

## Re: WI: Antarctica was on the North Pole –

**Source:** <http://sci.tech-archive.net/Archive/sci.geo.meteorology/2005-03/0031.html>

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**From:** Alfred Montestruc (*amontestruc01\_at\_yahoo.com*)

**Date:** 03/04/05

Date: 3 Mar 2005 20:01:39 -0800

chornedsnorkack@hushmail.com wrote:

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> > > > > > *doktorf wrote:*

> > > > > > *This effectively makes North America, oh, let's call it*

> *"Arctica"*

> > > > > > *and Eurasia a supercontinent. There might be narrow  
seaways*

> > > > > > *between the land masses, but we could reasonably expect  
> them to be*

> > > > > > *frozen for a good part of the year. It is also reasonable*

> *to expect > > > > > that the presence of Arctica would make the*

> *existence of the Bering*

> > > > > > *land bridge irrelevant.*

> > > > > >

> > > > > > *Depends, even in summer stone age people traveling north of  
> the*

> > > > > > *arctic circle will need supplies. Nothing exists to supply  
> travelers*

> > > > > > *using stone age technology to travel across far from the  
sea.*

> *No*

> > > > > > *food for 500+ miles and very real danger from exposure will*

> *make use > > > > > of this land for travel by stone age people*

> *impractical.*

> > > > > >

> > > > > > *What can they hunt? Anything that lives on that land must  
> have plant*

> > > > > > *food to eat. What plants will grow in a place that sees 6*

> *month*

> > > > > > *long winters of serious hard freezes and mostly no light,*

> *with a very*

> > > > > > *short growing season? Yes some plants will grow in the far*

> *arctic,*

> > > > > *but this is near the sea which moderates temperature, and*  
> *assures*  
> > > > > *rain/snow fall and so fresh water.*  
> > > > >  
> > > > *Er, vice versa!*  
> > > >  
> > > > *In summer, which is what matters for the plants (in winter*  
*they*  
> *will*  
> > > > *hibernate no matter whether it is –5 or –50), the Arctic as*  
*it*  
> *now*  
> > > > *exist makes the climate harsher, not more moderate!*  
> > > >  
> > > > *No. The proximity to the sea and the fact that open water, or*  
> *the water > > > under the sheet of ice, acts as a huge heat*  
*sink/source*  
> *that when the*  
> > > > *temperature drops below 0 C, it has an enormous reserve of*  
*heat*  
> *to give > > > up to keep temperatures at or near 0 C, will moderate*  
> *temperature.*  
> > > >  
> > > *Er, no.*  
> >  
> > *Er yes -- learn some basic thermal physics.*  
> >  
> > *Heat flows from higher to lower temperature, the phase change from*  
> > *water to ice*  
> >  
> > <http://www.physchem.co.za/Heat/Latent.htm#fusion>  
> >  
> > *The latent heat of fusion of ice is 334 kJ/kg (kiloJoules per*  
> *kilogram*  
> > *converted)*  
> >  
> > *While the heat needed to raise one kilogram of water one degree C*  
*is*  
> > *4.186 Joules/gram or 4.186 kJ/kg.*  
> >  
> > <http://hyperphysics.phy-astr.gsu.edu/hbase/thermo/spht.html>  
> >  
> > *The temperature at which pure water at sea level pressure freezes*  
*is*  
> > *0*  
> > *degrees C, while salt in the water depresses that a bit (not much)*  
*it*  
> > *clearly takes a hell of a lot of heat removal from the water to get*  
> > *it*  
> > *to freeze.*  
> >

- > > *The salt sea water acts during winter as heat \*source\* that tends to*
- > > *keep the air and ground in contact with it near zero degrees C.*
- > >
- > > *Temperature on the antartic plane far from the sea can sink very far*
- > > *below zero. The lowest recorded was at Vostok station on 24 August*
- > > *1960 of –88.3 degrees C (see first below web site),*
- >
- > *Er, yeah. And the minima are about –70 at the top of the Greenland ice*
- > *sheet. But they are also –70 in the Oimyakon and Verhoyansk valleys –*
- > *which are forested and inhabited areas.*
  
- >
- > > *and can average –55 degrees C in the winter*
- >
- > *My impression is that this is the yearly average.*

You are correct my mistake.

