CLIMATE CHANGE AND PIZZLY BEARS

(1) As climate change causes the Arctic to warm and the polar ice caps to melt, the habitat of the polar bear and other Arctic animals is changing rapidly. Unlike glaciers, icebergs, ice sheets and ice shelves, which all originate on land, sea ice is simple ocean water that freezes on the surface of the ocean. Sea ice forms every winter and recedes in the warmer months. With climate change, less sea ice forms each winter and more of it melts each summer. Polar bears depend on sea ice for hunting, mating and migration. With less and less sea ice available, it is becoming difficult for polar bears to survive. Though polar bears are superb swimmers, able to swim up to 100 miles (160 km) at a stretch, they depend on reaching sea ice to have a break from their physical exertion. With less and less sea ice, more polar bears are dying from drowning because there isn't enough sea ice to provide rest stops. Atop the sea ice is also where they find their prey as polar bears don't hunt in the water.

(2) As the sea ice continues to melt, polar bears either face extinction, or they might find a way to adapt and survive. The second scenario will be very difficult as they are adapted for the Arctic. They have a thick layer of fat that insulates them and helps keep them buoyant in the water, semi-webbed forepaws for swimming and white fur that provides them with camouflage. It has taken them hundreds of thousands of years to develop their special Arctic adaptations, while they only have a few years or decades to adapt to the new warmer conditions. Another scenario is one that might seem like it is out of a science fiction or fantasy novel. If polar bears go extinct, their genes might still survive in the form of pizzly bears.

(3) What are pizzly bears? Maybe you know them as grolar bears? These are bears who are the offspring of a polar bear and a grizzly bear. Though these two bears are considered different species, they are physically capable of mating and genetically capable of producing offspring. If this is the case, why aren't there more pizzlies right now?

(4) In nature, grizzly bears and polar bears have very different habitats and behaviors that have kept them separated for thousands of years.

Pizzly (shot and killed by Jim Martell), stuffed and mounted.

The majority of grizzly bears live in central and western Canada and range as far north as the Arctic tundra. As the Arctic warms, grizzly bear territory is expanding further north and this is where they are beginning to come into contact with polar bears. In Alaska, there have been documented encounters between the two types of bears when both have scavenged over the same whale carcasses. Encounters like these have resulted in aggressive behavior instead of mating behavior between the two species. However, at some point in the past, pizzly bear hybrids have been born in the wild, proof that not all polar bear and grizzly bear encounters result in aggression.

(5) In captivity, pizzly hybrids have been created, but none was confirmed in the wild until 2006. In April of that year, Jim Martell, a big game sports hunter, purchased a $45 000 licence to hunt for polar bears in the Northwest Territories of Canada. After his local guide and tracker found what they thought was a polar bear, Martell took the kill shot. However, after inspection, the tracker noticed that the bear looked odd. Though it had the creamy white fur of a polar bear, it also had long claws, a humped back, a less pointed snout, and brown fur around the eyes, nose, foot and parts of its back. All of these were more typical of a grizzly bear. The tracker insisted on getting the bear's DNA tested. The results of the genetic testing was stunning. The bear was a hybrid of a polar bear mother and grizzly bear father – the first ever recorded in nature. It is unknown whether the pizzly itself was fertile and we will never know as the animal was killed.

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(6) Four years later, in 2010, David Kuptana, an Inuvialuit hunter killed what he thought was a polar bear on Victoria Island, near Nunavut. This bear also looked a little different from the standard polar bear so he had the bear's DNA tested. It turns out that the bear was the offspring of a pizzly mother and a grizzly bear father. This was the first solid evidence that pizzlies created in the wild could be fertile.

(7) Though the Arctic is not currently overrun with pizzlies, and in fact it would be quite extraordinary to find a living specimen, some scientists speculate that pizzlies might be more common in the future as grizzly bears begin encroaching more and more into the warming Arctic regions of the polar bear.

(8) Not only might climate change create more pizzlies, it might also promote the creation of other Arctic hybrids. Sightings of narwhale and beluga whale hybrids have been reported. Hooded seal and harp seal hybrids are possible. Bowhead whale and North Pacific right whale hybrids are already suspected to have been produced as the warming oceans have caused increased overlap in their territories. These hybrids and more might be a part of our future.

Article Questions

1) How is climate change threatening the availability of sea ice?

2) Explain two reasons why sea ice so important to a polar bear.

3) What is a pizzly? What is another name for a pizzly?

4) What parts of a pizzly resemble that of a grizzly bear?

5) What proof is there that pizzlies can be made in the wild?

6) What proof is there that pizzlies can be fertile?

7) How might the changing climate be the cause of more wild pizzlies in the future?