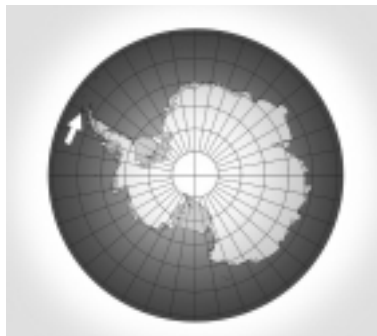


# Life as a scientist in Antarctica

Dr Jane Francis has been on geological expeditions to Antarctica. She works in the department of Earth Science at the University of Leeds. We interviewed her to find out what life was like as an expedition scientist.



**Map of the South Pole – the arrow indicates Livingstone Island**  
(Map reproduced by courtesy of the British Antarctic Survey.)

**Q** Where is Antarctica?

**A** Near the South Pole



**Livingstone Island, Antarctic Peninsula**

(Reproduced with kind permission of Jane Francis, University of Leeds.)

**Q** How do you get to Antarctica?

**A** By boat and plane. We fly from the UK to the Falkland Islands, then catch a ship to Antarctica.

**Q** How long does the expedition last?

**A** Usually 2 or 3 months during the summer, December to February. During this time it is light for most of the day and night because it is so near the South Pole.

**Q** Where do you stay?

**A** In tents as close as possible to the rocks we are working on. The tents take two people and we sleep and cook in them. They are very windproof and quite warm.



### Expedition tents and storage boxes

(Reproduced with kind permission of Jane Francis, University of Leeds.)

**Q** Does it get very cold?

**A** Yes, we have to wrap up warm. I wear three pairs of socks and often five layers of clothes. Sometimes it is too cold to go outside and we have to stay in the tents (lie-ins). When it snows we read a lot of books and play games.

Generally, the weather in the summer is usually very good, clean air, blue skies, warm sun but very strong winds, so temperatures are below freezing. Also we can have blizzards and a lot of snow. We have to wear sunglasses all the time and sunscreen on our faces because it is very easy to get very sunburnt because of the ozone hole!

**Q** How many people in the group?

**A** 2–5. Each scientist has a field assistant for safety.

**Q** What do you eat?

**A** A lot of high energy dried food such as soya, dried fruit, porridge and tons of chocolate for energy. We drink a lot of tea because we get dehydrated in the cold air.

**Q** Where do you wash?

**A** We don't, it's too cold! You don't smell in cold temperatures. Also, sometimes there is a shortage of water because we have to melt ice to make water and that uses up precious fuel supplies.

**Q** What do you do in the evening?

**A** It takes a lot of the evening to cook dinner on one small stove. Then we work, we have to write up the notes from the day's work.

**Q** Do you miss your home, while you are away?

**A** Yes, but the work is very interesting and Antarctica is such a beautiful and exciting place to be.

**Q** What work do you do?



**Dr Jane Francis**

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- A** I am a geologist so I map rocks, record the rock type, I see and measure sections such as the thickness of different layers of rocks. I write lots of notes, take photos and make sketches. The rock samples and fossils that I collect are wrapped up in big boxes and taken home by ship. Months later, they arrive in the UK!
- Q** Where are the rocks?
- A** Most of Antarctica is covered by thick ice but rocks are exposed on the coast in sea cliffs, on small islands and on mountain tops which stick up through the ice caps.
- Q** If I wanted to be an Antarctic scientist, what qualifications would I need?
- A** First you must be a good scientist. In the sixth form you should study subjects such as chemistry, physics, biology, geology, geography. At university you need to study subjects such as earth sciences and geology.
- Q** Do you need to do any fitness training before you go on an expedition?
- A** You must be fit and healthy... because a lot of the work is physical and the harsh conditions mean that you often lose weight on the trip.
- Q** What is the first thing that you do, when you get home after a long expedition?
- A** Eat fresh fruit and salads, smell flowers and look at colourful things.
- Q** If it is cold and the food is not very good, why do you go on the expeditions?
- A** It's a fantastic place to be, the work is very exciting. Some scientists are involved in drilling ice cores which are then taken home in a big freezer to analyse later. I usually go looking for different types of rocks, fossils and petrified plants. Some of the things we find are millions of years old, even older than the dinosaurs. In fact about 10 years ago, we found the remains of an Antarctic dinosaur. It was in millions of pieces, many of which were buried in the sand. On the way home in the boat we had to put all the pieces together. It was the hardest jigsaw I have ever done. All the pieces looked the same!
- Q** I thought that dinosaurs only lived in warm places?
- A** Yes you are right. Our findings shows that millions of years ago the Antarctic temperature must have been much warmer, at least 18 °C warmer that it is today. Together with some of our results from other work, we believe that 70–100 million years ago Antarctica has a similar climate to New Zealand, and this climate lasted until about 40 million years ago.
- Q** Why was the climate so different?
- A** Now that's a good question. Scientists believe that the warmth of Antarctica resulted from the warm 'greenhouse' climates that affected the whole earth at that time. And these climates were probably caused by much higher levels of carbon

dioxide in the atmosphere, as volcanoes emitted this gas. However, the answer is really complicated because many other variables are involved such as ocean currents and the actual position of Antarctica may have been very different. Many scientists have put forward different theories to try and explain the climate.

**Q** So in the future could we see forests in Antarctica?

**A** Perhaps if the climate was to become very warm.



**A simulation showing what Antarctica might have been like millions of years ago**

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The Open University.)

### **Student activity**

The British Antarctic Survey (BAS) has just decided to expand its research projects in Antarctica. New scientists are needed to carry out vital research.

Your job is to write an advert to encourage people to apply for the post.

In the advert, you will need to include the required type of person required, the qualifications, and what they might be doing.

To help you research more about life in Antarctica, visit the following BAS website at <http://www.nerc-bas.ac.uk/nerc-bas.html> (accessed June 2001) and then click on information for schools and students. The Antarctic diary will tell you about life at the Rothera Station. Photographs are also included. There is a slide show collection at <http://usarc.usgs.gov/> (accessed June 2001) and more information at <http://www.antarcticnz.govt.nz/education/Pages/InfoEducation/Education.msa> (accessed June 2001).