CHAPTER 1

World Geography: Some Glimpses

The modern age has brought the geography of the earth near to us, but made it difficult for us to come into touch with man.

— Rabindranath Tagore

Fig. 1.1. An image of the Earth 'stitched together' by scientists at NASA using minute data collected over several years.

The Big Questions?

1. *What are the unique physical features of the continents?*
2. *Why do we need to understand world geography?*
3. *How do human actions trigger environmental issues?*

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The Earth has long been revered as a mother by indigenous communities and personified in India as a living deity, often known as *Bhūdevī* or *Vasudhā*. Human lives are deeply connected to its many features; for instance, the distant Southern Indian Ocean influences the monsoon in the Gangetic Plains. From vast oceans to towering mountains and harsh deserts, humanity has long sought to understand the planet's wonders. Let's take a quick tour of our 'blue planet', our home, to give you a glimpse of a few of them.

LET'S EXPLORE

→ What do you think each of the different colours in the map in Fig. 1.1 represents?

→ Since this chapter is about world geography, we are concerned with physical maps. Physical maps have their own language that use colours —

Blue: water bodies (oceans, seas, lakes, rivers);

Green: plains; **Yellow/Brown:** plateaus;

Dark brown: high mountains; **Light yellow:** deserts;

White: ice and glaciers

Cartographer: Person who draws or produces maps

Oblate spheroid: A nearly spherical shape that bulges at the equator and is slightly flattened at the poles due to its rotation

The Complexity of Mapping the Earth

The Earth is an **oblate spheroid.** When we draw a map, we try to show the Earth on a flat surface. Take an orange; imagine that it represents the Earth. Now peel it and lay the peel flat without tearing it. As you will discover, it is quite impossible to do so. This is why all maps have some distortion. The process of showing the Earth on a flat surface is called a map projection. **Cartographers** have made several attempts at creating accurate representative projections of the Earth. They use different methods to draw the world. Some maps show the right shapes of countries but wrong sizes, while others show the right sizes but distorted shapes.

Every map is a compromise. To understand the world fairly, we must **look at multiple projections**, not just one. Given below are two projections.

Fig. 1.2. (1) The Mercator Projection — Preserves shape and direction, making it useful for navigation. However, it greatly distorts size near the poles (e.g., Greenland looks as big as Africa).

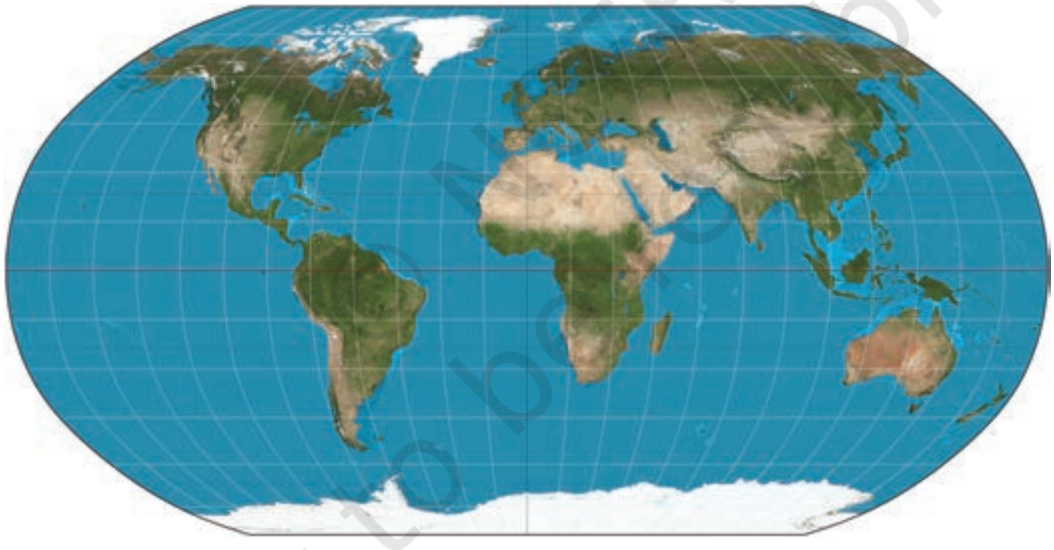

Fig. 1.2. (2) Robinson Projection — A compromise map that balances size and shape distortions, giving a more visually pleasing 'realistic' world map.

DON'T MISS OUT

Look at the size of Greenland compared to India in both the maps. In the Mercator Projection Greenland looks larger than India whereas in fact it is smaller.

Fig. 1.3. Fluorescent plankton (very small organisms that float on water) on a beach

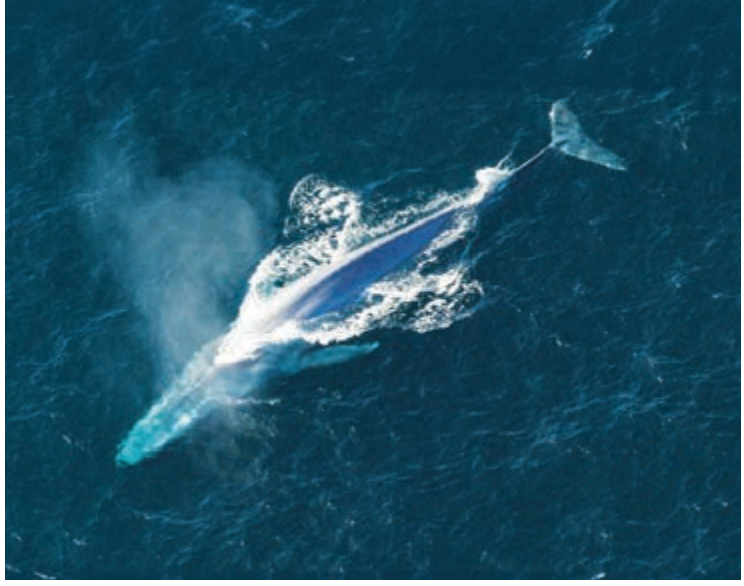

Fig. 1.4. The blue whale, the largest mammal in the world, can be over 30 metres in length and weigh almost 150,000 kg.

As we saw, world map projections on a flat surface are tricky. They only provide a visual representation that allows us to gauge size, shape, location, and distance across the whole world. However, professionals use maps that use the latitude and longitude coordinates (we saw these in Grade 6) which are more precise.

The Blue of the Blue Planet, the Oceans

Plankton: Microscopic organisms that have chlorophyll and use sunlight and carbon-dioxide to make food.

The **ocean** is a vast body of saltwater covering about 71 per cent of the Earth's surface. This is why the Earth looks blue from space and early astronauts called it the 'blue planet'. The oceans hold 97 per cent of the Earth's water. They support life, from tiny **plankton** to giant blue whales, and help regulate the climate by absorbing heat, slowly releasing it, and adding moisture to the air forming clouds and rainfall. As you may already know, the ocean floor is not flat! It has mountains, valleys, and plains like the land.

THINK ABOUT IT

Oceans give us almost half the oxygen we breathe. Tiny marine organisms, such as plankton, make this possible. What do you think would happen to all living beings if pollution harmed these planktons, and they could no longer produce enough oxygen?

The oceans

LET'S REMEMBER

In Grade 6, we got a glimpse of the oceans — the Indian, the Pacific, the Arctic, the Atlantic, and the Southern.

