

# Antarctica: Location, Physical Features, Climate, Natural Vegetation

## THINK AND ANSWER

### Question 1.

Why is Antarctica considered to be a desert ?

#### Answer:

Antarctica is a cold desert and very few plants can survive here. There are only a few plants that can survive the harsh climate of Antarctica, with its extreme temperature, fierce winds and lack of rain. Simple plants like algae, mosses, liverworts, lichens can survive and can grow in Antarctica.

### Question 2.

Antarctica is a far more dynamic place than anyone could have imagined a century ago. Why ?

#### Answer:

Antarctica is a far more dynamic place than anyone could have imagined as what happens in Antarctica can have dramatic consequences for millions of people around the world. The Scientists are seeking to map the inner workings of the strange forces at play in Antarctica Most of its research is focussed on the ice — what is happening under it, in it and to it as whole of earth's atmosphere, climatic changes, etc. are dependent on this.

## Discuss

Discuss the importance of the many research stations in Antarctica for the global community.

#### Answer:

At present scientists, researchers, and their support staff from 30 different countries live on about 70 scientific bases with a population of around 4000 in summer and around 1000 in winter. The main purpose for people living in antarctica is to undertake scientific research in atmospheric studies, glaciology, medicine, biology, environment, human impact, etc. Other people like lumbers, electricians, mechanics, and carpenters also live at these stations to support the scientific research work and keep these research stations running.

## VALUES AND LIFE SKILLS

The scientists working at the research stations in Antarctica face very harsh and difficult conditions. Still they have chosen to work at these stations.

What lessons do you learn from them ?

**Answer:**

We should learn to adapt every situation in our life.

**EXERCISES**

**A. Identify who I am**

1. I am the largest reserve of fresh water in the world : **The Antarctic Ice Cap.**
2. I am the highest point in Antarctica : **Vinson Massif.**
3. I am the most active volcano : **Mt Erebus (3,794 m)**
4. I was discovered in 1820 : **Antarctica**
5. I was one of the earliest explorers from England: **Capt. Robert Falcon Scott.**

**B. Unscramble the letters to form correct words and briefly describe each  
LIKLR, LZBADIZR, LEAS, HELWA, NAICATRTAC, CHELNIS, ONSIRP, EGNPINU**

**Answer:**

1. **LIKLR** — KRILL — Wildlife
2. **LZBADIZR** — BLIZZARD — an intensely cold and strong
3. **LEAS** — SEAL — Wildlife wind
4. **HELWA** — WHALE
5. **NAICATRTAC** — ANTARCTICA — Continent
6. **CHELNIS** — LICHENS — Plant
7. **ONSIRP** — PRIONS — BIRDS
8. **EGNPINU** — PENGUIN — Birds

**C. Fill in the blanks**

1. Greater Antarctica lies to the **east** of Lesser Antarctica.
2. Thick permanent layers of snow and ice are called **Ice cap.**
3. The Andes Mountains of South America continue southwards as the **Antarctic Peninsula.**
4. Because of extreme cold Antarctica is often referred to as the **Polar Desert.**
5. Antarctica was discovered in **1820.**

**D. Give two examples from Antarctica for each of the following**

1. **Seals**
2. **Birds**
3. **Glaciers**
4. **Mineral resources**

**Answer:**

1. **Seals** — Fur Seal, Elephant Seal
2. **Birds** — Penguins, gulls
3. **Glaciers** — Rennick, Lambert
4. **Mineral resources** — Coal, iron.

**E. Give geographical reasons for each of the following**

**Question 1.**

Antarctica is not the smallest continent.

**Answer:**

Antarctica would be the smallest continent in the world if it did not have an ice cap. Ice and snow cover 98 percent of the land area of Antarctica.

**Question 2.**

The sun never sets in Antarctica during the summer month.

**Answer:**

The sun does not rise over the horizon for about three months of summers during which twilight is experienced.

**Question 3.**

Antarctica is called the Polar Desert.

