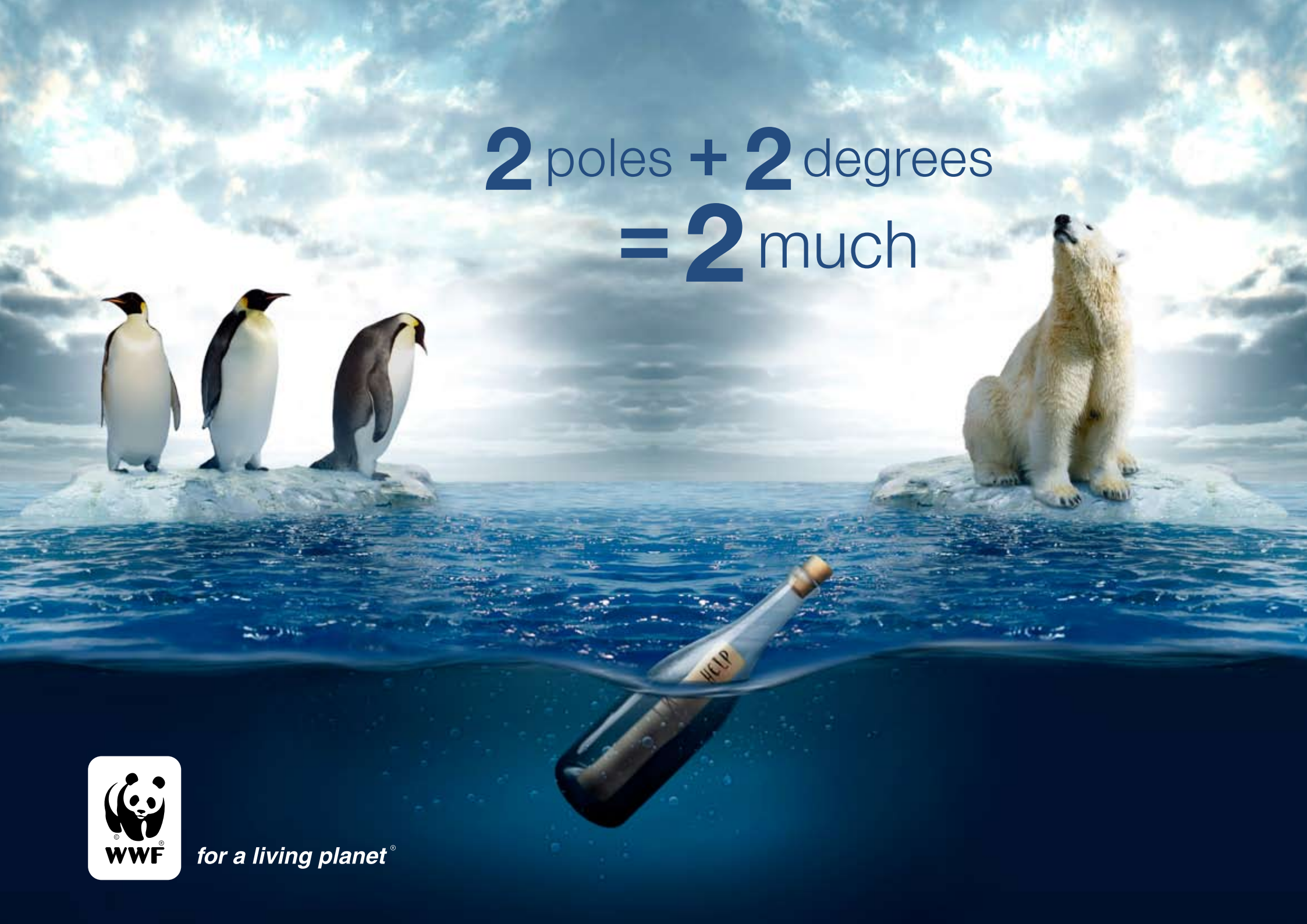
2 poles + 2 degrees
= 2 much
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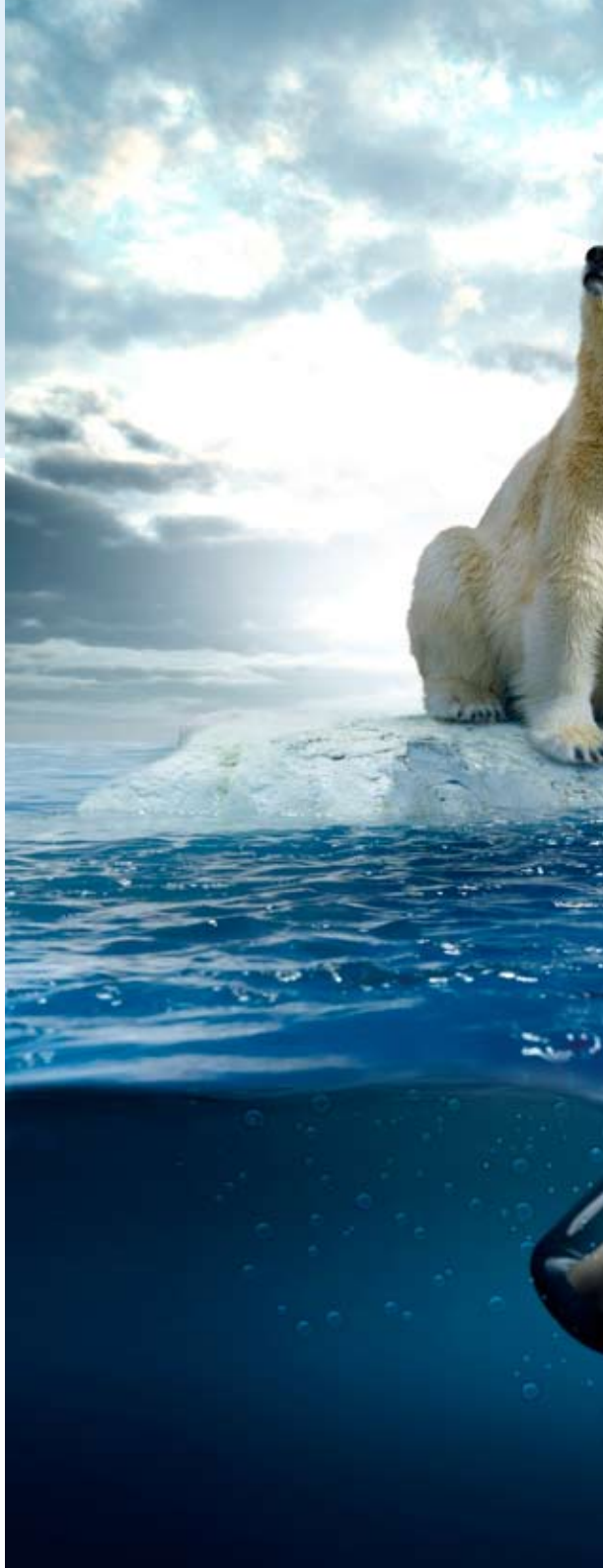
The signals coming from both poles are clear, observable and scientifically validated: man-made climate change is causing warming. This is a major concern for the peoples and ecosystems of the north, and for the unique Antarctic ecosystems. Climate change has brought new species to places they have not been before, stressed existing species, and raised concerns about potential extinctions and sweeping changes to natural systems. But the polar effects are only the tip of the iceberg. Change already being seen at the poles will unleash a cascade of predicted wrenching climate change effects that will envelope the entire planet, unless the governments of the world unite for swift and decisive action.

