VINSON MASSIF

Situated in Antarctica, the Vinson Massif is a large group of mountains, and is home to Mount Vinson – the highest mountain on the Antarctic continent at 4,892 m.

INTRODUCTION

Welcome to the amazing world of exploration

The wild places of our planet have always fascinated and amazed. From the soaring, snow-capped peaks of the Himalayas, to the tumultuous raging oceans which separate the great continents of the world. Over the centuries great adventures have explored these places, and returned home with fascinating tales to tell.

Navigators sailed across the oceans, discovering new lands. Travellers traversed deserts and jungles, establishing routes and rediscovering the remains of ancient civilisations. Mountaineers conquered the highest and most difficult peaks, and polar explorers reached the most northerly and southerly points on the globe.

This book explores the wild places on our planet, and the great adventures that have taken place while exploring them. We visit the polar regions, mountains, volcanoes, oceans, rivers, deserts, jungles, forests, and cave systems deep underground. We hear about the pioneering adventurers who first explored these places, use maps to learn about the routes they took, and meet some of the local wildlife along the way. In parts of this book you may find some scientific or geographical terms that you are unfamiliar with. The first time these are used they are highlighted in CAPITALS, and all of these works and phrases are explained in the glossary at the end of the book.

THE POLAR REGIONS

The areas of the Earth surrounding the POLES – the two points around which our planet spins – are known as the polar regions. These fall, within the highest and lowest CIRCLES OF LATITUDE, more commonly known as the ARCTIC CIRCLE and the ANTARCTIC CIRCLE.

These regions are very cold because the light and heat they receive from the Sun arrives at a low angle and so it is spread out, meaning the surface of these regions receives less than other parts of the Earth. Also, there is complete darkness for part of the winter in both these regions. The length of this dark season increases as you move closer to the Poles. At the Poles themselves, the dark season lasts six months.

Humans have long inhabited the outer fringes of the Arctic, with PALEO-ESKIMO peoples now known to have lived in the region over 4000 years ago. Exploration in the Arctic has a long history.

The Antarctic was never natively inhabited, and was only first viewed by humans in the 19th century. Exploration followed, and today many nations maintain research stations on the continent of Antarctica.

Polar bear

Ursus maritimus

Dependent on the sea ice of the Arctic region, polar bears are marine mammals, well-adapted to their cold environment. They have large feet which help them to swim and to spread the load when they walk on snow and thin ice. Bumpy pads on their paws help them to grip on icy slopes. They have a thick, fatty layer under their fur which combine to keep them warm at low temperatures. They are known as hypercarnivores because more than 70% of their diet is meat – mostly seals which they hunt for at the edges of sea ice sheets.

They are classified as a vulnerable species on account of the risks to their habitat posed by climate change and the shrinking of the Arctic ice cap.

THE ARCTIC

The Arctic is a region surrounding the North Pole, circled by the Arctic Circle – the line of latitude approximately 66 degrees north of the equator.

Unlike its Antarctic cousin, the Arctic is not a continent. Most of the ice sheet that comprises the area surrounding the Pole is the frozen surface of the Arctic Ocean. The land areas that surround the ice cap include sections of the most northerly parts of Europe, Asia and North America. The approximate size of the Arctic ice cap is marked on the map on the left. Every summer its edges break up and float away as ICEBERGS, and every winter the sea water around its edges freezes, trapping floating ice chunks into a continuous ice sheet.

Humans have lived within the Arctic Circle for many years. From the earliest Paleo-Eskimo to the later Thule and Inuit, these hardy indigenous peoples learned to live in the extreme cold, perfecting techniques for hunting marine animals such as seals, walrus and whales, and land animals including polar bears and caribou. There are around 150,000 Inuit still living in Arctic Greenland, Canada and Alaska.

