

Kassie Siegel, also of the centre, said: "This is the beginning of a sea change in the way this country addresses global warming. There is still time to save polar bears but we must reduce global warming pollution immediately."

The government's announcement reported the observations that Arctic sea ice had declined in late summer by 7.7 per cent, and that the perennial sea ice area had declined 9.8 per cent per decade since 1978.

But Kempthorne tried to downplay the implications of the decision, telling reporters it did not amount to recognition of the dangers of greenhouse gas emissions. "While the proposal to list the species as threatened cites the threat of receding sea ice, it does not include a scientific analysis of the causes of climate change. That analysis is beyond the scope of the Endangered Species Act review process, which focuses on information about the polar bear and its habitat conditions, including reduced sea ice," the government statement said.

But environmental activists said the stringent provisions of the Endangered Species Act — and the administration's natural reluctance to avoid a public relations fiasco over its treatment of such a popular species — worked in the polar bears' favour.

In their legal challenge, the organisations had invoked legal protections for endangered species, hoping to compel the administration to reduce its emissions of carbon dioxide. Similar tactics have been pursued by environmental groups to confront other aspects of global warming with activists joining municipal governments and 12 states to try to force the Environmental Protection Agency to regulate carbon emissions under the US's Clean Air Act.

For the Bush administration, which rejected the Kyoto protocols aimed at curbing greenhouse gas emissions, Kempthorne's recommendation amounts to an important admission.

The public have until March to comment on the proposal, and the administration will have up to a year to formally place the polar bear within the ranks of bison, prairie dog and bald eagle on the endangered list.

According to the latest data, the Arctic is now warming at faster than twice the rate of the rest of the world, and sea ice is projected possibly to disappear in summer months before 2050.

There are an estimated 22,000–25,000 polar bears in the Arctic with animals in the US, Canada, Greenland, Norway and Russia. However, according to a recent report by the World Conservation Union, many populations are in decline. Researchers are concerned that polar bears will not survive major ice depletion. Because the ice is breaking up earlier in the year, they have less time to hunt seals and build up fat reserves that have to sustain them for up to eight months of the year. As they have become thinner, so cub survival rates have fallen.

Scientists have observed that some bears are behaving differently to only a decade ago. Some have been found looking for food closer to human communities and others are trying to change their diets.

The UN Environment Programme recently reported that the extent of summer ice in the Arctic has shrunk by more than 25 per cent over the past 50 years. The US government's official National Snow and Ice Data Centre says that a "stunning" reduction in sea ice has taken place in the past four years.

Polar bear populations in Canada's western Hudson Bay and the southern Beaufort Sea, which is shared between the US and Canada, have declined by 22 per cent and 17 per cent respectively over the past 20 years. "Our goal ultimately is to combine the best science available with the power of working hand-in-hand with states, tribes, foreign countries, industry, and other partners to minimize the threats to polar bears and conserve this greatest icon of the Arctic for future generations," Kempthorne said.

Climate change rises on the 2007 agenda

Studies are increasingly showing the impact of global warming, writes **Nigel Williams**.

This year may be set for the record books with the likelihood of the highest ever recorded global temperatures, according to researchers at Britain's Meteorological Office. They believe there is a 60 per cent chance that 2007 temperatures will exceed the previous hottest year, 1998.

The predictions are due partly to a moderate El Niño event — a climate phenomenon focused on the eastern Pacific that affects climate globally and leads to higher temperatures.

