

THE GOBI DESERT AND ITS WILDLIFE

CARD 28

GROUP 10: WORLD HABITATS



The Gobi Desert stretches from southern Mongolia into China. The terrain is bleak, with barren rocks, low mountains, and drifting sand. But some hardy wildlife can still be found.

KEY FACTS

THE DESERT SURFACE

The Gobi Desert covers almost 580,000 square miles, extending from southern Mongolia into China. Much of the ground is covered with small pebbles called *gobi*, from which the desert gets its name. There are no grasses to bind the soil together or large shrubs to protect against the wind, so particles of soil are blown away from the surface, exposing rocks and pebbles. The soil particles then pile up into sand dunes at right angles to the wind.

To adapt to this environment, many desert plants have deep tap roots as well as a network of fine roots that spread to soak up as much water as possible. Succulent species such as *Euphorbia* have a waxy coating on their leaves to prevent moisture



loss. The seeds of other desert plants can lie dormant for

years, germinating only when water is present.

THE DESERT CLIMATE

The Gobi Desert is very different in summer and winter. In summer, midday temperatures can reach 110° F but drop sharply after sunset.

There are no clouds, so the heat escapes rapidly from the surface at night and raises the moisture level in the air as it cools. In winter, the tempera-

tures usually stay below freezing and may fall as low as -40° F. Snow may cover the ground for long periods.

The Gobi Desert lies along the same latitudes as much of western Europe, which has a moist climate. The westerly winds that sweep across Europe condense moisture collected over the ocean, which falls to the ground as rain. But as these winds pass across Asia, they lose moisture. By the time they reach the Gobi Desert they are almost dry, so very little rain falls.



Left: In summer it is extremely hot in the Gobi Desert during the day, but the scant cloud cover means that temperatures drop abruptly after sunset.

The Gobi Desert is classified as a cold desert, but the climate ranges from very high temperatures in summer to temperatures well below freezing in winter. Many desert species have adapted their lifestyles to survive these extremes of heat and cold as well as the lack of water. Other species migrate during the worst conditions.

ADAPTING TO THE DESERT

Animals have developed special adaptations to survive in the extreme temperatures and unreliable rainfall of the Gobi Desert. The long-eared hedgehog, for example, keeps cool in summer by means of the tiny blood vessels that run across its enlarged ears, close to the skin's surface. As air

blows on the ears, it cools the blood and helps stabilize the hedgehog's body temperature.

For insulation against the winter cold, some animals develop extra layers of fur, fat, or feathers. Many small animals hibernate below ground during winter and return to the surface when the snow thaws.



Left: *The Bactrian camel is still found wild in the Gobi. Because it has adapted well to desert conditions, this camel is often domesticated and used for transport.*

Right: *The jerboa forages only at night because it would die in the heat of the day.*

Front cover insets: *The jerboa and the eagle owl thrive despite the climatic extremes of the Gobi Desert.*



LARGE DESERT ANIMALS

The desert is a traditional hunting ground for the Mongol people, and the wild ass, the horse, and the saiga have been hunted almost to extinction.

Bactrian camels still live in the wild, but many have been domesticated. This camel can exist for days without water,

relying on fat stored in its two humps. To replenish its body fluids, it drinks up to 35 gallons at a time. The camel has a thick coat on top to protect it from the sun, but its coat is sparse on its underside to let heat escape. In winter it grows a long coat for insulation.

SMALL DESERT ANIMALS

Many small rodents, such as jerboas and gerbils, live in the Gobi Desert. They spend most of the day in underground burrows and emerge in the cool of night to search for food. On the surface it is so hot and dry during the day that a small animal would quickly dry out and die. But a few inches underground, the temperature is lower and the

air contains more moisture.

The Mongolian jird, like many other rodents, digs underground storage chambers. When rainfall is above average and food is plentiful, the jird gathers seeds in its cheek pouches and transfers them to its underground store-rooms. These supplies help to sustain the jird during periods of dry weather.

BIRDS

Hawks, eagles, and other birds of prey sweep over the desert at dusk and dawn in search of small rodents, birds, and reptiles. The large eagle owl hunts by night, while the common buzzard is active during the day.

Left: *Despite the searing heat, the buzzard scavenges in the desert during the day.*

In winter some birds migrate south to warmer climates. The desert wheatear and several species of the short-toed lark and sandgrouse spend the winter in India's Thar Desert. The houbara bustard was once common in the Gobi Desert, but it has been hunted too much and is now rare.



