frenetic when tourist boats are present. They rest for as little as 0.5 per cent of the time when three or more boats are close, compared with 68 per cent of the time in the presence of a single research boat."
measure	timebudget	"In New Zealand, for example, schools of bottlenose dolphins are showing increasing signs of stress, resting for as little as 0.5 per cent of the time when there are more than three tourist boats close by, compared to 68 per cent when only one boat is near."
measure	timebudget	"Sonar use during military operations has been linked to mass strandings of beaked whales and also seems to prompt changes in humpback whale calling behaviour. What is more, dolphins spend longer at the surface and rest less when tourist boats are nearby (New Scientist, 6 March 2004, p 7). "

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measure	timebudget	"In the fall, when the polar bears of Churchill, Manitoba, should be resting up for winter hunting, the bears instead rouse themselves seven times more often than usual when tourist vehicles are around, say researchers."
measure	vigilance	"The researchers found that signs of vigilance increased nearly sevenfold among male bears when tundra buggies carrying tourists were nearby."
measure	vigilance	"Polar bears in Manitoba are coping in October and November with upwards of 20,000 tourists, desperate for a glimpse of the white giants. It's the time of year when the animals should be resting. Instead, the bears go on alert any time a vehicle comes by, using up valuable fat stores, critical for hunting and defending themselves later in the year."
measure	vocalisation	Previous research has shown that when boats pass nearby, the belugas behave much like people in a bar with loud music, said Veronique Lesage, a Department of Fisheries and Oceans scientist."They start to repeat themselves, and then yell and then move to higher frequencies to avoid the band where the noise is louder," she said."And, at some point, they just shut up and say, 'Let's talk later,' I guess."
measure	vocalisation	"MORE evidence is emerging that ecotourism is not as benign as it first appeared. Killer whales are calling for longer in a bid to overcome the cacophony produced by tourist boats"
measure	vocalisation	"Before 1992, the whales did not change their calls in response to nearby boats. But after 2000, the animals in all three groups had increased their call length by around 15 per cent when tourists were nearby (Nature, vol 428, p 910). "There's this apparent [noise] threshold beyond which the whales do something to compensate," says Hoelzel."
measure	vocalisation	Research by scientists from the University of Durham in England shows that in the presence of boat engine noise, some killer whales change their behaviour to communicate not by shouting but by lengthening their calls.
measure	vocalisation	The whales have markedly increased the length of their calls in an effort to overcome the noise from the growing fleet of tourist boats, say U.S. and British biologists, who have been eavesdropping on 83 orcas that share their coastal waters off British Columbia and Washington with thousands of noisy ships and pleasure craft. The whales' distinct calls can travel up to 14 kilometres and are used to communicate while foraging for food. In the presence of the boats, the calls are about 15 per cent longer, say the scientists. The change is not unlike what would happen to a person's voice as he tried to speak louder and more clearly to be heard over traffic, says Richard Osborne, director of the Whale Museum on Friday Harbor, Wash., and co-author of the report.
prescription	prescription	In Alaska, tourists watching brown bears fishing for salmon in a river have to follow strict rules. Groups of the same size mount a platform at specific times and noise is discouraged. On the tundra near Churchill, on the other hand, vehicles are driving around all over the place, Dyck said."Those bears cannot really predict what is going on around them."
prescription	prescription	"Human-whale interaction is discouraged by Parks Canada officials but nobody has bothered to tell the whales and, in the summer, cetacean lovers just might get lucky, says Thomson."
prescription	prescription	"As a kayaker, I am always careful to keep my distance with seals and sea lions. But these seals are pretty blasé about the pod of snorkellers. A couple slip into the water, but the rest stay where they are, regarding us with bored, watery eyes. One even closes its eyes and appears to go to sleep. They are obviously used to seeing humans up close."
prescription	prescription	"If you are not running after them, it is not dangerous. Sometimes the whales will show you they don't want you so close," Provost cautions. "We have seen a humpback whale jump near the kayaks to show them 'you are in my bubble.' You have to be careful, you have to make noise. The whales hear you more than they see you, so sometimes you have to hit your kayak with your feet or carry a radio to tell them you are there. We have never seen aggressive behaviour here."
prescription	prescription	British Columbia's water, land and air protection minister, Joyce Murray, said people are mistaken when they think trophy hunting and bear watching tours cannot coexist
prescription	prescription	New regulations are in the making, which will likely replace the ambiguously worded "disturbing" a whale with far more specific language. As it is, there is some discrepancy in the whale-watching industry as to just how a whale is known to be disturbed.
prescription	prescription	The B.C. Guide Outfitters say there's plenty of grizzly bears to go around, so why not shoot them with a rifle as well as with a camera? "There really is opportunity for grizzly bear viewing in B.C. and grizzly bear hunting in B.C.," said outfitters spokesman Dale Drown.
prescription	prescription	"A variety of regulations govern how whale-watching guides operate on the water, particularly regarding distance from the whales. Being too close can hurt the whales, from a propeller clipping them, to pollution, to interfering with their ability to forage for food."
prescription	prescription	"upright on the noisy, loose moraine of a vast, barren glacial valley in daylight, wearing a brightly coloured jacket, I knew I was breaking several golden rules of wildlife watching. Worse still there was no cover to speak of—Svalbard has no trees."
prescription	prescription	"While the tourists don't directly harm the turtles, they leave trash such as water bottles and snack wrappers in Tortuguero, which lacks an adequate waste-processing center."
prescription	prescription	"There's nothing worse than entering a national park and finding a tiger within ten minutes. If you guarantee sightings, you start to put pressure on the animals to be in certain places and on the guides to find them, which means the guides may cut corners."
prescription	prescription	"Another vital piece of equipment is a pair of binoculars or a camera's telephoto lens. "One of the mistakes people make when going wildlife watching is not taking a pair of binoculars per person—this is absolutely crucial," says Breen. High-powered binoculars allow you to keep your distance from animals, which you should never approach or get too close to, in case they become nervous and flee, or worse, become aggravated."
prescription	prescription	"It's not either-or. We've had a scientific panel tell us that hunting does not risk grizzly bear population numbers," she said.

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prescription	prescription	Whale-watching operators might be easy to focus on, but Borrowman said pleasure boaters uneducated about whales are sometimes more of a problem. He believes that people can observe whales in the wild, but how to do it safely is what has to be figured out.
prescription	prescription	"Here at Knight Inlet Lodge, in the heart of British Columbia's Great Bear Rainforest, the operators enforce strict guidelines for the safety of their guests and the two dozen or so bears in the region (a number that swells to 50 during salmon spawning in the fall). They conduct their viewing excursions at the same time every day, stay for the same length of time and keep a respectable distance away (50 metres), cutting the motor and using oars as they approach."
prescription	prescription	"Outside the park, vessels are allowed to approach to within 100 metres."
prescription	prescription	"Touching the mantas at any time was forbidden, as was scaring them with a quick exit or ascent (which no sensible diver would do anyway)."
prescription	prescription	"The daily report of whale sightings helps park officials manage boat traffic inside Glacier Bay, where vessels are required to stay about 500 metres away from the whales. The park is a popular destination for cruise ships, tour vessels, charter boats, private boats, passenger ferries and sea kayakers."
prescription	prescription	"Killing grizzlies eliminates future profit by reducing the bear population, but a photographed bear can be shot again and again and again," Wyatt said.
prescription	prescription	"Furthermore, on my tour at least, the rules for washing boots after every landing at a penguin colony were not followed properly. [...] The cleansing of boots is intended to prevent cross-contamination between colonies."
prescription	prescription	Human harassment of belugas, which have been the object of fascination since P. T. Barnum captured them for display in 1861, remains a problem. In an attempt to curtail the effects of tourism on the whales, federal regulations in 2002 forbade viewing belugas at closer than 400 metres. However, individual boaters at the popular Saguenay St. Lawrence Marine Park routinely breach the rule, said Jean Desaulniers, the park's manager of research conservation. He said he's seen pleasure crafters plow directly into groups of belugas. "Some people either don't want to know the rules or couldn't care less, or say to themselves, 'I just want to see the belugas,'" Mr. Desaulniers said. "It happens regularly."
prescription	prescription	"The humane and responsible way to observe wildlife is from a distance, going your own way while animals go theirs. Quietly."
prescription	prescription	tranquilize/mark problem wildlife rather than immediately destroying them
prescription	prescription	"The wildlife have adjusted to the presence of vehicles," he says, "But when people get out and move toward them, the animal's comfort zone is encroached upon and they become scared and stressed."The goal is to observe from a distance. If you get too close, you will disturb the natural behaviour of the animal - and in the park that is considered harassment of the wildlife," said Duck.
prescription	prescription	We motor into one of the estuary's shallow channels, turning off the noisy, 300-horsepower motor and using a quiet electric-powered motor instead to cover the last distance. Our priority is not to disturb the grizzly bears, says Seiler. "We have to leave as light a footprint on this land as possible, because these bears are not habituated to humans, and we want to keep it that way." Intent on adhering to strict ecotourism, Seiler insists that guests sign a waiver before he guides them, a document in which they promise never to disclose the whereabouts of the grizzly tour, and never to return unless accompanied by a guide from his company, Silvertip EcoTours. "We put a lot of trust in the people we take, so we screen them first and never take more than four out at a time," he says. "This is what we have to do to ensure we're engaging in sustainable ecotourism. I couldn't sleep at night knowing I was screwing up the bears."
prescription	prescription	Let's hope the DFO does not come down on whale watching companies, which have worked with these animals for more than 20 years without incident, and other members of the boating public who wish to see wild whales, in the mistaken belief that these people will cause harm to these animals. These animals know about boats. They teach their young. Luna didn't get the lessons.
prescription	prescription	We've been instructed to keep our voices to a whisper because unnatural noises might cause the bears to flee.
prescription	prescription	U.S. federal law prohibits anyone from approaching closer than 100 yards (91 metres) to a humpback whale - including swimmers, sailboats and surfers. As well, aircraft are banned from entering a 1,000-ft. (305 metre) "bubble" around whales. As well, boaters are asked to operate vessels at speeds under 20 knots in areas where whales are known to frequent, according to guidelines created by PWF and Maui boat operators.
prescription	prescription	"The time has come to bring the morality of killing grizzly bears into the debate and give it a prominent place. As a progressive society, let's say loudly and clearly that we don't need scientific facts or economic rationale to protect our grizzly bears - that morality alone is reason enough. Let's learn from the French who have killed all their bears and relegated them to folk sayings."
prescription	prescription	Our guide had given us the guidelines for approaching wild animals: The safe circle (radius 80 metres); the caution circle for all but the dangerous animals (radius 30 metres); and the attack zone (eight to 10 metres). This elephant looked to me to be in the distinctly dangerous category, and apparently our guide thought so too as he signalled us to slowly back away. We were told that some animals, elephants among them, will sometimes "false charge" as a warning; "Don't run," said our guide. Hmmm. The African buffalo, we were told, does not false charge, so if you see one coming, look for a tree.