Human explorers have long been drawn to the wilds of the Arctic. Many expeditions to the North Pole were undertaken in the late 19th and early 20th century. A number of these claimed to have reached the Pole, but these efforts are now disputed. The first verified journey to the Pole was achieved by Roald Amundsen and Umberto Nobile in the airship Norge, on 12 May 1926. However, they flew over it without landing. A Russian scientific expedition, led by Aleksandr Kuznetsov, landed three Lisunov Li-2 aeroplanes at the Pole on 23rd April 1948 and were the first confirmed team to stand at the Pole itself.

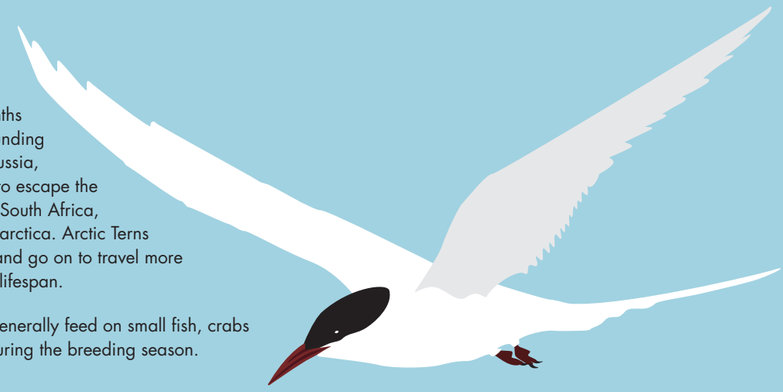
The Arctic environment is under threat because of GLOBAL WARMING. Human industrial activity around the world releases chemicals known as GREENHOUSE GASES into the air. These are so named because they cause the atmosphere to warm up like a greenhouse. This effect means that the average temperature around the world is increasing and, as it does so, the area of the Arctic that remains frozen is shrinking every year. One direct effect of this is that ice that previously remained trapped in the Arctic is gradually flows away into the oceans. Like pouring extra water into your bath, the level of the seas around the world is now increasing, which affects human and animal populations living in low-lying coastal areas.

Arctic tern

Sterna paradisaea

An amazingly well-travelled sea bird, the Arctic Tern spends the northern summer months breeding in colonies along the coasts surrounding the Arctic ocean, from northern Europe to Russia, Canada and Alaska. It then migrates south to escape the Arctic winter, sometimes travelling as far as South Africa, Australia and even the northern parts of Antarctica. Arctic Terns regularly cover over 70,000 km in a year, and go on to travel more than 2 million kilometres over their 30 year lifespan.

The species is carnivorous and these terns generally feed on small fish, crabs and krill, as well as insects whilst on land during the breeding season.



THE ANTARCTIC

The Antarctic is a region surrounding the South Pole, circled by the Antarctic Circle – the line of latitude approximately 66 degrees south of the equator.

Antarctica is a mountainous continent covered in ice. The Antarctic ice sheet is very thick, reaching a depth of 4,800 metres in the east section of the continent. 61% of all fresh water on Earth is held in this vast sheet of ice.

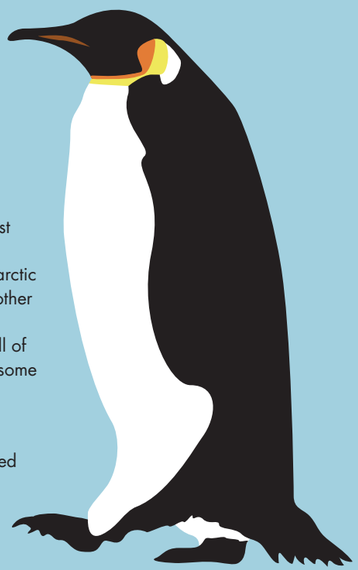
Antarctica has never had indigenous peoples living on it, but today it is home to many scientists who live on at research stations scattered around the coasts and inland.

Captain Cook's Second Expedition crossed the Antarctic Circle in 1773 but treacherous ice floes prevented them from reaching the coast. The First Russian Antarctic Expedition made it to within 30 km of the continent in 1820. The first confirmed landing on Antarctica was made by the crew of the Swedish-Norweigan whaling ship *Antarctic* in 1895.

