

**Greenland – for website research page.** <https://rosiesnell.com/greenland/>

### **Disko Island**

My trip to Greenland began from the simple research premise of documenting the sublime icescapes of the country. I have always had a fascination for ice and snow formations, in particular the potential power for the dramatic – avalanches, calving icebergs, the flow of a glacier.

I arrive in Greenland in May and the midnight sun has already arrived. The sea ice is beginning to melt away, allowing for travel by boat.

Greenland is the largest island in the world and 80% of it is covered by an uninhabitable ice cap. The towns and villages huddle along the coastline. There is nothing inland but vast stretches of ice and snow. There are no roads adjoining the towns, so the only way to travel is by air or sea.

I begin my travels in Uummannaq, an island on the north-west coast. It is described in my guidebook as 'the Rio de Janeiro of Greenland'. It is also apparently where Santa Claus has his summer holiday house. In its centre is an imposing 1175-metre red mountain, formed of gneiss rock. Greenland is mainly made up of gneiss rock, a type of granite formed under intense heat and pressure. This pressure separates the light and dark mineral constituents into visible bands giving the mountain a stripped and swirled appearance. This rock is very hard which makes it impossible to hide all the detritus that modern life creates.

### **Uummannaq mountain**

My first works made from Greenland are, as with previous works, concerned with man's impact on the landscape. I find myself drawn to these aspects of human intervention – rubbish tips and power stations, documenting how 21<sup>st</sup> Century living impacts the far reaches of our planet.

I then head for the Ilulissat Icefjord, now a World Heritage site. This bizarre geological landscape produces 20 tonnes of ice a day. It is the most prolific glacier in the Arctic, producing about a tenth of all icebergs floating in Greenlandic waters.

Walking along the coast here provides stunning views out to sea of the ice-choked bay. Every time I think I can't take another photograph of icebergs, the light changes and the scene represents itself anew. The ice bank at the mouth of the fjord portrays a never-ending drama of changing forms, colours and sounds.

The icebergs move slowly on the currents, grinding and bumping into each other and against the sea floor. The wind causes the sea ice to drift. In the Arctic this is driven by the Beaufort Gyre, a clockwise circulation around the North pole that is caused by high-pressure creating the Transpolar Drift System. But the ocean current typically acts in the opposite direction.

I walk on beside the Icefjord, crunching through the snow, the fear of polar bears never far from my mind. I pass the site of an archaeological dig, little markers peeking out of the snow alert me to its whereabouts. Here they found the remains of the largest settlement of the Saqqaq people, who lived about 4400 years ago, proving that this seemingly hostile landscape has a highly productive and stable eco-system, rich in resources.

## **Ilulissat Icefjord 2**

I step off the track to read a notice on the shore only to be told that standing here I am in danger of a tsunami caused by calving icebergs. To reinforce this warning, every now and again there is a roar like thunder as an iceberg comes crashing down into the sea. The sun is now low in the sky, skating along the horizon but never disappearing from view. Soon it will rise again above the boundless white.

The walk, although precarious at times with deep snow drifts and rocks to clamber up, is a beautiful one. But unfortunately, you can no longer reach the glacier on foot, as for the past few years the glacier has been in rapid retreat and now lies over 50km inland. So for that I had to take a plane.

It's hard to work out quite what I'm seeing from the plane, the surreal and dreamlike landscapes appearing to float through the clouds. The auto-focus on my camera can't find anything to fix on. I'm not sure if I'm looking at the face of the glacier or the soup of icebergs or clouds. Everything appears misty whites and turquoise blues.

Glaciers, like rivers, are constantly moving. The weight of the ice pack pushes them ever forward. Their surface is jagged and brittle and covered with crevasses. As the ice moves, cracks form and the crevasses open up, allowing melt-water to pour down and create rivers deep under the ice. These underground rivers lubricate the ice turning the glacier into a dynamic ice stream. Ilulissat's glacier is one of the fastest in the world, moving 7km a year. That's almost 1 metre per hour. Once the ice gets to the front of the glacier it will calve and become an iceberg. It will still take a year for the berg to move to the sea as the 50km fjord is so congested and chocked with ice.

