

## Heïdi Sevestre - Transcription EN

**Intro: [00:27:32 – 00:27:45]**

**There won't be any miracles. There won't be one single person who's going to save us from this problem. There won't be a technology, some technology that will save us from the loss of biodiversity, from global warming. In fact, the miracle is really within each and every one of us.**

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BNP Paribas Personal Finance invites you to discover On The Way, the podcast that explores the paths to responsible consumption. Entrepreneurs, people from the world of business and researchers: On The Way gives a voice to those who, day after day, are helping to develop more sustainable consumption. Welcome, and I hope you enjoy listening!

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Hello On The Way, my name's Heïdi Sevestre, I'm a glaciologist, and I work for one of the working groups of the Arctic Council, which brings all of the Arctic countries together. I'm trying to save the glaciers, I'm trying to educate people, trying to raise people's awareness of their importance, and I'm doing this through my work at the Arctic Council, as well as through expeditions, documentaries, and also radio work.

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I'm trying to use every tool available to raise awareness about the importance of these glaciers. So of course glaciology isn't a very common field. It's a bit of a strange job, but I was lucky to have fallen into it pretty early on in life. I grew up in the Alps, I was born in Annecy in Haute-Savoie, and quite early on my parents immersed me in the Heidi stories, and I sort of felt I was reading about my own story.

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Back then my mother was a librarian, and my parents were always passionate about taking me and my brother to the mountains, showing us nature, and being very curious about everything around us. And as a teenager they signed me up with a mountaineering and hiking club. The club was run by volunteers from my village, and was called the Randonneurs du Chéran.

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And that's really when I got my first introduction to mountaineering, to the high mountains. It was a real revelation for me. It was like another planet, exploring the glaciers, putting on crampons and a helmet, and setting off with your backpack. And it felt really crazy! You feel like you're somewhere else in the universe, with both your feet on a glacier, even though you're still on Earth.

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And I met someone who changed my life. When I was 16 or 17, I happened to meet a mountain guide, who said "Listen, Heïdi, you know there are people who are actually paid to study glaciers. Why don't you do that?" And I was lucky, as

I often say, that I had good teachers, I had good mentors during my studies, and who supported me in this field, which wasn't at all common for a girl to be in.

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And in fact I did everything I could to get my foot in the door as soon as possible, and really quickly started going out into the field to study glaciers. The very first glacier that I studied was one that really changed the way I looked at these mountains, the way I saw those glaciers. That was a glacier called the Trient glacier.

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It's a glacier that's pretty well known to people who tour Mont Blanc. At that time, when I was a young student, I was asked to reconstruct the previous 150 years of that glacier. And it's a glacier with an amazing history, because it's always been a pillar of the economy of the Trient valley, of the village of Trient.

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Right up to the 1870s and 1880s, people went and mined the glacier. In fact, at that time, glaciers were very big, and very beautiful. It was cold enough, there was a lot of snow, so everything you need to keep a glacier happy. And the glacier was monumental. People used it to preserve food, especially in the cities, people preserved food with blocks of ice.

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So it was real ice. Of course people didn't have freezers back then. And so at Trient, what was crazy was that the ice that people cut out during the day was replaced by the glacier overnight. And so through my research I discovered photos of the glacier, it was enormous, and it really occupied the whole valley. But in 2010, when I saw the glacier, it was totally different.

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It was really just a thin layer of ice stuck to the side of the mountain. That's when I realised that studying glaciers is not just about the adventure. It's also hugely important, because these glaciers are reacting to climate change very, very quickly. They're really extraordinary barometers of the climate. But most of all, if we lose these glaciers, we lose a lot of things.

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Notably, we lose our water reserves in the French Alps and the Swiss Alps. And so for me, studying the Trient glacier was a turning point, and I realised that studying glaciers is a lot of fun, but it's also a big responsibility. And if we use them, it's because in the end there are human lives behind these glaciers.

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So obviously, when you see such rapid changes happening to the glaciers, you can't keep that to yourself. And so pretty quickly, during my studies and then when I became a teacher-researcher, I realised that everyone absolutely had to know about this. I had to get everyone to understand what's happening at the Trient glacier, in the Arctic and at the Antarctic.

