

Antarctica

Guardian readers and Matthew Taylor

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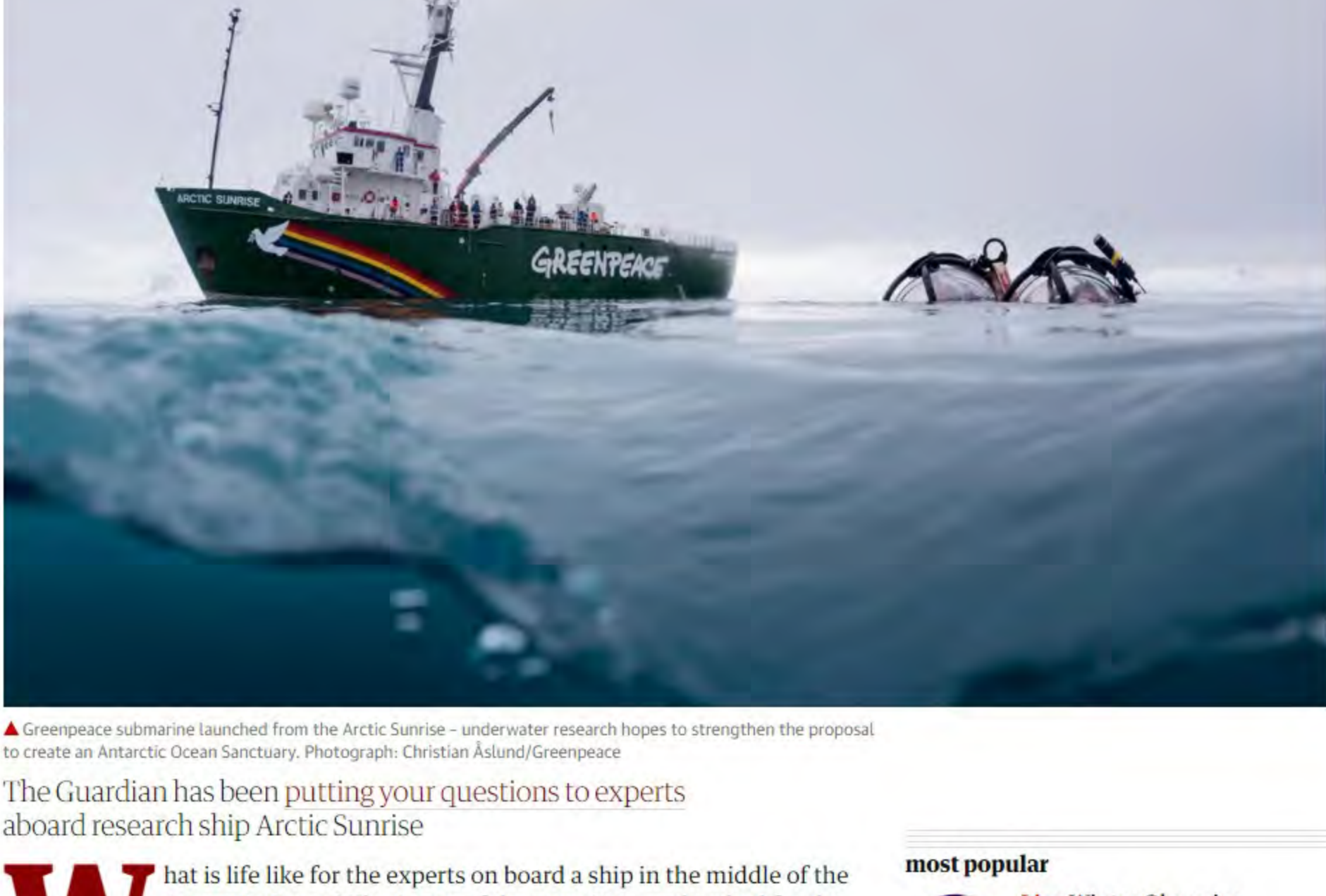


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First images of creatures from Antarctic depths revealed

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Ocean sanctuary: your Antarctic questions answered aboard Greenpeace expedition



▲ Greenpeace submarine launched from the Arctic Sunrise – underwater research hopes to strengthen the proposal to create an Antarctic Ocean Sanctuary. Photograph: Christian Åslund/Greenpeace

The Guardian has been putting your questions to experts aboard research ship Arctic Sunrise

What is life like for the experts on board a ship in the middle of the Antarctic Ocean? That's one of the questions readers had for the Guardian's Matthew Taylor, who has been travelling with Greenpeace as part of an expedition and campaign to create the world's largest ocean sanctuary.