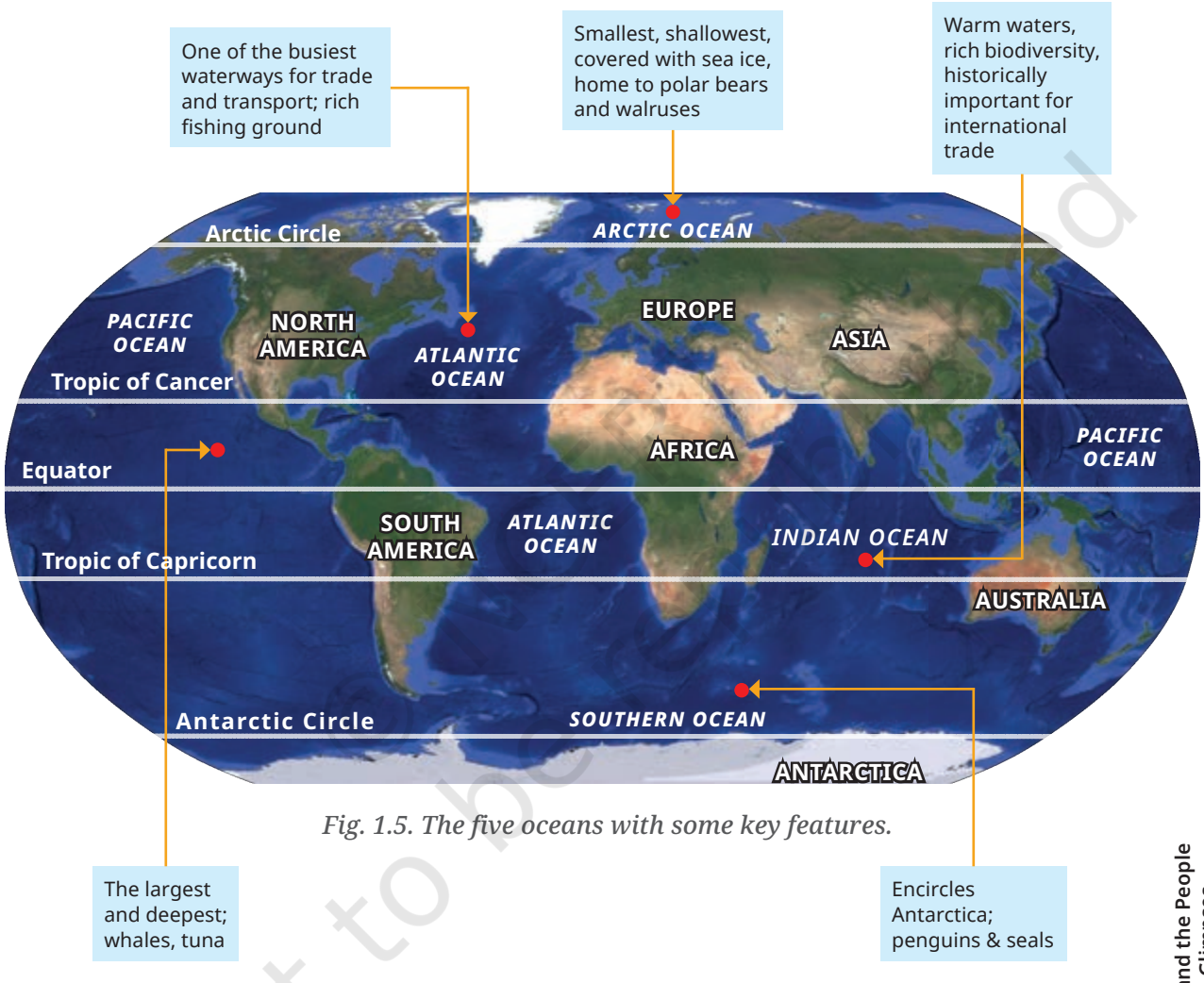

Fig. 1.5. The five oceans with some key features.

Ocean currents

Oceans are constantly moving! Ocean currents are like giant rivers flowing through the ocean. They can be:

- **Warm currents** bringing warm water from the equator toward the poles, or
- **Cold currents** bringing cold water from the poles toward the equator.

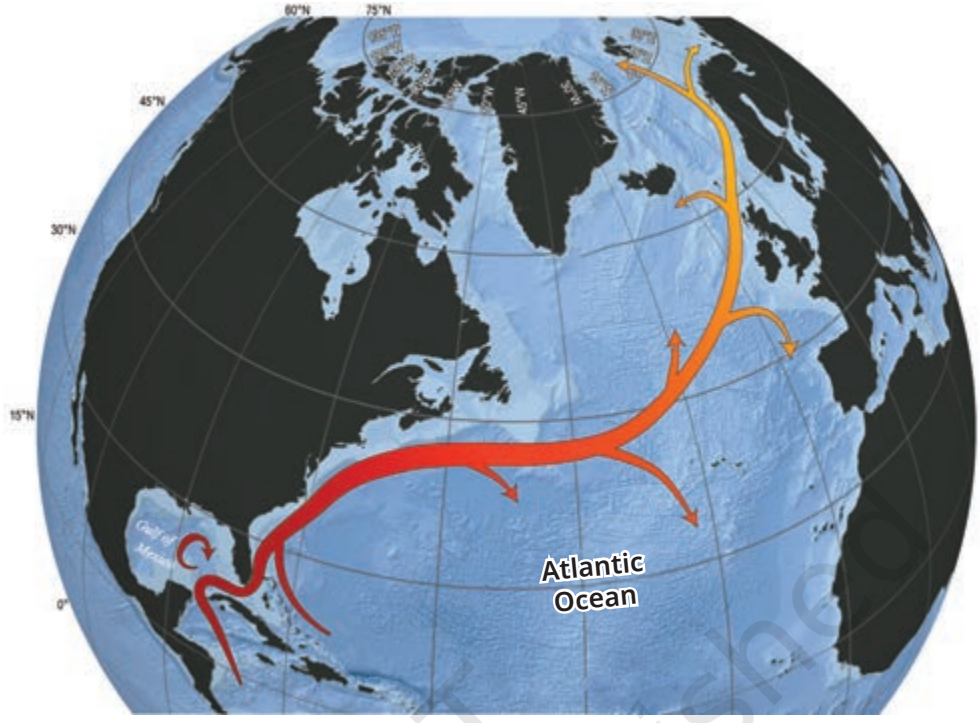

Fig. 1.6. A simplified diagram of the Gulf Stream showing its main course.

These currents affect the climate of coastal areas. For example, the Gulf Stream flows north from near the Equator (where the water is warm) through the Atlantic Ocean towards Western Europe. This warm water makes places like the United Kingdom warmer than other places at the same latitude.

Fig. 1.7. A type of snail photographed on the seabed of the Mariana Trench. It feeds on bacteria that synthesise chemicals for their own food.

Ocean trenches

The seafloor has very deep, V-shaped areas called trenches. The Mariana Trench is the deepest of these. Near-freezing temperatures, high pressure, and complete darkness make it one of the harshest environments on Earth. The trench is over 2,000 metres deeper than the height of Mount Everest. Its deepest section, the Challenger Deep, reaches over 11,000 metres below sea level.

Scientists studying these trenches have found unique life forms. Since there is no light, plants cannot use photosynthesis to make food. Instead, they use energy from chemicals in the water to produce food. Life finds a way to survive and thrive even in such harsh conditions.

The Great Barrier Reef

A **reef** is a ridge found at or near the surface of the ocean, formed either naturally or artificially. Natural reefs can be made of rock or built by tiny sea animals called corals. Reefs are among the