**Answer:**

Antarctica is called Polar Desert because there is little or no vegetation and the continent receives only about 5 to 10 cm of snowfall and no rain at all.

**Question 4.**

The North Pole is warmer than the South Pole.

**Answer:**

Land cools faster than water and takes longer than water to heat. This is why the North Pole, which lies in the Arctic Ocean, is warmer than the South Pole which lies in the land mass of Antarctica.

**Question 5.**

Antarctica's sole human inhabitants are visiting scientists who work in research stations.

**Answer:**

Its unfit for human habitation because of presence of ice-sheets, icebergs, rough waves, blizzards, strong winds, etc.

## F. Answer the following questions in brief

### Question 1.

Name all the oceans that surround the 'White Continent'.

#### Answer:

Antarctica is surrounded by Indian Ocean, Atlantic Ocean and Pacific Ocean, the Southern extremities of which together form the Southern Ocean.

### Question 2.

What is the literal meaning of the word Antarctica?

#### Answer:

Literal meaning of Antarctica is 'Opposite of Arctic'.

### Question 3.

What are dry valleys ?

#### Answer:

**Dry valleys** : ice-free valleys in the Trans-Antarctic Mountains carved out by glaciers and some of them have lakes.

### Question 4.

What is a blizzard?

#### Answer:

Blizzard means an intensely cold and strong wind accompanied by falling snow.

### Question 5.

List a few birds found in Antarctica.

#### Answer:

Birds found in Antarctica are albatross, prions, gulls, cormorants, petrels and penguins.

## G. Answer the following questions in one or two paragraphs

### Question 1.

Write a note on the ice cap of Antarctica. Why is Antarctica called the 'White Continent'?

#### Answer:

Antarctica is an ice-covered continent centered roughly on the South Pole. It is surrounded by the Pacific, Atlantic and Indian Oceans. In the Antarctica Treaty of 1959, the term Antarctica is defined as the land, ice shelves and water, South of 60° South latitude.

1. Antarctica is almost equal in size to the USA and Mexico combined.
2. Antarctica has a coast line of 29,800 km.
3. Antarctica has the Onyx river which starts from a glacier.
4. Antarctica covers and surrounds the South Pole.

Antarctica is the fifth largest continent of the world. It is called a '**White Continent**' because it is permanently under a thick cover of ice its the only continent thats frozen all year round. It is extremely windy and cold. Ninety eight percent of Antarctica is covered with on ice-sheet; which reflects as white in Satellite imagery.

### Question 2.

Describe the physical features of Antarctica.

#### Answer:

Antarctica, which literally means 'opposite of the Arctic', lies around the South Pole. It is surrounded by the Indian Ocean, Atlantic Ocean and Pacific Ocean, the southern extremities of which together form the Southern Ocean. The continent is almost circular in shape with a narrow piece of land extending northwards towards the southern tip of South America. The eastern part is bigger and is called Greater Antarctica. The smaller western portion is Lesser Antarctica. There are two broad inlets of water, namely the Weddell Sea and Ross Sea. Mt Erebus, an active volcano, is located in the Ross Sea.

### Question 3.

Describe the summer season in Antarctica.

#### Answer:

The summer months last from November to February during which time the sun never sets, so there is continuous light. The temperature, however, seldom rises above freezing point.

### Question 4.

Describe the winter season in Antarctica.

#### Answer:

The cold and long winter season lasts from April to September. During this time the temperatures are very low, sometimes going down to  $-70^{\circ}\text{C}$ .

**Blizzards** — intensely cold and strong winds accompanied by falling snow—are common.

### Question 5.

Give an account of the wildlife found in Antarctica.

#### Answer:

Birds and seals mostly live near the edges of the continent.

About 40 kinds of birds such as albatross, prions, gulls, cormorants, and petrels are found in Antarctica. Various kinds of seals such as the fur seal and the elephant seal live here. Penguins, the large waddling birds that can swim but cannot fly, are found in large numbers.