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And so quite quickly, I tried to get into scientific communication. And actually, these days, it feels pretty normal to talk about it. But at that time, about ten years ago, being a scientist meant publishing reports and publishing scientific studies, mostly for other scientists. But if you want to save the glaciers, if you want to change the planet, then you can't just stop there.

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You've really got to take it further, and bit by bit. I was incredibly lucky, as I did my doctorate at an extraordinary university, the northernmost university on the planet, Svalbard; and in fact almost every week we saw visiting personalities: journalists, ministers, queens, kings, princes ...it really was crazy.

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And so I was immediately thrown in at the deep end. They said "Hey Heïdi, so you want people to hear about glaciers? Well go right ahead!" And that's how I learned on the job, on the ground, how to communicate about science, so first of all via that university, and then I had some amazing opportunities to make scientific documentaries for French TV, in particular for France 5.

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At that time there was a series called *Terres Extrêmes*, which took me to all four corners of the earth, and that allowed me to understand how to communicate about science on television. And right now I'm continuing with make these efforts in communication, so through documentaries in France and overseas, on the radio, and right now I'm also trying out collaborations with artists.

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Culture is really an absolutely extraordinary catalyst for action. You have to speak to people's minds, but you also have to speak to their hearts if you want them to change.

### Musical interlude

So glaciers are some of the best barometers of the climate. Glaciers are happy when it's cold and there's snow. When temperatures rise and there's less snow or more rain, glaciers start looking really bad.

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And the situation has gone beyond catastrophic. We're really losing not only our mountain glaciers, but also the polar ice caps, Greenland and Antarctica, pack ice, which is the ice on the oceans, and the permafrost, which is permanently frozen ground. Everything that's made up of ice today reacts very quickly to climate change.

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So how much does this affect us? That's what's important in the end. We don't just study glaciers for the sake of glaciers, we really study them because they're important for us. When you talk about mountain glaciers, meaning the Alps, the Pyrenees, the Himalayas, these glaciers are the best water towers that we have on Earth. And there's a completely crazy figure, which is that currently 2 billion people on Earth use glacier water, whether it's for drinking, producing energy, or watering crops.

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For example, in France we use it to cool our nuclear power plants. That means that two billion people depend on these glaciers, which are really very heavily affected by climate change. There are other important forms of ice. The polar ice caps, notably Greenland and Antarctica, hold enough ice to raise the entire ocean level by up to 65 metres, which is absolutely huge.

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And, unfortunately, these polar ice caps also react very quickly to a rise in temperatures. You have to realise that hundreds of billions of tons of ice are being lost by these polar ice caps at the moment. Rising sea levels don't just affect Bangladesh, or the Netherlands, they also affect us, right here in France.

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So when Greenland and Antarctica lose ice, ocean levels also rise here. And we have cities that are directly on the front line of rising sea levels, right now in France: Bordeaux, Arles, Le Havre, La Rochelle, the north of France. With even with just one metre of sea level rise, which is likely to happen by the end of the century, parts of those cities risk being flooded by sea water.

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And I'll maybe end by talking about the importance of pack ice. Pack ice is this crust of ice that's permanently there, especially in the Arctic. This pack ice is great, because it's white, so it reflects the heat of the sun back into space. And the problem is that it's being enormously affected by the increase in the temperature of the icy Arctic ocean and of the air in the Arctic, and we're losing it.

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We've lost 45% of the surface of that pack ice in the last 40 years, so about the same area as India. If we'd have lost India, I think we'd have reacted very quickly! But as the pack ice is located in the far north, people don't care about it all that much. Losing pack ice means that here in France we're getting extreme weather events, even more heat waves.

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We might have early frosts, late frosts, so the opposite of heat waves: cold waves hitting us. We might have very dry periods, or periods of

heavy precipitation. So what I'm trying to explain is that ultimately, and right now, our daily lives are interlinked with this ice. We're really seeing an acceleration of global warming at the poles.

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And that's because unfortunately the melting ice accelerates climate change even more, and that accelerates the ice melting even more. The best example is pack ice. So pack ice, while it's there, is white. That reflects solar radiation back into space, so it sort of air-conditions those polar regions.

