

# CLIMATE IMPACTS

How changing conditions are affecting polar bears.

## THE BAD NEWS

**Of the world's** 19 polar bear sub-populations, just one is increasing. Of the rest, eight are declining, three are stable and we don't know about the other seven.

**In western parts** of Hudson Bay, the average mass of solitary adult female polar bears declined from 290kg in 1980 to 230kg in 2004 – any female weighing below 189kg is unlikely to breed.

**A survey of** Western Hudson Bay's polar bears in 2011 found very low proportions of cubs (7 per cent) and one-year-old bears (3 per cent). Researchers say this suggests that cub survival rates are poor.

**Polar bears** are having to swim greater distances

because the sea-ice is breaking up earlier in the year, and this exacts a greater energy toll on them. Between 2004 and 2009, 50 swims of between 54km and 687km were recorded.

**A bear spotted** by an Inuit hunter in 2010 was recorded as the first-ever second-generation polar-grizzly cross. Scientists say that climate change is allowing grizzlies to move north, causing interbreeding.

## AND THE GOOD NEWS

**The 2011 survey** of the Western Hudson Bay bears estimated the population at about 1,000 animals, roughly equal to numbers recorded in 2004, suggesting there has been no decline in that time.

**Polar bears have** always lived in fluctuating conditions that affect breeding success and survival. Heavy ice faced by two sub-populations in the mid-1970s and mid-1980s "caused significant declines... in the natality of polar bears and survival of subadults, but the population recovered quickly when conditions improved again", according to expert Ian Stirling.

**Productivity of female bears** is critical to the species' prospects.



**Researchers weigh a tranquilised bear cub from the Beaufort Sea sub-population off the northern coast of Alaska.**

"The magic number is about 180 days," York tells me. "If the bears are onshore, away from their favoured habitat, for longer than this, you will see reduced adult survival and reproductive failure." Put another way, polar bears can survive six months without their preferred food, but not much longer.

## GOING HUNGRY

Polar bears are resourceful, intelligent and adaptable animals. So, couldn't the individuals stranded on land switch to other sources of food as the ice-free periods lengthen in a warmer future? Sadly, no. Some bears do supplement their main diet by feeding on whale carcasses, other large mammals and even birds' eggs, but this will not help at a population level.

I call Ian Stirling, author of *Polar Bears: The Natural History of a Threatened Species*, which is often referred to as the bear 'bible'. "Polar bears might occasionally kill a reindeer on Svalbard, or scavenge from a carcass," he says, "but serious scientists don't think this changes anything." ▶



**The longest recorded polar bear swim lasted 232 hours.**

## 2007

A US Geological Survey team concludes that the number of polar bears will fall by two-thirds worldwide by 2050 if greenhouse gas emissions continue at the same rate.

## 2008

The US Fish and Wildlife Service lists the polar bear as Threatened under the USA's Endangered Species Act.

## 2008

As concerns grow over melting sea-ice, a radio-collared female bear makes a non-stop 687km swim in the Beaufort Sea.



## 2013

A proposal by the Russian and US governments to upgrade the polar bear's listing to Appendix I on the Convention on International Trade in Endangered Species is rejected.