STUDENT SHEET 6a

Catlin Arctic Survey 2009

Photo credit: Martin Hartley

The Catlin Arctic Survey 2009 was an international collaboration between polar explorers, some of the world's foremost scientific bodies and the World Wildlife Fund (WWF). The intention is to better predict how much time there is before the North Pole sea ice cover melts.

This scientific endeavour began on 28 February 2009. The expedition was led by highly experienced polar explorer and Survey Director, Pen Hadow. Accompanying him were Ann Daniels, one of the world's foremost female polar explorers, and Martin Hartley, the leading expedition photographer.

The team travelled on foot, hauling sledges from 81°30'N 130°W, across hundreds of kilometres of drifting sea ice, for around 73 days, in temperatures from 0°C down to -40°C (-60°C when taking wind chill into account), heading towards the North Geographic Pole.

Over 50 different types of measurements and samples were taken by the surface team from the seawater column, the ice and snow layers, and the atmosphere. These will help create a 3D benchmark data set on the state of the ice and a better understanding of the interaction between all the processes affecting the condition of the sea ice cover.

The team had the experience of working on the Survey through blizzards, white-outs, fog, across rubble-fields and even donning immersion suits for open water and thin ice crossings.

Current estimates for the total disappearance of the Arctic Ocean sea ice vary from 50 years down to just four.

Debate

- If the sea ice does melt in say 20 years from now, what changes would you expect to see in the tundra areas bordering the ice?
- What will be the likely impacts on the lives of people living in the 'periglacial' areas bordering the Arctic? For example the Inuit whose lifestyle and culture are based around frozen seas and ground. Or the 'ice road truckers' who have to transport materials over vast distances?
- If you were managing the extraction of oil and gas from these areas, what precautions would you take in light of climate change?
- In any debate about climate change in the Arctic we see polar bears featuring prominently. What major effects will climate change in this region have on marine and terrestrial ecosystems?
- What effects could happen across the UK if sea ice melts?
- What action could be taken that would reduce the rate of sea ice loss?

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