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prescription	prescription	[two reasons to paddle with guides: ...]Second, it's important to follow the rules for observing orcas without spooking them. The guidelines state watercraft must approach orcas only from the side, not head on or from behind, and must not go closer than 100 metres, nor come between the whales and the shore. Of course, as was our experience, the orcas sometimes approach you, and that's when it gets interesting.
prescription	prescription	"One of the most bizarre things we witnessed on Johnstone Strait is that while kayaks and small craft are required by B.C. law to stay out of the designated orca ecological reserve, dozens of salmon fishing boats chug right into it and set out their nets. Fisheries Canada permits commercial fishing within the preserve, and federal law overrules provincial law, so our guides explained."
prescription	prescription	" The federal government wants to license whale-watching operators, and some of them don't like it.
prescription	prescription	Public meetings will be held in the new year to discuss ways to regulate whale watching and to protect the animals. Marine mammal experts suggest that the southern residents may be affected by various factors, including whale-watching, toxic chemicals in their environment and a shortage of food. Current federal regulations are vague, merely stating that no one should disturb a marine mammal unless authorized to do so. The Fisheries Department has a guideline stating boats should stay at least 100 metres from whales and has distributed information on how to behave on the water around these creatures to cause the least amount of disturbance. The Fisheries Department is trying to provide a broader definition of what it may mean to disturb a marine mammal and what is acceptable, Joyce said from Vancouver. This means looking at how close vessels can come to whales and the number of boats allowed around them.
prescription	prescription	Marilyn Joyce, marine mammal coordinator for the federal fisheries department, has been involved in wide-ranging public discussions from the Arctic to Newfoundland to B.C. about new regulations to protect whales, and expects the results to be published as an official notice in the Canada Gazette in about six months. She said people can expect a better definition of disturbance, such as requiring boaters to maintain a 100-metre distance, along with prohibitions against feeding, touching or swimming with marine mammals.
prescription	prescription	Obayashi figures the whale-watching industry is pretty well controlled, compared with what often happens when recreational boaters encounter whales. "When a boat gets on top of them, most of us are outraged."
prescription	prescription	"We also talked to the Ministry of Natural Resources to make sure we met any requirements for this type of business. We are not harming the bears or allowing anyone to hurt them, so we have had no problems setting up the business."
prescription	prescription	Manitoba Conservation is in charge of policing tour operators. Only 18 buggies are allowed to operate, and new permits have not been issued in many years. "It's not in our interests to ruin the environment," said John Gunter of Tundra Buggy Tours in Churchill. Operators have to be aware of the modern sensibilities toward ecology the tourists bring with them. "You know who are best policing agents are? Our guests sitting behind our drivers," he said.
prescription	prescription	Wapusk camping will have to be carefully managed to make sure the bears do not become habituated to humans, which would change their behaviour.
prescription	prescription	One of the ways to have a long-term impact on the conservation of killer whales is to eliminate or reduce the number of commercial whale-watching boats in Active Pass. The pass is too narrow to accommodate whales, B.C. Ferries, shipping lines, pleasure craft and two dozen commercial whale-watching boats at any time.
prescription	prescription	"NOTE: Whale watching has gained such popularity in the Pacific Northwest that regulations and guidelines are necessary to ensure minimal disturbance for marine mammals. Under the federal Fisheries Act, it is illegal to disturb, molest, hunt, chase or herd whales." (Should work with hunters to find "alternate revenue-generating endeavours, such as whale-watching tours")
prescription	prescription	"We don't know enough about the risks. Until we do, we should stop it," Craig Bovim, a marine engineer, said. He wants end to shark-cage diving and particularly "chumming" – placing a noxious mix of blood and guts in the water to lure the predators to the cage. Bovim wants a code of conduct that forbids touching of the animal, particularly its highly sensitive snout. "Baiting of leopards and lions is no longer allowed. We should not do it to sharks. They are magnificent animals as it is," he told The Times, saying that he feared that the activity was creating a familiarity between two species historically deeply suspicious of each other – with fatal results.
prescription	prescription	"To give all bears a time-out from humans, the tenured operators at Glendale share a viewing schedule that ensures 40 percent of daylight hours are people-free. There are also limits on the number of viewers allowed in at once. Janz says experience in Alaska suggests that habituation doesn't cause problems if the operations are "consistent and somewhat standardized" – same boats, same old buses, same viewing platforms, same daily routines.
prescription	prescription	Nevin and Gilbert [researchers] stress eco-tourism must be carefully managed to have a positive effect. A management plan set by the B.C. government dictates when eco-tourists can view the Knight Inlet grizzlies. The lodge and tour operators have sought to extend the viewing hours, but the biologists advised the government to restrict the viewing to two periods, one in the morning and another in the late afternoon.
prescription	prescription	McGrady [operations manager at Knight River] worries that as word spreads about the grizzlies in Knight Inlet, more people will fly in and boat in and try to see the bears on their own. He and the biologists stress the need to go with a licensed guide. "We are very concerned that someone will go in there and get mauled," says McGrady.

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prescription	prescription	Chris Tucker, a research assistant with the Vancouver Aquarium and Marine Science Centre, said whale watching can be "a double- edged sword." Practiced properly, it can increase awareness about the animals and build support for conservation efforts. Boat noise is harmful to whales, Tucker said and "too many boats is a bad thing."
prescription	prescription	Guests will sail aboard a 16-passenger, 68-foot ketch. [...] Burke [owner of Bluewater Adventures] believes such flexible, low-impact trips are the future of tourism in sensitive areas - on a small ship it's possible to experience nature without causing damage.
prescription	prescription	The town's only barber has his own ideas on the situation. "Leave him alone," Harry Curtis said Wednesday. "He's going to get horny and leave soon anyway. He has never hurt nobody. He's gentle, just a big kid. "I'm not a marine biologist but do the marine biologists know what they're talking about anyway?"
prescription	prescription	"Back aboard the dive boat, the careless snorkeller received a stern warning from Skipper Andy Edwards: If he got that close again, he wasn't going back in the water."
prescription	prescription	"Strictly speaking, such contact with Luna is illegal. The federal Fisheries Act says: "No person shall disturb a marine mammal except when fishing for marine mammals under the authority of these Regulations."
prescription	prescription	I was offended by the photograph in the March 22 Times Colonist of the whale-watching vessel off Tofino that is only inches from a surfacing whale. This behaviour on the part of the vessel operator is contrary to the Fisheries Act and the guidelines set out for watching marine mammals. All whales are fascinating creatures and it is thrilling to see them but please give our whales their due respect and a little room - it's only 100 metres!
prescription	prescription	"Boat traffic has increased significantly over the past two years and it's caused a negative impact on the endangered population," Hamilton said. "They're supposed to be 100 metres away, preferably 400, especially if they have babies with them. They aren't. They're normally within 10 to 20 feet."
prescription	prescription	"One of the issues that all wildlife rehabilitation centres work hard at is ensuring that birds and mammals do not become too familiar with humans. If they do, they will become a nuisance and likely not survive."
prescription	prescription	Sees no need to create protected areas to protect whales. Whales still prosper in Robson bight, where there's commercial fishing. Tourists and sport fishers need to learn to respect the whales: "Just educate the public to leave the whales be. If the whales are not stressed, they dive deeply and when they blow it is a real squirt, worthy of a picture. If the would-be viewer comes too close, the animal is afraid and dives before it is ready. Then when it reappears it only gives a small squirt. It is being tortured. That is cruel." " I have observed the whales, guessed which way they were traveling and drifted, waiting. When I guess right, they come around my drifting boat and when they are bored with me they carry on. Then, after they are gone I move my boat and go on my way. That way they are not stressed.
prescription	prescription	he first morning, Tom gives his bear talk. We stay in the bus or in one of the blinds that he has built, except for an occasional guided walk. The idea is to view but not to intrude. Should a bear approach, he puts himself between it and us. "I'll do the talking to the bear," he advises. Okay, we all nod. What would one say to a grizzly anyway? He asks that we avoid pointing at the bears and no flash is used when photographing.
prescription	prescription	"The different whale watching operations stay in radio contact, informing each other of sightings, although they maintain a rule of no more than two vessels viewing the whales at a time."
prescription	prescription	"In the early days of the ecotourism industry here (the late 1980s to the early 1990s), riding was a common practice. However, the sharks have been fully protected in Australia since 1992. In that year, a steering committee was formed to develop guidelines for any interaction between humans and whale sharks. Touching or riding the whale sharks is now strictly prohibited."
prescription	prescription	"Marilyn Joyce, marine mammal co-ordinator for the Department of Fisheries and Oceans, says the activity runs contrary to voluntary guidelines regulating wildlife viewing. "It is certainly something we don't condone as an activity," Joyce says. "We do not encourage it."
prescription	prescription	Manitoba Conservation helped fund Dyck's research, but has no plans to set rules for how closely tundra buggies can approach the bears, wildlife protection director Jack Dubois said. "If (the bears) are bothered by the buggies, they can simply leave the area," he said. (Public asked to report sightings of whale and turtle in order to help develop recovery and management plans)
summary	summary	Report on birth of new whale in J-pod. Not yet named, as 50% death rate. "Sometimes the babies don't get enough food, sometimes they're poisoned by pollutants..." Individualisation of whales: "J pod is led by Ruffles, a "grumpy old man," Pidcock says. "He's always out on his own. His name is Ruffles because he's got little waves on the back of his fin."
summary	summary	Reports on company set up to combine travel between Vancouver and Victoria with whale watching during the trip.
summary	summary	Report of grizzly hanging out in Anchorage.
summary	summary	"Armstrong had heard chatter on the radio from other whale- watchers concerned about the behaviour of two U.S. Coast Guard boats." They said they were doing high-speed doughnuts in the vicinity of the whales and firing machine guns," he said. When he arrived, about 25 whales were in the area. "The whales were really freaked out," he said. "They were in a tight pod and changing direction with the males around the outside."

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summary	summary	"Once it looked like the whales were going to enter that area, they ceased firing (and) shut down all range activity until the whales moved clear," he said. "At no time were any marine mammals at risk."But Armstrong said the whales were not behaving normally during the gunfire."The whales were obviously very disturbed," he said. "They were really tight packed."The orcas would dive deeply and resurface facing different directions, yet remained in one place and stayed tightly packed, he said."So obviously the were a little traumatized by bullets being shot into the water."
summary	summary	"Bear No. 66, who nipped a Quebec man as he illegally camped in the woods last month, was spending time on the lower slopes of Sulphur Mountain on Thursday."We want people to take all the normal bear precautions. Don't approach her; give her space," said Banff park warden Marc Ledwidge."
summary	summary	Seal being chased by orca jumps into fishing boat.
summary	summary	Orca population plummeted after Valdez oil spill. Recovery program suggestions include transponders on females to keep boats well away, and less boat traffic in area: "They need to hunt. They need quiet to hunt. Having boats all around them doesn't help," Matkin said.
summary	summary	(Veterinarian on whalewatching trip hears about injured dolphin, probably hit by boat, impressed so many people tried to help out.)
summary	summary	(Joyce Murray, Minister of Water, Land and Air Protection, points out that it does not follow from the fact that WLT is an economic benefit, that hunting should be banned.)
summary	summary	(reports on meetings to establish regulations for whale watching)
summary	summary	(Defends against hypocrisy charge by being opposed not only to aquaria, but to all forms of animal exploitation. Suggests going on whale watching tour to see what animals should be like.)
summary	summary	(Icelandair and tour operators report cancellations as political gesture following whaling announcement)
summary	summary	"Researchers fear three endangered orcas recently missing from B.C. and U.S. waters are dead. Another three killer whales, from a less-threatened group in central and northern B.C., have also vanished."
summary	summary	"Prior to my trip I had believed that ecotourism placed very little pressure on wildlife. From firsthand experience I can now say emphatically that this is not so. I saw (and videotaped) significant numbers of my fellow tourists blatantly flouting the rules about approaching penguins, seals and other wildlife. Not only did they approach close enough to, in one case, touch the beak of a moulting penguin, some actively pursued these creatures across the snow, causing them evident distress."
summary	summary	(Scuba divers wrestling with cameras less controlled, thus tend to bump into reefs more often)
summary	summary	(Maintain wilderness character by de-comissioning logging roads.)
summary	summary	(report of Earthwatch vacation helping biologists with tranquilising and radio-tracking puma)
summary	summary	(Outfit combines whale watching with travel btw Vancouver and Victoria, to cater to tourists who didn't book time for a separate whale watching trip.)
summary	summary	The American National Marine Fisheries Service is investigating whether a killer whale was injured when it apparently collided with a Victoria-based whale watching boat last week. Guidelines set by the Whale Watch Operators Association Northwest require boats not to cross an orca's path and to stop their engines within 100 yards of a whale."That's what the investigation will be checking into - whether the vessel was following those guidelines. Obviously, if the whale moved into the boat, that's not a violation whereas if the boat moved into the whale it certainly could be," Sears said.
summary	summary	Sports fishermen will be banned from an area of Nootka Sound in an effort to give Luna the lonely orca a quiet zone.The aim is to minimize the five-year-old whale's interactions with vessels, both for his sake and for the safety of the boating public, said Ed Lochbaum, Department of Fisheries and Oceans fisheries manager.
summary	summary	(Objections to heli-skiing which might affect bighorn sheep and mountain goat populations)
summary	summary	(Sea to Sky construction delayed by eagle nest)
summary	summary	(letter in support of government spending on Luna protection)
summary	summary	(Evolving tools and training to untangle whales caught in fishing gear)
summary	summary	(Tongue in cheek proposal to share North Ontario's excess bear population with Southern Ontario. References to urban/rural divide in view of bears and of bear hunt not explicit in article; perhaps to the audience of the Sudbury Star they would be obvious...)
summary	summary	(book review. Humpback tangled in rope and eventually rescued)
summary	summary	Bear reports in Whistler don't simply consist of bears getting into garbage, but bears are breaking into cars, houses and even fridges, according to Doyle.He attributes the unnatural behaviour to the high concentration of bears in Whistler and the fact bears are developing bad habits because of their frequent exposure to the public."They are so habituated that they have no fear of people," Doyle said.
summary	summary	Seventeen men and women of the Mowachaht-Muchalaht band, brave guardians of a reincarnated leader embodied in Luna the orca, want to keep their reborn aquatic chief alive and well, despite the wishes of our illustrious and misguided Department of Fisheries and Oceans, by heading out to sea.Keeping Christianity in mind, we must not underestimate the effect a good reincarnation can have on a nation and its people, not to mention an excuse to eat those goeey chocolate Easter bunnies on a paid holiday.The DFO says the whale is too friendly and a nuisance. I would counter that with the DFO being the nuisance and a horrible waste of our tax dollars. I also venture to say that Luna pilgrims would enhance the local economy far more than the DFO could.
summary	summary	human-wildlife conflict caused by stupid humans feeding wildlife

