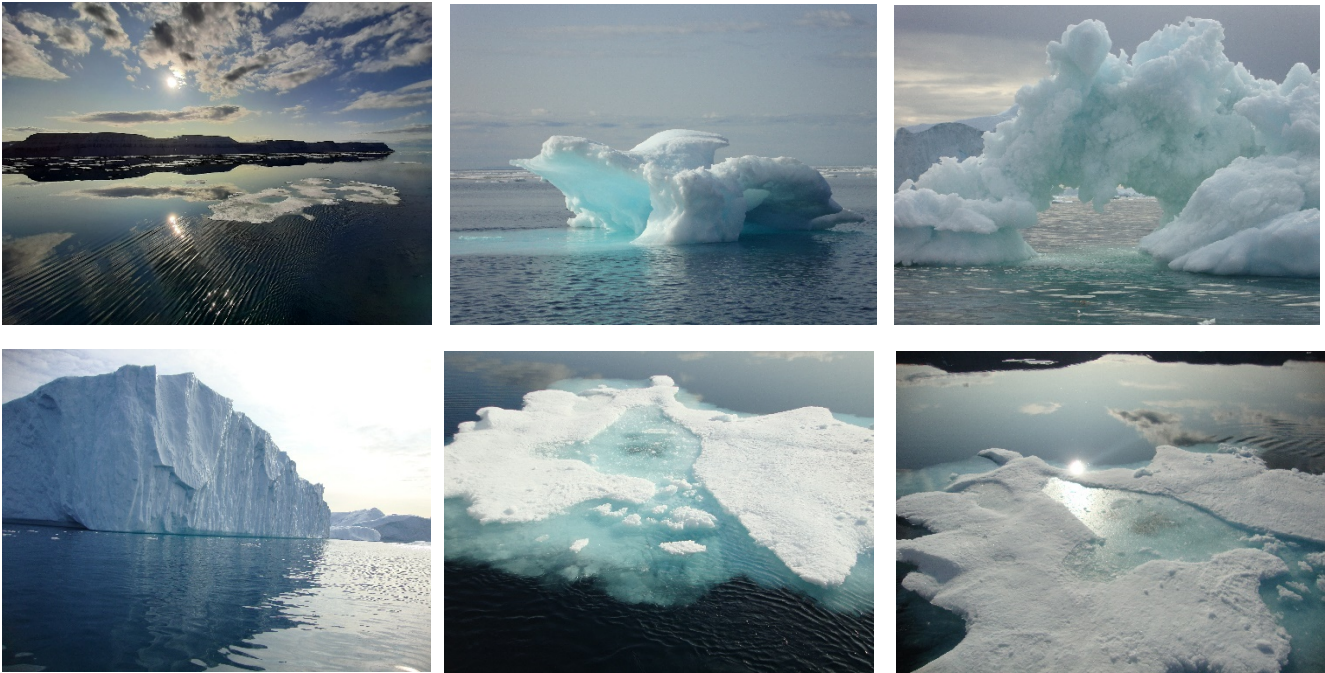


### Eco Awareness Week Day 3 – Cold Environments



#### Thought for the day

Cold environments are polar, tundra and alpine regions across Europe, Asia, The Americas, and Antarctica. Often referred to as frontiers of climate change, these regions face warming up to three times more rapid than the global average. This is primarily a result of ice loss, which exposes dark land and ocean surfaces that absorb heat more easily and drive further ice loss in a positive feedback loop. Global implications of warming in cold environments include sea level rise and associated risk of submersion for low-lying countries, loss of biodiversity as ice-dependent species die out, and climatic impacts as the ocean conveyor belt and associated global atmospheric circulation are disrupted by an influx of freshwater to the surface of polar oceans. However, the regional nature of these changes varies significantly from place to place.

For example, it is important to remember that the Arctic is home to 4 million people of whom 45,000 are indigenous and rely on the landscape and ecosystem both economically (cold-water fish exports account for 90% of Greenland's total) and culturally (in Northern Scandinavia the Sámi have developed a complex language with over 200 words for different types of snow). The regional impact of a melting Arctic could be devastating for these economies and cultures that are so closely tied to the wellbeing and variety of the surrounding environment.

Regional impacts are of a very different nature in the Antarctic, where there are zero permanent inhabitants. Antarctica is of huge importance to scientists as the only pristine wilderness remaining on Earth (protected from development by the 1959 Antarctic Treaty). The 70 permanent research stations on the continent are able to analyse ice cores with annual atmospheric records dating back 800,000 years (670,000 years older than those in Greenland), explore sub-glacial lakes teeming with 4,000 different species of microorganism and even search for answers about the fabric of the universe by detecting high-energy sub-atomic particles in an environment otherwise free of radioactivity (See [Arctic Muon And Neutrino Detector Array \(AMANDA\)](#)). Loss of such a pristine wilderness would inevitably come with loss of knowledge about the world that we live in and loss of a model of scientific information sharing that has existed in Antarctica for decades.

So what can we do? Today's video is a collection of perspectives from indigenous people, scientists and students who have an interest in cold environments with specific focus on the Arctic. They will be discussing why they care about the environment and giving some key advice on how we can make a difference from home.