Left: *The desert wheatear is a ground-dwelling bird that breeds in the Gobi Desert. In winter it flies south to the warmth of the Thar Desert in India.*



Above: *The jird stores the seeds it finds in times of plenty as insurance against long periods of dry weather.*



Left: *Blood vessels in the ears of the long-eared hedgehog help it keep cool.*

THE SIBERIAN TAIGA AND ITS WILDLIFE

CARD 27

KEY FACTS

GROUP 10: WORLD HABITATS



Siberia is not a bleak, icy wilderness. Instead, it boasts magnificent coniferous forests, known as taiga. There are many unique birds and mammals in this vast region.

NATURE RESERVES IN THE SIBERIAN TAIGA

In the Siberian taiga there are 38 nature reserves to protect the wildlife. Two of the most famous are the Barguzin and Baikal State Nature Reserves. The Baikal Reserve includes 452 square miles of taiga, which is largely made up of dark fir and Siberian stone pine trees. It is home to about 800 species of flowering plants, 37 mammal species, and 260 bird species. The Barguzin Reserve, which is larger, was established to protect the fur-bearing sable.

Near these reserves is Lake Baikal, the world's deepest

Below: *The black woodpecker nests in conifers, feeding on beetle larvae and horntails.*



freshwater lake. It features the world's only freshwater seal and many unusual fish, mammals, and birds. Unfortunately, the lake has been polluted by shoreline industries.

Above: *The taiga covers a huge area of the Soviet Union, from the Urals to the Sea of Okhotsk.*

Below: *Snow lies on the rocky peaks of the taiga's forested slopes year-round.*



DID YOU KNOW?

- The Russian word for capercaillie is the same as that for a deaf person. The birds get so involved in mating that they do not hear the hunters' guns.
- Siberian spruce grouse seem to be fearless. Instead

of fleeing from the sound of hunters' guns, they move to lower branches to investigate the noise and become easy targets.

- A century ago about six million game birds were killed yearly in the USSR.

- Some forest vole species give birth to as many as 40 young each year.
- The brown bear eats nuts, berries, herbs, conifer seeds, fish, ground-nesting birds, rodents, insects, elk, and wild boar.

The Siberian taiga stretches east of the Ural Mountains

to the Sea of Okhotsk. Its character changes with the seasons. In summer it is colorful and inviting, while in winter it is cold and mysterious.

Humans rarely venture into the deeper forests, where elk and immense brown bears roam and other wildlife flourishes.

CLIMATE & VEGETATION

The Siberian taiga offers the widest range of temperatures in the world. In Verkhoyansk, winter temperatures can drop to -90° F, making it the coldest location in the Northern Hemisphere. In contrast, summer temperatures can rise to almost 100° F.

The average temperature in the taiga is 66° F, which is warmer than other parts of the world at similar latitudes.

Most of the taiga is made up of Daurian larches. This tree is ideally suited to the harsh climate. Its shallow root

system lets it draw water from the surface soil. It also thrives in both sandy and stony soil.

Further east, the forest turns into grassy steppes at times. Near the top of the Siberian mountains, the forest thins out. Instead of larches, there are dwarf Siberian stone pines and birches.

In the north the taiga supports conifers as well as small shrubs such as dwarf birches, cranberry, and bilberry. The forest is denser in the warmer center and south. Humans rarely enter these areas.

BIRDS

The taiga forests are ideal for many birds. Some live there year-round, adapting to the harsh winter. Others visit only in summer, drawn by the swarms of insects.

The black-billed and western capercaillies, along with the northern hazel grouse and Siberian spruce grouse,

draw hunters to the area. The hazel grouse in particular is commercially important.

Taiga birdlife is often heard before it is seen. A common sound is the oriental cuckoo's call. Another is the call of the black woodpecker, which is attracted by insects hidden below the tree bark.



Left: *The Siberian ruby-throat is a species of thrush. The female has only a white throat patch, without the male's vivid splash of red, shown here.*

OTHER WILDLIFE

The taiga winters are too cold for most amphibians and reptiles. Among the few amphibians is the Amur frog. Reptiles include the common adder and the viviparous lizard. Both these reptiles give birth to live young, which is essential in an area where it is too cold to hatch eggs.

Insects include the horntail, which lives in alder and birch trees, and the pine sawfly, which feeds on pines and destroys them.

Left: *The brown bear feeds on almost anything it can find.*



Front inset left: *The icy taiga winters do not deter the wolf from hunting. Its dense fur and endurance are key to its survival.*

Front inset right: *One of the few cold-blooded taiga inhabitants is the viviparous lizard, which gives birth to living young rather than laying eggs.*



MAMMALS

Many people equate Siberia with an image of wolf packs howling across a desolate snowy land. Even though it is widely hunted by humans, the wolf is still relatively common in the Soviet Union. It has adapted to most terrains but favors the open taiga. The wolf avoids the dense forests, where its main prey, the elk, is harder to track.