I'm on a ferry now to Disko Island to visit the Arctic Scientific Research Station there. It's a cold seven and half hour trip negotiating towering icebergs. This is no mean feat by the lookout, who stands half way up the mast to get a better view, as Icebergs are 90% below the water. Icebergs appear so serene but they are full of energy. Their large mass pushes them down but the salinity of the water pushes them up. Inside sea water forces its way up through the berg while above melt water forces its way down. These floating goliaths creak and groan as the water inside vibrates and resonates with its own music. As the icebergs age they become more unstable. The sea gradually erodes the berg from underneath and they can become top heavy and roll over, creating giant waves in their wake. The sun erodes from the other direction causing melt-water that flows down, eroding their surface and causing them to fracture and split apart.

## **Disko bay iceberg 2**

Apart from icebergs, there is so much variety of ice to encounter as we cross the bay. There is sheet ice, frazil ice, pancake ice, grease ice and congelation ice. As the temperature of the water drops below  $-1.8^{\circ}\text{C}$ , small ice crystals are formed called frazil ice, a slushy substance. These crystals expel the salt causing the salinity of the surrounding water to rise. The frazil crystals then rise to the surface and bond with other crystals forming sheets of floating ice. Grease ice is formed when the sea is calm, allowing the frazil ice to form thin, continuous sheets called nilas. As this sheet thickens it becomes congelation ice. If the sea is rough the frazil crystals form into circular disks called pancake ice.

The colours vary immensely too. Ice crystals are jagged and reflect light and therefore appear white. But as melt water on the surface drips down and refreezes it is transparent and appears blue or green.

Breaking through the sea ice on the way in to harbour we pass the old whaling station. Where the lookout once stood, there is now the huge, white jawbones of a Bowhead whale. These bones were from the last Bowhead to be killed here in 1973.

### **Disko harbour sea ice**

The pack ice groans and creaks as it shattered into a chequered pattern beneath the ship's bow. Ice is a simple but strange substance. It has some unusual and paradoxical properties. This simple chemical composition creates very different surfaces and landscapes. As it freezes it can produce complex snowflakes or simple icicles. It is one the one hand so delicate and fragile you can melt it with the warmth of your hand but on the other, it is so powerful it can carve out entire landscapes. It is one of the few substances that expands when it turns from a liquid into a solid and therefore floats rather than sinks. This is because ice forms a hexagonal crystal that opens out, pushing the atoms further apart. This is an unusual property but a very fortunate one. If it were heavier than water the sea would freeze from the bottom up, extinguishing all the rich marine life in the Arctic ocean.

As a snowflake falls on the glacier it freezes and compacts. The ice can capture air molecules in the ice, so it has the ability to preserve the past. It will be around 15,000 years until that snowflake is released again from the ice and back into the water. Ice is a contradiction. It is always on the point of disappearing making it fragile but this is also its strength.

Greenland's landscapes have endured for millions of years but at the same time there is a temporality, an ever-shifting surface that groans under the pressure. The icebergs appear like fantastical, otherworldly lands. The scale and perspective are hard to fathom and the colours are constantly shifting. Although transient and constantly in flux, these vast, floating landscapes have the appearance of permanence, as if hewn from marble.

Through the experience of meeting the people and documenting the landscape, I have become interested in our often complex and contradictory relationship between humanity and the natural world. The eulogizing and destruction, the aestheticizing and ultimately our longing for control.

### **Ilulissat huskies**

Witnessing the front of a glacier crash into the sea or an iceberg suddenly roll over, made me view my environment differently. This was no longer a passive landscape. This was the awe-inspiring landscape of the Romantics, already full of potential and drama.

As I have always had a great interest in the medium of paint, it seemed a natural move for me to try and explore these phenomena in terms of paint. How paint can not only be used to represent nature but how it can emulate it in terms of its behaviour. Using weak layers of paint between more stable ones to cause the paint to move under pressure, or using a brittle paint over a flexible one to cause the surface to crack. I have also been working through these ideas with my drawings and watercolours, cutting and tearing the paper to replicate the pressures these landscapes undergo.

Glaciers, Sea Ice and Ice Formation – John P. Rafferty, Britannica Educational Publishing, 2011

Ilulissat Icefjord – Ole Bennike, Naja Mikkelsen, Henrik Klinge Pederson and Anker Weidick, Geus, 2004.