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summary	summary	Although whale watching in the waters off southern Vancouver Island is more popular than ever, there are concerns being raised about the negative impact these tours might be having on resident whales. However, several of Victoria's whale watch operators are hoping to make sure that doesn't happen. These operators are members of, and adhere to the strict standards set out by, the Whale Watch Operators Association of the Northwest (WWOA-NW).
summary	summary	(possible effects of sonic blasting for oil exploration, on whale, crab, cod)
summary	summary	(Dolpins in shallow sea-cage as part of swim-with-dolphins plan during two hurricanes, and what to do about it.)
summary	summary	Responsible wildlife viewing practices, like those detailed in the Whale Watch Operators' guidelines, are essential. [...] These magnificent killer whales are indeed under increasing pressure from vessel noise, declining food supply and pollution. The CRD contributes to this by dumping 120 million litres of raw sewage every day into the waters in which these endangered animals live – sewage that contains PCBs and many other toxic chemicals. Establishing marine reserves, practising green boating, fishing responsibly, eliminating the use of pesticides and toxic household products – all of these actions can help preserve our orcas and the marine plants and animals upon which they rely. If we want to show our love for these "neighbours" we must treat them, and their marine environment, with the utmost of respect.
summary	summary	"The wilderness resort sits in splendid isolation in the middle of British Columbia's Great Bear Rainforest, a place where tourists go to embrace nature – but where generators provide dirty power, outboard engines propel the small vessels used for whale watching and float planes are the main transportation link with the outside world."
summary	summary	"A team of 14 U.S. scientists began cutting into the remains of 11 harbour porpoises yesterday to determine whether naval sonar helped kill them."
summary	summary	(letter in response to suggestion that bear hunting be replaced with viewing) When you replace one or two hunters moving through their territory each year with trip after trip carrying dozens of people, what is the result of that? Increased habituation? Pushing bears out of their territories? Just how many commercial recreation tenures do he and the Commercial Bear Viewing Association of British Columbia think the bears can tolerate without harm?
summary	summary	Each year tens of thousands of British Columbians and visitors to our province attend the Adams River Salute to the Sockeye festival, thousands watch the return of salmon in Goldstream Park on Vancouver Island, and many more thousands hike and backpack to view wildlife of all kinds. All of these activities create an economic benefit for the province. Yet none of these activities result in calls for the banning of fishing or hunting. Wildlife viewing, hunting and fishing all have impacts that need to be managed. This government makes decisions about the conservation of wildlife based on science, not on economics, and not in response to pressure from advocacy groups. Joyce Murray Minister of water, land and air protection
summary	summary	"At the heart of the argument is a dispute over the size of B.C.'s grizzly population. Environmentalists say it is as low as 4,000. The outfitters and the B.C. government say it's almost 14,000."
summary	summary	"Killer whales hunt for food using echolocation. If their hearing is impaired, then that means they aren't as effective at catching fish, their main diet."
summary	summary	Tourists are turning their backs on Iceland because the country is resuming commercial whaling, a tour operator claims. Whale watching is one of Iceland's main tourist attractions but bookings have fallen 25 per cent in the two weeks since it has resumed hunting.
summary	summary	"But Stilwell isn't worried that will result in a sudden stampede of humanity from cities and towns into sensitive areas. All of the truly fragile spots he knows about have been left out of the book and may never be recognized in print."
summary	summary	(web cam on eagle nest, soon bear cam will be added)
summary	summary	(weird satirical treatment of reality TV, bears, and russians???)
summary	summary	Wapusk National Park in northern Manitoba plans to offer visitors an original, if expensive, camping experience inside a fenced compound, with curious wildlife stopping by to ogle.
valuation	ecological	Chris Genovali, executive director of the Raincoast Conservation Society, the organization that commissioned the report, said Murray's decision to continue the hunt is based solely on "special-interest politics" not good business. "There really is no ecological, economic or ethical justification to continue to hunt grizzlies for sport. The bottom line for us is that the hunt is not only bad for grizzly bears, it's bad for business."
valuation	ecological	"There is no question, Kunz says, about the bats' value. The bats eat more than half their body weight in insects each night. "In their absence, the population of insects would be overwhelming," says John Westbrook, a research meteorologist with the U.S. Department of Agriculture. Just how overwhelming is something biologists are trying to determine."
valuation	ecological	"It's not really about conservation. Some whale species, like the fin whales and the blue whales, the largest animals who ever lived, have never recovered from the slaughter of the 19th and 20th centuries and will need strict protection indefinitely. (Fin whales are down from an estimated pre-whaling population of 700,000 to around 50,000, and blue whales from 275,000 to a mere 5,000.) Others, like the sperm whales and minke whales, have populations big and stable enough to withstand limited whaling."
valuation	ecological	The area, with its fenced highway, is a kind of industrial- tourism-meets-wildlife theme park – too urbanized to be wild parkland, too dangerous to wildlife to qualify as a zoo. Parks Canada and its consultants may have decided to let nature take its course, but there is nothing natural about the deaths of Bear 66 and her two cubs, unless locomotives and automobiles are now officially classed as the apex predators in our national parks.

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valuation	ecological	Re Kill Your Grizzly While You Can (June 18): While grizzly-bear viewing may generate more money for British Columbia than hunting, the impact of bringing in the huge numbers of extra tourists needed to make up the revenue lost from hunting would be catastrophic for some of the province's remotest and most fragile ecosystems. What the conservationists have not pointed out is that sustainable hunting is far less intrusive on the environment than mass game viewing.
valuation	ecological	Joyce Murray claims that people should have a choice when they come to B.C. as to whether to view grizzly bears or kill them (Grizzly bear viewing more valuable, June 18). That doesn't make a great deal of sense. When I travel to another country I certainly don't expect to be given the choice as to whether I can kill things or view animals. If the government's estimates of the numbers of grizzlies are correct at 13,000, then I think it's time to re-implement the hunting ban. Thirteen thousand grizzlies is not many for a province as vast as ours. This hunt only feeds the large egos of little minds.
valuation	ecological	Environmentalists worry, however, that the spread of private parks has gone largely unregulated, guided by economics rather than conservation. "I think it is a very positive trend if we are moving away from agriculture ... which is very destructive for soil and habitats," said Jason Bell-Leask, regional director of the International Fund for Animal Welfare. "But are we conserving wildlife ... or are we actually starting to farm these animals?"
valuation	ecological	Not only are whales meant to be with whales, says Pakenham, but a young, healthy male like Luna could make "a real contribution" to his endangered pod once he reaches sexual maturity in another 15 years or so. "My feeling is it would be unfortunate for him to stay in Nootka Sound."
valuation	ecological	"There has long been an argument that we must end the grizzly hunt for ecological reasons. Grizzlies, which reproduce slowly and require large territories, are an "umbrella" species, the decline of which causes a ripple effect throughout the ecosystem."
valuation	economic	"That makes New Jersey just one of seven states where those watching animals have a bigger economic impact than those trying to catch them. The others are Arizona, Hawaii, New Hampshire, New Mexico, Rhode Island and Vermont."
valuation	economic	"One study conducted in 1999 estimated that bats injected \$9-million into the Austin economy. The bridge spectacle had become an event."
valuation	economic	"I figured it out," said Mr. Ellis, who held the guiding rights for the past 28 years. "One dead grizzly was generating \$50,000 to the local economy." Wildlife viewing, which is becoming increasingly popular on the coast, might take up the slack, he said, but he has his doubts. He's thinking of giving it a go himself, he said, and even has a website set up for Bella Coola Grizzly Tours Inc., but he is still struggling with the numbers. "The bottom line is, bear viewers won't pay the \$25,000 that a non-resident hunter would have to have the right to hunt a bear," he said. "Bear viewers come in volume. They want to pay \$100 a day. So, with the price of diesel and given the distances you have to go on the central coast, it makes it a pretty tough proposition." Ecotourism is not proven. It's going to be great - if it works."
valuation	economic	Obviously the market exists for building a whole infrastructure around the seal hunt protest - hotels, helicopters, guides, all could cater to this high-end opportunity and provide sustainable employment to this region where unemployment cheques provide a necessary part of the annual income. The eager protesters could arrive on special package tours, enjoy high-end accommodation and dining, and be flown out onto the ice to protest the seal hunt - and every dollar spent would go straight into the local economy. The local government could even participate by requiring protesters to purchase licences - just as the fisherman now do.
valuation	economic	"Sewid quit the business in 2000 when he realized there was more money to be made from people who wanted to look at bears. The problem, he and other eco-tourism operators say, is that so many bears - black and grizzly - have been killed by hunters there aren't enough left for eco-tourists to view."
valuation	economic	I disagree with Chris Rumbold's statement (letter - June 20) that "huge numbers" of tourists would be needed to make up the revenue lost from the annual killing of grizzly bears in British Columbia and that the tourists' impact would be necessarily catastrophic. When my husband and I went grizzly-bear watching in B.C. last summer, the cost was \$230 per person for the day trip by boat from Telegraph Cove. Added to that were the costs of lodging, food and transportation, which for us brought the total closer to \$500 each. At \$500 per person, you would need around 6,000 tourists, or an average of 33 a day in all of B.C. throughout the spring and summer, to make up the lost revenue from hunting. Hardly a huge number.
valuation	economic	"Hunting contributions to the economy - less than \$50 million - pale in comparison to the amount brought in by wilderness tourism - more than \$900 million."
valuation	economic	(Bid to have spirit bear declared a symbol of the 2010 Olympics, which in some way would bring tourist dollars to Terrace...)
valuation	economic	(comparing economic impact of hunting/fishing versus non-consumptive activities)
valuation	economic	"Unfortunately, many countries fail to realize the true value of these creatures and the lucrative tourism dollars they can attract. With the decline of traditional fisheries, fishermen in India, Thailand, the Philippines and Indonesia have begun hunting whale sharks as a source of income."
valuation	economic	"In Nunavut, the government could foster eco-tourism and the revenue of villagers could be increased tenfold."
valuation	economic	Chris Genovali, executive director of the Raincoast Conservation Society, the organization that commissioned the report, said Murray's decision to continue the hunt is based solely on "special-interest politics" not good business. "There really is no ecological, economic or ethical justification to continue to hunt grizzlies for sport. The bottom line for us is that the hunt is not only bad for grizzly bears, it's bad for business."

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valuation	economic	"Another argument against the grizzly hunt uses the language of dollars and cents. This argument holds that the economics of bear hunting pale in comparison to the money that can be made off live bears through carefully managed commercial bear-viewing activities."
valuation	economic	"There is a risk to BC tourism because of the grizzly bear hunt," says Donna Morton, executive director of the Centre for Integral Economics. "Look at the campaign against the east coast seal hunt and the ads put out by the American Humane Society. Bears are B.C.'s totem animal and they should not be hunted."
valuation	economic	"Crossroads: Economics, Policy and the Future of Grizzly Bears in British Columbia," completed by the Centre for Integral Economics, found that grizzly bear viewing is worth \$6.1 million annually to the province - almost twice the value of hunting them for sport, \$3.3 million.
valuation	emotional	"During the past six years, government records show legal hunting is responsible for the single largest source of grizzly bear deaths. Each spring, grizzly bears emerge from their dens weakened, groggy and fixated on eating, only to be shot.....People from all over the world travel to Alberta to view our wildlife. These eco-tourists pay dearly for chance encounters with wildlife; watching a grizzly bear tear up an alpine meadow, rummaging for its next snack of ground squirrels or marmots, is indeed a sight to behold. A healthy and protected grizzly bear population for future generations, now that's the Alberta Advantage."
valuation	emotional	"But the anti-whaling lobby simply cannot bear to see these large, beautiful and seemingly very intelligent creatures killed for food. The intelligence is the key: many people have a strong emotional conviction that while killing animals to eat them is justifiable, we should not kill anything that too closely resembles ourselves - and whales' apparent intelligence puts them within that charmed circle."
valuation	emotional	"Whatever the economics involved, Paquet says people should try to look at the issue of the grizzly hunt from the "bears point of view."
valuation	emotional	"[bears] are B.C.'s totem animal and they should not be hunted"
valuation	emotional	The young bear kept a careful eye on the inflatable boat where I sat with a half-dozen grizzly admirers no more than a few metres away. A magical bond was created, as neither the bear, nor our small quiet group felt any danger.
valuation	emotional	"I try to figure out what I'm afraid of, and why this fear is so pleasurable: It's not that I really think these whales are going to tip the boat over, or that I'm going to be swallowed alive. I know this mixture of fear and acute pleasure is what people mean when they say the word "sublime."
valuation	emotional	What those belugas hungered for was eye contact. Peering intently into our eyes on each glide-by, the belugas ignited a connection with the wild beyond anything I've ever experienced. For a heartbeat, there was genuine communication between two radically different species. The connection Churchill whales form with human visitors is something different - it's beluga bonding.
valuation	emotional	What started as a good and sensible cause - saving the whales from extinction - has evolved into a kind of religion that has turned those great animals into almost holy creatures. Maybe it's all a result of synthetic living in the concrete jungle, with its endless sense of remorse about nature - the hole in the soul that all those Birkenstocks, veggie take-aways and Survivor shows have yet to adequately fill. We, on the other hand, are stuck on an ice-cold island in the middle of the ocean, surrounded by 100,000 whales. And even though we're more modernized in some ways than the United States, we have not totally lost contact with nature. The whale posters in the Icelandic bedrooms have a different meaning than those in London and Washington. Grandpa was a whale-hunter. He used to save the whales for dessert.
valuation	emotional	It's uncertain when wildlife stopped being wild. Probably when we turned their home into our backyard. The farther we go in search of wilderness, the tamer it becomes. Whatever the cause, it's a fact. Once-shy animals have gone Hollywood, if not actively seeking the spotlight, then not shunning it, either, as they brazenly help themselves to our gardens (and occasionally our pets) without so much as a thanks-for-the-cat. In short, the critters have become comfortable around people, and we're the worse for it. Wolves grown used to being hand-fed by kayakers attacked a camper a while back. Last week, Inuit on Baffin Island complained that roaming polar bears were making their streets unsafe. Frequent readers will recognize my all-time favourite headline: Woman Who Beat Off Cougar Hailed As Hero.
valuation	emotional	Members of the Mowachaht/ Muchalaht First Nation marshalled all their resources, and tugged at the heartstrings of whale lovers everywhere, to keep Luna from the clutches of cold-blooded bureaucrats and marine biologists. Paddling about the sound in war canoes and singing traditional songs, they drew Luna away from DFO boats last month, scuttling the reunification plan. The Mowachaht/Muchalaht say the orca represents the spirit of their late chief Ambrose Maquinna. Just before dying three years ago, Chief Maquinna told elders that he wished to return to Nootka Sound as a killer whale. Luna arrived a few days after his passing.
valuation	emotional	"It does seem a little too good to be true, getting so close to a whale like that," acknowledged Mike Hoekstra, visiting the area with his wife and two children. "It's almost unnatural."
valuation	emotional	Curtis dismisses the theory that Luna embodies a first nations' spirit. "There's no way in hell he's a spirit - it's just a fish."