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If there's no pack ice, what's left instead, especially in the Arctic? That's the ocean, which is much darker, and is very effective in absorbing heat from the sun. So the less pack ice there is, the more the ocean warms up; the more the ocean warms up, the more the entire Arctic region sees increasing temperatures.

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And as temperatures rise, the more the ice melts.

I think that really the first thing, the essential basis for taking action, is education, and information. If people don't know about it then they won't change. That's obvious. And I'm talking about a subject that's still pretty enigmatic. Glaciers, pack ice, they all seem very distant from us.

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If people don't understand that our economy, our health, and the health of the ecosystems all around us depend on these glaciers, then why should they protect them? So educating and informing people is crucial. There are lots of ways of doing that, including the Climate Fresk, the autumn workshops, the Biodiversity Fresk, and talking about water. Making people aware of these subjects at a local level is crucial, and everybody really needs to be aware of it.

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So that's important. And it's not just for younger generations. People tell me all the time "Yes, but Heïdi, you have to go and visit schools." Yes, I'm doing that, no problem. But everyone really needs to be aware of this kind of information: elected officials, businesses, citizens. And these things really need to be implemented at these clubs, in these municipalities, at these companies. We really need to try and educate everyone.

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And in France there are some extraordinary workshops. There's also a nice movement happening right now: our senior civil servants are starting to get access to 28 hours of training about the climate, about biodiversity, about resources. So it's really pleasing to see that education is really being placed at the heart of the subject.

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The second thing that's important to me, and I'm not saying this so that we can all beat ourselves up, is to try and work out our own carbon footprints.

## Musical interlude

Working out your carbon footprint, even though it's a tool that was invented by the oil and gas industry, is still very useful for understanding the actual impact of our daily lives, and of certain decisions that we take day to day, which can either slow down what's happening or really speed it up.

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So to work out your carbon footprint, it takes a bit of time, but there are lots of tools, you just need to Google it to find out. You end up with a sort of pie chart, and what I recommend is that you use that pie chart to find the things you can do that are the most effective. That depends on the individual, it might be transport, it might be the energy consumption of your building, it might be the food you eat, the clothes you buy.

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That all counts, and you really need to find at least one thing in your carbon footprint that you can improve drastically and effectively. I'm fully aware, being from a small village in Haute-Savoie, that sometimes if you haven't got a car you can't go to work and you can't go study.

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So the solutions are not going to be the same for everyone. But what's very clear is that we all have to find the right way to decrease our carbon footprint.

Also, the third thing I often recommend is an idea that I have to confess, I stole from Jean-Louis Etienne, the extraordinary French explorer, who often says that you have to leverage your circle of influence. And again, I understand that it's easier to combat climate change when you've got a roof over your head and you have three meals a day, we don't all have the same scope for action.

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We don't all have the same tools, we don't all have the same sphere of influence, we don't all have the same connections. And so of course the wider the circle of influence you have, the greater responsibility you have for what's happening. So there you go, use your circle of influence wisely. You're never too small to have some sort of influence.

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When I go to schools, colleges, and high schools, all the time I meet young people who are extraordinarily motivated. It's incredibly inspiring! They tell me: "Yes, but we get the feeling that we're too young to make anything happen." And I tell them: "Wait, not at all. Have you been to speak with your principal ?

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Have you been to talk with your municipal council and ask them to maybe form a junior municipal council?" So unfortunately I'm giving them a lot

of ideas. What's crazy is that sometimes they actually carry out these ideas and they work, and they realise that actually... I also notice a lot of discrimination in terms of age.

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But in fact we really need these young people to be on board, to continue to push us forward. And they're never too young to make a difference.

I'm seeing this more and more when I'm speaking to the general public. There's huge frustration about what's happening. So I meet people who tell me: "Well, I calculated my carbon footprint.

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But I'm vegetarian or vegan, I don't use my car anymore, and so I'm maxed out." And you see that despite all of that, they're frustrated. People feel like they can't change things. And I totally get that. Sometime you run up against a brick wall. And that's where we need to work together. We really need to build momentum together to make a difference, because on an individual scale you quickly hit a wall. You soon reach a ceiling, and after that then it's only by taking collective action,

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that's the important thing, that we'll make a difference. It was Jane Fonda who said this lovely thing, which was that the best cure for eco-anxiety and also for frustration was action. And these days we really have to work together to truly make a big difference. The best example I have of this is Camille Étienne, who I admire enormously, who is an environmental activist, and who does fantastic work.