However that really makes my point. I do not think anyplace that can be inhabited by much of any sort of meaningful life that could support travelers could live in a place with a mean temperature that low, or even like say –30 C. Not even for trips in the hottest part of the summer.

- >
- > > *far from the sea, while near the sea averages of –5 C are seen*
- > *(second below > web site).*
- > >
- > > <http://ireland.iol.ie/south-aric/climate.htm>
- > > <http://www-das.uwyo.edu/~geerts/cwx/notes/chap03/antarctica.html>
- > >
- > >
- > > > *The ice on sea acts as a huge heat sink, it has enormous*
- > > > *reserves of cold to give up to keep the temperatures at or near 0*
- > > *C.*
- > >
- > >
- > > *That is during the spring, and temperatures of about 0 C are not*
- > > *all*
- > > *that flipping dangerous to living things.*
- >
- > *To warm-blooded mammals, that is.*

Nor to plants that grow on the north shore of alaska that reindeer graze on.

You may note that in the higher elevations of the mountains in Greenland or Alaska or even northern scandinavia, that plants do not

grow well. They grow more and better on the coast near the sea where the mean temperature is higher.

- >
- > *But they are very important for green plants – in that region, every*
- > *degree counts. If you have 0...–5 Celsius, soil snow–covered and more*
- > *wet snow falling, people may find it easy to manage, but plants just*
- > *can't grow. At 0...+5 Celsius after the snow has melted, some plants*
- > *can grow, but not very well.*
- >

Right, and if you have land that is near a pole, far from the sea or open bodies of water, not too much grows there, and you do not have too many grazing animals.

By the way, the only animals that live in Antarctica AFAIK are birds of various sorts that stick close to the coast, and mainly live off fish and other seafood. Much as a large fraction of the large animal life in the arctic (seals, polar bears and so on).

- > *It will make a huge difference if eliminating the sea ice heat sink*
- in
- > *spring/summer allows temperatures of 10...15 Celsius, or more.*
- >
- > > *–55 C will kill you, fast even with good personal gear if you are*
- > *stuck*
- > > *outdoors. That is what happened to the first british expedition to*
- > *the south > pole, the weather turned colder than predicted for a week*
- > *or more and they*
- > > *died on the march back as a result.*
- > >
- > *One thing is that they ran out of fuel.*

But they did so because they stopped moving because they were too cold. They could not press on with the outdoor temperatures that low.

- > *Yes, –55 C is dangerous. But*
- > *there is a difference between –55 on top of Antarctic or Greenland*
- ice
- > *sheet, or on the barren grounds of Canadian Arctic, and –55 C in the*
- > *forests of inland Yukon or Mackenzie valley or Yakutia. Warm–blooded*
- > *mammals like muskoxen, reindeer, elks and wolves easily endure –55*
- > *degrees outdoors.*

I think you are at least in part mistaken. IIRC most large arctic mammals migrate south or to the coast in the winter. Show me a cite of reindeer staying the whole winter in a place that has a yearly average temperature anything like –55 C or even –20 C. Those –70C places you cite were IIRC minimums, and probably not seen even every year for a low temperature on a single night.

I will grant you that reindeer could probably survive a few nights with minimum temperature as low as  $-70$  C, but not too many, and I think some of the weaker members of the herd will freeze to death on nights that cold.

- > *And so do humans prepared for the situation, even*
- > *Stone Age hunter-gatherers.*

Not places with yearly average temperatures of  $-55$  C, or even  $-30$  C I wager.

- > *All that is required is that there should*
- > *be enough summer warmth to support plants to last herbivores through*
- > *the winter, and trees to provide firewood.*

You do not see that (trees plants) in places with yearly average temperatures that low, and that is what you would see in places well inland and above the arctic or antarctic circle. I would like to see evidence relating the minimum yearly average temperature of places that have significant plant life (on earth, or elsewhere but stating what planet if you know any LGM ;-)).

----snip