There are two main mechanisms by which the poles drive the planetary climate system:

- The Arctic and the Antarctic are covered in snow and ice year round. This combined area of about 80 million km^2 (comparable to the combined areas of North America, Asia and Europe) reflects a large part of the sun's heat back into space, regulating the Earth's temperature. This is known as the 'albedo effect'.
- The Polar Regions are integral parts of global ocean circulation. The world's ocean currents are driven by differences in temperature and salinity that partly arise from the formation of sea ice in the Arctic and Antarctic. The global ocean circulation determines patterns of temperature, rainfall and the healthy functioning of many ecosystems worldwide.

Changes in the polar regions have major consequences for every country in the world:

- Loss of snow and ice reduces the albedo effect increasing the amount of heat that is absorbed by the Earth, accelerating climate change. The more the snow and ice melt at the poles, the more heat accumulates in the global weather system. This in turn melts more snow and ice, causing a vicious cycle of self-reinforcing feedbacks.
- Less sea ice and more freshwater run-off in the polar oceans could modify the global ocean circulation and, consequently, global patterns of temperature and rainfall.
- The frozen soils of the Arctic hold large amounts of organic material. These are now thawing. The thaw releases more carbon dioxide and methane, accelerating climate change. Recent research has also suggested that offshore deposits of methane are liable to be released to the atmosphere with increasing warmer water temperatures.
- Glaciers and ice sheets in the Arctic and Antarctic hold more than half of the Earth's freshwater. If they should melt completely, there is enough water to increase global sea level by 13m. Based on the latest studies, water levels are forecasted to rise by about 80 cm over this century, completely flooding low lying areas, some of them vital for global food production, and putting many more at risk from storm surges.
- The Polar Regions are important feeding grounds for many migratory species. Birds and whales travel to the poles to feed in the short but productive summer. Climate change is jeopardizing the food chains of polar waters, and the survival of the species that feed there.
- The Polar Regions are home to many unique species that cannot be found elsewhere in the world, e.g. the polar bear and the narwhal in the Arctic, the emperor penguin and weddell seal in the Antarctic. Many of them have adapted to the specific food resources and climate conditions. Climate change threatens their survival.
- Fish stocks, very sensitive to changes in water temperature are already on the move, causing major difficulties for fishermen and fisheries regulators who cannot predict what will happen next.



