

You are going to read an extract from an article. Six paragraphs have been removed from the extract. Choose from the paragraphs **A–G** the one which fits each gap (1–6). There is one extra paragraph which you do not need to use.

A fine balance – managing the relationships between animals and humans

Ecotourism, where travellers visit natural environments with an eye toward funding conservation efforts or boosting local economies, has become increasingly popular in recent years. In many cases it involves close observation of, or interaction with, wildlife, such as when tourists swim with marine animals. However, during a recent project life scientists analysed large volumes of studies on how ecotourism affects vulnerable animals and concluded that such experiences can be detrimental to a range of species.

1

They found that while ecotourism could be instrumental in ensuring that groups of animals in the highest risk categories avoid extinction, there were definite drawbacks. Ecotourism, by its very nature, tends to focus tourist activity on specific sites of interest. And whilst taking an interest in the world around you is all well and good, the numbers may surprise you.

2

One way it is causing this is by the simple fact that the presence of humans changes the way animals behave. It makes them more vulnerable — to poachers, for one — but also in less obvious ways. When animals interact in seemingly benign ways with humans, they may let their guard down. As animals learn to relax in the presence of humans, they may become bolder in other situations. If this transfers to their interactions with predators, they are more likely to be injured or killed.

3

In fact, researchers have pointed out that ecotourism has effects similar to those of animal domestication and urbanisation. In all three cases, regular interactions between people and animals may lead to habituation. Domesticated animals become more docile and less fearful due to regular interactions with humans. Domesticated fish are less responsive to simulated predatory attacks. Mammals and birds which live in urbanised areas are slower to flee from danger.

4

A case in point is the New Zealand sea lion, which is found around the southern mainland, and the dangers it faces. Fisheries are the main threat to sea lion populations as they reduce pup survival rates by affecting the supply of food. However, ecotourism also tends to impact on this stage too. Tourists, keen to photograph pups, often get too close to the animals, causing them to retreat to the sea. In turn this means that young seals miss feeding opportunities.

5

The economic benefits of ecotourism are, however, very much dependent upon scale. This is clearly demonstrated in Indonesia, where small-scale ecotourism has focused on orang-utans. While interest in this species has helped it secure a protected status, the positive effects have not been able to overcome the problem of habitat loss. This is due to the financial importance of logging, which so far surpasses interest in animal conservation as a source of income.

6

Whatever the future for ecotourism, the hope is new analysis will encourage more research into the interactions between people and wildlife. It is essential to develop a more comprehensive understanding of how various species in various situations respond to human interaction. We now know that even minimal interaction could affect the behaviour or biology of a species and influence its function within its community. However, it is also important to acknowledge that without this interaction, some species may no longer exist at all.

- A Having said this, researchers have identified a threshold effect where ecotourism displaces activities conventionally seen as harmful to wildlife. When more money is generated by tourism, attitudes change regarding primary industries. Although whether this results in action tends to depend on those who own or directly benefit from such businesses.
- B Conversely, in other cases, the food chain is also affected by natural predators being discouraged by an abundance of humans in the ecosystem. The sum total of all this is that prey species become less alert and increasingly tame.
- C The major outcome of this research is that the findings were integrated into established computer models which calculated the viability of a threatened species. The research teams then quantified the impacts of ecotourism operations on habitats, population change and migration patterns.
- D However, it's not all bad news. Other species such as the cheetah have greatly benefited from increased tourist numbers. With this interest has come an awareness regarding the threat from poaching. Furthermore, local communities have seen that tourism revenue outweighs their reward from any involvement in hunting the animals.
- E Protected areas around the globe receive in the region of 8 billion visits each year and this is beginning to take its toll. Ecotourism can now be added to the growing list of drivers of human-induced rapid environmental change.
- F It has been estimated that direct spending through ecotourism is worth approximately \$600 billion annually. This far surpasses the \$10 billion which is spent each year safeguarding and managing areas which contain protected or endangered species.
- G Indeed, interacting with people can cause significant change in the characteristics of various species over time. If individual animals selectively habituate to humans — particularly tourists — and if invasive tourism practices enhance this habituation, ecotourism may be creating traits which have unintended consequences.