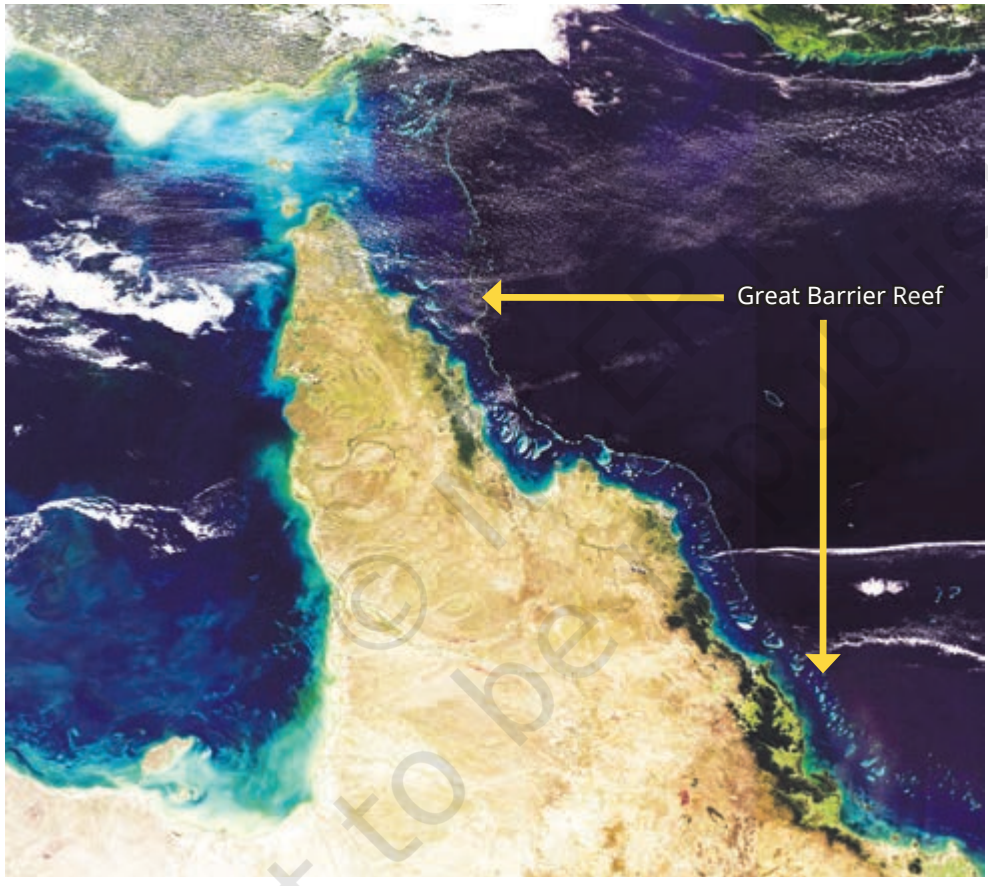

Fig. 1.8. The Great Barrier Reef seen from space.

most diverse ecosystems on Earth, often called the 'rainforests of the sea', as they provide food and shelter for about one-quarter of all ocean species, including fish, crabs, turtles, and sponges. However, they face serious threats from human activities such as overfishing, pollution, and climate change, making their conservation crucial.

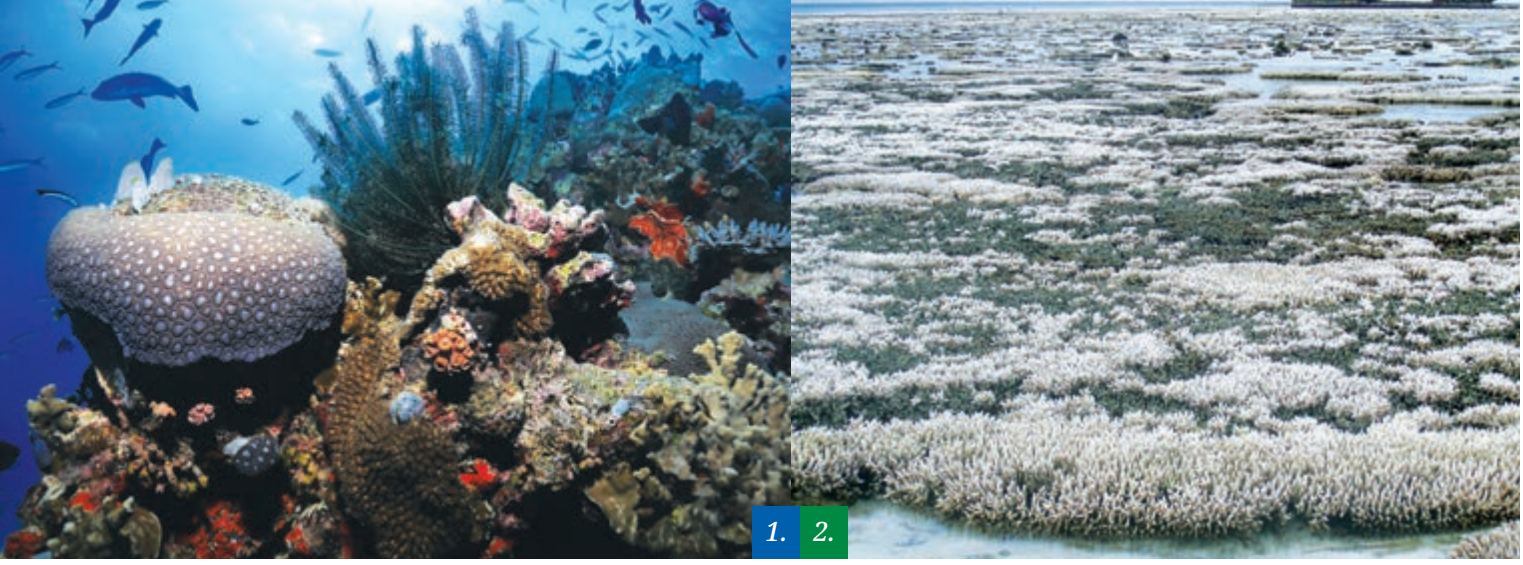

Fig. 1.9. (1) Live corals in the Great Barrier Reef, home to a variety of sea life. (2) The bleaching and death of coral leads to the loss of habitat of a whole host of sea animals. The bleaching occurs due to changes in the chemical composition of ocean waters, largely caused by human actions.

The Great Barrier Reef (Fig. 1.8), off Australia's northeastern coast, stretches over a length of 2,000 km and covers about 350,000 square kilometres. It is a complex, interconnected habitat housing hundreds of species of coral, thousands of species of fish and other sea animals. Recognised as a UNESCO World Heritage Site, the reef is one of the planet's most remarkable features.

Smaller water bodies and waterways

It helps differentiate among the various types of formations in the sea through a system of classification and naming — seas, straits, bays, gulfs and canals — as shown in the table below.

Type	Description	Example
Sea	Large, partly enclosed saltwater area connected to an ocean	Arabian Sea
Gulf	Large inlet of the sea deeply cutting into land	Persian Gulf
Bay	Smaller, broad inlet of the sea	Bay of Bengal
Strait	Narrow channel joining two seas or oceans	Strait of Malacca
Canal	Man-made channel connecting water bodies	Suez Canal

These formations play an important role in supporting trade and transport. The Persian Gulf, for instance, has been important for

trade between India and Europe for millennia. The bays provide safe havens for ports and dockyards shielding them from the strong winds of the open oceans.

DON'T MISS OUT

The Bay of Bengal is the world's largest bay and has been important in trade, influences climate, and is home to a variety of flora and fauna.