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valuation	emotional	Although I don't agree that Americans should determine the way that Canada deals with its animal populations, I find the idea that polar bears should be hunted for sport appalling, in the same way that we now consider the whale hunt to be barbaric and unnecessary. It would be better to ban sport hunting of polar bears even if it is not the main contributor to the decline in polar bear population. [...] I know that if this issue received half as much attention as the seal hunt in Atlantic Canada, maybe stricter measures would be taken to conserve this unique environment.
valuation	emotional	"They're beautiful and graceful animals, but I think our attraction to them is because it's a two-sided relationship," says Macri. "There are times when they're calving and feeding when they can't afford to spend the time with us, but when they can, they do."
valuation	emotional	I cannot believe the words written by Croft Randle with regard to the bear that was recently destroyed in Campbell River.ou're not in Disneyland Croft! This wasn't Yogi - the friendly bear, or some kind of pet... it was a wild animal! Blame your own neighbour who had an un-electrified pond stocked full of fish. Those are the people who are responsible for the demise of this bear. Not the Conservation officers and RCMP. A bear in a residential area is one thing, however, a bear that is half-drugged, highly-stressed and completely unpredictable heading into a residential area is something completely different.
valuation	emotional	Radios crackled with excited chatter when whale watchers and researchers saw the first new calf. "It seemed like it was exciting for the whales as well," said Balcomb. "There was an increase in vocalization and more exciting sounds. Maybe we read into it."
valuation	emotional	(re: reluctance in fishermen to report whale entanglements for fear of negative PR) "The fishermen's fears were well grounded, says Fisheries officer Larry Paike. "It's viewed as the Labrador puppy syndrome" says Paike. "The public feels a need to protect anything with big wet eyes. There would be a tremendous backlash."
valuation	emotional	"There's a common misconception that whales know you are trying to help them," says Morin. "That is not true. We have to add flotation and drag and we're pulling on entangled gear which is pulling on the animal and causing it more pain. It does not want to be there. It makes for one heck of a wild ride."
valuation	emotional	"The decision [to consent to a spring bear hunt] is values-based, because the science is clear - bears are in trouble."
valuation	emotional	"They are just so social," said Ellen Newberry, who works on the boat as a naturalist and has a degree in marine biology from the University of Maine. "I have seen mothers toss their babies out of the water with their snouts. Young males show us the salmon they just caught. I get they feeling they are all just trying to show off."
valuation	emotional	"I know it sounds kooky," Munro, 63, said during a break at a recent public hearing on the plan to make Puget Sound a protected zone, "but I can show you 10 people in this room who have had mystical experiences with orcas."
valuation	emotional	[...]change in public attitude away from hunting wildlife for entertainment to viewing and photographing wildlife in a protected habitat. To respond to this "change in social norms" by "recruiting" 20,000 new hunters to B.C. is to ignore the market forces often relied on by the government to explain its policy decisions.
valuation	emotional	"Much as I'd like to avoid anthropomorphizing the whales, they genuinely seemed inquisitive about the raft and its odd surface-bound appendage. It was the same in the boats and kayaks: they approached without fear, sometimes speeding by, other times slowing down to take a good, long look."
valuation	emotional	"Nonetheless, Dean Wyatt bristles at the thought of a hunter paying \$15,000 for a one-shot encounter with a coastal grizzly. He estimates a live bear at Glendale is worth \$40,000 a year. Even if hunting has little effect upon the number of bears at Glendale, it does reduce the number of bear viewers. "There are people who don't come, because B.C. still hunts grizzly bears," Wyatt contends. "They think we're extremely archaic in not protecting them."
valuation	emotional	"Compayre, a gruff but amiable 54-year-old, is working on that part, using his uncanny ability to communicate with the bears to get some real action for the people who have paid thousands of dollars to be here. "They never cease to amaze me by their intelligence," he says, eyes staying on the monitor. "The more you watch them, the more you realize that they're pretty much their own bear. They're individuals. Every one has a different temperament and character." [...] you see the human-like qualities, like the friendship you see between these two guys. [...] When the ice freezes up and they go hunt seals, I guess they go back to the beasts they are. But for now they're pretty animated and pretty cool to look at."
valuation	emotional	Job cleared his throat to announce our presence, but the massive vegetarians took little notice. Though accustomed to humans, (a habituation project that took four years to complete), the silverback shot us a look and let out a little grunt. I froze. Uncertain of how this wild animal would react, I crouched, steadied my footing and prepared for a possible attack. Instead of charging, the silverback gently reclined, stretched out among bamboo shoots and farted - loudly. Our group snickered, feeling strangely privileged to have witnessed a flatulent mountain gorilla in its natural habitat.
valuation	emotional	It took James Moskito and the other divers about an hour to cut enough of the ropes to free the humpback. It was not business as usual. Moskito reported: "When I was cutting the line going through the mouth, its eye was there winking at me, watching me ... It was an epic moment of my life." Even more fascinating, once the whale realized it was free, it swam to each diver, nuzzled him and then swam to the next one. "It seemed kind of affectionate, like a dog that's happy to see you," Moskito said. "I never felt threatened."
valuation	emotional	"If our flight had not been the following day, we would have returned to Everglades National Park and spent more time hanging out with the birds and gators. After all, it's not that often that I get to fulfill one of my childhood fantasies."

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valuation	emotional	"Hunting has its place, but promoting the type of activities that are really drawing people into the outdoors today makes far more sense than pandering to a declining special interest group."
valuation	emotional	"People go to that and they're just awed," says Thomas Kunz, a Boston University biology professor who has been studying the Texas bats for several years. "But I always try to say, 'You've got to come out to some of these caves and you'd be awed even more.' I consider it a wonder of the world."
valuation	emotional	(Belugas trapped in ice.) "It's a big concern for the people of the community," Jackie Jacobson, mayor of Tuktoyaktuk, N.W.T., said Tuesday. "We just hope they can get all out." (If hole freezes over, hunters will take the animals) "It's not a bad situation. This is a natural occurrence and this will happen." (But people already have enough muktuk.) "If they get frozen in, they're going to be in one hole, popping up and down and taking turns (breathing)," Jacobson said. "That's not right, seeing the whales suffer like that."
valuation	emotional	The koala is the only Australian animal that prompts such a reaction. Conservation groups are baffled by the opposition to shooting koalas, which were introduced to the island in the 1920s, while no one minds that thousands of the island's native kangaroos, wallabies and possums are killed every year to control their population. Ms. Lewis attributed public empathy for the koala to the "cute and cuddly factor." However, she urged tourists to recognize the complexity of the issue. The animals can't be easily moved to other states because they're inbred, not resistant to a mainland koala disease and probably wouldn't survive, she said.
valuation	emotional	(re: spring bear hunt) "Let's say the spring hunt resumes. If there is even one cub orphaned and caught on tape, the animal rights activists will use it the same way they used pictures of baby seals being clubbed to death. Bear hunters may return, but other tourism will plummet as potential visitors see repeated gross images that convince them all Northerners are bloodthirsty barbarians. What the tourism folk ought to be doing is embracing the opportunity to change from shooting bears with a gun to shooting them with a camera."
valuation	emotional	One of my many grievances with this provincial government was the reinstatement of the grizzly bear hunt after the NDP had placed a ban on hunting these magnificent creatures. It is totally unnecessary to kill these animals. If Premier Gordon Campbell wants to reinstate some of his good standing he might well change this arrangement - a few votes from trigger-happy hunters is not worth the shooting of a sow grizzly with cubs.
valuation	emotional	In the late '80s, as a student at the University of Victoria during the initial debate between environmentalists and politicians about the fate of this valley, I interviewed a government bureaucrat about whether logging should be permitted, given the area's indigenous grizzly population. "Oh, you environmentalists," was his response. "You'd put a fence around a garbage dump if we let you. There's nothing you don't want to preserve." These days, few would argue about the value of this pristine watershed. You'd be hard-pressed, as well, to find a government employee making the same foolish statement.
valuation	emotional	P" Personally, I couldn't agree more. Two of the sounds that define "wild" for me are the call of the loon and the howl of the wolf ... even including the song of the coyote."
valuation	individual	"It was absolutely wonderful. It was nice to see her back. And she didn't have any inclination to come back to the boat. She was just out there being a whale. She looked real healthy." The close-knit whale-watching community kept the good news to themselves until Springer's sighting was confirmed by a scientist at the Vancouver Aquarium. "Everybody was floating," said Jim Borrowman, owner of the Lukwa and Stubbs Island Whale Watching in Telegraph Cove. "It was a huge joy. We've been like pregnant mothers waiting for the baby to arrive. I took a deep breath of relief. Phew."
valuation	individual	"Smoothly gliding, slipping, rolling, the humpback whales are friendly and curious, both sentiments we attach to them with our anthropomorphic human tendencies. We are in their silent element, the sea. This is their home. We are fortunate guests."
valuation	individual	We whale-watchers watch as whales watch us. They mean us no harm. Friendly, sociable, they "flipper display," and roll beside the boat, gliding and blowing. One humpback surfaces as all 25 of us are leaning over the low gunnels.
valuation	individual	"I felt an odd protectiveness I quickly identified as maternal. Although I've never desired children, I realized I could easily be mommy to this gangly, red-haired youngster."
valuation	individual	Townfolk and tourists have dubbed the three-year-old whale Luna, and often come to the water to visit with him.
valuation	individual	Tom names the bears by their behaviour patterns and Running Bear lived up to her name. She hit the gravel bar loping, charged into shallow waters, chased a few salmon, roared at the sea-gulls then settled in to gorge on salmon.
valuation	individual	She seemed curious - gliding slowly around us, turning and rolling, at times so close we could see the barnacles on her belly. Incredible, awesome, spellbinding are a few of the inadequate words to express the majesty of that encounter. It remains one of the most memorable experiences of my life.
valuation	individual	"Whale-watching companies are going to give Springer and her family a wider berth than the normal 100 metres. Boats will try to keep a distance of at least 150 metres. This means anybody planning to whale watch in Johnstone Strait should bring a good pair of binoculars."
valuation	individual	The trouble with focusing on cute individual members of the charismatic mega fauna, such as grizzly cubs, is that after awhile we can't see the forest for the bears, meaning the wild lands that bears cannot live without. [...] Given the concern about the shrinking population of grizzlies in Banff park, and the threatened status of grizzlies in Alberta, I suggest it is time for Parks Canada to take responsibility for rehabilitating its own orphaned cubs. In Russia, Prof. Valentin Pazhetnov has successfully rehabilitated 70 orphaned brown bear (grizzly) cubs since 1995 and returned them to the wild.