Left: *The Siberian red squirrel feeds on pine cones, nuts, and berries in the taiga.*

The red fox hunts the many voles in the taiga. Another mammal is the Siberian red squirrel. In winter it sheds its red fur for a silvery-gray coat that is prized by fur traders.

A majestic taiga inhabitant is the thickly furred brown bear. It roams the forests for many miles in search of food. From May to July, its mating roar is clearly heard.

Right: *The bull elk can take on most predators, but wolves or brown bears may kill its young.*

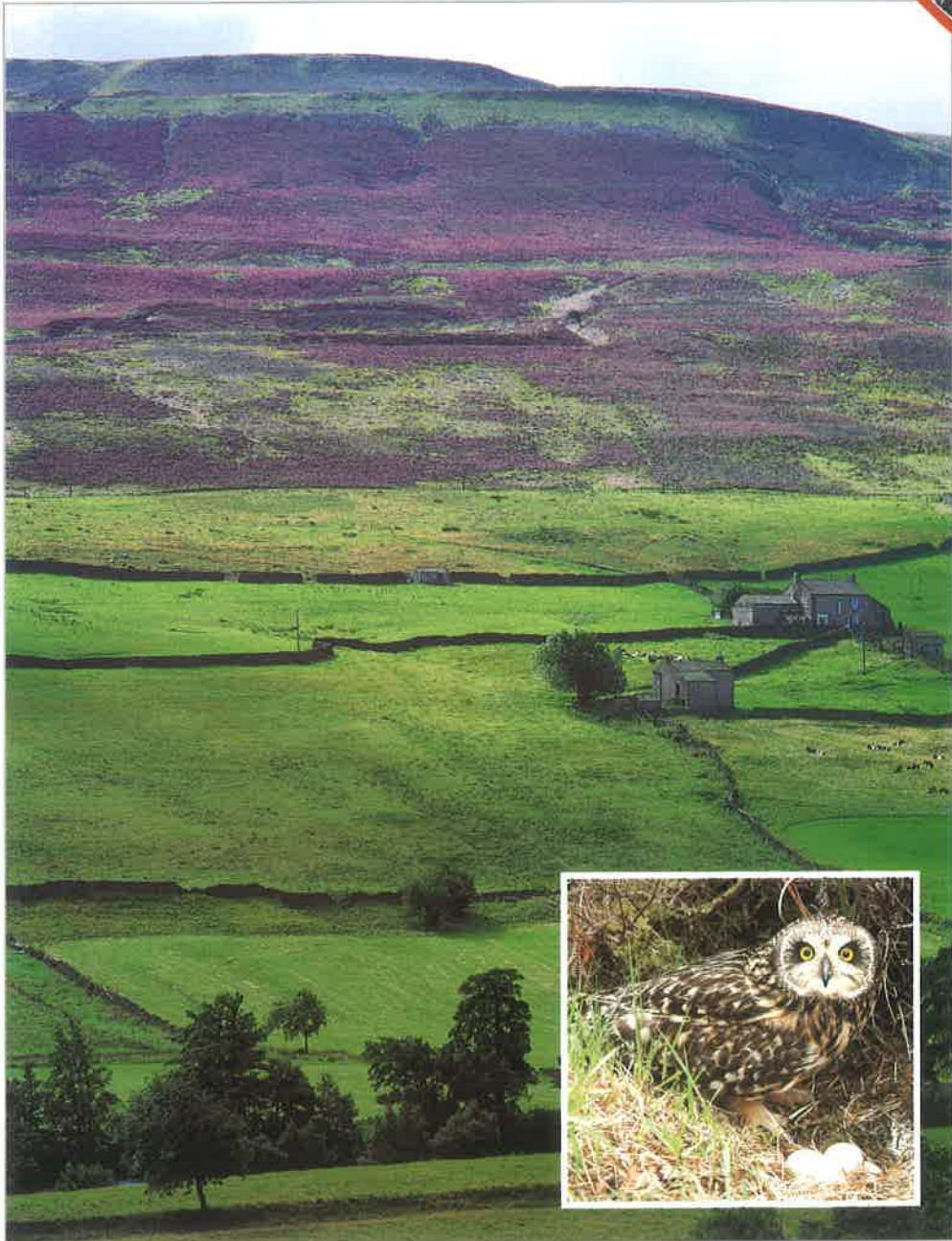


THE BRITISH MOORS AND THEIR WILDLIFE

CARD 23

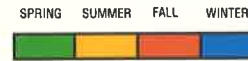
ACTION FILE

GROUP 10: WORLD HABITATS



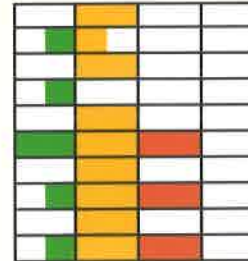
The wet, windy climate of Great Britain's upland moors discourages many plants and animals. But some hardy species flourish in these open expanses of seeming wasteland.