The Arctic

The Arctic is made up of an ocean almost completely surrounded by land. Four million people from eight different states, including 30 different indigenous peoples, live here. Many Arctic peoples are still tied to the land they inhabit, economically, culturally and spiritually. Changes in the Arctic climate and landscape are causing deep concern.

- Over the past few decades, surface air temperatures in the Arctic have been warming twice as fast as the mean global rate, and sea ice has been melting. Summer sea ice coverage in the Arctic Ocean reached record lows in 2007 and 2008. The Arctic Ocean could be ice-free during the summer very soon, allowing more heat to be absorbed by the dark ocean surface (instead of the reflective sea ice) forcing global climate changes that are even more rapid and abrupt than has been forecast up to now.
- Scientists forecast that the Arctic will warm by 2-4°C over the next 40 years. This is a very large and rapid change for a region where species have evolved to be well adapted to cold, snow and ice. Polar bears need the ice to be able to hunt their primary food, seals. The seals in turn need the ice to give birth to their pups in a place free from the foxes, wolves, and other land-based predators. The seals also rely on plentiful supplies of fish, and the fish rely on smaller prey, some of which are only found in association with sea ice. Taking the sea ice away from the Arctic could therefore cause hardship all the way through the arctic food web, destabilizing a system that is already fragile due to the comparatively low number of species.

The Antarctic

The fifth largest continent on Earth, over 99% of the Antarctic continent is covered by thick ice sheets year-round. There is no indigenous population and no country owns Antarctica: for the past 50 years, Antarctica has been managed internationally under the Antarctic Treaty “as a natural reserve, devoted to peace and science”.

- Ice shelves are extensions of the ice sheets on the Antarctic continent and they float on the surrounding seas. During the latter part of the 20th century, ten ice shelves in the Antarctic Peninsula have undergone retreat, losing approximately an area of 26,000 km^2 (slightly smaller than the country of Belgium) of ice. The Wilkins ice shelf, covering more than 16,000km^2, is said to be hanging on by a thread. Since ice shelves are already floating on the sea, like ice cubes in a glass of water, their melting will not result in a rise in sea level. However, as the ice shelves disappear the continental ice sheet behind the ice shelves accelerates their flow and loss into the sea, contributing to a global rise in sea level. Recent observations show that the West Antarctic Ice Sheet in the Amundsen sector is currently the most rapidly changing region of the entire Antarctic ice sheet. It holds enough ice to increase global sea levels by 1.5m.
- Scientists forecast significant warming and reduction of sea ice over Antarctica over the 21st century. The Antarctic Circumpolar Current – the world’s largest ocean current – is forecasted to continue warming and shifting southward. Migratory species such as the humpback and blue whales would have to travel further to reach the food-rich areas south of the Antarctic Circumpolar Current. These longer trips take energy, and reduce the time available for the whales to feed. The loss of sea ice around the Western Antarctic Peninsula has been accompanied by a decline in the populations of Antarctic krill and ice-associated fish. The loss of krill and fish mean, in turn, less food available for many seal, seabird, penguin and whale species that are migratory or resident in the Southern Ocean. Many scientists believe that the fate of sea ice and its relationship to the food web holds the key to the future of many species in Antarctica.

WWF is working for the conservation of the Polar Regions and finding solutions to the challenges of climate change

Climate change and the Polar Regions are linked intimately. Conservation of these regions requires slowing down and eventually stopping climate change. Because changes in the poles are driving global change, more than just conservation is at stake. Food security, economic security, and disaster avoidance are dependent on tackling climate change hard and fast enough to slow and halt changes at the poles.

Governments can work to keep the poles cold, and the planet safer

WWF calls for a fair, effective, science-based climate agreement at the Meeting of the Parties of the United Nations Framework Convention on Climate Change in Copenhagen in December 2009. Reducing greenhouse gas emissions must be the major policy response in face of the large-scale loss of ice and snow and possible changes in the global ocean circulation. Allowing carbon emissions to rise unabated shackles everybody now on the planet and future generations to an uncontrolled and unpredictable global climate experiment. The nations of the world must reach an agreement this year on limiting carbon emissions enough to keep the global temperature rise well under 2 degrees.

As the nations with perhaps the greatest vested interest in halting climate change, we call on the Arctic Council countries particularly to take action, and to signal this action at their coming ministerial meeting.

We also call on the countries of the Antarctic Treaty to continue their 50 year long mission to protect and preserve the environment of the Antarctic by committing themselves also to actions that will slow and reverse change in the Antarctic.

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