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valuation	individual	"But there's a problem, namely a tubby boar lingering around the dinghy. This bear is known to be trouble: it once spent the afternoon gleefully bouncing on the inflatable—make that deflatable—dinghy."
valuation	individual	It's easy to get attached to these remarkable mammals. For this reason, whale watchers don't name calves the first year they show up. "If you name them and then they don't come back after the course of the winter, it's pretty heart-rending," he said.
valuation	individual	"Our second day on the inlet we watched Rock and Roll, brother and sister grizzlies, around four years old, as they plodded along the shore, pushing over boulders to feast on the juicy crustaceans beneath. It was comical to watch as they lifted one rock after another, as though searching for lost keys under couch cushions. When the boulder was too heavy, the two would work in tandem to roll it over, then share in the catch. When they tired of the hunt, they wandered over to some rotting wooden pylons, left over from a cannery that operated here in the 1920s. The pylons are now covered in barnacles and mussels, a perfect back-scratcher for a grizzly, and the two siblings slowly rubbed up and down the poles like exotic dancers."
valuation	individual	Being a scientist, Black is reluctant to acknowledge a personal bond with the animals."But they might recognize us," she confesses quietly, as if violating a professional code. "They seem almost as curious about us as we are about them. We think they might be seeking interaction."Black once watched as CA 51 and a juvenile corralled a school of salmon. That was unusual, but not as unusual as what followed. The juvenile surfaced with a dead salmon in its teeth and gently released it alongside the inflatable. A crew member reached out and hauled it aboard, earmarked for dinner."It makes you wonder," Black says.
valuation	individual	"Children especially adore the whale. They insist the feeling is mutual. Others aren't so sure. The fact is, no one really knows, because Luna isn't talking."
valuation	individual	"We're very excited she made it through the winter," said John Ford, Fisheries and Oceans Canada's marine mammal scientist at the Pacific Biological Station in Nanaimo.
valuation	individual	Stronger bears may insist on fresh-caught salmon, and fishing techniques vary as much as individual personalities. Some bears wade in and swat fish with their paws. Some stand on the bank and pounce. "We had one that used to belly-flop off a log into a shallow eddy and try to stun the fish," recalls naturalist Kerry Dawson. "Others do a lot of snorkelling with their heads underwater."One notable snorkeller is The Hummer. "In the water, where he's usually fishing, he's always humming. When his head goes underwater he stops, you can't hear him, and as soon as it breaks the surface you hear the humming start again."
valuation	individual	"iPattinson parks the bus and checks that The Troll isn't lurking under the bridge. An adult male bear, The Troll has been known to climb up and give bear watchers a view that's a bit close for comfort."
valuation	individual	"Their social life is like a soap opera," said Allen of his ursine actors. "Everyone sleeps with everyone and so you don't know who is true or not. They love to cheat; after all, it is a better strategy for their survival."That's why I started the hair trapping and the DNA work because this will finally tell me who the fathers are."
valuation	individual	Townfolk and tourists have dubbed the three-year-old whale Luna, and often come to the water to visit with him. Biologists, who prefer to call him L-98, wish everybody would just leave the whale alone before he forgets his roots. It may be too late: The orca seems to love people, a fact that is rapidly complicating the debate around what to do with him.
valuation	individual	Reading the headline "Bear Hug" and a caption that read, "A trained bear shares a tender moment with his owner in downtown St. Petersburg, Russia," made me wonder if people can still be tolerant of this type of entertainment. The bear in the picture appears to be a sloth bear, the type of bear frequently exploited in Russia and made to "dance" for tourists. These bears are poached from the wild as young cubs after their mothers are shot. They are then subjected to abuse that we can't even imagine. After their spirit is broken, the bears spend endless hours tethered to a pole in a hot, dusty street in temperatures that are unlivable. To make them follow their owners and "dance" upon command, a rope is forced through an open wound in the nose, lip and upper pallet. This rope - or chain, as shown in the picture - is tugged to make the bear appear to "dance." Dancing, it is not.
valuation	individual	As Tom led us on a short walk along the river, Freebie showed up on the opposite shoreline. So named because she is the one bear that tends to hang around the lodge. "She is a little lazy so looks for hand-outs. Even though she doesn't find anything, bears are creatures of habit so if I see a bear near the lodge, it is Freebie," says Tom who says that basically bears treat humans as they do each other. "They mostly ignore us." This is true with Freebie as she lumbers along the shoreline paying us little heed.
valuation	individual	"There are quite a few bald eagles in British Columbia, but these two have become part of the community, so to speak. They've been here a couple of years and have grown on people," he [construction manager] said.
valuation	legal	"Customers make the decision about how they want to interact with the wilderness," she said. "My job as minister is to make sure we have good science and are conserving the numbers."
valuation	legal	"A 63-year-old professional whale-watching guide is accused of twice disturbing orcas last summer, one of the first cases of its type in a decade to go to trial."
valuation	legal	Maya said he was not within 100 metres in the first incident, but was in the second. The retired teacher turned whale-watching guide said his seven-metre boat began drifting into shore, and he had no choice but to turn the motor on or risk harm to his boat and passengers. Whale-watching guidelines say that a boat shouldn't be within 100 metres of a whale or pod with its motor on. Whale-watchers say the regulations are evolving and subject to interpretation and different views of science. Several of the many whale-watching guides filling the courtroom questioned just how one can divine when a whale is disturbed.

Appendix A: Values analysis data

Values analysis data

valuation	legal	Photographs show Sir Paul and his wife, Heather, patting a white-coated seal pup as they visited the ice floes to protest against the Canadian seal hunt. At one point, the pup took exception to Mrs. McCartney's caresses and snapped at her. Roger Simon, area director for the Department of Fisheries and Oceans in the Magdalen Islands, said the offence was so minor it does not warrant taking the couple to court. "It's almost like saying you're going 51 kilometres in a 50-kilometre zone," Mr. Simon said. "If a fishery officer had been present, something like a warning would have probably been issued, saying, 'Well, if these pups are still nursing, we suggest that you don't pet them - just watch them.' "
valuation	legal	"The Mexican government is legally responsible for these dolphins, captured for a "swim-with-dolphins" scheme. Yet, despite warnings, nobody ensured there was an adequate hurricane evacuation plan in place - again, mandated by law - in a hurricane capital of the world."
valuation	legal	"Killer whales are entitled to the protection of the courts, a judge said Monday as he fined an American whale-watching guide \$6,500 for disturbing the endangered mammals."
valuation	legal	(proposed change to law in Yukon, which currently defines game farm animals as wildlife, thus belonging to the Crown rather than to the game farmer)
valuation	moral	One of the major donors, Michael Mayzel, an executive vice-president of Daymen Photo Marketing, who with his business partner, Uwe Mummenhoff, contributed a "very significant" amount of money to the project - he refused to say exactly how much - said he did so because of his special regard for bears. "The killing of bears through hunting has always appalled me," Mayzel said. "Because it's just senseless, particularly when people are brought in from other countries strictly to hunt and kill bears, wolves and so on. I just find it appalling. Hunting for food is one thing, but hunting for trophies is wrong."
valuation	moral	"There is, however, a third compelling argument upon which we cannot place a dollar value. This argument is a moral one: The argument that we should end the grizzly hunt because it is simply wrong to kill one of our most culturally cherished species for fun and profit. The argument that grizzlies have intrinsic worth, distinct from their ecological role or economic contribution. The argument that our children have a right to witness the magic of seeing a bear in the wild."
valuation	moral	Reports on experience watching Bighorn sheep by side of road. Another car approached close enough to hit the sheep: "He delighted in watching the sheep temporarily lose its balance and tumble forward when the car thudded its hind end... I am often embarrassed to be a human."
valuation	moral	On our ferry, there is much discussion about the future of grizzlies and their place in the world. "We're not the only intelligent life on the planet," says Davis. "There's got to be room for all of us." His passengers are unquestionably travellers with a conscience. They deplore the effects of global warming and continuous human interference - through forestry, and oil and gas development, not to mention poaching and hunting - have had on critical grizzly habitat.
valuation	moral	"The saddest cases of all are when humans have tried to tame wild creatures. [...] There are many ways to take pleasure in the glory of nature. Birding is now the Number 1 leisure activity in North America. And eco-tourism offers people a unique look into interesting and different worlds. Let's enjoy nature as it was meant to be enjoyed."
valuation	moral	"As with our human relationships, respect is crucial in dealing with wildlife. And that means all living creatures, including the ducks in the park, have the right to feel safe in their own homes. The animals we treat here at the Wildlife Rescue Association of B.C. frequently come to us because of conflict with humans. Sometimes we inadvertently trample the rights of our wild neighbours - perhaps because they are largely invisible or because we don't fully understand what their needs are."
valuation	moral	Chris Genovali, executive director of the Raincoast Conservation Society, the organization that commissioned the report, said Murray's decision to continue the hunt is based solely on "special-interest politics" not good business. "There really is no ecological, economic or ethical justification to continue to hunt grizzlies for sport. The bottom line for us is that the hunt is not only bad for grizzly bears, it's bad for business."
valuation	negative	Although I'm not an admirer of reptiles, I tried my best to like these prehistoric-looking, miniature dinosaur-dragon lookalikes. "They are ugly," I inadvertently said aloud. "Not at all!" Ernesto bristled. "Just because you are Homo sapiens you think you are superior to other species. All species have their beauty! Even the marine iguanas!" A little later, I watched iguanas clearing their nostrils, spraying salt water on their companions. "Can I say they're disgusting?" I asked him. "No! That's worse than ugly."
valuation	negative	"That's when [...] I came toe to tail with a surprisingly black (not green) gator. Although he appeared docile, I sensed his powerful jaws could whip around and crunch my leg in less time than it takes to say "cheese." Slowly, I turned."
valuation	negative	So why did I dive at the chance to snorkel with sharks and stingrays in Punta Cana, Dominican Republic? With some trepidation, I agreed, at least somewhat, in order to allay my fear of sharks, which I perceive as voracious monsters of the deep. I am not alone
valuation	negative	Everyone is pushed off from shore. And one by one we start to paddle. Before you can say, "Hey, isn't that a whale?" I am in the drink. Flailing in the water like a fish on land. Drinking the murk and convinced that the whales are going to eat me. [...] At first the whales are merciless. I swear they are laughing at me. Smelling my fear and poking fun. They bump the kayak, gently raising it into the air forcing me to test my concentration with the paddle. But they don't bite and I'm not eaten and I'm able to take a minute to look around. It is breathtaking.

Appendix A: Values analysis data

Values analysis data

valuation	negative	(re: probosal to relocate bears to bolster numbers in the North Cascades) "A number of directors, chief among them Nicola Valley director Mike Rose, believe boosting grizzly numbers in the area from the U.S. border to an area south of Merritt will mean more encounters with humans. They also say forestry and recreational activities could be shut down by government managers to avoid those encounters."
valuation	negative	"That whale is a damned menace," snapped one man, standing at the float plane dock, a few metres from where Luna and the children played their game of tug-of-war. "I want it out of here. It doesn't belong here."
valuation	negative	"Once considered a nuisance, bats are fuelling tourism in Texas"
valuation	negative	The remarkable tolerance shown by the Department of Fisheries and Oceans toward Luna's dangerous behaviour reflects the radical makeover that has occurred in the public image of killer whales. No longer are they feared as the most efficient killing machines on the planet, capable of hunting in bloodthirsty packs to bring down the largest creatures in the ocean. Now the resident pods are viewed as docile, even fragile creatures that graze contentedly on salmon, while maintaining a life-long commitment to their families. Marine mammal regulations that keep whale-watching boats from operating too close to pods are not there for the protection of bite-sized tourists, but to keep the whales from being overly harassed. In the same way that early studies of orcas quickly dispelled the stereotypical view of them as simply vicious killers, Luna may now be doing us all a service by stopping the pendulum of public opinion from swinging too far in the other direction. Through his familiarity with humans, Luna is reminding us that killer whales are immensely powerful, wild creatures that should not be mixing with people, no matter how inspirational or awe inspiring they may be.
valuation	negative	"Whales are considered more "cute and cuddly" while sharks will always suffer from an image problem, aided by the impact of the movie Jaws, which helped legitimize the slaughter of sharks by casting them as savage killers. Globally, "it's been hard to get to the point where people are paying to see them and care about them," Tapelko said."
valuation	negative	Meanwhile, my heart is palpitating and my pupils are wide. I'm all too aware of this massive animal's ability to outrun and outswim me, kill me with a single swipe of its powerful paws and cover the distance between us before I can make it back to our boat, sitting in the estuary a few steps away.
valuation	negative	"The notion of a small grizzly is comforting.[...] Somewhere in the dense woods, a tree snaps. The hair on the back of our necks stands on end [...] Bears – black, brown or white – will go out of their way to avoid a close encounter with the human kind, and knowing this helps quell our rising hysteria. So does the knowledge that none of the guides have ever used their little bottles of pepper spray, their only weapon."
valuation	other	The bull orca looked like it was headed straight for our kayaks, cruising at about five knots. "Everybody get the kayaks into a raft formation," yelled our guide Krista Bogen. "Splash your paddles so he hears that we're here!" You can tell you are getting your money's worth when Sea to Sky's guides – usually so congenial and keen on group decisions – start barking orders.
valuation	utilitarian	"We trust Ontario hunters will be willing to accept these new measures. This is a reasonable balance to enhance wolf conservation and to maintain hunting opportunities and protect farmers property rights."
valuation	utilitarian	"We view this unprecedented initiative as part of a larger effort to create a conservation-based economy on the central coast," said Alex Chartrand, Wuikinuxv Nation chief. "Our value system does not support killing animals for trophies and our communities are working hard to develop a sustainable wildlife viewing industry."
valuation	utilitarian	First nations say sport hunting and eco-tourism can't co-exist, arguing that a live animal is worth much more to their local economies than a dead one.
valuation	utilitarian	On the other hand, their own position is not exactly hyper-rational, either. The limited amount of whaling that the Norwegians do in defiance of the moratorium (quite legally, since Norway entered a reservation when the ban was first introduced in 1986) is merely a disguised subsidy to coastal communities: Norwegians don't eat whale-meat any more, and the stuff was just piling up in cold storage until they started exporting it to Japan. The 550 whales a year that Japan kills in the name of 'scientific research' end up in restaurants, but 61 per cent of Japanese have not tasted whale-meat since childhood if at all.
valuation	utilitarian	Ellis, who operates the Bella Coola Outfitting Company, will now lead wildlife-viewing tours himself. "I honestly believe there's room for both hunting and grizzly viewing on the coast. I think honestly that the way it's going down, there's interest for both. I think to avoid complication, certain areas have to be designated to hunting and others to viewing."
valuation	utilitarian	"The historic relationship between man and wolf is uneasy at best, tortured at worst. And Ontario Natural Resources Minister David Ramsay has announced that he plans to try and alter that relationship, to ensure that Ontario's wolves continue to flourish. What Ramsay has proposed is simply applying the principles of wildlife management to the management of wolf populations in the province. If you believe at all in scientific wildlife management, this is really the only route to take."