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Camille does a lot of work about seabed resource exploitation. So that might seem like an impossible task. There are lots of countries that want to use a sort of combine harvester on the seabed to go exploring for copper, cobalt, and manganese to make batteries, mostly for the eco-transition. And in fact Camille has been able to transform individual-scale action into collective-scale.

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She basically said to all her followers: if you don't want France to engage in Deep Sea Mining, then click on this button, and it will send emails to all the deputies, and to all the senators of the French government. And I think that set off a mini-tsunami of emails. And in the end, the President of the Republic, against all expectations, decided to declare a moratorium on the exploitation of seabed resources.

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So that's extraordinary. But that couldn't have been done without the individual-scale being turned into the collective-scale.

**Musical interlude**

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So, as scientists, we're really the first in line to explain that we need to reduce our carbon footprints. We really have to get closer to two tonnes per person per year, as soon as possible. And it's something that's also difficult for us as scientists to preach about, because of the way we do our jobs, especially for me, as I'm a scientist who does a lot of work in the polar regions;

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We're often people who have large carbon footprints, as we lead fairly carbon-intensive lives as scientists right now. And we've got a real duty to lead by example. People haven't been talking about it for all that long, and in fact I think it's really the younger generations who remind us about that. I remember a meeting that really moved me. It was in Svalbard, so that's a small archipelago where I spend part of the year in the far north, in the Arctic, 1000 kilometres from the North Pole.

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It's a place that's administered by Norway. We're dropped into the middle of the Arctic, so living there means flying in and out, and a lot of energy is needed onsite, and until just few weeks ago that was produced by coal. So there you go, it wasn't ideal. And one day a French school group came to see me.

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They were young students from the south of France. And the university said: "Wow Heidi, you're really making an impression on them." You're telling them about your job as a glaciologist, you're showing them how great it is to be a glaciologist in the Arctic." So I'd talked about the helicopters, the snowmobiles, the boats, and everything. And at the end of my conference a young girl came up to see me.

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And so it was a tricky moment for me, France Info was there with their microphone right under my chin. And this young girl said: "Heidi, it's been really interesting to hear about your job as a glaciologist, but in the real world, in the everyday life, what are you doing to preserve those glaciers? And to reduce your own carbon footprint?"

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And, wow, I sort of ran up against a brick wall. I hadn't understood anything. And, fortunately, this young woman came to see me and confronted me with the truth. Because being in Svalbard means 36 tonnes of emissions per year per person, on average. That's enormous. When you're a scientist,

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at the time, it was all helicopters, snowmobiles, and icebreakers. There was really a total cognitive dissonance with what I was trying to preach. As in, the idea that you need to reduce your carbon footprint as fast as possible. And so really made me rethink things. So that just goes to show that sometimes you need a bit of a slap in the face to wake you up, and I really needed it.

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And that's how I understood that, on my personal level, I needed to question my own way of living, my own way of doing science. And for me, science is my whole life. When I talk about my carbon footprint, that's exactly what it is, that's my job as a glaciologist in the polar regions. And I decided that I'd do everything I could to organise a first expedition where I'd try to reduce our carbon footprint as much as possible.

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That's not easy, as we still had to travel to the polar regions, because that's where we do our studies. But once we were there, the aim was to do everything to minimise our impact onsite as far as possible. So I organised an expedition for 2021, called *Climate Sentinels*, and so off we went.

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And we tried to break with all the norms of a classic scientific expedition. We were four women, we worked a lot on scientific communication, but, most importantly, onsite, no snowmobiles, no helicopters, and definitely no icebreakers, so we went off on skis, pulling all our equipment behind us, using a small sled called a *pulka*.