## H. Picture Study



The Amundsen-Scott South Pole Station in Antarctica is seen in the photograph here.

### Question 1.

Who were Roald Amundsen and Capt. Robert Falcon Scott?

#### Answer:

Roald Amundsen and Capt. Robert Falcon Scott were British Naval officers.

### Question 2.

Why do countries have research stations in Antarctica ?

#### Answer:

To study earth's atmosphere, for studying astronomy and astrophysics.

## LET'S DO SOMETHING

### Question 1.

With the help of encyclopaedias and the Internet, find out more about the wildlife of Antarctica. Collect information and pictures of the albatross, blue whale, krill, squid, penguin, and seal. Stick the pictures in your scrapbook and write the information alongside.

#### Answer:

Antarctica is a vast frozen continent at the far south of the world. It is covered in a thick layer of ice, and surrounded by the icy waters of the Southern Ocean.

The Antarctic region includes the continent of Antarctica, together with the surrounding sea, ice shelves and island territories that fall within the Antarctic Convergence – an area where the cold Antarctic seas meet the warmer subantarctic waters.

This list of Antarctic animals contains species found throughout the Antarctic region.

The Antarctic is a cold, inhospitable place. It has a low biodiversity, which means that,

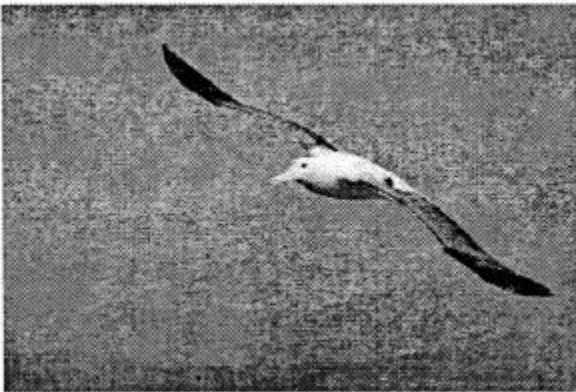
compared to other parts of the world, only a small number of species are found here. On the continent of Antarctica itself, very little life exists in the frozen interior. Most species are found on or around the coasts, particularly on the Antarctic Peninsula; the northernmost part of Antarctica.

## **Antarctic Animals List**

### **1. Albatross**

Albatrosses are large seabirds that spend most of their lives at sea. The Wandering Albatross (*Diomedea exulans*), and other albatross species such as the Grey-headed albatross (*Thalassarche chrysostomus*) and Black-browed albatross (*Thalassarche melanophris*), are found in the Antarctic region.

The Wandering Albatross has an average wingspan of 3.1 m (10.2 ft.); the largest of any bird. It spends most of its life in the air, and only lands in order to feed and to breed.

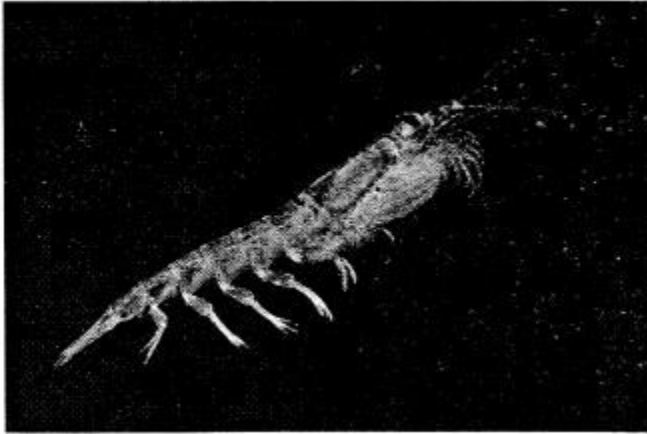


### **2. Antarctic Krill (*Euphausia superba*)**

It may be small, but the Antarctic Krill is one of the most important animals in the Antarctic food chain. This small, shrimp-like crustacean is found in vast numbers in the Southern Ocean, forming groups called swarms which can be seen from space.