Appendix B: Scientific literature analysis data

Scientific literature analysis data

<i>keyword</i>	<i>subkeyword</i>	<i>note</i>
benefits benefits	conservation conservation	female bears with cubs feed more when tourists present, because large males absent Documents the low number of nests (34) for a bird, and suggests that "Ecotourism might be a suitable means to help to protect the species, but care has to be taken to avoid any further disturbance"
benefits benefits	conservation conservation	Uses tourist (and other) ships to get opportunistic data on whale numbers and distribution. suggests that the higher education and focus on specific rare species of birdwatchers may require hosting communities to be more aware of, and work to conserve, specific ecosystems than those catering to tourists "for whom a muddy forest trail, a waterfall, and a few unusual organisms may constitute an exotic adventure."
benefits	conservation	"Tourism development may result in negative impacts on natural resources owing to overuse and mismanagement. However, tourism may also play positive roles in natural resource conservation, which has rarely been verified in practice, although some researchers have demonstrated this in theory.[...] In this article, taking Jiuzhaigou Biosphere Reserve (JBR) as a case study area, based on social survey, on-site field survey, and the interpretation of the remote sensing images, we present a positive case where the environment is not degraded as tourism is increasingly developing, and some ecological indicators such as vegetation coverage are even improving. The relationship between tourism, natural resources, and local community is analyzed in order to identify the roots behind the positive story."
benefits	conservation	"In this paper, we analyse long-term whale shark Rhincodon typus sightings collected by ecotourist operators and evaluate the validity of conclusions drawn from the data for scientific and conservation purposes. [...] we discuss the limitations of using ecotourist operators as non-specialist volunteers for data collection but conclude that their use can be beneficial for long-term, broad geographic studies such as this."
benefits benefits	economic economic	contingent value survey of tourism potential "Although only 6.9% of park management costs were recovered, visitors were willing to pay over 10 times the current entrance fee, indicating a substantial potential for increased revenue."
benefits benefits	economic economic	Supplementary feeding as economic benefit to local people who supply the food. "Guiding for bird watchers, however, is less demanding, better paid, values knowledge of natural history, and has minimal language requirements. The names of local bird species comprise the only English many successful guides speak. Although knowledge of natural history was crucial to many indigenous communities around the world, the dependence on market economies has resulted in the disappearance of this knowledge from many areas."
benefits benefits	economic economic	reviews economic potential of birdwatching "Ecotourism is largely perceived to safeguard pristine areas and thereby to contribute to the conservation of the rich tropical biodiversity. Revenue from ecotourism operations may compensate local people for the abandonment of other non-sustainable uses and might allow a gentle development of regions where economic alternatives are rare."
benefits	economic	Revenue from ecotourist operations used to subsidise insurance for farmers' livestock/other losses to snow leopards.
definition	definition	Proposes term "incidental ecotourist" for cases where wildlife is encountered, but not the sole (or even primary) focus of the tourism.
justification	disease	" These data provide baseline parasitologic data for this population as part of a comprehensive health-monitoring program. With the advent of ecotourism in this study area, continued monitoring is indicated for insuring the health of both gorillas and humans in the Bai Hokou study area. "
justification	disease	"Surprisingly, there are few scientifically substantiated reports of negative consequences for the health and viability of provisioned animals. There are, however, a number of reports that imply or conclude that feeding wild animals is detrimental."
justification	disease	"The purpose of this study is to examine the effects of ecotourism on the behavioral ecology of Bwindi's tourist gorilla population. The goal is to determine if dietary, ranging, and grouping patterns of tourist gorillas differ from wild populations and what health implications, if any, these differences may have."

Appendix B: Scientific literature analysis data

Scientific literature analysis data

justification	energetics	"Avoidance responses benefit wildlife when an encounter with humans can cause injury or death, but flushing responses may prevent the birds from using preferred foraging sites or may cause elevated levels of stress [...] Belanger and Bedard (1990) found, however, that human activities resulting in flight and alertness increased energy expenditure by snow gees and reduced their energy intake due to lower feeding rates"
justification	energetics	"Avoidance responses benefit wildlife when an encounter with humans can cause injury or death, but flushing responses may prevent the birds from using preferred foraging sites or may cause elevated levels of stress [...] Belanger and Bedard (1990) found, however, that human activities resulting in flight and alertness increased energy expenditure by snow gees and reduced their energy intake due to lower feeding rates"
justification	energetics	"Vigilance behaviour conflicts with other activities, such as sleeping, feeding, grooming or fighting. As such, it is costly because it requires limited resources of time and visual attention. Continued stimuli that are perceived as threats can elicit a hormonal chain reaction resulting in increased cardiac output, increased levels of 'stress hormones', and the formation of glucose at the expense of protein and fat."
justification	energetics	"Disturbance may force the animals to leave a suitable foraging site to look for another one that could be of lower quality. Increased movements could entail high energetic costs, especially when caribou have to wark in deep snow, and eventually affect body condition and survival."
justification	energetics	"this study sought to identify the stimuli bears utilize to assess risk and to determine whether fleeing or staying in the presence of bear viewers had significant fitness effects, via impacts on nutrition and condition."
justification	energetics	"Many lizards respond to people as if they were predators, by readily escaping to refuges. However, an increase in the frequency of these antipredatory strategies can lead to a loss of body condition, which may have important consequences for short and long term fitness."
justification	energetics	not really explicit, but energy costs of predator avoidance appear to be as far as authors take it
justification	energetics	"One important issue that is beginning to be addressed concerns the biological consequences of observed avoidance responses. What are the consequences if a dolphin spends 10 s longer underwater on average when a boat interacts with it? It is necessary to relate the effects of the responses observed to standardised parameters such as the energetic budget of the species to assess their biological significance."
justification	habitat	"It is feared that harassment, particularly in the vicinity of some warm springs winter refugia, can drive manatees a way to less favorable areas, thereby increasing the risk of cold-related illnesses."
justification	habitat	"If human activity on the refuge is displacing migratory birds to other areas during the early winter, the refuge is not meeting its primary objective of providing habitat for overwintering waterbirds."
justification	habitat	"Displacement generates gaps in resources for birds [...] Such gaps force birds to meet their needs elsewhere, which may include less-preferred habitats. Gap formation in habitats is a common process that leads to habitat fragmentation."
justification	habitat	"Managers were concerned about humans displacing bears and whether bears had sufficient access to salmon to continue concurrent sport fishing and bear viewing in a safe environment."
justification	habitat	"The study provided evidence that sustained disturbance associated with footpaths, roads, and railroads reduced local habitat quality for waterbirds and the carrying capacity of estuaries."
justification	habitat	Human activities can affect an animal's ability to feed, rest, and breed if it is unable to habituate to the disturbance [...] More sensitive species may find it difficult to secure adequate food or loafing sites as their preferred habitat becomes fragmented and recreation-related disturbances increase.
justification	habitat	"Whilst we acknowledge that behavioural indicators generally used to assess tolerance to disturbance (e.g. flight initiation distance) may not reflect population level responses, we believe that a behavioural approach is essential for certain management situations. Visitors to protected areas may reduce the biodiversity they seek via direct or indirect disturbance. [...] Under this paradigm the question becomes not whether or not a species is negatively affected by human disturbance, but what the probabilities are of any given species using a particular site within a protected area under different levels of disturbance."
justification	habitat	Human activities can affect an animal's ability to feed, rest, and breed if it is unable to habituate to the disturbance [...] More sensitive species may find it difficult to secure adequate food or loafing sites as their preferred habitat becomes fragmented and recreation-related disturbances increase.
justification	habituation	"Habituation can be defined as "reduced response to repeated stimulation not attributable to fatigue or sensory adaptation". [...] Humboldt penguins appear to have little habituation potential to human disturbance. [...] stress responses in Humboldt penguins remain extremely high in comparison with other species"
justification	habituation	Rates of habituation measured, but no explicit discussion of whether management should encourage habituation. It is implied that habituation would be good by reducing the stress response.
justification	habituation	"Although there are instances in which manatees will actively seek out human contact, many dispute whether this should be encouraged for the long-term health and safety of the species."

Appendix B: Scientific literature analysis data

Scientific literature analysis data

justification	habituation	"In contrast to their offspring, [adults] apparently habituated towards human observers. This allowed them to continue incubation while at the same time preventing the exposure of nests to predators and explains why hatching success is indistinguishable between undisturbed and tourist-exposed nest sites.[...][Unclear whether real habituation, or whether sensitive individuals are displaced] [...] We expect the threshold for habituation to be much higher in the non-flying hoatzin chicks than in adults because their risk of predation is presumably much higher."
justification	habituation	"If yellow-eyed penguins showed signs of habituation, an increase in visitor numbers might not be as detrimental. However, yellow-eyed penguins appear to grow accustomed only to minimal and well-regulated exposure to humans (e.g., people in hides behind camouflage netting), but remain timid where the presence of unconcealed people is unpredictable, at close quarters, and with large groups."
justification	habituation	"These results should not be interpreted to mean that Magellanic penguins habituate readily to human presence and that, therefore, tourist visitation at penguin colonies is not a problem for breeding birds."
justification	habituation	Discusses dependence on human food sources and loss of foraging efficiency/ability. Also discusses habituation, and dangers posed by intentional (hunters/fishers/poachers/harassers) or unintentional (cars, boats, etc) human injury/death, and claims "It is in a wild animal's best interest, therefore, for them to remain wary of people"
justification	injury	"Although human presence in wildlife areas may provide an important economic benefit through ecotourism, exposure to human pathogens may represent a health risk for wildlife."
justification	injury	"The intent of these various laws is to assure that manatees are protected from human-associated impacts (i.e. disturbance and direct mortality) and that important habitat is identified and protected."
justification	injury	"Even outside the breeding period, birdwatchers should minimize flushing of birds, ssince this has high physiological costs for many species and can be fatal to birds during times of food shortage."
justification	normalbehaviour	"As humans seek recreation, wildlife behaviour and the quality of the visitor experience can be altered or negatively influenced."
justification	population	Various justifications reviewed, but all centre on population concerns, or on rather strange economic arguments:"For economists, the desirability of special action to save sea turtles usually hinges on whether market failure is present."Also mentions exstence, bequest and option values.Under the rubric of "some philosophers", Leopold's land ethic, Passmore's stewardship, and Sagoff's "rights to continue to exist" covered.Economic values returned to under direct consumptive values, and the notion of keystone species in ecosystems providing essential EGS.
justification	population	"[ecotourism], therefore, has the potential to cause all the ill effects noted above, with the possible result of population decreases that could endanger colonies."
justification	population	"In assessing tourism-related disturbance, an indicator of human impact must be chosen for analysis. Often effects upon key parameters such as mortality rate and population size are considered to be the ultimate criteria for identifying negative impacts, however, a decrease in population numbers reflects an extreme impact. Increasing attention is being paid to the possible presence of subtle and hidden environmental impacts of tourism, including the identification of sublethal physiological effects[...] which may reduce individual fitness and could ultimately have population-level consequences."
justification	population	"Potential responses to human disturbance at breeding colonies of waterbirds include reproductive failure, population declines and displacement from activity areas"
justification	population	"They can unintentionally disturb colonial nesting seabirds, breeding pinnipeds and other animals, or trample vegetation. The can also introduce exotic species[...]"
justification	population	"In addition, there are critical life history stages during which foraging success is an important constraint on survival. For example, young wading birds are often less successful at foraging than adults and have higher mortality rates. Similarly, during nesting the energetic requirements of adults greatly increase due to physiological stress and provisioning of nestlings"
justification	population	"The rare empirical evidence [for rainforest animals] available indicates that even low numbers of visitors can change activity patterns or expel rainforest animals from potential foraging or breeding sites. All of these effects can reduce reproductive success and therefore hamper conservation goals of protected areas. At the same time negative impacts on wildlife reduce both teh ecotouristic as well as the economic value of the visited area."
justification	population	"Taking for granted that the use of whales as a resource for ecotourism does not pose any ecological dilemmas is an equally problematic assumption. Often whale-watching boats produce too much underwater disturbance (noise), leaving whales disoriented and frightened. This can potentially affect their social lives, their capability to feed themselves, or their ability to nurture their offspring. Some argue that such stresses can actually compromise the ecological resilience of whales and that, as such, whale watching might have serious negative impacts on the long-term welfare of the species (Monteiro 1998). In fact, this very issue became a point of contention in Lajes do Pico when whale watching was introduced in this village in the late 1980s. While many embraced this new activity as the conversion of an exploitative relation with whales into a ecologically sustainable practice, some people in Lajes, including some former whale hunters who relied on "local traditional knowledge," became worried that unless this activity were regulated, the well-being of Lajense whales might be seriously compromised."
justification	population	"Therefore, any human impacts or interactions taht negatively affect manatees ability to use these areas during the winter season must be considered seriously given the endangered status of the Florida population."