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We weren't reinventing the wheel. That's how Jean-Louis Etienne, that's how Scott, and how Shackleton travelled around the polar regions. We wanted to demonstrate that you can do science, or at least some science, whilst minimising your impact on the environment. We went to study how atmospheric pollution affects snow and ice, and how it dirties the surfaces of snow and ice, it darkens them, and so it accelerates the melting of these surfaces even more.

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We realised various things during that expedition. The first was that, of course, what we could do scientifically on an expedition on skis, pulling a *pulka* behind us, was very limited. We did do some science, but we definitely did much less than what we could have done using snowmobiles, for example.

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But, after all, we're being asked to adapt these days, it's all part of adaptation. We're also changing the way we do science, in terms of the climate. We also realised that we were very vulnerable in terms of climate change. What we experienced over one month, we spent one month there, camping all along the way,

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we skied for 450 kilometres, and the weather took a very, very heavy toll on us. It was pretty abominable. I don't think we really expected that, and we realised that we were very small, very vulnerable. When you decide to go on an expedition, and you reduce your carbon footprint. But in the end, these days, since then, there have been lots of other expeditions that are designed to reduce their carbon footprints.

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Now, lots of expeditions are using wind energy to get around, and in particular French research stations, which will soon be rebuilt to reduce their carbon footprints as much as possible. So what was uncommon seven or eight years ago is no longer uncommon at all today, and we understand our responsibility as scientists. If we want to carry on talking about reducing people's carbon footprints, then we also have to lead by example as much as possible and we're doing just that.

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Going on an expedition is very nice, but you really have to keep focussed and make sure that these expeditions reduce their carbon footprints as far as possible. So why are we continuing to organise expeditions to these polar regions, that have a carbon cost, that have an economic cost, and sometimes even unfortunately a human cost? Because if we're going to Svalbard, if we're going to Antarctica, if we're going to Greenland, it's because we really need that data.

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We just can't get those figures, those measurements, using only satellites. Today we still really need to have women and men out there to measure the condition of this ice that is thousands, even tens of thousands of kilometres away from home. Because, again, if we better understand what's happening in Svalbard, Greenland and Antarctica, it's so we can better warn people, like people in France, about changes in temperatures, about rising sea levels.

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So it's still essential to physically go to these polar regions.

With *Climate Sentinels*, it was also very important for us to demonstrate the role of women in this scientific research, in this polar research. When you look at the latest IPCC reports, just 30% of the authors are women, and actually, with that expedition, we wanted to highlight the importance of diversity.

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Essentially, what's needed in science today is diversity, in the ways of conducting this science, and communicating about it. We really need more open-mindedness, more creativity. We really need diverse sensitivities to do this science and to communicate about it. And so we tried to shake things up with four women from different backgrounds, who were very diverse in character.

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And I think it got us out of quite a few problems, going on an expedition as a team, made up of women or not, but all very sensitive people, with no egos, and who respect one another very, very much. The best example of that is from the start of the expedition, when we decided to follow the advice of the person who was the most afraid, and actually we weren't all afraid at the same time, in the same place.

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But that shows the respect we had for each other, although we all had ten to fifteen years of polar experience behind us. Silje was maybe afraid of the pack ice. Me, I was very scared of avalanches. Nina was afraid of polar bears. Anne was very strong, basically she wasn't scared of anything. But that got us out of a lot of problems, in difficult-to-manage conditions.

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So in the end, a 100% female expedition wasn't a bad idea at all.

### Musical interlude

When you're dealing with political awareness about the subjects of climate and biodiversity, it's always a very sensitive subject. But in fact things are changing. It's pretty extraordinary to see that in November 2023, in Paris, there was a summit 100% dedicated to the cryosphere, meaning the poles and the glaciers.

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For me, being able to attend was amazing. I spent the three days interacting with politicians at all levels, right up to the highest level in France. In fact it was led by our pole ambassador, Olivier Poivre d'Arvor, and our president, Emmanuel Macron. And hearing how brutally frank people's words were, about the loss of these glaciers.

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It wasn't at all sugar-coated. Hearing people talk, I couldn't believe the extent to which, in France, millions of people are being affected by the loss of these glaciers, and the importance of taking action. And we managed to make decisions that were very significant. So I'm very grateful to them.

