

Dear Bolot

Thank you for your questions, all the way from Siberia! I have answered them all below, which I hope gives you a better understanding of where I'm presently living and working. Life out on the ocean and in the warmth is very different to where you are. There is more information on some of these questions on the website e.g. wildlife. I have also just uploaded a short video on Facebook which can be seen through the AMT Ocean Exploration page.

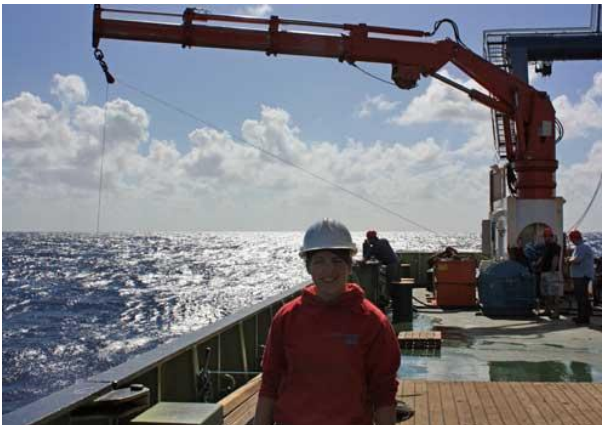
I hope you enjoy learning about the oceans! If you have any more questions I'll happily answer them,

Kind regards,

Ella Darlington

Education and Outreach Officer

Sent from: Main laboratory | RRS James Cook | Middle of the Atlantic Ocean!



Working on the back deck this afternoon

The science mission- why are we here?

Plymouth Marine Laboratories sample a route from the UK, to somewhere in South America every year in the autumn. This year we left from Southampton on 12th October and are expected to arrive in Punta Arenas, Chile on 25th November having travelled 8500miles or 13500km. We have no days off during this time, and start work early in the mornings, many at 4am! We are undertaking a 'Health Check' of the ocean. By taking water samples from different depths we can analyse for many different things such as ocean acidification. One of the main points here is to study phytoplankton and zooplankton. Phytoplankton, although tiny, are vital for our climate system- without them we wouldn't have enough oxygen to breathe! Through photosynthesis they take up carbon dioxide and convert it to oxygen. These tiny plants are then eaten by zooplankton, which make the carbon sink to the ocean floor, so it doesn't return to the atmosphere for thousands of years.

One of the main aspects of the study to discover how these planktic species cope in a warmer climate so we can better predict what will happen in the future if we continue to emit so much carbon dioxide. These tiny creatures are in water all over the world- if you've been to the beach you would have not just been swimming in water, but a whole ecosystem of tiny marine organisms which you need a microscope to see them individually.

The zooplankton are eaten by fish and other marine creatures like whales. Because of this they come up to feed at the surface during the night, so they themselves don't get eaten. For this reason we sample in the dark, before sunrise, so we can catch them in plankton nets and understand how they operate. We then repeat the sampling at solar noon, when the sun is at its peak, to observe all the other creatures living in the water. Travelling such a long way means we have to change our clocks regularly so that we always sample around these times. At the moment we are GMT-1, but this evening we will return to GMT. This will stay the same until we head west at the end of this transect when the clocks will be put back until we end up in the same time zone as southern Chile.

What is it like to be in the middle of the Atlantic, near the Equator?

It's very surreal knowing that we are working where only a few people have ever been. I feel privileged to be able to see such an untouched part of the world, especially given how important the oceans are to our climate. The weather is hot and humid! Recently we have had rain and stunning sunshine, often in the same day. Because we are moving most of the time, we pass through many small weather systems.

Is the ocean quiet?

Whilst out here, the only real noise is that from the ships engines. It's a new ship, only four years old, so she's very quiet really. Because the weather has been so good there hasn't been much noise from the wind. When the weather does get bad, it becomes incredibly wavy, with waves crashing on the back deck. This certainly becomes noisy, but we'd have to stay indoors during this.

What is the weather like?

As I mentioned before, it's very hot here. Most afternoons air temperature is over 30°C. At the bow (front) of the ship it's fairly windy because we are moving, but on the aft deck (back of the ship) it's

sheltered so becomes a real heat trap. It never gets cold! As we head further south towards Chile it will become colder again. We have been through some tropical storms, where there is torrential rain for a few days. Today however, the sun is shining!

At night there is no light pollution so we can see millions of stars, and even the Milky Way. It's absolutely stunning. And because it's still warm it's lovely to sit and watch them.

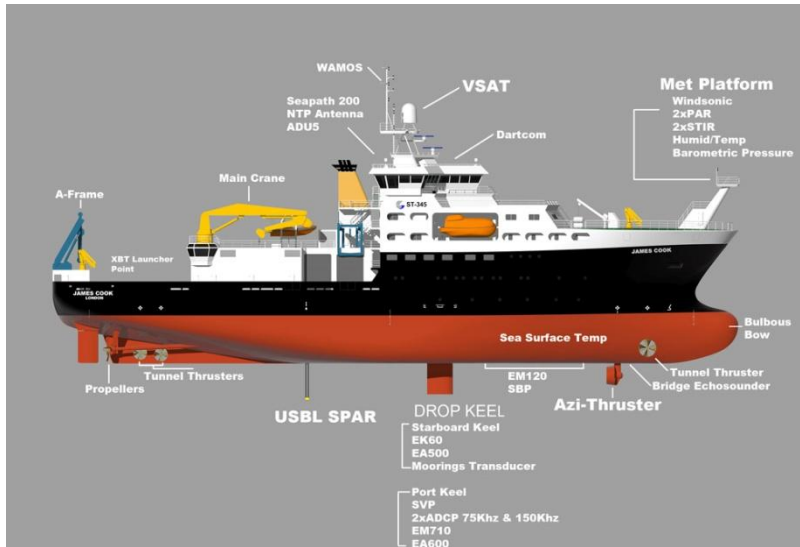
What clothing do you need to wear?

Shorts and t-shirt are all that's needed out here, with plenty of sun cream to avoid being burnt. Whilst we're working though we need to wear hard hats and steel toe capped boots because of the large cranes and winches that move our sampling equipment around. When we're in the laboratories we need to wear lab coats and latex gloves to protect ourselves from the chemicals we use, as well as to avoid contaminating the samples.

What mammals or fish have you seen?

On leaving the English Channel we saw Common Dolphins, which were playing around the ship, especially at the bow. They were so graceful and a real treat to see. A few days later, out in Atlantic waters we saw Pilot whales. Now the large marine life has decreased, and instead we are seeing flying fish! This is expected to continue until we get further south where we may see penguins around the Falklands. There is more on the wildlife, with pictures and a video on the ETE website.

A quick tour of RRS James Cook...



Schematic design of RRS James Cook



Bar



Lounge



Canteen



Dining hall



View of the front



View of the back



One of the many laboratories



CTD in the sampling hanger