Appendix B: Scientific literature analysis data

Scientific literature analysis data

justification	population	"Unfortunately, it is seldom possible to infer biological significance based on short-term behavioral change. It is rarely known whether, and in what ways, short-term responses translate to longer-term change in reproduction, survival, or population size"
justification	population	"Unfortunately, it is seldom possible to infer biological significance based on short-term behavioral change. It is rarely known whether, and in what ways, short-term responses translate to longer-term change in reproduction, survival, or population size"
justification	population	"Effects on survival or breeding success are often seen as the ultimate criteria for identifying adverse effects. However, even subtle impacts of human disturbance on physiological parameters, such as increased heart rate, stress hormone levels and energy expenditure, may reduce individual fitness and can eventually have population-level consequences."
justification	population	"Studies evaluating effects of human activity on wildlife typically emphasize short-term behavioral responses from which it is difficult to infer biological significance or formulate plans to mitigate harmful impacts."
justification	population	"Studies evaluating effects of human activity on wildlife typically emphasize short-term behavioral responses from which it is difficult to infer biological significance or formulate plans to mitigate harmful impacts."
justification	population	"However, the effects of these [time budget] changes are often difficult to assess. The assumption that any change is negative is simplistic and ignores the evidence that feeding has helped a number of endangered species to recover."
justification	population	"The purpose of this paper is to report on nesting success in two Wood Storks colonies in the southern llanos of Venezuela, and to quantify the influence of predation and human disturbance in the reproductive parameters."
justification	population	"Also, snowmobile and ski trails established for ecotourism may favor wolf access to caribou."
justification	reproduction	"It is suggested that the elevated level of nest failure observed in the boat-treatment group is evidence of biologically significant disturbance."
justification	reproduction	Displacement of nests to less viewed areas leads to variety of reproductive issues due to less optimal habitat features.
justification	reproduction	"In the present paper, we examined the effects of ecotourists on reproductive success of hoatzins in the Cuyabeno Lakes by comparing birds at undisturbed nests in off-limit zones and at tourist-exposed nests."
justification	reproduction	"It is important to note that not all of these effects may be biologically meaningful in measuring detrimental effects of human disturbance. For example, if a bird temporarily flushes from its nest, but does not suffer decreased reproductive success as a result, then the disturbance can be argued not to have had a real effect. Nisbet (2000) argues that only reductions in breeding success, increased adult mortality or declines in local, regional or total numbers can be considered adverse effects because birds are unlikely to be able to compensate for these losses."
justification	reproduction	[female bears feed more when tourists present; male bears feed when tourists absent, but feed intake not depressed] "With the strong positive relationships between mean female mass and litter size, this may in turn increase population productivity"
justification	reproduction	"Behavioral responses at the time of disturbance are typically used as indicators of effects when determining safe approach distances for birds. However, in this study, behavior during disturbances was unrelated to the eventual effect of disturbance."
justification	reproduction	"Foraging success is an important factor determining the reproductive success of wading birds"
justification	reproduction	Physiological effects such as increases in heart rate without overt changes in behavior except perhaps increased vigilance. Nisbet (2000) points out that this response should not be considered as adverse unless it decreases survival or reproductive success. Moving away from a nest, territory, feeding site etc. and then returning after the disturbance ends. Again, Nisbet (2000) points out that this should not be considered adverse unless the movement results in loss of nest, status, food resources etc. Permanent movement away from a nest, territory, feeding site or other resource (i.e., abandonment or "desertion"). This may likely have adverse effects. In colonial/group living species, abandonment of a colony, home range or even larger scale distribution. Unless the population is able to relocate successfully, then adverse effects will result. Even if relocation is possible, the new site may not be ideal and reduced survival and reproductive success may result. Disturbance results in direct reduction of reproductive effort either by loss of eggs and/or young, failure to reach reproductive maturity, attract a mate or find a suitable nest site. Disturbance results in an increase in adult mortality in local, regional or total populations.
justification	reproduction	"While we (and others for that matter) have not shown specifically that interactions with swimmers acutely increase mortality or reduce fecundity of manatees, one can assume that these effects are negative due to the fact that this species is at the limits of its temperature tolerance in the winter in central Florida, and would not be able to occur there were it not for the warm springs in the area."
justification	stress	"Vigilance behaviour conflicts with other activities, such as sleeping, feeding, grooming or fighting. As such, it is costly because it requires limited resources of time and visual attention. Continued stimuli that are perceived as threats can elicit a hormonal chain reaction resulting in increased cardiac output, increased levels of 'stress hormones', and the formation of glucose at the expense of protein and fat."
justification	stress	"We attempted to put the corticosterone effect of a tourist visit in context by comparing it to corticosterone secreted in response to capture and restraint, a novel event most likely perceived by these penguins as a severe stressor, similar to a predation attempt."

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justification	stress	Historically, studies on the effects of anthropogenic activities on wildlife focused on changes in demographic effects. Only recently have studies begun to examine how internal physiological factors are modified in free-living animals exposed to anthropogenic disturbances. Quantifying behavioral and physiological responses and their variations in individuals is important. For example, appearance of external "calm" may not be indicative of significant internal physiological changes in an individual. Furthermore, although factors such as breeding success may not be affected immediately by human activities, long-term consequences due to physiological effects of chronic stress have the potential to affect individuals far into the future, long after a study is terminated. Studies in humans show that the negative consequences of stress early in life may not manifest until adulthood.
justification	stress	"Chronically elevated levels of glucocorticosteroids, however, can cause immunosuppression, muscle wasting, reduced growth rates, and, ultimately, death (Sapolsky 1987; Johnson et al. 1992; Wingfield 1994). High levels of glucocorticosteroids can be particularly harmful in young because they are incapable of escaping from a perturbation (i.e., altricial species Starck 1993). Furthermore, young subjected to stressors and/or reduced parental care shortly after birth or hatching can suffer negative consequences later in life."
justification	stress	"Even outside the breeding period, birdwatchers should minimize flushing of birds, since this has high physiological costs for many species and can be fatal to birds during times of food shortage."
justification	touristexperience	"The primary purpose of a wildlife viewing site is to provide a satisfactory viewing opportunity with minimal impact. Consequently, it was necessary to determine whether the act of viewing may reduce the opportunity to view moose."
justification	touristexperience	"The rare empirical evidence [for rainforest animals] available indicates that even low numbers of visitors can change activity patterns or expel rainforest animals from potential foraging or breeding sites. All of these effects can reduce reproductive success and therefore hamper conservation goals of protected areas. At the same time negative impacts on wildlife reduce both the ecotouristic as well as the economic value of the visited area."
justification	touristexperience	Tourist safety: animals become aggressive when fed.
justification	touristexperience	"Managers were concerned about humans displacing bears and whether bears had sufficient access to salmon to continue concurrent sport fishing and bear viewing in a safe environment."
justification	touristexperience	survey of tourist experience
justification	touristexperience	survey/interview work on identifying why people seek wildlife, and what types of experience to provide.
justification	touristexperience	"As humans seek recreation, wildlife behaviour and the quality of the visitor experience can be altered or negatively influenced."
justification	unclear	"Provisioning of macaque groups can lead to elevated group sizes, escalating aggression and infant mortality (Berman et al. 2004), dependence on food hand-outs and negative monkeytourist interactions (Zhao and Deng 1992). Consequently, provisioning macaques for tourists may provide increased management challenges."
justification	unclear	"disturbances caused by humans may force permanent changes in life history characteristics of organisms so they can survive such perturbations. How anthropogenic disturbances will be dealt with in conservation practice requires integration of scientific information into protocols for managers at the field level, and enormous political efforts (including cultural and economic change). However, much research remains to be done at the basic biological level. We still know relatively little about how animals respond to environmental change to adjust their life cycles accordingly and thus maximize fitness (Wingfield, 2004aGo, bGo)."
justification	unclear	"A review of 27 studies on the effects of wildlife observation and photography on birds reported negative effects on birds in 19 of the studies[...] Here, disturbance mainly refers to intrusion and excludes habitat modification."
justification	unclear	In intro, effects of human presence include avoiding potential feeding patches, lowered feed intake, and physiological stress effects. In conclusion, emphasis appears to be on "normal" flight distance and "undisturbed" habitat.
justification	unclear	"The idea that changes in behavior associated with human activity could be an adaptive response instead of a negative consequence has only recently been considered. The results of this study support that responses to human activity are analogous to prey responding to the risk of predation and that perceived risk is balanced with the benefit of food acquisition or resource use."
justification	unclear	"Given the high conservation concern of these species and the rarity of waterholes, we suggest that human visits continue to be regulated [...]"
justification	unclear	"Provisioning of macaque groups can lead to elevated group sizes, escalating aggression and infant mortality (Berman et al. 2004), dependence on food hand-outs and negative monkeytourist interactions (Zhao and Deng 1992). Consequently, provisioning macaques for tourists may provide increased management challenges."
justification	unclear	"Some bears continue to avoid people at these streams, apparently unable to habituate. [...] This change in management provided the opportunity to evaluate whether the degree of tolerance of people indeed determined the pattern of use of adult bears. [...] A bear population can adjust numerically and/or behaviourally to impacts from human activity. Habituation has allowed many bears to fish near people [...] Unfortunately, habituation increases the probability of food-conditioning."
justification	unclear	"Measurements of behaviour have often been used to evaluate the effects of disturbance. Woodland caribou and Asian rhinos were shown to spend less time feeding and more time alert when visited by ecotourists. The foraging behaviour of bighorn sheep was also disrupted by tourists. Therefore, changes in resting, foraging and vigilance behaviour could indicate disturbance of wildlife by ecotourists."
justification	unclear	"Beside changes in behaviour, displacement of animals from their preferred habitats to less profitable environments could have important consequences."

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justification	unclear	"the increase in dragon numbers was to a level generally not found naturally, however, and may have resulted in longer term, unmeasured ecological, behavioural and physiological changes."
justification	unclear	Historically, studies on the effects of anthropogenic activities on wildlife focused on changes in demographic effects. Only recently have studies begun to examine how internal physiological factors are modified in free-living animals exposed to anthropogenic disturbances. Quantifying behavioral and physiological responses and their variations in individuals is important. For example, appearance of external "calm" may not be indicative of significant internal physiological changes in an individual. Furthermore, although factors such as breeding success may not be affected immediately by human activities, long-term consequences due to physiological effects of chronic stress have the potential to affect individuals far into the future, long after a study is terminated. Studies in humans show that the negative consequences of stress early in life may not manifest until adulthood.
justification	unclear	"ecotourism can contribute to safeguard biodiversity and ecosystem functions in developing countries, even though meeting the requirements for ecotourism is extremely difficult."
justification	unclear	damage to coral reefs measured.
justification	unclear	After detailing differences in chick movement from natal nests, age of chicks at fledging, and perhaps fledging success between nests within view of tourist centre and those out of view, concludes with: "The long-term biological significance of these findings is, as yet, unknown but surely worthy of further research."
justification	unclear	It is probable that most wildlife species will demonstrate some degree of tolerance when human engagements take place within the wildlife setting itself [...] Tolerance, though, should not enter deliberations on this subject. Rather, debate should center on the long-term biological consequences of tourism."
measure	bodycondition	"We analysed the effects of tourism on escape behaviour of common wall lizards, <i>Podarcis muralis</i> , as well as on their body condition and health state (ectoparasites, blood parasites, and cell mediated immune response)."
measure	displacement	Measured habitat use of various bird species as a function of distance from dyke and number of cars using dyke.
measure	displacement	measured distribution and abundance in response to experimental intrusions
measure	displacement	measured presence, activity, fishing for habituated vs. non-habituated bears during a week-long extension of previous viewing season.
measure	displacement	"our objectives were to quantify the interactions between bears and people by determining: (1) the number, age, sex, and species of bears using the area, (2) the number and spatiotemporal distribution of live and dead salmon captured by bears, (3) the number and spatiotemporal distribution of sport fishing and bear viewing boats using the area, and (4) the number and locations of salmon caught by sport anglers. We were limited to observing natural variation in human and bear activity as experimental manipulations (e.g., temporal or spatial closure to human use) were prohibited."
measure	displacement	"The rare empirical evidence [for rainforest animals] available indicates that even low numbers of visitors can change activity patterns or expel rainforest animals from potential foraging or breeding sites. All of these effects can reduce reproductive success and therefore hamper conservation goals of protected areas. At the same time negative impacts on wildlife reduce both the ecotouristic as well as the economic value of the visited area."
measure	displacement	"Categories were: 1) no apparent response, 2) at least one bird lifts head, 3) at least one bird moves away from dike, 4) at least one bird leaves the area, 5) at least one bird vocalizes, 6) at least one bird stops foraging."
measure	displacement	"Factors eliciting displacement and the nutritional consequences of behavioural change were measured"
measure	displacement	"Even outside the breeding period, birdwatchers should minimize flushing of birds, since this has high physiological costs for many species and can be fatal to birds during times of food shortage."
measure	displacement	"The potential impact of human disturbance on wintering waterbirds using intertidal mudflats was considered by relating their numbers to the presence of nearby footpaths, roads, railroads, and towns."
measure	displacement	"disturbance of sea-birds or sea-lions, which we defined as causing adult sea-birds or sea-lions to temporarily leave the island for the relative safety of the air or water"
measure	displacement	"Based on decades of detailed behavioral records, we evaluated long-term impacts of vessel activity on bottlenose dolphins (<i>Tursiops</i> sp.) in Shark Bay, Australia. We compared dolphin abundance within adjacent 36-km ² tourism and control sites, over three consecutive 4.5-year periods wherein research activity was relatively constant but tourism levels increased from zero, to one, to two dolphin-watching operators. "
measure	displacement	"Based on decades of detailed behavioral records, we evaluated long-term impacts of vessel activity on bottlenose dolphins (<i>Tursiops</i> sp.) in Shark Bay, Australia. We compared dolphin abundance within adjacent 36-km ² tourism and control sites, over three consecutive 4.5-year periods wherein research activity was relatively constant but tourism levels increased from zero, to one, to two dolphin-watching operators. "
measure	displacement	"This paper specifically focuses on the impact of the efficacy and viewing activities that could be assessed by monitoring moose movement activity pre- and post-construction. Specifically to determine if the visitation rate and time of use by moose at the salt lick in Dixville Notch were affected by the construction and subsequent use of the wildlife viewing area."
measure	displacement	"We reviewed 64 articles from 20 scientific journals, five books and one report dating from 1971–1998. For each of five orders of birds, we summarized effects of disturbance on waterbird physiological parameters, behavior, reproductive success, nest distribution patterns, and breeding population size trends."