While onboard the Arctic Sunrise and reporting on the issues the region faces, our environment correspondent has been talking with crew members, experts and scientists to answer some of your questions, ranging from ocean plastics to marine life – and what people do in their “free time” on board. Here are some of the responses.

Plastic waste

How much plastic waste are you seeing, and how does this compare to previous visits?

Joe O'Donnell, 33, London

Grant Oakes, ship logistics, from the UK: “Great question Joe. Fortunately the Antarctic area has relatively little plastic waste sources, being surrounded by large areas of ocean, compared to the Arctic, and so does not have large quantities of typical coastal litter often found even on remote shores. The ocean currents are also much more closed. However, we do encounter plastics, such as the three square metre tarpaulin our dive team discovered entangled into the jet drive unit of one of our small boats while operating close to the South Shetland Islands recently.

“In general things is very similar to what was observed in a 2007-08 Greenpeace and British Antarctic macro plastics survey collaboration, where a number of random miscellaneous plastic items were encountered. On the ship at the moment we're undertaking microplastic sea-surface sampling to gather further data on the presence of microplastics and microplastic fibres often derived from larger plastic items breaking up over time.”



▲ Grant Oakes, Elmer Vestidas and Jono Emms preparing for the submarines to arrive onboard. Photograph: Christian Åslund/Greenpeace

When researchers visit these areas, do they ever pick up plastic waste and take it with them?

Carmen Pekkarinen, 45, Espoo, Finland

Grant Oakes: “Hi Carmen. We do attempt to remove plastic pollution whenever possible and practical. Certainly any plastic pollution we encounter within Antarctic waters will be removed. Sadly in some locations globally there is simply far too much to remove with our resources, even with a relatively large vessel. So we sail knowing much remains, strengthening our resolve to end ocean plastic pollution at its source on land, through both legislative change, infrastructure investment, and making corporations and industry responsible for the single-use ‘convenience’ plastics that now choke many coastal marine systems.”

Antarctica's marine wildlife

I'd like to know if the wildlife of Antarctica is going to be able to survive warming conditions. I'm very concerned about marine wildlife going extinct.

Elizabeth Butler, 60, Madison, Wisconsin

Will McCallum, Greenpeace oceans specialist on the expedition: “Hi Elizabeth. The truth is, no one knows exactly. But all over the world we're seeing amazing wildlife threatened by the impact of a changing climate. We also know that creating ocean sanctuaries can mitigate against the worst effects of climate change and make our oceans more resilient. It's very unlikely the Antarctic Ocean of the future will look like the one we see down here today, but the best hope of saving the wildlife we all care about is creating protected spaces for them to recover and flourish.”

This question comes from my six-year-old son, Uko, who loves nature. Is it possible and if yes, then how do you confirm the age of the whales you come across? Is the population of whales decreasing or increasing?

Alo, Estonia

Will McCallum: “We've seen so many incredible whales down here: minke, fin whales, killer whales (they're not so scary really!) and humpbacks. Because we don't have any dedicated whale specialists on board, we've been doing our best to give them a lot of space so they don't feel encroached upon – so I haven't got up close enough to check their ages I'm afraid. Whenever we see a whale, we slow right down and make sure to steer away from its path. I do know that ever since hunting for whales was banned, lots of different species of whales have increased in numbers, which is great news.”

Life on board

What do you do when you're not working?

Firuza Pastakia

Laurence Nicoud, a French cook on board the Arctic Sunrise: “As soon as I finish my work, I run to the bridge to get information: where we are, where we are going, what's happening. Without asking too many questions – just by listening to the captain or the second mate giving orders. If there is no operation going on, I look at the amazing birds that exist here with binoculars, or the whales, or the seals or penguins we come across. I also like to draw the landscapes. If the weather is really bad – it can often be foggy – I have time to call my grandmother, to write emails to my friends, to sleep, to read or to share what's going on with all the others. But I'm working more as a cook than I have free time, so it's a full life here in Antarctica!”



▲ Laurence Nicoud in the galley of the Arctic Sunrise, along with her Indian colleague Walter Rodrigues. Photograph: Christian Åslund/Greenpeace

How do you cope with the constant cold? Do you find it affects your mood?

Mick Scott, 58, North Carolina

Laurence Nicoud: “It's actually summer here in the Antarctic so not as cold as you might expect. On some afternoons, it's even less cold than in the autumn in Europe or in the US. But the weather can change so fast from snow to sun to thick cloud in the evening: in two months, we've only had about three starry nights. The long days we have here in are amazing, though, and I really enjoy and count how lucky I am to sail to work for the planet everyday. For me, someone who spends most of my time in the galley, the fresh – even if cold – air from outside which I get on deck? It's my booster.”

