

# Surviving Winter's Freeze

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## ***A Look at How Different People, Animals and Plants Live Through the Deep Chill***

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*Last winter we experienced a record-breaking Siberian chill. People who ventured outside donned several layers of heavy clothing to protect themselves. Others took the easy way out and remained indoors. By some standards those on the US east coast and midwest are spoiled, unable to bear such bitter cold. There are many people and animals in the world that face much colder weather for most of the year without complaining. They have learned to adapt to incredible cold and make the most of it. Read how.*

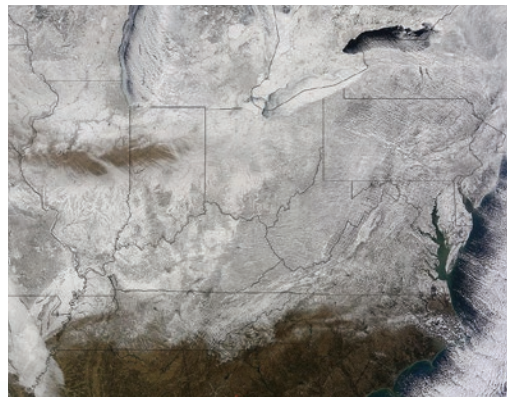
“Special! Tickets to Antarctica completely free! Just open your front door!” This joke circulated last winter in response to an unusual cold wave. The freeze of early 2015 broke records.

The record-low temperatures were not unique to the American Midwest and Northeast. Even the southern states got hit with it. On February 20, 2015, the temperature in Lynchburg, Virginia, dropped to -11°. Charleston, South Carolina, experienced 18°, four degrees lower than the city’s previous record.

Meteorologists dubbed this long and extreme cold spell the “Siberian Express,” and it is not just a cute nickname. The National Oceanic and Atmospheric Administration (NOAA), the federal agency that keeps America informed about the weather, reported that the cold actually arrived from distant Siberia by way of Canada. It passed through New York and from there travelled further south to reach the other states. Since the freezing winds did not pass through warmer regions during their long march, they never had a chance to warm up.

In that one week leading up to February 20 alone, the cold was responsible for 23 deaths. Eighteen of those were in Tennessee, where the winter is far milder in a typical year.

The heavy cold shook up Americans. People who had to step out put on several layers of warm clothing, while others hunkered down behind closed doors.



Satellite image from 200 miles above the frozen Northeast, Midwest and Southern states on Friday, February 20, 2015.



A two-story snowman in a village in upstate New York.



The Hudson River and East River that straddle Manhattan were also covered in ice.



Before you complain about the cold, stop for a moment to think about the Arctic.

This bitter cold arriving from Siberia was unbearable.

However, there are many who live with this kind of weather most of the year—the people and animals living in the region where this cold originated. They face *much* colder weather most of the year. Let’s take a closer look at how they do so.

## The Arctic

The Arctic encompasses the region around the North Pole. It includes the Arctic Ocean and vast swathes of Alaska, Canada, Russia, Finland, Denmark, Iceland, Norway and Sweden.

Everything in the Arctic region, ocean included, is covered with a thick layer of ice. The summer lasts no more than a few weeks and the warmest weather reaches about 50°F. The cold is so pervasive that the region is virtually bare of trees and shrubbery.

Despite its forbidding climate, there are a number of animals, birds, fish, plants and even people who make their home in the Arctic. For animals that can stay comfortable in the deep cold, the Arctic offers many benefits. There is little competition with other animals or people over the plentiful habitat and food sources.

When winter arrives in the Arctic, temperatures drop to an average of -40° (Fahrenheit or Celsius—at -40° the two scales meet). The sun is hardly seen all winter long, and far up north night lasts for six months straight!

## Bitterly Cold but not Frozen

Among the many animals that have learned to deal with the frigid Arctic weather is the Arctic squirrel. They survive in a region where temperatures regularly drop to -22°F, far colder than a human can live with.

Like many other Arctic animals, the squirrels burrow into the ground to make their homes. Each September they crawl into their holes, which descend three feet deep beneath the surface. They line their den with grass, shrubs and hair that sheds from caribou. Then they make themselves comfortable and sink into a deep slumber that lasts through the winter.

Squirrels are among the animals that spend their winters hibernating. They descend into an almost unconscious state with their metabolism dropping precipitously. Some bodily functions are reduced to a bare minimum while others are put on hold altogether. During hibernation squirrels rely for their nourishment on the body fat they accumulated while gorging themselves over the summer.

The padded burrow does help relieve the brutal cold and biting winds of the arctic winter. Still, it does not offer nearly enough protection to enable them to survive the freeze. Wildlife biology researchers spent years trying to uncover the secret of the Arctic squirrels’ survival in such incredibly low temperatures.

More than 25 years ago, University of Alaska Professor Brian Barns experimented

by catching squirrels and planting tiny radio transmitters on them. After he released the squirrels, the transmitters regularly sent him data on the squirrels’ core body temperature. Barns was shocked to discover that as the winter fell and the squirrels went into hibernation, their body temperature plummeted from around 97°F to -22°F!



Some animals are only found in the frigid Arctic region.