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measure	feedingrate	measured energy intake as salmon for bears feeding at a stream
measure	feedingrate	"We report the impacts of human visits at a waterhole used by mountain gazelles [...] and Nubian ibex [...] in the Ibex Reserve of Saudi Arabia."
measure	feedingrate	"Factors eliciting displacement and the nutritional consequences of behavioural change were measured"
measure	feedingrate	"Foraging rates were calculated for the pre- and post-disturbance observations as follows. Paces/min was the number of times a bird moved each of its legs during the observation period. Strikes/min was the total number of times the birds bill penetrated the water including both successful and unsuccessful capture attempts."
measure	flight	Measured FID at high-use site, low-use site, and where fence limits use to one side.
measure	flight	FID in response to experimental approaches by PWC and outboard.
measure	flight	Measured hatching success, fledging success, and stress hormones in both parents and juveniles, and flushing distance in adults.
measure	flight	"flight initiation distance, detection distance and post-disturbance response"
measure	flight	FID in response to experimental approaches by PWC and outboard.
measure	heartrate	"Heart rate change can be a reliable parameter to quantify penguin stress response to single disturbance events."
measure	hormones	"We reviewed 64 articles from 20 scientific journals, five books and one report dating from 1971–1998. For each of five orders of birds, we summarized effects of disturbance on waterbird physiological parameters, behavior, reproductive success, nest distribution patterns, and breeding population size trends."
measure	hormones	"plasma corticosterone (a hormone secreted in response to stress)"
measure	hormones	"Here we examined how Magellanic Penguin (<i>Spheniscus magellanicus</i>) chicks living in either tourist-visited or undisturbed areas of a breeding colony were affected by human visitation by comparing the baseline and stress-induced levels of corticosterone during three periods of the breeding season."
measure	hormones	"In the present paper, we examined the effects of ecotourists on reproductive success of hoatzins in the Cuyabeno Lakes by comparing birds at undisturbed nests in off-limit zones and at tourist-exposed nests. We also measured stress hormones in hoatzin chicks to evaluate the physiological effects of human disturbances."
measure	hormones	"Baseline levels of corticosterone return to normal after exposure of naive birds to humans. However, penguin chicks appear to show a heightened adrenocortical response to handling stress in nests exposed to tourists, compared to chicks living in areas isolated from human intrusions. Given that developmental exposure to stress can have profound influences on how individuals cope with stress as adults, this potential effect of tourists on chicks could have long-term consequences. This field endocrine approach identified a stressor not observed through monitoring behavior alone."
measure	hormones	"Blood samples were collected from all birds to allow later determination of circulating plasma levels of corticosterone."
measure	injury	anthropozoonotic diseases
measure	injury	Zoonotic diseases
measure	injury	Described incidence of anthropozoonotic mite infection in gorillas
measure	injury	Documents introduction of tuberculosis from humans to mongooses and suricates.
measure	injury	"killing sea-lions, or indirectly killing sea-bird eggs and chicks by scaring away the guarding parent and exposing the young to predation and/or, alternatively, overheating."
measure	injury	"To facilitate ecotourism and research, free-ranging mountain gorillas of Uganda have been habituated to humans. Testing of fecal samples of gorillas (n = 100), people sharing gorilla habitats (n = 62), and local pre- and postweaned cattle (n = 50) having access to these habitats[...]A large percentage of the local community does not follow park regulations regarding the disposal of their fecal waste, as self-reported in a questionnaire. This genotype may have been introduced into gorilla populations through habituation activities and may have then been sustained in their habitats by anthropozoonotic transmission."
measure	injury	" These data provide baseline parasitologic data for this population as part of a comprehensive health-monitoring program. With the advent of ecotourism in this study area, continued monitoring is indicated for insuring the health of both gorillas and humans in the Bai Hokou study area. "
measure	injury	Parasite loads in habituated gorillas
measure	landscape	Surveyed abundance and distribution of manatees.
measure	landscape	"from the distribution of manatee sightings, we conclude that the manatees avoid areas where boat traffic is high."
measure	pollution	"visible pollution caused by the disposal of gas, oil, or plastics"
measure	reproduction	"Disturbance may take the form of approaches by people or vehicles that are too close to breeding birds, or alternately loud noises from vehicles, both of which can cause birds to jump from their nests (Ward et al. 2002). These actions can lead to increased physiological stress on the birds (Walker et al. 2005), can expose their eggs or young to predators, or cause the eggs to roll out of the nest (Ward et al. 2002). "
measure	reproduction	"The suspected cause of decline is a reduction of fish and squid due to large-scale commercial fishing around the Falklands. [...] Diet analysis shows that Magellanic penguins have a greater reliance on squid and fish species being taken commercially. [oil spills and drilling mentioned] Ecotourism has increased rapidly over recent years in the Falklands, with penguins being the main attraction. Monitoring of the affects of tourism has concentrated on breeding success and population change, and the results indicate no detrimental affects on penguin populations at the current level."
measure	reproduction	"Additionally, we monitored breeding performance of Humboldt Penguins exposed to different levels of human activity[...]"

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measure	reproduction	"In the present paper, we examined the effects of ecotourists on reproductive success of hoatzins in the Cuyabeno Lakes by comparing birds at undisturbed nests in off-limit zones and at tourist-exposed nests. We also measured stress hormones in hoatzin chicks to evaluate the physiological effects of human disturbances."
measure	reproduction	Measured hatching success, fledgling success, and stress hormones in both parents and juveniles, and flushing distance in adults.
measure	reproduction	Measured fledgling weight and fledgling survival.
measure	reproduction	measured nesting behaviour and nesting success.
measure	reproduction	"Most breeding failure occurred prior to hatching and was significantly higher in the boat-treatments in comparison with controls."
measure	reproduction	"We evaluated the following null hypotheses: there would be no differences in: (1) nest distribution within the colony, (2) nest success, (3) fledging success or (4) breeding chronology in pre- vs. postconstruction [of a wildlife viewing area] time periods."
measure	reproduction	"We reviewed 64 articles from 20 scientific journals, five books and one report dating from 1971–1998. For each of five orders of birds, we summarized effects of disturbance on waterbird physiological parameters, behavior, reproductive success, nest distribution patterns, and breeding population size trends."
measure	reproduction	Mentions nest abandonment and egg loss due to nest predators
measure	socialbehaviour	"Another potential effect of human activity is the modification of interspecific interactions due to behavioural changes [...] We therefore examined the levels of interspecific nest acquisition" [meaning, cormorants steal nest materials or locations from herons]
measure	socialbehaviour	.
measure	socialbehaviour	Basic biology of whale sharks investigated; ecotourism mentioned but not followed up on later in paper.
measure	socialbehaviour	"The hypotheses were that locomotion rates would increase if the animals became more agitated; vocalizing would be more frequent as would behaviour such as hiding or displaying towards the observers. In contrast, resting and feeding rates were predicted to decrease."
measure	socialbehaviour	"The purpose of this study is to examine the effects of ecotourism on the behavioral ecology of Bwindi's tourist gorilla population. The goal is to determine if dietary, ranging, and grouping patterns of tourist gorillas differ from wild populations and what health implications, if any, these differences may have."
measure	socialbehaviour	"We analysed the effects of tourism on escape behaviour of common wall lizards, <i>Podarcis muralis</i> , as well as on their body condition and health state (ectoparasites, blood parasites, and cell mediated immune response)."
measure	socialbehaviour	"This study was designed to categorize moose reaction to stimuli caused by wildlife viewers and vehicular traffic in order to determine whether there were predictable and measurable behavioral responses."
measure	socialbehaviour	"We present a preliminary study on threat and affiliative behaviors of two groups of free-ranging Tibetan macaques (<i>Macaca thibetana</i>) as a function of habituation and tourist presence."
measure	socialbehaviour	"The use of protected (no-entry) sanctuaries by manatees was significantly greater when both the numbers of swimmers and boats increased, and when water temperatures were lower in surrounding areas. The time manatees spent bottom-resting and nursing decreased while the time spent milling and swimming increased when swimmers were present compared to when they were absent."
measure	socialbehaviour	"Socializing and resting behaviors were disrupted by interactions with boats to a level that raises concern. Both the duration of bouts and the total amount of time spent in both these behavioral states were substantially decreased. Dolphins were significantly more likely to be traveling after an interaction with a boat. However, the overall behavioral budget of the population was not significantly affected. Therefore, the bottlenose dolphin population seems to be able to sustain the present level of boat interactions because of its low intensity. "
measure	socialbehaviour	"We present a preliminary study on threat and affiliative behaviors of two groups of free-ranging Tibetan macaques (<i>Macaca thibetana</i>) as a function of habituation and tourist presence."
measure	socialbehaviour	"We reviewed 64 articles from 20 scientific journals, five books and one report dating from 1971–1998. For each of five orders of birds, we summarized effects of disturbance on waterbird physiological parameters, behavior, reproductive success, nest distribution patterns, and breeding population size trends."
measure	socialbehaviour	number of alternate stares (alarm/aggressive behaviour). Vocalizations.
measure	socialbehaviour	"The rare empirical evidence [for rainforest animals] available indicates that even low numbers of visitors can change activity patterns or expel rainforest animals from potential foraging or breeding sites. All of these effects can reduce reproductive success and therefore hamper conservation goals of protected areas. At the same time negative impacts on wildlife reduce both the ecotouristic as well as the economic value of the visited area."
measure	survival	Measured population numbers in response to introduction and cessation of feeding
measure	timebudget	Because previous research showed higher effects of tourist presence when dolphins were resting, and lower effects when dolphins were socialising, authors mapped out which parts of the area are used by dolphins for resting vs. socialising, so tourist use could be concentrated in socialising areas to reduce impacts.
measure	timebudget	
measure	timebudget	"Thus, the provision of food to wildlife by humans almost always results in a change in the natural behaviour patterns of the wildlife."
measure	timebudget	"In addition, we examined parent and chick behaviour to determine if more subtle responses occurred, for example, if adult birds spent less time attending nests or chicks were more vigilant in areas closer to the WVA."

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measure	timebudget	"We assessed the impact of ecotourist visits during winter on woodland caribou Rangifer tarandus caribou time budgets in the Charlevoix Biosphere Reserve, Canada. We compared the behaviour of caribou during and after ecotourist visits with their behaviour during days without visits."
measure	timebudget	"Pedestrian viewing, when more than 75 m from the nearest active nest, produced no detectable change in breeding success or behavior. However, boats passing within 20 m of nests were associated with significant changes in the time budgets of incubating adult storks."
measure	touristexperience	Used sign-in registers to get at increasing numbers and changing quality of tourists at the site.
measure	vigilance	"we studied vigilance behaviour [...] of polar bears to evaluate impacts from tundra vehicle activity."
measure	vigilance	"In addition, we examined parent and chick behaviour to determine if more subtle responses occurred, for example, if adult birds spent less time attending nests or chicks were more vigilant in areas closer to the WVA."
measure	vigilance	"Categories were: 1) no apparent response, 2) at least one bird lifts head, 3) at least one bird moves away from dike, 4) at least one bird leaves the area, 5) at least one bird vocalizes, 6) at least one bird stops foraging."
measure	vigilance	"defensive head turns"
measure	vocalisation	"Categories were: 1) no apparent response, 2) at least one bird lifts head, 3) at least one bird moves away from dike, 4) at least one bird leaves the area, 5) at least one bird vocalizes, 6) at least one bird stops foraging."
other	survival	"Article focusses on tenure and regulatory frameworks of common-pool resources, rather than at impacts per se.
summary	summary	"Commercial companies concerned with environmental tourism also caused little apparent disturbance to sea-birds or sea-lions, but only because the company that brought the majority of ecotourists developed and followed guidelines to minimise disturbance"
summary	summary	Focuses one ecosystemic conservation, not specifically on wildlife
summary	summary	Uses document content analysis, interviews, and participant observation to get at the issues relevant to mmanaging swim-with-manatee programs
summary	summary	Definitions of conservation - cultural vs. wild nature - human exclusion from PA - IUCN zoning concept - ecotourism promoting return/shift to PA as recreation area - ET promoting ties btw society and PA - ET unregulated, plus no enforcement, means possible problems?
summary	summary	"Presently, Arctic fulmars face threats from harvest, bycatch in sheries, and fouling in oil spills while the birds are in their winter range (the North Atlantic). However, during breeding, migration, and overwintering, they may also experience stress from ecotourism, contaminants, particulate garbage, and climate change. In this paper I review the effects of all of these threats on fulmars and I describe how the ecology of these birds makes them particularly suitable for tracking contaminants, garbage, and the effects of climate change in the Arctic marine ecosystem."
summary	summary	Looked at vehicle and pedestrian track development.
summary	summary	conceptual framework and research questions related to ecosystemic (reefs, mangroves, sea grasses, brackish marshes) health
summary	summary	General environmental/ecosystemic indicators (conceptual development thereof)
summary	summary	Measured rate of contact between divers and coral reefs, and the effects of trip parameters and intervention options on reducing that rate.
summary	summary	assessment of wildlife status and potential for benefits from ecotourism to Maasai