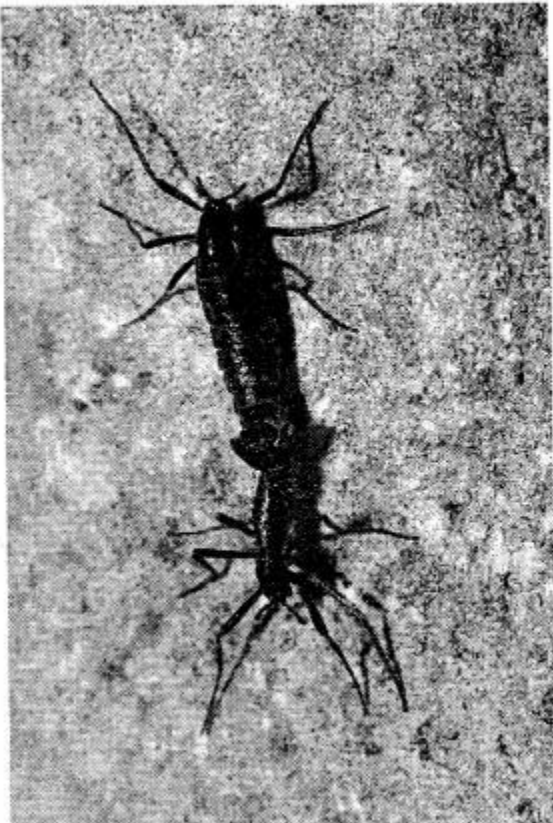
Antarctic Krill grow to around 6 cm (2.4 in). Krill is eaten by many other Antarctic animals, including whales, seals and seabirds.

The total biomass (weight) of all of the Antarctic Krill in the world is thought to be larger than that of any other species.



### 3. Antarctic midge (*Belgica antarctica*)

The wingless Antarctic Midge grows up to 6 mm (.25 in) in length. It is the largest land animal (i.e. one that lives purely on land, and doesn't fly or swim) in Antarctica. It is also the only insect on mainland Antarctica.



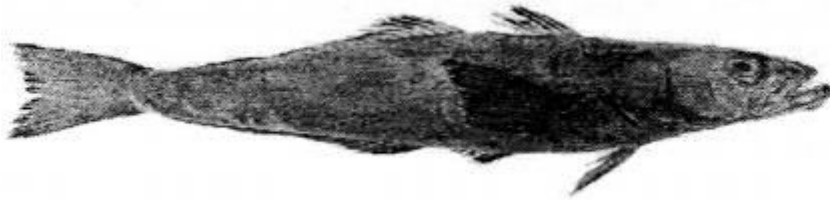


#### 4. Antarctic Springtail (*Cryptopygus antarcticus*)

This tiny, insect-like animal grows to only 1 -2 mm in length and can survive in temperatures as low as  $-30^{\circ}\text{C}$  ( $-22^{\circ}\text{F}$ ). It has a natural chemical antifreeze in its body to prevent it from freezing.

#### 5. Antarctic Toothfish / Patagonian Toothfish

The two species of the *Dissostichus* genus are the Antarctic toothfish (*Dissostichus mawsoni*) and the Patagonian toothfish (*Dissostichus eleginoides*). Both toothfish produce natural antifreeze proteins in their blood and tissue.



#### 6. Arctic tern (*Sterna paradisaea*)

The Arctic Tern is a small seabird with mainly white plumage, bright orange legs and bill, and a black 'cap'.

This incredible animal travels further than any other bird in one year, and is known to cover distances of around 40,000 km (25,000 miles) each year.

The Arctic Tern breeds in the Arctic before making its way south to the Antarctic. This is why you'll find it in our Arctic Animals List, as well as in this Antarctic Animals list.

Another tern found in the Antarctic is the Antarctic Tern (*Sterna vittata*).

#### Question 2.

Read news magazines in your school library and search the Internet to gather information on the effects of climate change and global warming on Antarctica. Write a report on the basis of your research.

#### Answer:

Do it yourself.