

# 7 species on the climate change HIT LIST

Many forces – including habitat destruction and overfishing – are already driving species to extinction, and for some climate change is likely to prove the final straw. Last December the International Union for Conservation of Nature (IUCN) published a study of the most at risk from global warming; seven of them are described below. Yet, as Simon Stuart, Chair of IUCN's Species Survival Commission, says, 'Ordinary people are not powerless to stop these tragic losses. They can cut down on their own CO<sub>2</sub> emissions and voice their support for strong action by their governments to change the dire climate prognosis we are currently facing.'

## Clownfish

Clownfish were made famous by the film *Finding Nemo*, but their real lives are even stranger than fiction. If the sole female in a group dies, for example, the largest male of the group changes sex to allow breeding to continue. They are also able to build immunity to a particular sea anemone's poison, live among the anemone's tentacles and lay their eggs beneath them, so that they are protected from predators. When the eggs hatch, the larvae follow chemical signals in the water to detect a suitable anemone for a new home. But as the oceans grow more acid as they absorb more and more CO<sub>2</sub> from the atmosphere, it is increasingly difficult for the clownfish to detect these signals.



Kike Calvo/Das Fotoarchiv/Still Pictures

## Koala



Xopherlance/www.flickr.com

Koalas are fussy eaters: they will only consume the leaves of a few dozen of the more than 600 species of gum trees. Eucalyptus leaves are already poor in nutrients, and increased levels of CO<sub>2</sub> have been shown to reduce protein and increase levels of tannin, a chemical which makes leaf proteins highly indigestible. Eating more, to try to make up for reduced nutritional quality, would cause poorer digestion and a lower uptake of nutrients. Alternatively, koalas may become even more choosy about what gums they will eat and will have to travel further to find them, increasing the risk of being killed by dogs and cars; 4,000 a year already die like this. Increased droughts and forest fires will reduce their food supplies even further.

## Leatherback turtle

As the sands in which they lay their eggs warm up, leatherback turtles will become more and more endangered. For, strangely, their temperature determines the gender of the newborn and, as global warming increases, the proportion of females to males will also grow, threatening the stability of their populations. Rising temperatures will also affect their staple food, jellyfish, which are generally found in cool, nutrient-laden, upward-flowing waters. And the more frequent and severe storms brought by global warming will erode and degrade beaches, causing turtle nests to be washed away in the short term, and reducing the number of suitable nesting areas in the long run.



Kent Southers/Rusty Bug/Flickr

# Emperor penguin



Drjameslee/www.flickr.com

Emperor penguins depend on ice, both to live on as chicks before they fledge and to use as they moult. So they are particularly vulnerable to the rising thermometer. Air temperatures on the west coast of the Antarctic Peninsula, one of their main habitats, have risen by nearly 3°C over the past 50 years. If global temperatures rise by a further 2°C all their colonies north of 70° (almost 40 per cent of the total) would become unviable. Rising temperatures and thinning ice are also likely to lead to more frequent incidences of icebergs colliding with penguin colonies, as happened in 2001. And projected declines in pack ice are likely to reduce populations of the krill they feed on, and that form the base of much of the Antarctic food web.

The quiver tree – so called because San Bushmen hunters use it to make quivers for their arrows – is Namibia’s national plant. Growing in the desert, the tree’s pulpy, water-retentive wood yields drinking water and makes dead trunks suitable for hollowing out to use as natural refrigerators. Their bark can be used for building and their flowers provide nectar to feed a range of insects, birds and even baboons. While animal species can adapt to climate change by moving, plants including trees are much less mobile and rely on animals to disperse their seeds. But these are moving south, and so the northernmost trees are increasingly vulnerable and large numbers have already died.

# Quiver tree



Martin Heigan

# Arctic fox



Pat Meyer/Flickr

One of the first mammals to colonize Sweden and Finland following the last ice age, and now found as far west as Alaska and as far east as Russia, the arctic fox gives birth to its young in summer in complex underground dens that can host several generations. The number of young born in each litter depends on how much food is available, but many of the fox’s prey animals – including lemmings and voles which rely on the insulation provided by snow to get them through the winter – are suffering as a result of mild temperatures. Climate change is also pushing the arctic fox’s greatest competitor and predator, the red fox, to encroach upon its territory.

The 160 species of antler-shaped staghorn corals make up over 20 per cent of the world’s coral. They depend on algae – which give them their colour – for oxygen and nutrients. But as sea temperatures rise the algae produce too much oxygen, which can poison the corals. So they expel the colourful algae and become ‘bleached’, also losing the algae’s life-giving assistance. If the waters resume their normal temperature within a few weeks, there is hope that the corals will recover, but the damage caused is not totally reversible and the colonies never return to their full state of health. Already a fifth of coral reefs worldwide are damaged beyond repair.

# Staghorn coral



Tersia Claasen