



National Parks

National Parks exist all over the world. From the glacial splendour and lakes of Banff in Canada; the river cut gorge of the Grand Canyon, Arizona, USA; to the UK's Peak and Lake Districts, these areas of natural beauty attract attention from visitors and scientists alike. They allow us to study and better understand our planet.

So what is a National park?

A natural Park is an area of natural beauty and ecological significance. Originally envisioned by the American Government in the 1870s, the aim is to protect and conserve unique ecosystems and their biodiversity. Development is severely limited and tourism carefully controlled, to preserve the landscape and plants and animals that live there. In America, the Grand Canyon has long been a site of significance for geologists, giving them an opportunity to study evolution through time: as its oldest layers date back some 1.7 billion years.

Do we have any National Parks?

There are National Parks everywhere and people love to visit them. In the UK the Peak and Lake Districts are popular with hikers and climbers; the African Seregeti National Park attracts people who want to see safari animals; in Australia it is Uluru-Kata Tjuta Park and Ayres rock which attract attention. Sadly, despite their protected status, human activity often still threatens the delicate balance of the parks, and we need to better understand our relationship with nature to further protect them.

Case Study: Yellowstone National Park, Wyoming, USA

Scientists studying Yellowstone over the last 50 years began to notice an alarming trend – the landscape was dying. Large areas of grass and scrubland were being destroyed, and with it, went the biodiversity of the park. Fewer and fewer different species were being recorded in a number



of areas, compared to records from 100 years ago. Further study revealed that one key change had happened in the park within the last 100 years that was believed to be the root cause of the problems: wolves.

Disastrous Food Web Imbalance

In the 1900s there were known to be several packs of wolves living in the park. During the 1920s and 1930s men had hunted them to extinction, trapping and killing them for sport, their furs and because they were seen as a threat. With the wolves gone, the apex or top predator for many food webs was removed. This left other prey animals to flourish. Rabbits and rodents took over, over-grazing the landscape. Deer numbers increased and, not needing to hide from predatory wolves, came out more into open areas. They grazed on the grass meadows and on young saplings, preventing new vegetation getting established, and destroyed older trees by rubbing their antlers on them. Without the range of plant life, insects soon disappeared and with them the many birds that depended on them for their diet and the trees for nesting. This was an ecosystem in crisis.

Restoring the Natural Balance

In 1995, conservationists took the decision to re-introduce the wolves to Yellowstone to try to redress the balance. The wolves reclaimed their place at the top of the food webs and the effect of their presence was soon noticeable. The number of prey species were controlled, resulting in recovery for the grasslands. New trees got a chance to grow and the meadows began to flourish as rabbits and deer sought protection and camouflage in the wooded areas. This subsequently attracted a more diverse range of insects, who, in turn, attracted the birds back. Soon, other apex predators such as cougars (aka mountain lions), hawks and eagles began to return to the previously empty valleys. Food webs were restored and the effect on the landscape was so immense that even a local river changed course and was reinvigorated, helped by returning beavers.

Return to Rich Biodiversity

By reintroducing the wolves, the park changed from a desolate landscape into a flourishing ecosystem. Where only a few species could survive in the 1960s, these are now areas teeming with biodiversity. By repairing the natural order of things and stepping back, humans have truly fulfilled the promise of the national parks. As Sir David Attenborough once said, "Nature requires our absence", in order to flourish. National Parks exist to achieve that aim.

EXPLANATION FOCUS

1. National Parks are described as having “ecological significance”. Using an example from the text, explain what the author means by this phrase.
2. Without the wolves, the park is described as an “ecosystem in crisis”. How bad does the author imply things are by using this description?
3. How do the sub-headings help the reader navigate the text?
4. Which words does the author use to contrast the park before and after the re-introduction of the wolves? What does this tell you about how the author feels about the re-introduction of the wolves?
5. How is David Attenborough’s quote relevant to the case of the wolves at Yellowstone?

VIPERS QUESTIONS

- I** Why are National Parks seen as a necessity?
- I** National Parks are described as having a “delicate natural balance”. Explain what this means with reference to the text.
- R** Why were wolves hunted in the 1920s?
- V** What is the difference between predators and prey? What is an apex predator?
- R** How does a flourishing grassland environment benefit the birds?