



EMERALD KEEPERS

For an Emerald Green, Ocean Blue Coronado



POLAR CLIMATE CHANGE

SANTA'S NEIGHBORS FACE DIRE FUTURE AS HOMELAND WARMS

It's the most wonderful time of the year when our attention turns to the North Pole with great anticipation. Thankfully, Old Saint Nick is highly adaptable, easily capable of moving from climate to climate. But what about Santa's homeland as climate change transforms the poles?

SANTA'S FRIENDS AND NEIGHBORS

With nearly ice-free summers predicted in the Arctic by mid-century, wildlife dependent on sea ice faces life-threatening disruption to travel, hunting, mating and recreational patterns:

- Polar bear populations dropped 40% from 2000-2010; current modeling projects an additional 30% loss in the next 35 to 40 years.
- Across the northern regions, caribou herds have decreased by more than 90% in the past two decades, endangering the food security and culture of indigenous peoples.
- At the South Pole, penguins, seals and whales are vulnerable to sea ice loss and ocean acidification, which negatively affect microscopic organisms and



phytoplankton populations at the base of the marine ecosystem food chain.

- Biologists assert emperor penguins may face extinction by 2100.

POLAR TIPPING POINTS

- Scripps Institution of Oceanography data reveals that over the past 40 years sea ice has declined at a rate of almost 13% per decade.
- Climate change-related temperature increase is occurring twice as fast at the Earth's poles owing to to global energy transfer patterns and "ice-albedo feedback," the process by which warming increases as decreasing ice coverage reflects less of the sun's light out of the atmosphere. This perilous cycle means the more polar ice melts, the warmer the poles get, and the rate of melt will continue to accelerate. This will critically affect how global ocean currents move heat and nutrients around the world, intensifying storms globally.



U.S. NAVY

CLIMATE CONFLICT CONCERNS?

Beyond the biological and atmospheric impacts, polar climate change also carries immense eco-political consequences. The massive loss of ice at the North Pole has national security, global trade, natural resource exploration, and fishing implications. The resulting increased human activity will further degrade these fragile ecosystems.

It's up to us to take climate action. Start by celebrating with a green holiday and make environmentally friendly New Year's resolutions to reverse this course. Otherwise, Santa may be forced to revise his naughty and nice list!

U.S. Navy submarine at the North Pole. Massive Polar ice melt has opened the Arctic Ocean. Countries now compete for natural resources in this region, resulting in national security implications.

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