As a team on expedition, are there any ever tensions within the group? If so, how do you go about resolving them?

Ian Devereux, 44, Aberteifi, Wales

Fernando Romo, chief mate on the Arctic Sunrise, from Spain: “On a ship at sea, that is almost isolated from the world, with 35 people and weeks at sea, there are always conflicts. I would say that are two types of conflicts: professional conflicts and personal conflicts.

“Professional conflicts come normally from different points of view of the same problem. We hold daily meetings to discuss our objectives. As we all have the same goal, normally it is quite easy to find solutions that make everybody happy.

“Personal conflicts are are not very common on board. As a team leader I constantly try to search for potential issues knowing very well the people that I work with. If a big problem arises then more action is needed and I talk personally and find solutions. Most of the time, it works! A sense of feeling useful on board, respected, and part of a big goal, normally keep personal conflicts out of the ship.”



▲ Fernando Romo on board the Arctic Sunrise in Punta Arenas, Chile, while en route to the Antarctic. Photograph: Christian Åslund/Greenpeace

Getting involved

I would love to be on expeditions like this one day. Both the Antarctic and the Arctic really fascinate me. How can I get involved?

Daniel Haag, 18, physics student, Germany

Fernando Romo: “Many research ships explore polar regions – Greenpeace explores and campaigns here quite often. Sometimes we take scientists from institutions that work in collaboration with us, and sometimes it is Greenpeace staff, depending on the campaign or job we are doing. Often, there are open positions offered on our website ahead of trips.

“I am part of the deck officers team. I have been working for Greenpeace for 10 years now, but before that I worked already as a deck officer on commercial ships. There is always a need for nautical officers on the Greenpeace ships.”

Hello, I am starting university this September and my goal is to become a research scientist focusing on extremophilic micro-organisms. I have a physical disability but would love to collect samples in Antarctica. Is this possible?

Beth, 32, UK

Mariella Giancola, head of human resources at the British Antarctic Survey (BAS): “In short, it depends on the situation. Everyone who goes to work at a BAS research station undergoes a medical fitness assessment based on the individual's work requirement, activity, location and level of local medical and operational support available.

“The standard medical screening is bespoke to the individual. BAS human resources and operational teams work with the BAS medical unit (based at Plymouth hospital) to ensure an individual's medical fitness will not impinge on their own health and safety in the polar regions, or on those working with them to provide support in the field. Individuals with medical conditions or disabilities including semi-blindness and loss of toes due to past frostbite have previously passed as medically fit for their particular job requirement.”

Greenpeace and other NGOs

How do you see the role of NGOs like Greenpeace in ensuring our oceans are protected, not just from overfishing but also climate change?

Louise Fisher, 39, London

Will McCallum: “We're lucky at Greenpeace to have three ships, which massively increases our ability to go to the most remote parts of the world. And when we do we like to take guests with us like scientists, who we help to undertake their essential research. We also take celebrities, to help us tell the story to millions of people around the world about how we need to protect these special places. Back at home, NGOs have a vital role in holding governments and companies to account and building public pressure to create positive change.”

What is Greenpeace is doing to reduce its emissions from these scientific excursions? I believe that the conservation community will have to lead the way for modelling how we can pursue important monitoring and discovery without further contributing to the problem we're trying to solve.

