

# Living on 'The Ice'

When you hear the word 'Antarctica', you probably think of ice and snow, freezing cold temperatures and penguins. You probably don't think of home! But for 1 000 to 5 000 people annually, Antarctica, our seventh continent, is a kind of home.

Antarctica is a massive place, taking up about 4.5 million square miles. It is classified as a continent since it is a land mass (unlike the Arctic which is mostly made up of sea ice) but until recently it was hardly explored at all. The rough seas, the complete isolation and the difficult climate made it impossible for early nomadic people to get to. Unlike the Arctic, which has been populated by nomadic tribes of hunters for thousands of years, Antarctica was not even noticed by seafarers until the 1820s and had no human inhabitants at all until the 1950s.

The reasons for the lack of human habitation are myriad. Scientists who live there call Antarctica 'The Ice' since, on average, the ice that covers the land masses is  $1\frac{1}{2}$  miles thick. Although the ice over the land is fresh water ice, sea ice also builds up around the continent in winter, causing it to almost double in size.

The average temperature there is  $-60^{\circ}$  Fahrenheit ( $-51^{\circ}$ C), in comparison to  $0^{\circ}$ F or  $-17^{\circ}$ C in the Arctic. The cold, dense air of Antarctica causes **katabatic** winds. These are constant winds which sweep the mountains and valleys at over 60mph. **Herbies** are the even more volatile windstorms during which the wind can gust to 100mph.

While White Nights (days and nights of constant light) are experienced around the summer solstice (December 21st), the opposite is true during the days of the winter solstice (June 21st). Then the land is entirely dark throughout the day and night.

But what does this mean for humans attempting to live there? Alongside the extreme cold temperatures which can cause frostbite and hypothermia, nothing edible grows outdoors here. The largest native land animal (the penguin is considered an ocean animal) is a half-inch long wingless midge. The dark nights can cause severe depression or SAD (Seasonal Affective Disorder), the high altitude of the continent causes altitude sickness and the sunlight bouncing off the ice and snow can cause severe sunburn and snow-blindness. It's quite understandable that people would have found adaptation to this environment difficult.



In the 1950s however, countries began to develop an interest in Antarctica. It was seen as a fabulous scientific research prospect since the winter nights were incredibly dark for observation of the solar system, the harsh environment was perfect for testing equipment for difficult terrain and conditions (as on the moon and other planets) and it provided a perfect place for studying ocean creatures like penguins and whales.

Since Antarctica doesn't belong to any one country and doesn't have a government of its own, countries argued for some years over who had rights to it. Seal and whale hunters nearly wiped out several species of animals who fed near its shores. In 1959 twelve countries signed Antarctica Treaty, agreeing to use the area for scientific and peaceful purposes only. These countries were Argentina, Australia, Belgium, Chile, France, Spain, New Zealand, Norway, South Africa, the Soviet Union (now Russia), the United Kingdom and the United States of America. Since then, 38 countries have signed the treaty.

Amundsen-Scott South Pole Station

At the moment, there are over 50 research stations on Antarctica, owned by a number of countries. Some of these are summer-only stations, while others, such as the American sites of McMurdo and South Pole Station and the Argentinian Esperanza, are year-round facilities. Some of these stations have had to be rebuilt several times since the blowing snow piles around the structure too quickly to be removed by human hands. The new South Pole station (opened in 2008 to replace two earlier structures) uses an ingenious system to limit the effects of this problem. The station is built on hydraulic stilts, the principal being that the snow will blow under the station rather than over and around it. As the snow piles higher, the station can be jacked up on its stilts giving it extra years of usability. Despite this solution, scientists estimate it will still need to be replaced in 2050.



The research stations combine the state of the art scientific equipment and labs needed for research with the more prosaic requirements of human life. Most stations contain gyms, medical units, saunas, kitchen and dormitory style living arrangements. Greenhouses are used to maintain a source of fresh vegetables and fruits and each station generates its own power using special fuel generators and solar panels. The fuel needs to be mixed with antifreeze and stored in special fuel bladders to prevent its freezing before use.

### Happy Camper School

Life in Antarctica is so harsh that all those preparing to live on the continent for any length of time must take part in a survival school. This is called the 'Happy Camper School' but deals with some serious stuff. Students are taught how to survive in the extreme weather conditions, how to keep hydrated, build an emergency shelter and avoid the natural dangers of the continent, including crevasses.

Life in Antarctica is tough indeed! Despite this, Antarctica is probably one of the toughest places on earth to gain residency! To be allowed to stay on Antarctica, you must be affiliated with one of the research stations. You can apply for a job as a research scientist, a member of the medical staff, a maintenance worker or engineer but chances are your first application will not be successful. Many researchers apply for jobs in Antarctica several times before being offered a position. Even after being accepted, stay on Antarctica is relatively short – most people work there for six months to one year before being transferred to their home nation again.

South Pole Station at night and Aurora Australis.



Esperanza



### Fancy growing up on Antarctica?

Both Chile and Argentina maintain stations on the continent that are more like small towns. The Chilean station town is known as Frei Montalva Station or Villa Las Estrellas and maintains a population, even in winter of about 80 people. The Argentinian town is called Esperanza and has about 55 winter residents. Both of these stations have schools, medical stations and other facilities such as gyms.

The Argentinian station made the news in 1978 when the first native Antarctic was born there. His name is Emilio Marcos Palma and officially he holds citizenship to Argentina. His mother and father were sent to the station in the final months of her pregnancy as part of an experiment to determine if Antarctica could be colonised by families. Since 1978, 11 children have been born within the zone defined by the 1959 treaty as belonging to Antarctica. Emilio Palma was the most southerly birth however, being born on a peninsula of the main continent of Antarctica.