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Decisions are important, but actions are even better. And notably the fact of increasing the protected status of glaciers. Currently, 60% of glaciers in France are highly protected. We're going to move to 100%, which is great. So that means all the bulldozers on the glaciers that we've seen over recent weeks, they're gone! That should take care of it.

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So that's really good news. What we've also seen is far more investment in polar research. And that's still very important. People won't understand rising sea levels if we don't have people in Greenland and Antarctica. So one billion euros funding was announced, which is very significant for France. That will be funnelled into French polar research from 2023 until 2030.

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So these are really very significant announcements, and there's also a coalition of countries that have glaciers, as well as countries that are suffering from rising sea levels, due to loss of glaciers. So we tried to get these countries to be more ambitious in terms of their climate objectives. That's all really good. But what we're seeing right now is that while countries are implementing the strategies they've

defined up to now, we're still heading towards a rise in temperature between 2.4 and 2.7 degrees by the end of the century.

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So what does that mean? Figures like these can feel very vague. Well, that's not great, because we know that if we exceed certain temperature thresholds on Earth, we risk creating irreversible consequences on our lives, and on ecosystems. The simplest example I can give is Greenland, the polar ice cap in North Greenland, which holds enough ice to increase the level of oceans by 6 to 7 metres.

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If the temperature on Earth rises by more than 1.5 degrees, that polar cap might begin to collapse. It might take several centuries, but it will start to collapse irreversibly. So far, temperatures on Earth have increased by around 1.1 and more like 1.2 degrees now. We really mustn't reach 2.4/2.7 degrees at all, that's far too high.

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So yes, right now things are moving. There's a real awareness among politicians. But as we scientists always say, it's not enough. We need to accelerate the movement even more. We have to make sure we do everything to ensure that our climate strategies take into account that there are physical realities that are non-negotiable.

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So when I hear people say "yes, but the transition needs to take a bit longer", there are certain points where we really need to move faster. So there's mitigation: we really need to combat climate change at the grassroots level. And also adaptation. The two go together. We will have to adapt to the fact that rising sea levels will continue to accelerate over the next few decades if we don't react very quickly.

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I really welcome the increased awareness that's happening at the moment, but now, even more than ever, we need action, action, and more action. I think it's really important to talk about these topics of climate, biodiversity, and resources every day. In fact, every day, we have a thousand and one opportunities to do that: when we go to the hairdresser, when we go shopping, when we eat with our family, with work colleagues, at school, to talk about the importance of these subjects.

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You have to understand. Right now, what I have to say is brutal. There won't be any miracles. There won't be one single person who's going to save us from this problem. There won't be a technology, some technology that will save us from the loss of biodiversity, from global warming. In fact, the miracle is really within each and every one of us.

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What I mean is that we're all the best experts to talk about these subjects. You don't have to be a glaciologist. We don't need climatologists right now to talk about the importance of these subjects at home, at work, or at school. So first, discussing it with the people around you is very important. The second thing I highly recommend is using your vote.

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We often roll our eyes because it's not easy, with the options we sometimes have. But in fact, we've all got plenty of opportunities to vote every day, at our sports club, at our school, at our company, and also of course in our communities, and at the national level. But we also really need to be able to put people into positions of power who understand, or at least who respect scientific work; that's a good start already.

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People who understand the emergency that we're in today. That's really crucial. Choose candidates who truly want to put things in place, and all the way up to the highest levels of government, let's vote for people who understand the absolute emergency we're in today.

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And finally, on a day to day basis, we have consumer decisions to make. That's crucial. Personally, there was really one phrase that totally shocked me. It was about plastic straws, there was a poster and on the poster it said: "But it's only a straw..." And then, below that: "...said 8 billion people." Well that sums it up. Our day to day consumption, that sums it all up.

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Today, we have to make crucial choices. It's crucial that when you're shopping you ask yourself "can I buy more seasonal things, more local things?" Yes.

"Do I really, really need this piece of clothing or this new toy  
? Do I truly need it? What impact will this have on me, on my daily life, and also on the environment around me?"

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These days it's not so easy to do your shopping, and there are plenty of apps for doing it - Yuka, and others, and we hope to soon have more apps like Yuka for the environment, that are designed to educate us, to help us make the right decisions, day to day, because we make decisions,

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and here I'm talking about more well-off communities, "Shall we set up a swimming pool in our municipality, or should we try to conserve our drinking water reserves?"

