
turnip

The Arctic Circle marks the latitude above which the
not rise on the winter solstice. The sun only rises and
months of daylight and six months of nighttime. How
and night grow shorter.

People in the Arctic Circle can experience sens
other parts of the world. One of the reasons is t
constantly inhabit the frigid, arctic air, affectin
As light passes through these crystals, it is refr
illusions.

e sun does not set on the summer solstice and does
sets once every year in this region, resulting in six
ever, at lower latitudes the continuous cycles of day

sory phenomena that can't be encountered in
the presence of microscopic ice crystals that
g how light and sound travel over distances.
racted and bent that creates many optical

MIRAGES AND OPTICAL ILLUSIONS

Mirages and other optical illusions occur in the Arctic because of special atmospheric conditions that bend light. A superior mirage occurs when an image of an object appears above the actual object. Superior mirages sometimes appear in the Arctic because of the weather condition known as a temperature inversion, where cold air lies close to the ground with warmer air above it. Since cold air is denser than warm air, it bends light towards the eyes of someone standing on the ground, changing how a distant object appears. Superior mirages can produce a few different types of images: Distant objects can appear to float high above their actual position, for example a boat can look like it is floating in the sky, or an object below the horizon can become visible. This is known as a looming type of superior mirage. Superior mirages can also distort images so that the object appears stretched and elevated, called towering.

A fata morgana is a complex mirage in which distant objects are distorted as well as elongated vertically. For example, a relatively flat shoreline may appear to have tall cliffs, columns, and pedestals. The phenomenon can also result from temperature inversions.
While mirages may seem like fun, they proved confounding for early explorers. In 1818, British explorer John Ross entered Lancaster Sound while seeking the Northwest Passage. He saw mountains blocking the sound, and decided to sail no further. Ross named the range the Croker Mountains—but a later expedition showed that they did not exist: Ross had likely mistaken a superior mirage for a mountain range. In 1906, American explorer Robert E. Peary viewed a vast land northwest of Ellesmere Island and named it Crocker Land after his patron George

Crocker. The next decade, American explorer Donald MacMillan and his men traveled laboriously over the frozen ocean toward what appeared to be the snow-capped peaks, hills, and valleys of Crocker Land. But the landscape ahead seemed to change its form and extent over time, and MacMillan realized that he and the members of his expedition were seeing, as Peary had seen, a superior mirage.

Ursus maritimus

Sterna paradisaea

Cystophora cristata

Branta canadensis

Fratercula arctica

Stercorarius parasiticus

Haliaeetus leucocephalus

Monodon monoceros

Orcinus orca

Erignathus barbatus

Pusa hispida

Enhydra lutris

Ovis dalli

Ovibos moschatus

Lepus americanus

Chen caerulescens

Gynaephora

Delphinapterus leucas

Somniosus microcephalus

Pagophilus groenlandicus

Histrophoca fasciata

Phoca largha

Odobenus rosmarus

Lemmus

Lepus

Vulpes lagopus

Rangifer tarandus

lemmus

arcticus

AURORAS

Also called the northern lights, the spectacular color displays of the aurora borealis appear in the sky on clear, dark nights during periods when solar storms are active. The aurora borealis is centered around the geomagnetic North Pole and is most often seen above the Arctic Circle. However, displays occasionally appear as far south as the northern United States. The same phenomenon occurs in the Southern Hemisphere, known there as the aurora australis or southern lights.

Auroras gleam like rainbows or hang like curtains, sometimes seeming to almost touch the ground. But the actual lights are produced high in the sky, 70 to 200 kilometers (43 to 124 miles) above the Earth's surface—far higher than an airplane flies. The amazing color displays and formations are produced by the solar wind ... a stream of electrons and pro-

The Artic Fox (*Vulpes lagopus*)

Fauna

The Artic Region features a wide range of unique flora and fauna, with each species having evolved unique adaptations to withstand the bitter temperatures of the area.

Artic Fox

The Artic Fox, depicted above, is one of the most well known examples. The arctic fox is an incredibly hardy animal that can survive frigid

An Ermine, also known as a Stoat (*Mustela erminea*)

Arctic temperatures as low as –58°F (-50°C) in the treeless lands where it makes its home. It has furry soles, short ears, and a short muzzle—all-important adaptations to the chilly climate. Arctic foxes live in burrows, and in a blizzard they may tunnel into the snow to create shelter.

Arctic foxes have beautiful white (sometimes blue-

gray) coats that act as very effective winter camouflage. The natural hues allow the animal to blend into the tundra's ubiquitous snow and ice. When the seasons change, the fox's coat turns as well, adopting a brown or gray appearance. These colorings help foxes to effectively hunt rodents, birds, and even fish. But in winter prey can be scarce on the ground. At such times, arctic foxes will follow the region's premier predator—a polar bear—to eat the leftover scraps from its kills. Foxes will also eat vegetables when they are available.

ground and through underground burrows. Females hunt in tunnels more than males, which may explain the higher number of males that are trapped. Ermine can also run easily

Ermine (Stoat)

Another common, but less well-known, mammal is the ermine. The ermine's slender, agile body allows it to move swiftly both above

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Sources

http://www.biokids.umich.edu/
http://animals.nationalgeographic.com/
https://nsidc.org/cryosphere/