

THE FUTURE of GLACIERS

Hi everyone, my name is Anne de Carbuccia and welcome back to my lessons for the planet. Today I will show you how much the world of glaciers has changed and how my art has evolved with it.

CHAPTER 1 | INTRODUCTION

Since the beginning of my One Planet One Future project one of my main goals has been to artistically document glaciers. That's probably why a lot of people call me an environmental artist. I try and recount what we have, what we are about to lose and especially what we have already lost.

CHAPTER 2 | LET'S FIND OUT!

I started creating my TimeShrine installations on glaciers in 2013 and I was really shocked and surprised a few years later to go back and see how those same glaciers had dramatically receded. Actually ice loss has been substantially increasing, almost by 65% in the last 20 years... It was like watching climate change in real time.

So, from documenting the extraordinary beauty and fragility of glaciers it suddenly rippled into talking about heat, ice loss and... sea level rise. Because everything is of course connected and interconnected on our beautiful planet and glaciers are one of the most important sentinels of climate change and its dramatic consequences.

I created a series of installations at the Morteratsch glacier in 2013 in Switzerland. It was a very beautiful glacier with fantastic ice caves; and its snout, that's what you call the end part of a glacier, consisted of these immense sheets of blue ice, quite magical looking and very photogenic. Years of compression gradually make the ice denser, freeing it from bubbles and making the ice appear blue. This was very ancient ice, look how blue it is. It really felt like the perfect place to portray European glaciers!

Receding Glacier I, 2

I was able to trek up to its snout using a sled to bring up all my gear and of course my symbols. I always try to portray symbolically the importance of individual choice in these transitional times we are living in. This is the hourglass I used, one of our most ancient ways of calculating time. My other symbol, the Vanity, a symbol of choice, is there to remind us that during our limited time on this planet we can all choose whether we want to live a positive and productive life or a superficial and vain one. I also used some crystals in the installations. Crystals have always been considered as creators of a flow of good energy and as healers. That is exactly the impression I had standing in front of the Morteratsch, I was in front of something very ancient and very important for the wellbeing of our planet and therefore for our wellbeing.

Glaciers have existed for millions of years, and they keep an important record of our atmospheric history. They really are a silent witness of all the key events that took place on our planet. Amongst the ice layers are kept records of volcanic eruptions, pandemics, ancient civilizations, nuclear testing and anthropogenic climate change.. And from their size, depth and extension scientist can get a pretty good idea of the health of our planet.

One of the crystals I had brought was a crystal ball. I placed it in the center of my installation and realized only later, when looking at the images, that my reflection was captured inside it. People say you can read the future in crystal balls and this image of myself upside down only took its full significance when I returned to the Morteratsch glacier six years later in 2019.

It had dramatically receded; the ice caves and the great blue ice walls were completely gone, and I couldn't find any reference of what I had photographed. It felt like a world upside down and I felt very sad.

Glaciers have been melting at an accelerated pace for the past 20 years and yet they are key to our survival and the survival of so many other species on our planet. Glaciers are our greatest freshwater reserve, provide water for billions of people, they irrigate crops through meltwater and generate hydroelectric power. Losing a glacier is like losing a very important protector.

When a glacier disappears, experts speak of extinction. They consider it a very grave event. In Iceland, for example, when they lost the Okjokull glacier they had a symbolic funeral with even the Prime minister in attendance. They also created a commemorative site to remember the glacier. This is the first monument to a glacier lost in the Anthropocene.

Human experience of glaciers is generally limited to mountain glaciers that are easily accessible, but by far the greatest mass of ice on Earth is the Antarctic Ice Sheet, which reaches a thickness of 3 miles, you heard me right, 3 miles! Antarctic ice may calve icebergs that are over 50 miles long.

The Antarctic continent has been partially covered by ice for the past 40 million years and is part of the Cryosphere, that includes all the portions of the earth that are covered by water in its solid form, from glaciers to permafrost.

I was lucky enough to go to Antarctica! It is by far our most beautiful open-air museum. It's like traveling to a different planet where everything is white and you can actually see the light because it becomes golden in comparison!

Antarctic & Southern Elephant Seal Skulls

You can get a sense of that in this image: I created this installation on an iceberg which, let me tell you, was quite treacherous to climb on. But what an incredible sensation I was basically creating my TimeShrine on a live sculpture that moved, turtled and constantly changed shape! If you look closely, you will notice that the base of the installation is made with a whale vertebra that I had found close by. Yes that's the size of just one vertebra!!!!

Today one third of the ice platforms in Antarctica are at risk of collapse. And the largest slab of ice ever, called A-76, which measures almost four times the size of New York City has just broken off from the frozen edge of Antarctica.

So why are glaciers melting so fast?

A glacier is considered "in equilibrium" when the amount of snow that falls and accumulates on its surface is equal to the amount of ice lost through melting, evaporation, calving and other processes. Unfortunately, global warming is not helping to keep this equilibrium, quite the contrary. The last decade was the warmest on record and the six warmest years ever recorded have taken place since 2015; and nobody is forecasting improvements...

