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Questions can be posted by students on the [Ask-an-Expert](#) [2] Web Board. The answers were provided by Antarctic experts and by Shelley the LEARNZ Field Trip Teacher.

All field trips have an Ask-an-Expert web discussion board for this purpose. When the web board closed one month after the field trip, a selection of questions and answers were moved to this page.

What did Craig mean when he talked about seal slime and sneeze for the question about people keeping themselves clean?

When Craig was talking about the seals that pop up out of the holes they have drilled he said that sometimes they can sneeze and cover you in snot! This is obviously not very nice and hard to clean off. From Shelley the LEARNZ teacher.

Have there been any serious injuries in Antarctica in the last few years and if so, what happens to sick people in Antarctica?

As far as I know there have been no major injuries at Scott Base recently but it is a risky environment and people have to be very careful and well trained. There is a doctor here and a little hospital 3km away at the American McMurdo Station which can deal with minor sickness. Anything really serious requires an evacuation on the plane back to New Zealand. From Shelley the LEARNZ teacher.

How often do planes fly to and from Antarctica?

The number of planes in and out depends on the season. Usually in summer there are about 3 flights each week if the weather is fine. In the winter there used to be no flights at all but I think this year was the first winter where they did flights every 6 weeks - these winter flights are with cargo usually rather than people. From Shelley the LEARNZ teacher.

How badly is global warming affecting the ice and snow in Antarctica?

A very good question, and the answer depends on where you are. On West Antarctica, the ice is melting because of warming. Two ice shelves have collapsed and floated away and several others are getting thinner very quickly. On the other side, in East Antarctica, things haven't started to change because of global warming just yet. The ice over there is much thicker, and it is much colder. We haven't seen any change yet, but if we do it could be very bad because there is so much ice there if it melts the sea level could rise many metres. From Andrew Pauling.

How often do the ice shelves melt and crumble away?

We know of two ice shelves that have collapsed and crumbled away recently, the

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Larsen A ice shelf collapsed in 1995, and part of the Larsen B ice shelf did the same in 2002. We hadn't seen this before, as ice shelves usually melt away slowly from warm water getting in underneath them, but for these two the top also started to melt and form cracks, which filled up with water and then split apart, meaning the whole ice shelf fell to bits. We don't know how often this happens as we have only seen two, but it could happen more if the planet keeps getting warmer. Some other ice shelves are melting from underneath very quickly, and could be gone by the end of this century. The Pine Island Glacier is the most famous examples, and is melting at rates of up to 30 m per year. Since these ice shelves are only between a few hundred metres and about 2 kilometres thick, it won't last long. From Inga Smith

Why is Antarctica so dry? Does it ever rain?

Antarctica is one of the driest places on Earth, because it is so cold. In the normal water cycle that we see in New Zealand, water from the sea, lakes and rivers evaporates and form clouds, where the water later condenses and falls as rain. In Antarctica, because it is so cold there is much, much less evaporation, meaning there is much less water in the air. There are still lots of clouds, but they hardly ever get enough water in them to condense and fall as snow. Here at Scott Base we have had very little snow, and when it does fall it falls as tiny crystals, rather than the big snowflakes that we see when it snows in other places. In the northernmost coastal parts of Antarctica, like the Antarctic

Peninsula, it is sometimes warm enough to rain, although because there is so little moisture in the air it doesn't rain very much. From Inga Smith and Andrew Pauling.

Why is there so much sea ice?

This is a good question, and one people are trying to understand better, especially in Antarctica. The sea ice forms because the air above the ocean is so cold it starts to freeze the water. In the Arctic, there has been less and less sea ice each year because the air and ocean are getting warmer. However, in Antarctica, the sea ice has been getting bigger each year. The maximum extent of sea ice happens in September, and last year there was over 20 million square kilometres, about 75 times the size of New Zealand, the most we have ever seen. In February we see the minimum sea ice extent, about 3 million square kilometres, which is still 11 times the size of New Zealand, still a very big area. We don't know why it's getting bigger, and there are several ideas that are being investigated, such as the winds getting stronger, ice shelves melting more, and effects from the ozone layer, but still nobody knows for sure, and scientists like us are working hard on figuring it out right now. From Inga Smith.

Where does the salt from the ocean go when the "evaporation" stage of the water cycle occurs, if only fresh water comes back down at the "precipitation" stage?

The salt stays in the ocean when the water evaporates, which makes the sea saltier and heavier, and so it sinks and mixes and that is an important part of the climate system. From Inga Smith.

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Does the water cycle occur differently in Antarctica compared to say, New Zealand, because of the cold?

Yes, the water cycle in Antarctica is different to that in New Zealand. It is very dry in Antarctica, and as a result it hardly ever snows (and here at Scott Base it never rains). It is snowing today, which is unusual. If you look online, you can find out how the shape of snow crystals is different depending on the temperature and how much moisture is in the air. From Inga Smith and Andrew Pauling.

If we can see the ocean, lakes, rivers, etc and we can see the rain or snow, why can't we see the water changing forms when it is evaporating.

Water vapour is an invisible gas, which is why we can't see it evaporating. "Invisible" just means we humans can't see it with our eyes, which can only see the colours of the rainbow (red to violet), but if we could see beyond red ("infrared"), we would be able to see water vapour. From Andrew Pauling.

After looking at pictures and stories about animals and plant life that used to be on Antarctica we were wondering why are there no longer any trees in Antarctica and where did they all go?

Really great question, and I had to look this up because I am definitely not an expert on everything! These trees were really interesting, and could stay alive even with months of darkness, but climate changed and they died out and their seeds couldn't grow any more. The trees became rocks, which scientists can no study. You can read more here:

<http://www.livescience.com/40893-weird-ancient-antarctic-forests.html> [3]

<http://www.bbc.com/news/science-environment-19077439> [4]

From Inga Smith.

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