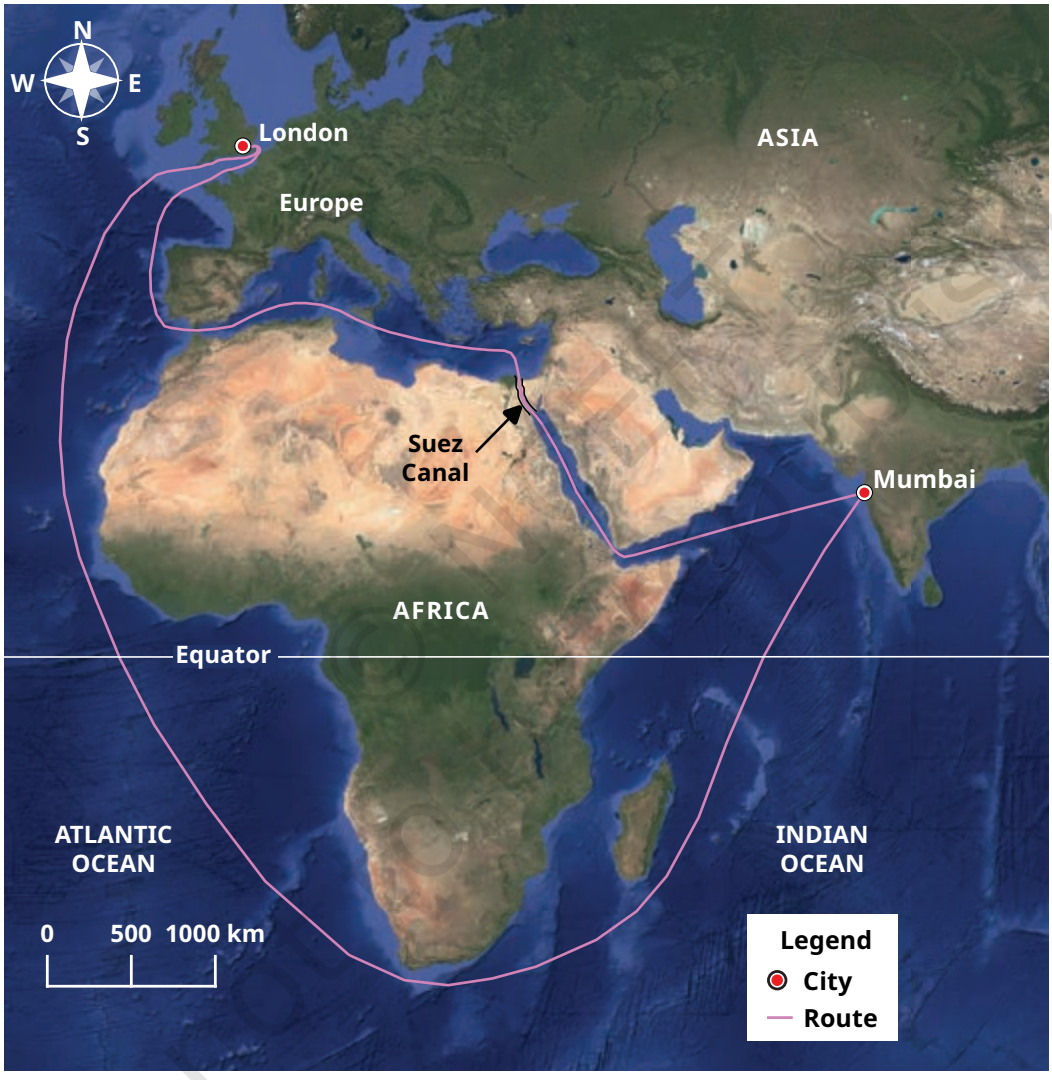

Fig. 1.10. The Suez Canal is the shortest maritime route from India to Europe.

The **Suez Canal** is a human-made passage (opened in 1869) connecting the Red Sea with the Mediterranean, creating a waterway from the Indian Ocean to Europe.

The Continents: Variety on Land

Landforms of the world include mountains, plateaus, and plains. We have encountered them across various chapters throughout the Middle Stage, mainly in the context of India. Here we expand the scope to look briefly at these landforms across the world — where they are located, what some of their features are, and in what ways they are connected to life.

LET'S REMEMBER

- → In Grade 6 we looked at the three main landforms — mountains, plateaus and plains.
- → Mountains are landforms that are much higher than the surrounding landscape. They can be recognised by a broad base, steep slopes and a narrow summit.
- → A plateau is a landform that rises from the surrounding land and has a more or less flat surface; some of its sides are often steep slopes.
- → Plains are landforms that have an extensive flat or gently undulating surface. They do not have any large hills or deep valleys.
- → Deserts are considered to be large and dry expanses with very little precipitation. Their flora and fauna are also unique. Some deserts are hot, such as the Sahara Desert in Africa and the Thar Desert in the northwest of the Indian Subcontinent. Others are cold, like the Gobi Desert in Asia.
- → A large continuous expanse of land is called a 'continent'. The most common count is of seven continents — Africa, Antarctica, Asia, Australia, Europe, North America, and South America.

We will tour the continents, spotlighting one or two landforms in each. We start from near home, Asia. Since we have taken a tour of the major landforms of India in Part 1 of this textbook, our focus will be on other parts of the world.

Asia

Fig. 1.11. Physical map of Asia with some features marked

LET'S EXPLORE

Study the map in Fig.1.11. What are the different physical features represented here? *(Hint: You may refer to LET'S EXPLORE on page 2 of this chapter.)*

Roof of the world — the Tibetan Plateau

As we fly across the Himalayas, we encounter the Tibetan Plateau. Studying plateaus offers us insights into the Earth's geology, and their importance for both nature and human life.

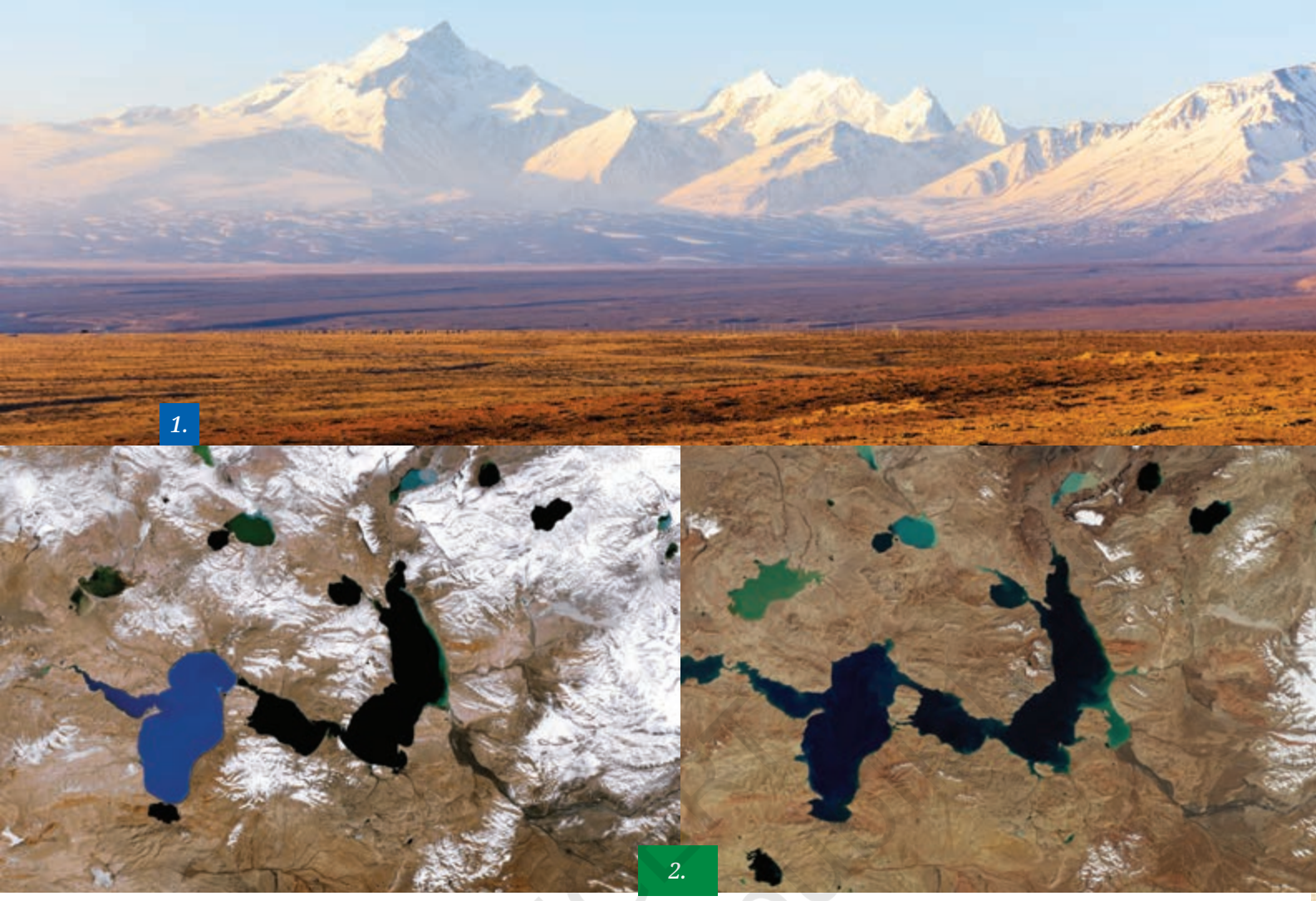

Fig. 1.12. (1) The Tibetan Plateau, an expanse of flat land with the steep Himalayan mountains towards the south; (2) Part of the Tibetan Plateau. These satellite pictures are from 1987 and 2021 respectively. What differences do you notice?

