

# How Do Bears Prepare To Sleep For Six Months? Why Do Bears Hibernate and How Do They Do It?

The main reason why bears hibernate is because of the lack of food. Bears are specially designed to go for long periods of time without eating, urinating and defecating. They are not true hibernators, however, they are very efficient ones. To do this they need to put on enough weight to sustain themselves for the long winters sleep. Before a bear goes into hibernation they get prepared by going through a physiological phase that helps them to put on a lot of weight in a very short period of time.

As the time for hibernation approaches, the bears begin to head to their denning sites. Once a bear goes into hibernation their respiration rate and heart rate decreases. Their body temperature drops only by a few degrees.

As the bear sleeps they continue to burn about 4,000 calories a day to fuel their metabolism that burns fat to keep them hydrated, this then causes the requirement to urinate. The urine produced is then recycled into protein that will be used by the brain and the muscles so they do not atrophy.

This amazing ability to hibernate and awaken without major affects, other than weight loss, is being studied by scientists in the hope that the process of hibernation can be used in the future for space travel.



## **Hyperphagia**

Late in the summer and early fall bears begin to prepare for hibernation. They need to put on enough weight to get them through the winter of no food. Hyperphagia is a physiological trigger that makes a bear want to consume as much food as possible. Hyperphagia increases the amount of fat a bear can produce.

At this time of the year bears can put on 2 to 5 kilos or 5 to 10 pounds a day. To do this bears are consuming over 40,000 calories a day. This would be the equivalent of eating twenty-five Big Mac Combo meals per day.

A large male can store approximately 1 million calories. I have seen bears with so much fat their bellies are almost dragging on the ground.

Some research suggests that when a bear eats a varied diet of greens, carbs and protein they put on weight faster than if they eat only one food source. In areas where protein such as salmon is not available bears can put on their weight by converting the sugars from berries into fat.

Hmm.... perhaps we should take note from the bears. Sugar consumption equals weight gain.

# Survival Secrets of Grizzly Bears and Black Bears!

## **Fact Sheet #4**

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**Nature, Art, Grizzly Bears**

### **Why Bears Need To Put On So Much Weight!**

When a bear is sleeping it is still burning 4,000 calories a day to fuel its metabolism for the recycling of nitrogen toxins that are building up in their systems.

So, if we take the 4,000 calories and multiply that by let's say 165 days that would mean a bear would have to have to store at least 660,000 calories to make it through the winter. And this would be without any disruptions during the denning period.

One pound of fat equals 3,500 calories so a bear needs to put on a minimum of 190 pounds in about six to eight weeks. Of course, the bigger bear the more it needs to eat.

## Making Their Dens! So, Where Do Bears Go In the Winter?

Bears head to their denning sites. Some bears head high up into the alpine and other stay at lower elevations for the winter. To make their dens bears use a variety of structures and locations for their dens. A denning site should be dry and in a place where the bears will be undisturbed.

Some bears will wait until the first snow storm before entering their den. This helps to hide their den so they won't be disturbed while sleeping from hunters and wolves. When a bear is sleeping it is very vulnerable. I have seen wolf scat with tiny black bear claws in it.

### **Where Grizzly Bears Make Their Dens!**

Grizzly bears go high into the mountains where there is snow all winter long. They might use an exposed root structure, a crevice in the rock or dig a den in the side of a bank.

The bears use the snow pack as insulation. As the snow gets deeper it acts as a blanket to help keep them warm. You maybe wondering how snow can keep something warm?

If you take a thermometer to measure the temperature under the snow it might read  $-10^{\circ}$ , then take the temperature once again above the snow the air temperature might read for example  $-20^{\circ}$ .



### **Where Black Bears Den!**

Black bears will den under exposed roots, in a hollow of a tree or in a hole dug under a tree along a river bank. Black bears use dens that are at lower elevations and go in just before the snow begins to fly.

In some areas, where food might be available throughout the winter the bears there sometimes do not go into hibernation.

Reports of this occurring have been noted in areas such as South Vancouver Island where food sources can be available all winter.

## **Do Bears Always Use Dens For Their Long Winter's Nap? Maybe, Maybe Not!**

I have heard of a story that perhaps bears might not even need to make a den and survive. In one of the national parks a young grizzly male was walking along a trail and decided to take a nap which turned out to be a very long one.

The snow began to fall and the sleeping bear was covered with a big pile of snow. The park rangers checked on this young bear throughout the winter and when spring arrived, it was reported that the bear got off shook himself off and continued on its way.

