

Reindeer are shrinking: warming threatens Christmas icon

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By the time they reached adulthood, reindeer born in 2010 weighed just over 48 kilogrammes (106 pounds), compared to 55 kg for those born in 1994

If Santa is recruiting helpers to haul Christmas presents around the world this year he had better take a few extra, said researchers Monday who warned that reindeer are shrinking.

Over the past 16 years, the weight of adult [reindeer](#) in Svalbard in the

Norwegian Arctic has dropped by 12 percent, likely due to [global warming](#), said study findings presented to a meeting at the British Ecological Society (BES) in Liverpool.

By the time they reached adulthood, reindeer born in 2010 weighed just over 48 kilogrammes (106 pounds), compared to 55 kg for those born in 1994.

"Twelve percent may not sound very much, but given how important body weight is to reproduction and survival, it's potentially huge," study leader Steve Albon of the James Hutton Institute in Scotland, told AFP.

Previous research had shown that when the average adult weight in April is less than 50kg, the population as a whole declines, he added.

Albon and his fellow researchers blame climate change for the shrinking reindeer.

Scientists say land surface temperatures in the Arctic were about 2.8 degrees Celsius (five degrees Fahrenheit) higher last year than when records began a century earlier.

Warmer winters mean more rain, which falls on snow and freezes, the BES explained in a statement.

'Catastrophic die-offs'

The ice prevents reindeer from getting to the lichen which comprises the bulk of their winter diet and for which they usually forage in the snow.

Lichen are complex organisms comprised of a fungus living in symbiosis with an alga or bacterium.

"The reindeer starve, aborting their calves or giving birth to much lighter young," said the BES.

Reindeer numbers have increased over the past two decades, said the research team, so greater competition for food likely also contributed to their smaller size.

This meant there could be more, but smaller reindeer in the Arctic in the decades to come, "possibly at risk of catastrophic die-offs because of increased ice on the ground."

The team has tracked Arctic reindeer since 1994, catching, marking and measuring 10-month-old calves every winter and returning the following year to recapture and note the animals' size and weight.

A study earlier this year pointed to 61,000 reindeer starving to death on the Yamal Peninsula in Siberia in the winter of 2013-2014 due to a "rain-on-snow" event as described in the new research.

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