Tectonic: Geological forces related to the movement of the Earth's crust

The Tibetan Plateau is the highest and largest plateau on Earth. Located north of the Himalayan Range, it is the result of collisions between the Indo-Australian and Eurasian **tectonic** plates, which also led to the formation of the Himalayan mountain range. The plateau stretches about 2,500 km from east to west and 1,000 km from north to south, with an average height of over 4,500 metres above sea level. The region plays an important role in influencing the climate of Asia, and is the source of many major rivers, including the Indus, Brahmaputra, and Yangtze.

Scientists call the Tibetan Plateau and its mountains the 'Third Pole'; it contains the largest reserves of freshwater outside the polar regions. With climate change, snow-melt has led to the expansion of existing lakes and the creation of new ones.

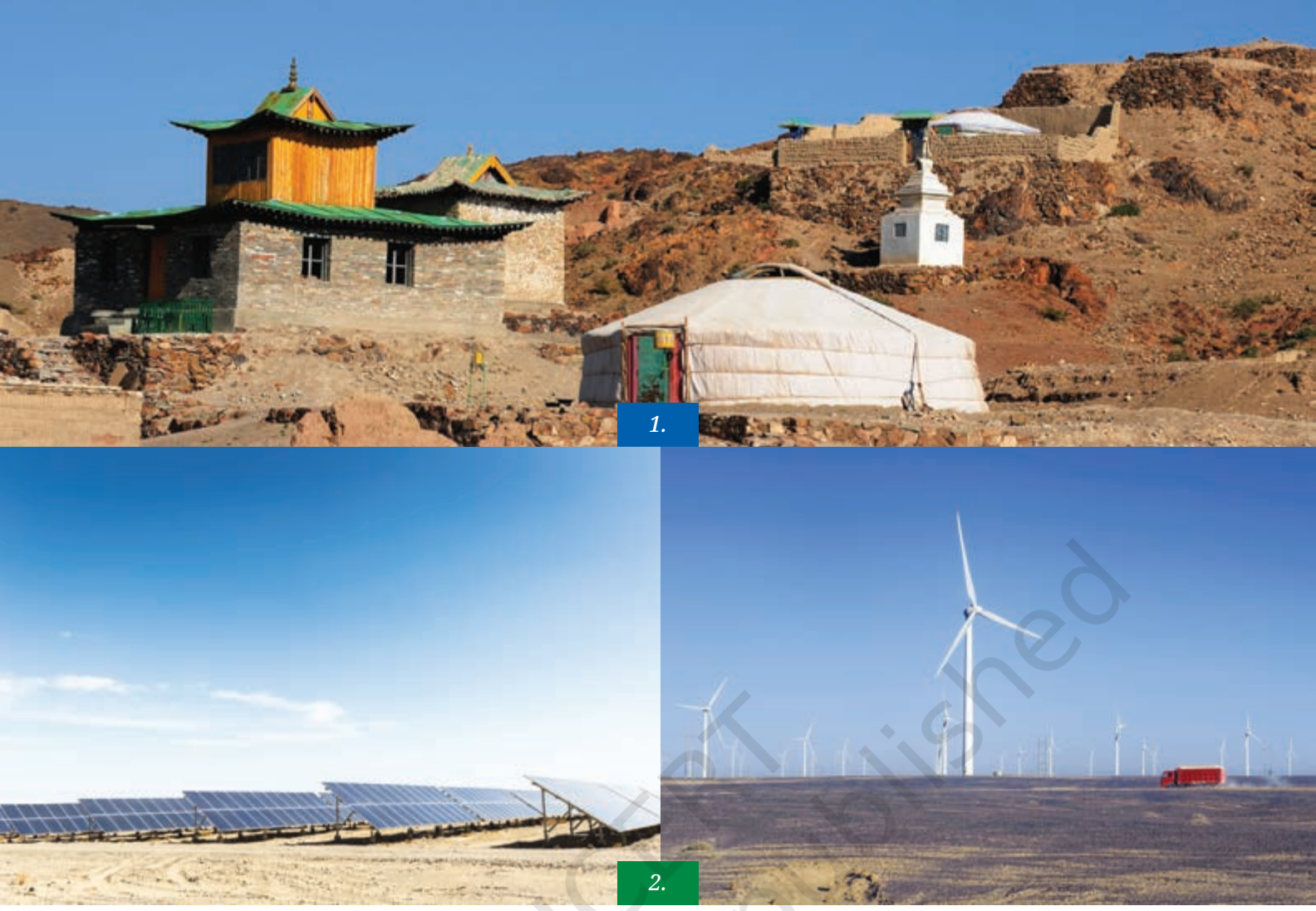

Fig. 1.13. (1) A Buddhist monastery at the edge of the Gobi Desert. Notice the lack of vegetation in the surrounding area. (2) Harnessing energy from Nature in the Gobi Desert Left: Solar panels; Right: Windmills

Gobi Desert in the 'Land of the Eternal Blue Sky'

Deserts are large, extremely dry areas of land with low precipitation (less than 25 cm per year). Deserts are found on every continent and cover about one-fifth of the Earth's land area. According to the National Geographic Society, around one billion people (one-eighth of the world's population) live in deserts.

As we move to the northeast, we arrive at the Gobi Desert in Mongolia (part of the desert is in north China). Mongolia is called the 'Land of the Eternal Blue Sky' because it has about 8 to 9 months of sunny weather, but winter temperatures can drop to minus 30°C. The climate is harsh and vegetation sparse; herds migrate seasonally to access pastures supported by underground water supplies.

Fig. 1.14. (1) The landscape of the Steppes. (2) The steppe tortoise is about 13–25 cm in size. It lives in burrows almost 2 metres deep, and hibernates for 2–5 months depending on weather conditions. Two of them were among the first inhabitants of the Earth to travel to the moon in 1968. (3) This is a yurt, the hut of a nomad of the steppes. (4) The inside of a yurt.

Steppe: A large area of flat unforested grassland, that has a temperate climate with hot summers and cold winters, and moderate rainfall that is often seasonal.

The Eurasian Steppes

We are now ready for better weather — we go north we arrive at the **Steppes**.

The Steppes are spread for over 8,000 km west to east (see Fig. 1.11) This grassland is a global **carbon sink**; it absorbs carbon from the air and stores it underground; this helps to reduce greenhouse effects over time. The steppes and their water bodies nearby serve as resting spots for migratory birds like the Siberian crane.

1. 2.

Fig. 1.15. (1) Snow-capped Ural mountains; (2) A collection of rocks from the Urals that yield semiprecious stones like crystal, topaz, quartz, agate, beryl, amethyst and gypsum.

The Urals

We now travel a little westward to the Ural Mountains (see Fig. 1.11).

Mountains are formed by tectonic forces, volcanic activity, and erosion. They play an important role in determining climates, serve as '**water towers**', biodiversity hotspots and, in many cases, serve as natural boundaries between countries.

Water towers: Mountains are called water towers because they are at a height, and provide freshwater through melting snow and glaciers.

LET'S EXPLORE

Assess and describe the Himalayas from the perspective of these different roles.

Since we have gathered information about the Himalayas in the past, in this chapter we will explore a few mountain ranges in other parts of the world.

The Ural Mountains are an ancient range stretching about 2,500 km from the Arctic Ocean in the north to the border of Kazakhstan in the south. (See Fig. 1.11.) They form a natural boundary between Europe and Asia. The range is notable for its rugged slopes, caves, valleys, and forests.

Fig. 1.16. An aerial view of the Siberian taiga, an area near the Arctic with forests of coniferous trees.

Fig. 1.17. Winter night in the polar tundra

Fig. 1.18. The tundra in the Ural Mountains in summer

Tundra: A tundra is a treeless, cold plain where the soil stays frozen most of the time. This frozen soil, called permafrost, acts like a giant freezer, trapping greenhouse gases like carbon dioxide and methane. As global warming causes the planet to heat up, the permafrost melts, releasing these stored gases and speeding up climate change.

Swamp: Land that is always wet and partly covered with water

The Urals are rich in mineral resources, including iron ore, copper, zinc, platinum, gold, and coal, as well as oil and natural gas.

These mountains support diverse ecosystems, with coniferous taiga forests dominating the western and eastern parts, while deciduous forests (Fig. 1.18) prevail in the south, providing habitats for animals such as brown bears, wolves, lynx, elk, reindeer, and sable. The varied landscapes, from the northern **tundra** and **swamps** to the fertile southern farmland, make the Urals significant for their ecological diversity, natural beauty, and economic importance.