I really think we're going to get there really quickly. And we're in a window where we're not quite there yet, but we risk not getting there if we don't make the right decisions about day to day consumption right now, in 2023/2024.

## Musical interlude

00:30:15:19 - 00:30:36:02

I often promote the importance of discussing these things, talking about the climate and biodiversity with family, with friends, with colleagues. And you sometimes come up against walls. I find that family can be very difficult. Some people are major climate sceptics, and you realise your limits when you're not a scientist, when you don't feel you have the right to talk about all that.

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I've got a great uncle who tells me, "In 1962, in Larzac, the temperature was this or that in July, it isn't like that at all... Climate change was already happening." It's tricky, and I feel uncomfortable. So you have to already know what you're going to say. There's no doubt that climate change is happening.

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And there's no doubt that much of that is due to human activities. But there are also tools that help us prepare to communicate better. There's an incredible website. Basically, it's the top 100 arguments of climate sceptics, it's called *Skeptical Science*, so when sceptics tell you:

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"But 200 years ago in the Alps, the glaciers were smaller," or "in Larzac, in the 1960s, it was this or that temperature." And it gives you the scientific fundamentals so you're able to talk about these subjects. So I have a bit of history with climate sceptics. I find it's impossible to have a dialogue with them.

00:31:35:23 - 00:32:02:06

I mean the extreme-extremes. I'm not talking about the I-don't-care-about-the-climate types, who don't really know what's going on. I mean the sort of people who think the Earth is flat. And it's the same thing in for the climate. There are people who, whatever the science you show them: I mean, I've been in situations where people are talking to me about Antarctica and saying, "But wait, in Antarctica, we've got no scientific data" and I tell them: "But I personally set up the weather station there. So please, I know that we have scientific data from Antarctica, because I was the one who went to collect it."

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So there's really this huge gulf with climate sceptics. There are certain people who are very scientifically savvy, but who deliberately cherry-pick, so they choose data from a particular time, at a particular place.

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You just can't convince those people. The people we need to convince, they're what you might call "the softs", the I-don't-care-about-the-climate types, people

who unfortunately maybe don't have access to this awareness, to this education about climate issues. These people are the majority. We really need to bring them along with us. And we need to make it clear to these people that they're needed, that they have legitimacy, they have experience.

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They have the qualities that will allow us to get there. I often think, and I don't know whether it's a good idea or not, but I often think about someone who's running a petrol station right now. And I think, that person running a petrol station, they must look at us scientists and think "But you're trying to invent a future where I'm not needed."

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And how we can make them understand that in fact we are going to need them, because while it might not be petrol gas station, it would be a recharging station, where people come to charge their batteries. These people have their place in the future that we're trying to create right now.

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So I understand people's fears, I understand that people are frustrated. I understand that we really don't want to be the bad guys, in terms of the future we're creating. But believe me, we're really going to need to get everyone onboard to make it. So it's not easy right now, but once again, I'm absolutely certain that with education, with awareness, we'll be able to get these people on board too, because we really need them with us.

00:33:42:07 - 00:33:58:00

There's this phrase that I really like. One of my best friends from Svalbard says it all the time. This girl is working hard to try to reduce the carbon footprint of everyone up there, and every day she says "You know, we're all part of the problem, but I truly believe that we all want to be part of the solution."

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And it's true. In fact, right now, there's this great and sincere militancy that's forming, which I understand, to combat climate change, to combat the erosion of biodiversity. And there's this English expression: "*The way to hell is paved with good intentions*". - And sometimes trying to be perfect, ultimately makes us waste time, and makes us clash with each other.

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And right now, there's no perfect solution. We definitely don't have a perfect solution. But it's very good that we have people who are getting there, who are actually showing us some sort of direction. But let's not feel crushed by the weight of this all-or-nothing desire to try and do everything all at once. That's why our carbon footprint is about finding one thing that we can improve on a daily basis, one thing that we can actually change.

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And that's really how we get there, little by little, we'll create a snowball effect, and we'll get there.

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