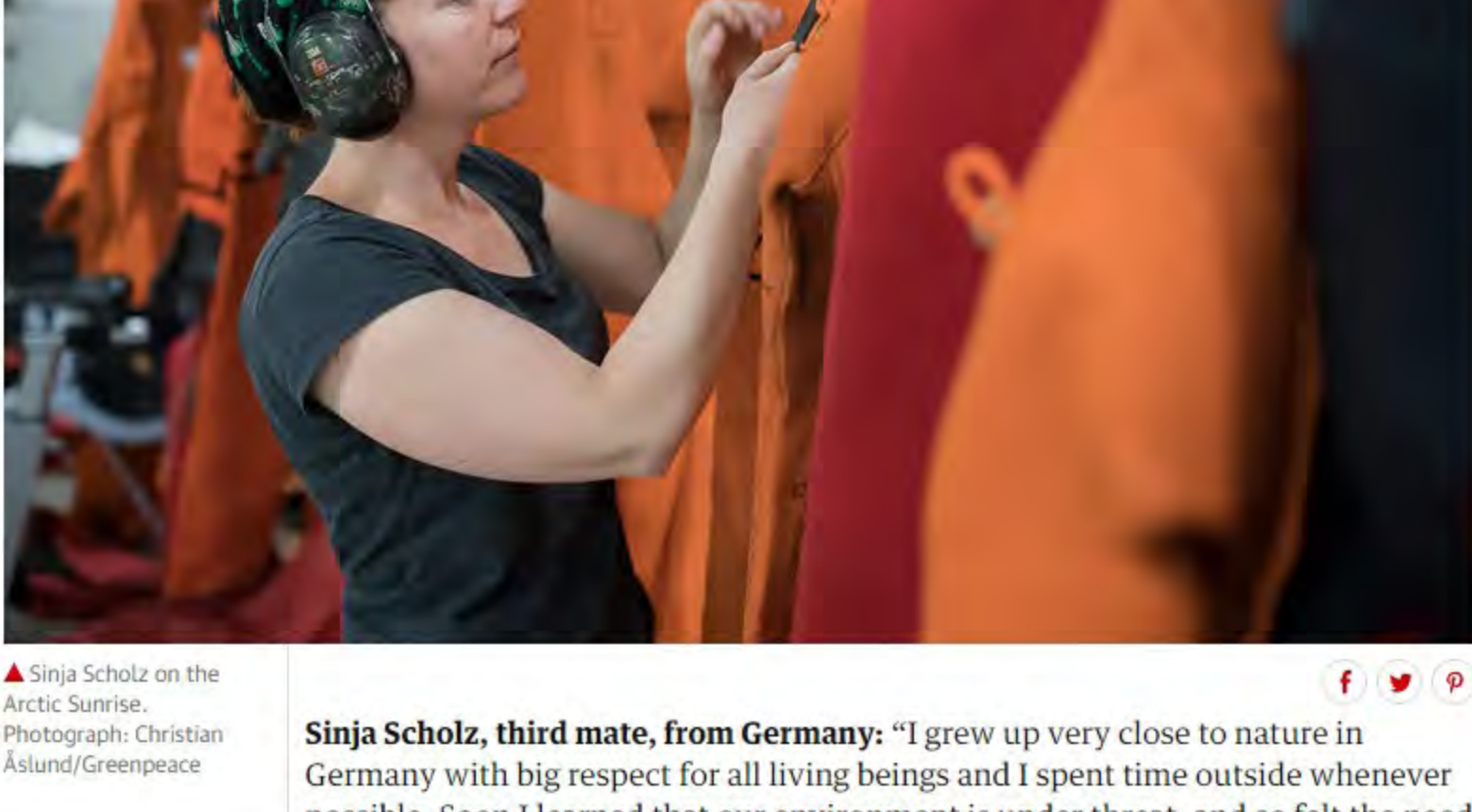
Kris Deutschman, Boulder, Colorado

Will McCallum: “We're living in a world where our transportation systems are largely dependent on oil. We are undeniably a part of that system as well, even though we are working towards the necessary political and systemic changes needed to move us beyond it. Our vessel, the Arctic Sunrise, has been modified to minimise the ecological footprint from our expeditions, and we work as hard as we can to reduce fuel use. Furthermore, for activities like this, we assess whether the footprint we leave behind can be justified when looking at the positive effects we gain from it. For this expedition, as for previous Greenpeace expeditions to the Arctic, we believe the value it has for moving us towards our vital goal of securing an Antarctic Ocean sanctuary, which also has vital benefit of mitigating the worst effects of climate change, is important enough to justify our footprint.”

Hopes and fears

Could you share a moment when you personally realised bringing awareness to environmental degradation was urgent? How do you hope to persuade people of this?

Carmen, 35, UK



▲ Sinja Scholz on the Arctic Sunrise. Photograph: Christian Åslund/Greenpeace

Sinja Scholz, third mate, from Germany: “I grew up very close to nature in Germany with big respect for all living beings and I spent time outside whenever possible. Soon I learned that our environment is under threat, and so felt the need to act and joined an environmental youth movement. I remember the French nuclear tests in 1995-96 making me totally upset, not understanding how it was possible humans could do such cruel things to the planet.

“Progressive desertification, melting glaciers, increasing intensity of hurricanes – we cannot let this happen and have to change our behavior, personally as well as a world community. We need to take our responsibility for a healthy planet and future generations.”

This is an expedition primarily about the human impact on Antarctica's ocean environment – what do you most hope to find and what is the finding you would most fear?

Colin Campbell, 45, London

Sinja Scholz: “I most wanted to find a broad variety of wildlife – under the sea surface as well as on the continent. And we did indeed, it is absolutely fascinating how many different species found a way to adapt to, and survive in these harsh conditions. But also in this remote area the impact of human actions is evident; I would most fear that the basis of wildlife is threatened as life out here depends more than at other places on a healthy environment for population stability.”

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