Europe

The European Plain

We now fly west across the Urals to Europe, where we come to the vast European Plain (Fig. 1.19).

Plains are vast flatlands formed by sediment deposition and are known for their fertile soils that support farming, trade, and dense populations. Valleys are carved by rivers and provide fertile soil, water, and transport routes that have nurtured some of the world's earliest civilisations. Together, plains and river valleys sustain agriculture, and foster biodiversity.

The **European Plain**, or the Great European Plain, is one of the largest flat lands in the world. It covers parts of several countries. The plain is characterised by low-lying terrain, gentle rolling hills, and several wide river valleys.

Fig. 1.19. Physical map of Europe

Fig. 1.20. (1) A village in Switzerland located next to Lake Lucerne, with a view of the Alps; (2) The 1,200 km long, crescent-shaped Alps photographed from space. (3) Wheat fields in Europe; the largest proportion of the world's wheat production is from Europe.

LET'S EXPLORE

Observe the area covered by the European Plain. Now turn to the political map of the world at the end of this textbook. List the countries that are part of the European Plain *(you need not memorise them).*

The fertile soils here make it one of the most productive agricultural regions in the world. Wheat, barley, rye, and potatoes are widely cultivated. The rivers of the region have played an important role in trade and transport. The region has deposits of coal, oil and natural gas, resources that have been important for economic growth. The relatively flat land and favourable

climate have also supported the growth of major cities like Moscow, Berlin, Paris, Amsterdam, and Warsaw, among others.

The European Plain has been the ground for major battles with many rulers jostling to take control of it. Today, it remains vital for Europe's economy especially for agriculture and transportation.

As we continue southwest we sight a crescent-shaped mountain range, the Alps. The Alps are renowned for their picturesque landscapes with skiing and hiking in all the countries they span. They form a natural barrier in south-central Europe and contain famous peaks such as Mont Blanc.

Fig. 1.21. Edelweiss, flower of the Alps. It is the national flower of Austria and belongs to the family of sunflowers.

The Alps have oak and beech forests at lower altitudes, spruce and pine at higher elevations, and alpine flowers such as the edelweiss in the high mountains. Wildlife includes ibex, chamois, marmots, golden eagles, lynxes, wolves, and brown bears. The Alps provide water to major European rivers like the Rhine and tributaries of the Danube (see Fig. 1.19), which supply drinking water, irrigation, and hydroelectric power to lowland Europe. The region is also rich in minerals such as iron, copper, lead, rock salt, graphite, gypsum, and magnesite, and is known for its forests and fertile land.

Africa

After this whirlwind tour of the key landforms of Europe, we fly south to the African Continent. As on every other part of the Earth, Africa too has varied landforms. The first large one we traverse is the **Sahara Desert**, the largest hot desert in the world. (See Fig. 1.22.) Temperatures range widely across the desert, from 30°C to 46°C, with rainfall below 25 cm, and hardly any vegetation.

Fig. 1.22. The African continent highlighting the African Savannah, the Sahara Desert, and the River Nile.

The savannah is a tropical grassland ecosystem that has wide open spaces, scattered trees, and seasonal rainfall. It lies mainly between tropical rainforests and deserts, the most famous one being in Africa. The savannah supports a rich diversity of wildlife, including elephants, lions, zebras, and giraffes, which depend on its grasses and waterholes. Its climate features a distinct wet and dry season, influencing plant growth and animal migration patterns. However, human activities such as farming, deforestation, and climate change are threatening the balance of these vital ecosystems.

Fig. 1.23. (1) An oasis in the Sahara, an area with water and vegetation in the otherwise dry desert. (2) Underground dwelling in the Sahara. This design keeps the house cool in summer and warm in winter.

Fig. 1.24. (1) Traditional clothing and headgear of nomads in the Sahara, designed to keep the body cool. (2) Date palm trees in an oasis. Dates are rich in carbohydrates, vitamins and minerals. (3) Cacti in the desert store water in their leaves. (4) The large ears of the Saharan fennec fox help dissipate heat and listen to the sounds of underground prey. The flora and fauna have adapted and built resilience to extreme heat, sometimes upward of 50°C.

The Sahara has been home to nomadic tribes that herd livestock — sheep, goats and camels — and engage in trade for their livelihood. Ancient trade routes passed through here, carrying gold, salt, and ideas to the Mediterranean world.

The African continent has the longest river in the world, the Nile, almost 6,650 km long. The Nile and its basin have been the cradle of the ancient Egyptian civilisation. For thousands of years, the river has provided irrigation, transforming dry lands into fertile agricultural areas that support crops such as wheat, barley, flax, fruits, and vegetables. The river also provides drinking water, fishing, and hydroelectric power, and it has served as an important transportation route for centuries.

LET'S EXPLORE

On the map (Fig. 1.22) locate the course of the River Nile. Where does it originate from and in which direction does it flow? Turn to the political map at the end of the book, and identify some of the areas that the river flows through.

South America

We now fly across the Atlantic Ocean to South America. On the west coast of South America are the Andes Mountains — the largest mountain range in the continent (Fig. 1.25). They are home to Mount Aconcagua, the highest peak in the Western Hemisphere and Bolivia's Uyuni Salt Flats, the largest **salt flat** on Earth.

The Andes are a vital source of freshwater for millions of people, feeding major rivers incuding the Amazon, world's largest river by volume. Rich in biodiversity, the mountains are also home to thousands of species of mammals, birds, amphibians, reptiles, and fish, many of which are unique to the region. However, only about one-fourth of the original flora and fauna remains, making the Andes a critical **conservation hotspot**.

In addition, the Andes are among the most resource-rich regions in the world, holding vast reserves of copper, zinc, silver, and lithium.

Salt flat: Areas of flat land covered with a layer of salt.

Conservation hotspot: An area where efforts are made to save the native flora and fauna lost generally due to human activities.

Fig. 1.25. South America

Fig. 1.26. (1) The Andean condor is a national symbol of several South American countries. It has an average wing span of 3.2 metres, and is a significant part of the mythology representing the sun deity; (2) Salt flats in South America.

Fig. 1.27. The Amazon River flows through the Amazon Rainforest in South America.

DON'T MISS OUT

- The **Amazon River** is the longest in South America and flows from the Andes Mountains in Peru and flows east towards the Atlantic Ocean. The river basin with all its tributaries supports the Amazon **Rainforest**.
- Almost 400 indigenous communities reside in the forest and play an important role in conserving the forest. Today, the Amazon is threatened by deforestation and climate change.
- Dust travels all the way from the Sahara to the Amazon rainforest, carrying with it phosphorous needed by the plants in the rainforest.

Rainforest: An area of tall, mostly evergreen trees that receives a high amount of rainfall.

LET'S EXPLORE

- The Amazon Rainforest has been called the 'Lungs of the Earth'. Why do you think this might be so?
- The countries in this region need land for development but risk losing the Amazon Rainforest. Discuss in groups: What are the short and long-term effects of deforestation, and how can we protect the Amazon for the planet?

Fig. 1.28. (1) Moon Valley in the Atacama Desert. The moon-like formation has occurred due to movements in the Earth's crust. (2) A sculpted human hand rises from the Atacama Desert, seemingly reaching for the sky, created by a famous Chilean artist. (3) Rainbow Valley, a part of the Atacama Desert. The colours are from different minerals in the soil.

From the Amazon Forests we travel to the **Atacama Desert** in Chile (see Fig. 1.25), one of the driest places on Earth, stretching about 1,000 km. The temperature varies from 40°C during the day to 5°C at night.

LET'S EXPLORE

The Atacama Desert is famous for stargazing, offering some of the clearest night skies, and its rocky, Mars-like landscape has even been used by NASA to test rovers. However, it has also become one of the world's fastest-growing dumps for discarded clothes, caused by the rise of cheap **fast fashion**. The UN has called this waste problem 'an environmental and social emergency'.

Fast fashion: Replication of trendy clothing fast and at low costs, generally by producing in countries where labour is paid low wages. The clothing is very quickly discarded when the fashion trends change.