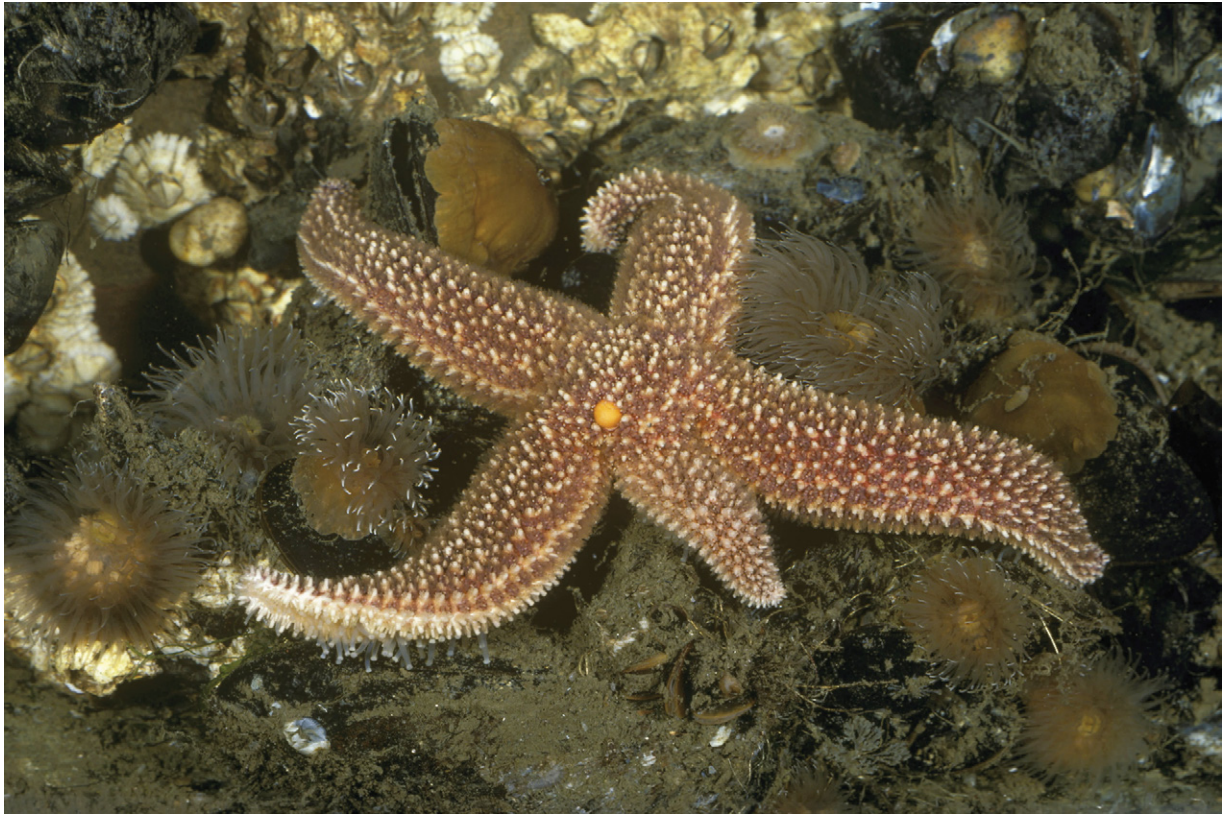
In 1998, a strong El Niño event occurred resulting in a global average temperature of 14.52°C. The Met Office is predicting this year will be 0.02°C higher.

High temperatures are likely to increase the focus on climate change issues as a growing number of studies reveal just how much some biological communities are already seeing significant changes.

One substantial report, published late last year, records the changes that are taking place amongst marine organisms around the shorelines of the British Isles. The four-year study exploited the detailed long-term records of species numbers and distribution around Britain's coast.

While global warming is seeing significant effects at the Poles and at high altitudes, significant effects are also occurring at mid-latitude sites such as Britain.

The average temperature of the Earth increased by 0.7°C in the twentieth century. Globally 9 out of the 10 warmest years were between 1990 and 2000. Sea surface temperatures around Britain have increased in line with global warming, in some places by more than the global average: the western English Channel has seen a 1°C rise since 1990, larger



On the move: New studies are increasingly revealing organisms shifting as a result of climate change, as shown in a new study of Britain's shoreline creatures. (Picture: Photolibrary.)

than any changes since records began. There have also been similar changes in the eastern Channel.

"Climate change is having a big impact on British shorelines," said Nova Mieszkowska of the Marine Biology Association, who led the MarClim project to track the distribution of 57 species at more than 400 sites around the British coastline.

By comparing their new data with 1950s records from the same areas, researchers found that some marine species adapted to cold water were migrating away from warming seas, and were moving faster than their terrestrial counterparts. They include toothed and flat topshells, acorn barnacles, China limpets and small periwinkles. Some cold-water species, such as the tortoiseshell limpet, have almost disappeared from Britain's shores.

"Global predictions are that species ranges will move polewards as the climate warms, regardless of them

being terrestrial or marine," said Mieszkowska. But for terrestrial species the inter-seasonal and inter-annual variations in climate make studies more difficult than those in the marine environment, where results are more clearly seen.

"Warm water species are able to extend their ranges now into areas where the climate was too cold in the past, whereas a lot of our native species that have cold water species distribution are struggling as waters are warming up."

Topshells, a type of warm water snail, have extended their range in Britain by up to 80 kilometres since the end of the 1980s. "We have data from the 1970s and 80s and, for a 10-year period, the range didn't move at all. Then suddenly, in 16 years, they've really extended their range."

Key movers discovered by the study include: the purple acorn barnacle, which has extended its distribution range 160 km east along the English Channel; the largest seashore snail, the toothed

topshell, which has also increased its range 40 km east along the English Channel; another snail, the purple topshell, which has spread 80 km further along the coast of north Scotland over the past 20 years; a northern brown seaweed, known as dabberlocks, which has disappeared from much of south-west England; a southern brown seaweed, *Bifurcaria bifurcaria*, which has extended 150 km eastwards along the English Channel; and the common tortoiseshell limpet, which has retreated from much of the Irish Sea and has only been seen off northern Scotland in recent years.

The warmer waters have also seen new species. A type of Japanese seaweed, *Sargassum muticum*, was brought to Britain in the 1940s in the ballast of ships and in the last 20 years has expanded its range rapidly.

The MarClim researchers will continue their new work in a project called IndiRock. This will monitor entire ecosystems on the shoreline, rather than individual species.