Imagine that if all glaciers and ice sheets melted, global sea levels would rise by more than 229 feet. Recent studies already predict that we will lose at least a third of all our glaciers by 2100 and that will include most if not all of European glaciers. This will increase sea levels by approximately 3 feet which would basically imply the demise of numerous coastal cities around the world. That's why most scientists consider that glaciers are approaching a tipping point, meaning the point when a small, reversible change, becomes irreversible. In the case of glaciers this would imply unstoppable melting and dramatic rise of global sea levels.

Since everything is connected on our planet that doesn't even take into account the Feedback loops which could accelerate things even more.

Feedback loops reinforce the impact of climate factors and tipping points, starting a chain reaction that repeats again and again. So for example, glaciers melt because of global warming and by melting their reflection of sunrays and cooling effect is reduced. Glaciers then start having dark patches that actually absorb the sunrays and accelerate global warming which in turn makes glaciers melt even more. The consequence of the consequence and the ripple effects on our planet are endless, especially when it comes to Antarctica's glaciers.

Most people will never get to visit Antarctica, it's so remote. But ALL of us wherever we live on this planet depend on its well-being for our survival.

The good news is we already know what we need to do to prevent this from becoming an unimaginable crisis.

The only way to limit the global retreat of glaciers is to reduce greenhouse gas emissions and thus the warming of the atmosphere.

The Paris agreements of 2015 is an international treaty to fight exactly that. Its goal is to limit global warming compared to pre-industrial levels to well below 2 degrees Celsius, preferably to 1.5. It was signed by 197 countries.

We are adapting to a warming planet and super computers can already calculate what our planet will look like in the future. But depending on how much the temperature of our planet increases there will be a great difference in how many of our coastal cities we will lose and in how extreme our adaptation will have to be.

A tangible example of adaptation is that we are covering up our glaciers with geotextiles to prevent them from melting too fast. These are measures that can help slow down but not to stop the melting of glaciers in the long term.

When I discovered that every spring several glaciers were being covered, I decided to go see for myself. I went to the Presena glacier in the Italian Alps which has lost more than one third of its volume since 1993.

Follow the Blue Thread SERIES

My installations, the TimeShrines, are also about creating awareness as I try to show you what we could lose. But most of my images depict something at risk but still very much there. Seeing glaciers covered, suddenly made me feel my TimeShrines had become irrelevant, we had moved on from mitigation and entered a world of adaptation. The glacier itself had become the art installation, the Shrine to time. And so I created a whole series called "Follow the blue thread" symbolically we are trying to sow our glaciers back together with this blue thread.

Look at these images, it looks like something the land artist Cristo would have created back in the day, it's actually quite beautiful. But in our era, the Anthropocene, it's not a work of art but an adaptive fight against time.

In the last decade, it was estimated that the chance of any one year reaching the 1.5C threshold was only 20%. New studies put that risk at 40% today. It means that we're approaching 1.5C limit, we're not there yet but we're getting close. And yet our CO2 emissions continue to grow, and pollution levels continue to reach new records. If our governments and institutions, and also we as individuals, don't act now to reduce fossil fuel consumption the situation as we just learned could become dramatic.

Finally scientists are worried that with melting glaciers we are also losing an entire extreme ecosystem of bacteria and microorganisms that could potentially have the solutions to some of the health or environmental challenges of this century. These subworlds are disappearing

before we can even study them. Not only are we losing a powerful protector, we are also depriving ourselves of a precious problem solver.

CHAPTER 3 | CONCLUSION

There is no one solution to reduce our global warming and evolve into a fossil free economy. What is certain is that there are many ways of solving this challenge and that we can all take on that responsibility in different ways. What we need is an individual and collective change of approach as vast and multifaceted as our glaciers. Only in this way we will be able to create a future for our glaciers and more generally life on Earth. We are living in the Anthropocene, there is no way of changing that. But we can make the Anthropocene wiser, a new era where humans become a positive geological force.

Where humans become the protectors of our planet.

CHAPTER 4 | SUMMARY

1. Glaciers have existed for millions of years and keep an important record of our history.
2. Glaciers are one of the most important sentinels of climate change and its dramatic consequences.
3. Ice loss has been increasing by 65% in the last 20 years.
4. Almost 2 billion people depend on glaciers for their survival.
5. if all glaciers and ice sheets melted, global sea levels would rise by more than 229 feet.
6. Today one third of the ice platforms in Antarctica are at risk of collapsing.
7. Today most scientists consider that glaciers are reaching a tipping point.
8. Feedback loops reinforce the impact of tipping points
9. The only way to limit the global retreat of glaciers is to reduce greenhouse gas emissions.
10. We can make the Anthropocene wiser, a new era where humans become a positive geological force.

Losing a glacier is like losing an important protector.

I hope you enjoyed our lesson. You can find more information on our project on our website or write to us at this address.

If you want to stay connected, we would love to know more about your views and ideas. You can follow us at One Planet One Future which is both on FB and IG.

Until next time!