North America

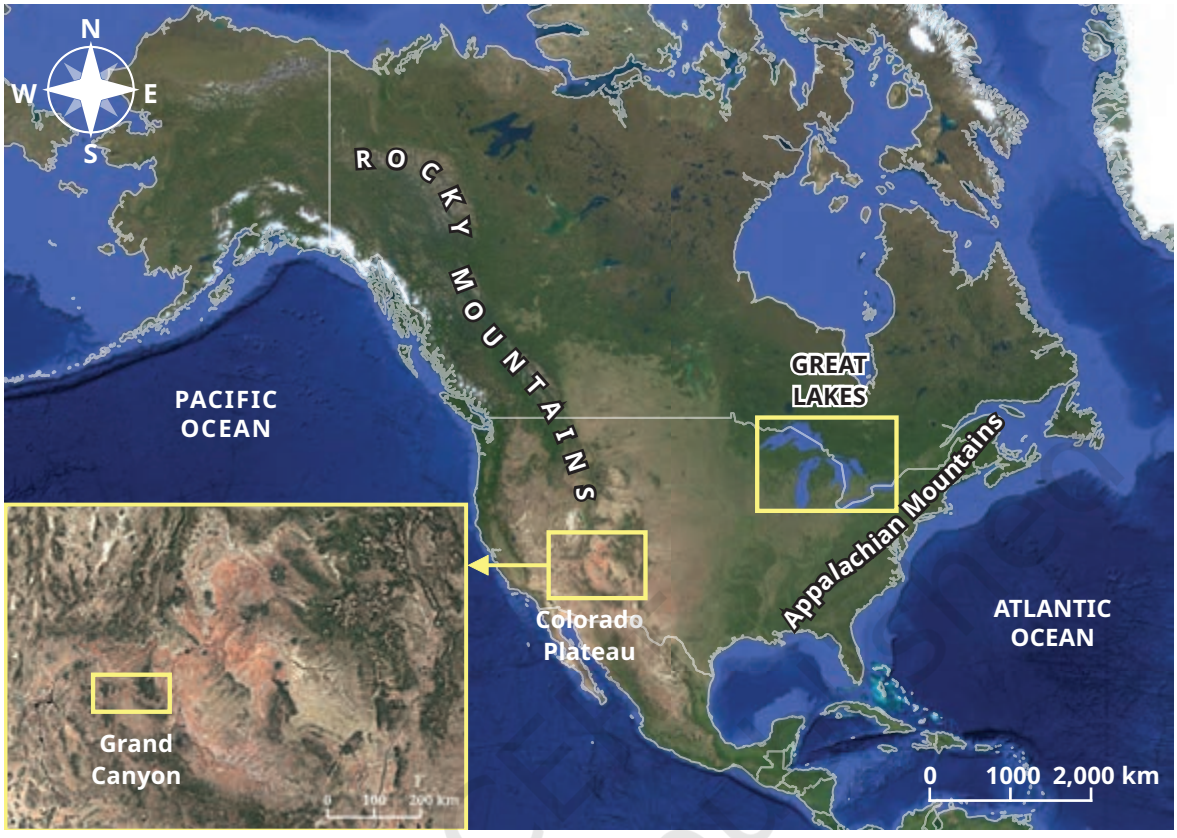

Fig. 1.29. North America

We now travel north to North America.

The Colorado Plateau

The Colorado Plateau is a large highland region in the southwestern United States that stretches across several states. Covering over 3,30,000 square km it is renowned for its landscapes, including the Grand Canyon. The plateau is composed mostly of layers of sedimentary rock that were slowly uplifted by tectonic forces and shaped by erosion over millions of years. This process has created dramatic red rock formations and deep canyons (see Fig. 1.29).

The Colorado Plateau is rich in natural resources, such as coal, oil, natural gas, uranium, copper, and other minerals. Its unique geology, mineral wealth, and diverse plant life, including both coniferous and deciduous trees, makes the region important for tourism and natural resource use. The Grand Canyon has had about 5 million visitors annually over the past several years.

Fig. 1.30. The Colorado Plateau with the Colorado River flowing. Note the plateau, at a height above the river.

The Rocky Mountains (see Fig. 1.29), or the 'Rockies,' stretch over 4,800 km. They are rich in natural resources such as copper, gold, and silver. Mining, hydropower generation, tourism and agriculture contribute to the GDP. The Rockies were home to large indigenous communities, Native Americans as they are called, till about 300 years ago. These communities depended on the region's rivers, forests, and wildlife for sustenance and regarded the mountains as sacred. Today, many of them live on reservations that have been established for them.

Fig. 1.31. 'Old Faithful', a geyser erupts at Yellowstone National Park in the Rockies. Geysers are jets of boiling water and steam, caused in this case by volcanic activity deep beneath the Earth's surface.

Fig. 1.32. The Appalachian Mountains

DON'T MISS OUT

The Yellowstone National Park, located in the Rockies, is an example of ecosystem restoration. The Park was experiencing an ecological imbalance due to overgrazing by elk, a type of deer. In 1995, wolves were introduced here. This predator hunted the elk, reducing their population and enabling the return of the flora, hence leading to the restoration of ecological balance.

Fig. 1.33. A Native American of the Cherokee community in traditional dress. The Cherokee are one of the communities indigenous to the Appalachian Mountains.

The Appalachian Mountains (see Fig. 1.29) are among the oldest mountain ranges in the world. The fertile valleys, abundant game, and natural travel routes enabled indigenous communities to thrive. Like in other traditions, the mountains hold spiritual significance for the people here. The mountains have been vital for economic development providing coal, timber, and natural gas industries. Tourism and renewable energy are also growing sectors.

The Great Lakes (see Fig. 1.29) are a chain of five massive fresh-water lakes. They have been vital to North American commerce and industry for centuries through their shipping routes. Several cities in the region depend on the lakes for drinking water. The lakes are a vast habitat for diverse wildlife, though they also face environmental challenges such as chemical contamination of the sediments in the lake, and water contamination due to agricultural run-off and industrial processes.

We have travelled all over the world, exploring a few significant geographical features, and how they connect with our lives in various ways. The continent we now visit is Australia, our last stop.

The Australian Continent

As you may be able to figure out from Fig. 1.34, a large part of Australia is desert, or arid, and has been termed the Great Australian Desert. It comprises several desert areas, among which is the Great Victoria Desert.

