

BIRDS AND THE BEES

SUPERTHEORY OF SUPEREVERYTHING

*Polar Bears in Peril?
El Chichon holds
the Answer*



arc volcano that erupted shortly after Pinatubo, contributing to the cooling event, and very effectively demonstrating that it doesn't pay to come in 'second'.

Anyway, this drop in global temperatures resulted in a longer spring ice season on western Hudson Bay. Cubs born in that year essentially got a 'head-start' on life.

After emerging from the dens in March, their moms were able to hunt seals longer during this critical time following the seven-month 'fast' that a pregnant bear must endure. More seals meant more milk; more cubs survived, and in better condition.

This advantage translated into an early competitive advantage and resulted in large, healthy 'Pinatubo Bears'. For example, almost ten years ago, a polar bear stood up and actually placed his chin ON TOP of the back deck of a 26 passenger Tundra Buggy. This was likely a 'Pinatubo Bear'.

One can safely assume that the wealth of seals and beneficial hunting conditions that spring led to a greater degree of survival among the entire population.

five to ten year 'echo'. In essence, the increased numbers of polar bears should not exceed carrying capacity until the 'Pinatubo bears' reached maturity at five or six years old.

After five or six years, these larger, adult bears would begin to have a real impact on the population, outcompeting the younger and older generation for food resources. Once these males reach breeding age of seven or eight, this may even have increased the level of male mortality during the mating season sparring matches.

After a time of high mortality, the overall population would begin to decline, closer to its normal level of, say, 900-1000 polar bears. This is supported by the fact that the true decline in body condition of polar bears is seen in sub-adult polar bears (excluding Pinatubo bears) and bears older than 19 years of age.

You can see, Mount Pinatubo had a dramatic effect on the western Hudson Bay polar bear population. This, however, leads to the question - if Pinatubo bears were so healthy and big, why has overall condition of the bears been continuously and steadily declining since the early to mid-eighties.

Here is where it gets a bit complicated. (ed.note: bet you thought that wasn't possible.) On March 28, 1982, Peru's El Chichon volcano became active. The El Chichon eruption registered as the third largest volcanic eruption of the 20th century. It registered as a Level Five on the VEI (the same as poor Mount Hudson) and it too emitted a significant level of sulfur dioxide, approximately seven million tons; enough sulfur dioxide to cool the global climate by 0.3C (0.6F).

This 'inflation' should carry-over for a

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While the long-term effects were mitigated by an emerging El Nino and the positive phase of the Arctic Oscillation (ed. note: just trust me on this one...), the fact remains that the 1983 ice season on Hudson Bay was significantly extended.

This logically leads to the 'El Chichon' bears. While the ice cover in 1983 was not quite as long as 1992, it is clearly well above average, the third longest ice season on record (1971-2008). A comparison of historic ice records (1751 to 1870) has demonstrated a 95% correlation between volcanic activity and 'severe ice' occurrences in western Hudson Bay.

Consider that the late 1970s and early 1980s were a time of increased volcanic activity. There were 14 arc eruptions over three years (1980-1983) including not only El Chichon but also Mount St. Helen's (another Level 5). I believe that a positive correlation exists between this activity and the record-breaking cold of the early 1980s.

Now, consider that volcanic activity has significantly declined from the early 1990s until the present day. No volcano has emitted more than 1 billion tons of sulfur dioxide into the atmosphere since Rabaul in 1994, none more than 10 billion since Pinatubo.

It could be argued that El Chichon created a similar competitive advantage and created an artificial inflation of polar bear condition, reproduction and population as Mount Pinatubo.

This implies that baseline population data for the western Hudson Bay polar bears was 'inflated' at the time when the Canadian Wildlife Service population research began in 1987.

It is true that polar bear research has been



Even the Tundra Buggies are shrinking...

conducted for over thirty years along western Hudson Bay, however, pre-1987 population statistics have been discarded, due to insufficient knowledge of polar bear habitat during the aerial surveys at the time.

While reliable population studies are not available for the early eighties, observations of scientists, hunters and tour guides operating in the Churchill area indicate that population, condition and reproduction were much higher in the early 1980s. For example, sightings of female polar bears with triplets were a more common occurrence at that time.

For this reason, a decline in these traits, including a 22% per cent drop in population since the mid-eighties, might not be unexpected.

Removing the outlying cold years (1983, 1992) resulting from an intense release of sulfur dioxide due to volcanic activity and the annual mean reduction in sea ice on Hudson bay looks significantly less dramatic than current research suggests. If you remove the remaining outliers, that

is, 1972 as the coldest and 1998/2005 as the warmest, then the trend is further decreased.

Therefore, man-made greenhouse gas influence on climate change cannot be considered as the 'primary' cause of the observed decline in condition, more likely a simple return to the area's natural carrying capacity reproduction and overall numbers of the Western Hudson Bay polar bear population.

This is not to say that man-made greenhouse gases may not be a significant factor contributing to global climate change/warming or that they do not present a threat to the future of polar bears. There just seems to be more evidence that volcanic activity and the cooling trend that results have a 'primary' influence on Churchill's polar bears.

- submitted by Kelsey Eliasson

Boring Scientific References:
1. Christy and Drouilhet, 1994; Monastersky, 1994
2. pers.comm E.Olson
3. Stirling et al, 1999
4. Regehr et al, 2007
5. A.J. Catchpole, I. Hanuta, 1988

in Churchill...

you can see wind
with slanting snow
erase the landscape

~
snow on rock still-life
moves
becomes polar bear

~
tap my knuckle
against plane's window pane -
the rattle worries me

~
beneath the streetlight
hazy and low through the fog -
hazy autumn MOON

~
one crow wrests a scrap
from another mid-air and
nabs

it
in
a
dive

~
seafood sliding in
steak gnawed through
bone to marrow
cheesecake aftertaste

~
Every morning:
sullen faces stare dare me
to make them smile

!!

sleepingsoclosely
bodyheatmeldsusinto
ourowntruehaiku

- George Power

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While best known for our polar bears, Churchill is truly a four season tourism destination. Each summer, thousands of beluga whales return to the Churchill River to feed, socialize and raise their young. Churchill is the only place in the world where you can snorkel with beluga whales - a truly amazing experience.

Spring brings hundreds of bird species, followed by birders from around the world. Winter is a dazzling display of northern lights and northern culture, including the Hudson Bay Quest dog sled race and Aurora Winterfest celebrations.

Visit the Town of Churchill website at www.churchill.ca
for upcoming events, tourism information and community updates!

Town of Churchill

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