Atlantic Ocean
Southern Ocean
ANTARCTIC CIRCLE
King Haajan VII Sea
Weddell Sea
Brunt Ice Shelf
Larsen Ice Shelf
Ronne Ice Shelf
Bellinghausen Sea
Vinson Massif
1955-58 Commonwealth Trans-Antartic Expedition route
SOUTH POLE
Amery Ice Shelf
West Ice Shelf
Davis Sea
Shackleton Ice Shelf
Mawson Sea
Transantartic Mountains
Amundsen Sea
Ross Ice Shelf
1911-12 Amsterdam Expedition route
Bay of Whales
1911-12 Scott Terra Nova Expedition route
Pacific Ocean
Ross Sea
Indian Ocean

Research Bases

1 – Amundsen-Scott (USA)
2 – Vostok (Russia)
3 – Concordia (Italy / France)
4 – Scott (New Zealand)
5 – Mario Zucchelli (Italy)
6 – Dumont d'Urville (France)
7 – Casey (Australia)
8 – Mirny (Russia)
9 – Mawson (Australia)
10 – Syowa (Japan)
11 – Dome Fuji (Japan)
12 – Maitri (India)
13 – Troll (Norway)
14 – Kohnen (Germany)
15 – Halley (UK)
16 – Dan Martin (Argentina)
17 – Rothera (UK)
18 – Vernadsky (Ukraine)
19 – Palmer (USA)



Emperor penguin

Aptenodytes forsteri

Unique to the continent of Antarctica, the Emperor penguin is the largest and heaviest penguin species on Earth. This hardy bird breeds during the freezing cold of the Antarctic winter and, once their chicks hatch, the mother and father take turns to undertake lengthy foraging journeys, returning with bellies full of fish, squid and krill. They then regurgitate some of this food to feed the growing chick.

Like many other species living in the polar regions, the Emperor penguin is endangered because of the effects of climate change.

Amundsen and the South Pole

Roald Amundsen was a Norwegian explorer who led the first successful expedition to the South Pole. He was born in 1873, in the village of Borge. His family was a seafaring one, but his mother made him promise to break from tradition and go to university to become a doctor. When Roald was in his early twenties his mother died, and he gave up medicine to pursue his dream of becoming an explorer.

His first expedition was as First Mate on the Belgian Antarctic Expedition between 1897 and 1899. The team was the first to spend an entire winter on the continent of Antarctica. Between 1910 and 1912 he focussed his attention on the South Pole. He and his the other members of his team – Olav Olavson Bjaaland, Hilmer Hanssen, Sverre Hassel and Oscar Wisting – constructed a camp – Framheim Base – at the Bay of Whales on the Great Ice Barrier. From here they organised their equipment and sled dogs, and ventured inland to lay store depots containing food and fuel.

After an aborted attempt in September 1911 due to bad weather, he set out again with his team the following month. Their treacherous journey took them across the Ross Ice Shelf, beyond which they discovered a glacier which allowed them passage onto the high Antarctic Plateau. They named the glacier Axel Heiberg after a Norwegian who had funded early polar expeditions. The glacier was a fortuitous discovery, as without it the climb up to the Plateau would have involved ascending the precipitous Transantarctic mountains. The Norwegians were well-skilled both at skiing and driving their dog-pulled sleds, and were able to travel fast and efficiently across the Antarctic ice. They reached the South Pole at 3pm on Friday 14th December 1911.

Amundsen and his team returned to Framheim, following snow cairns which they had left to help them retrace their route. The descent of the glacier was enjoyable for those on skis, but for the men driving the heavy, hard-to-control sleds, this section of the journey was fraught with danger, as the glacier was littered with deep crevasses. Once back on the Ross Ice Shelf, they accessed their supply depots, and made it back to Framheim by 25th January 1912. Their journey had taken 99 days, and they had covered 3,440 km.

Their jubilation was short lived. Their competitors – Robert Scott and his Terra Nova Expedition – successfully reached the Pole thirty four days after Amundsen's team but,on their return journey, they succumbed to frostbite and exhaustion. Scott and his four companions perished.