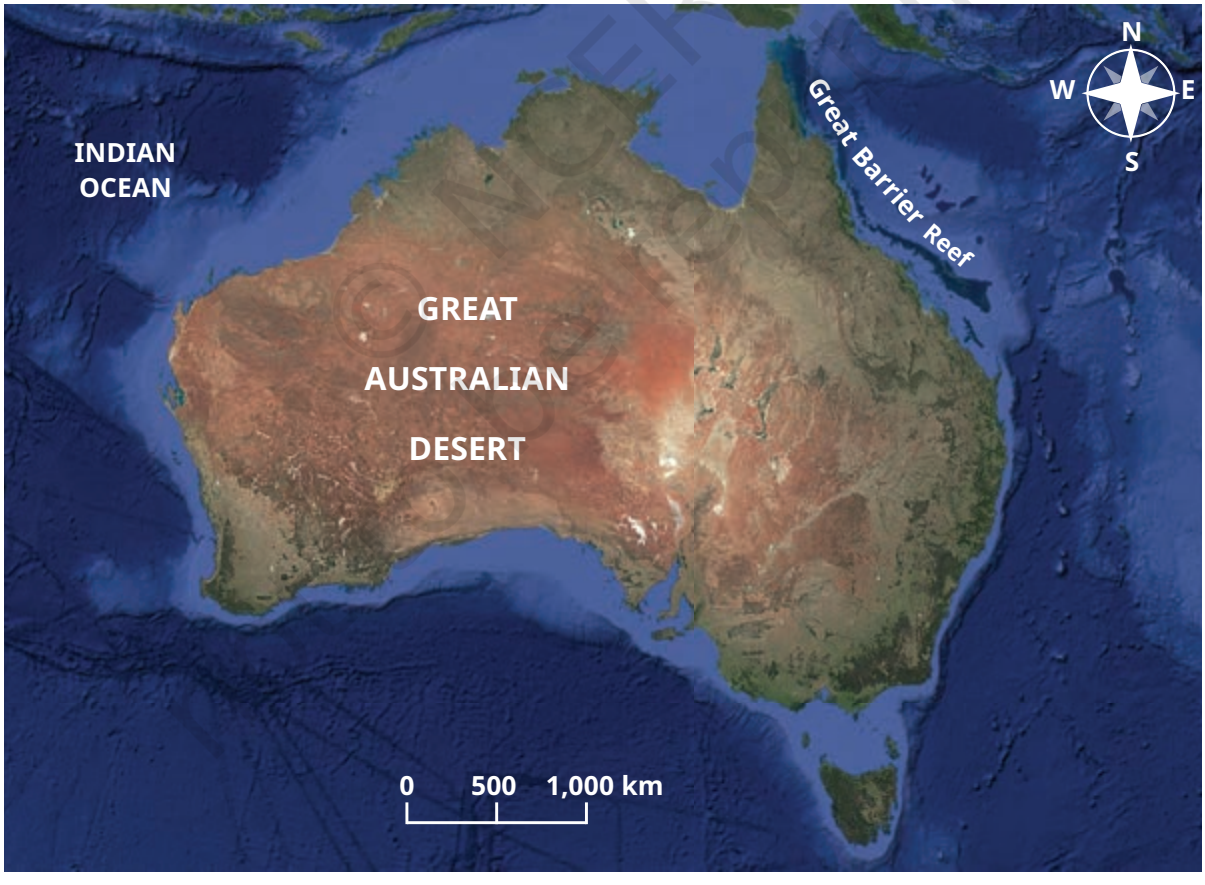

Fig. 1.34. Physical map of Australia. Based on the colours you see, what conclusions can you draw about the landforms?

Fig. 1.35. (1) A remote road in the Great Australian Desert. (2) Camel in the wild — camels were transported from places like India and Afghanistan to help exploration and colonisation during the 19th century.

The deserts are home to many animals, like reptiles, skinks, wallabies, bilbies, and feral camels. Predators include dingoes, large lizards, cats, foxes, and snakes. Some rare animals, such as the sandhill dunnart, marsupial mole, and mallee fowl, are struggling to survive.

The Spinifex are an indigenous population of Australia who have lived in the desert for over 25,000 years. Their way of life and culture are being preserved by younger generations and attract tourists. Tourists also come to see the unique geography and wildlife.

DON'T MISS OUT

The word 'desert' conjures up images of a very hot and dry place. However, there are cold deserts too. The largest desert on Earth is Antarctica, which covers over 14 million square kilometres, more than four times the area of India. It is also the coldest desert on Earth, even colder than the Arctic, the planet's other polar desert.

Through our whirlwind world tour we have visited most of the key geographical features of the Earth.

Before we move on ...

- The Earth's surface includes varied landforms and water bodies such as mountains, plateaus, plains, deserts, grasslands, rivers, and oceans, all shaped by natural processes like tectonic movements, erosion, and deposition.
- These features influence climate, ecosystems, and human activities such as settlement, agriculture, and trade.
- Human actions like deforestation, overuse of resources, and pollution disturb this balance, causing issues like desertification, biodiversity loss, and climate change.
- Studying world geography helps us understand these features and the need to manage them wisely for sustainable development.

Questions and activities

1. Why do all map projections have some amount of distortion?
2. What makes the Tibetan Plateau unique?
3. Why are coral reefs called the 'rainforests of the sea'?
4. How do the oceans help to regulate the Earth's climate?
5. What is the main reason for the Great Barrier Reef facing threats today?
6. Why is the Amazon Rainforest often called the 'Lungs of the Earth'?
7. Choose two different types of geographical features you have explored in this chapter. Write short paragraphs on how they influence the flora and fauna or human lives in that area. Do they also have an implication for the whole globe?

8. Discuss how oceans influence climate and trade. Use examples from the Indian and Pacific Oceans.

9. Choose one environmental issue (deforestation, reef bleaching, or desertification) and explain its causes, impacts, and possible solutions.

10. Imagine you are a geographer asked to advise a government about protecting one major landscape in your country. Which one would you choose, and why?

11. Imagine that someone is funding a group of you for a road trip across two continents. There are differences of opinion on which two they should be. Make a pitch for the ones you would like everyone to go to. Use a blank map, trace your route and locate the places on it, and try to convince the others to your point of view. You could use a variety of creative ways.

Looking back and forward...

Remember that in the chapter 'The Colonial Era in India' (Part 1 of this textbook), we saw how the Great Rebellion of 1857 was not an isolated flashpoint, but rather the culmination of a long history of resistance and uprisings against the British. Before we embark on the second leg of India's long journey to independence, let us look back at two more important movements that took place in eastern India and serve as examples illustrating how deep-seated grievances over land revenue and the loss of sovereignty fuelled the desire for fairness and an end to colonial tyranny.

The Paika Sangram: Odisha's Early Uprising Against Colonial Rule

The Paika Sangram was one of the earliest uprisings against colonial rule. It took place at Khorda, in present-day Odisha and its roots lay in decades of British betrayal and exploitation. After assisting the East India Company in 1803, the Raja of Khorda found his territories annexed by the Company and his religious authority over the Jagannath Temple stripped away. Resistance led by the royal preceptor, Jayee Rajguru, resulted in his execution in 1806, further fuelling local anger.

A further source of distress was the Company's revenue policy. The British began collecting tax even from revenue-free lands earlier granted to local officers and soldiers in return for service. The Paikas—Odisha's traditional peasant militia—lost their hereditary, rent-free lands because of these high tax demands imposed by the British. This economic distress was compounded by rise in salt prices and by forced payments in a new currency, as the East India Company abolished the traditional system of cowrie currency. All this not only affected peasants but also tribal communities, as they suffered dispossession and hardship.

Buxi (or Bakshi) Jagabandhu, the hereditary military commander of Khorda, emerged as the chief leader of resistance and mobilised the disaffected Paikas and tribal groups. Under his command, the rebels seized control of Puri and reinstated the Raja's authority. The temple priests even declared the end of British rule, using Lord Jagannath of Puri as a symbol of Odia sovereignty to unite the masses.

The rebellion spread across large parts of Odisha and involved thousands of fighters. Though the British imposed martial law and eventually contained the main uprising by May 1817, imprisoning and executing some of the rebels, Buxi Jagabandhu pursued a guerrilla campaign, taking advantage of forests and hills to launch surprise attacks, disrupt communications, and challenge British authority. Even after his surrender in 1825, the spirit of defiance persisted through further revolts that continued into the 1830s. Today, the Paika Sangram is remembered as a broad-based and influential 'people's movement' which equally involved peasants, tribal communities, religious institutions, and local elites.

The Sambalpur Uprising: A Saga of Resilience

Sambalpur, in present-day western Odisha, witnessed one of the longest regional resistances to British rule in eastern India, lasting from 1827 to 1862. It was sparked by colonial interference in royal succession, and the eventual British annexation of the state. The conflict began when the British refused to recognise Surendra Sai as the rightful ruler and annexed the state, imposing heavy land revenue that united local landlords and peasants against colonial injustice and economic exploitation.

The resistance reached its peak during the Great Rebellion of 1857, when Surendra Sai, released from prison, led a valiant resistance with several members of his family, including his younger brothers Udanta Sai and Chhabila Sai, along with other local supporters, in defence of their land, regional autonomy, and right to self-rule. They used guerrilla tactics, taking advantage of the region's dense forests and hills, converting hilltops into forts and using the terrain to repeatedly launch surprise attacks on the British forces. The battle of Kudopali in December 1857 was a historic landmark in this struggle, in which fifty-seven fighters, led by Chhabila Sai, sacrificed their lives.

Despite inflicting heavy casualties and executing numerous fighters, the British could not defeat the movement militarily. They ultimately resorted to deception to arrest Surendra Sai, who died in prison after 37 years of captivity. The Sambalpur Uprising stands as a powerful example of courage, guerrilla warfare, mass martyrdom, and prolonged suffering in India's struggle against colonial rule.