WHEN TO SEE WILDLIFE



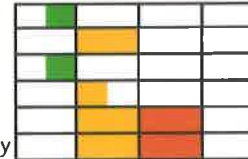
PLANTS (flowering times)

- Sundew
- Bilberry
- Heather
- Cotton grass
- Mat grass
- Sphagnum
- Bog asphodel
- Cloudberry
- Purple moor grass
- Rowan



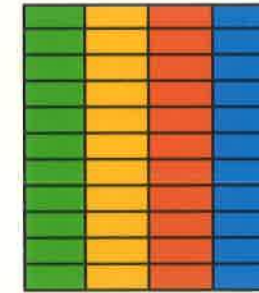
INSECTS

- Green hairstreak
- Large heath
- Marsh fritillary
- Mountain ringlet
- Bog bush cricket
- Golden-ringed dragonfly



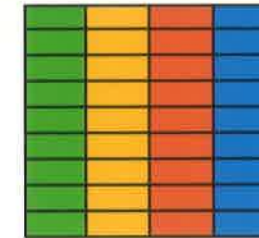
BIRDS

- Red grouse
- Black grouse
- Merlin
- Peregrine falcon
- Short-eared owl
- Kestrel
- Golden plover
- Stonechat
- Curlew
- Partridge
- Hen harrier



MAMMALS AND AMPHIBIANS

- Pony
- Red deer
- Wildcat
- Rabbit
- Mountain hare
- Fox
- Common toad
- Common frog
- Smooth newt



MAINTAINING THE MOORS

In early times the bare upland moors were covered with rich woodlands. Some 6,000 years ago, during the Bronze Age or even earlier, people began clearing the forests to graze livestock on the pastures.

Today on the moors there are remains of early human settlements including ancient field patterns, ringed hill forts with mossy ditches, and Roman fortifications such as Hadrian's Wall.

THREATS TO THE MOORS

The bleak expanses of the moors were essentially created by the early settlers who cleared the forests. In this sense they are a man-made

environment, and thus some people argue that there is no reason to preserve them.

Mining interests would like to extract the minerals. Dartmoor is rich in metal ores, and the North York moors contain alum and coal.

A major threat comes from forestry companies, which plant extensive areas for lumber. Although these forests are often open to hikers, the habitat is alien to most moorland plants and animals.

Mismanaged farming has resulted in the drainage of marshlands and the destruction of many acres of heather. New roads and housing pose yet another threat.

In addition, large areas

have been sealed off by the defense ministry. Water companies have claimed land for reservoirs.

Despite all these threats, the moors have retained their semiwild appeal. Tourism helps to support the rural economy. Dartmoor has 7 to 8 million visitors a year, and there are about 640 miles of public trails in Northumberland National Park.



Above: New plantings of conifers threaten tracts of open moor.

A long time ago Great Britain's upland moors were covered with forests. Today their acidic soil and peat support heather, bracken, and spongy mosses instead. Marshy bogs attract amphibians and insects, while birds of prey and summer migrants nest in hollows on the ground.



PLANTS OF THE MOORS

Years ago the upland hills were stripped of trees, and ever since they have been exposed to cool, damp, windy weather that leaches nutrients from the soil. Much moorland is now covered by peat or blanket bog, which is made up of dead plant matter.

The acidic and absorbent peat supports *Erica* and *Calluna* heathers and *Sphagnum* moss. When these plants die, they in turn form more peat.

Sphagnum moss can survive on poor soil, so it thrives on

Left: Summer on the moor is heralded by banks of sweet-smelling heather.

the moors. Its ability to hold water encourages other, bizarre plants such as the insect-eating sundew. This tiny, pinkish, starry-leaved plant exudes a sticky sweet "dew" that attracts, traps, and digests small insects.

Bilberry, bog asphodel, and mat grass accompany heather. In summer, tufty white flowers appear on the spikes of cotton grass and purple moor grass sends up feathery flowers.

Hilltop trees such as rowans are crippled by the wind. But in the streams that cascade through rocky gullies, there are lush ferns and mosses.

RED GROUSE: THE HUNTER'S BIRD

The red grouse, or *Lagopus lagopus*, is a prized game bird that feeds on young shoots of heather. If it is disturbed, this plump bird clatters noisily into the air, showing its rusty-plumage.

The fall grouse hunts are an important local business. Acres of heather are burned

back each year to promote regrowth of the red grouse's staple diet.

Fortunately, the guns have not deterred the grouse. It even weathers winter blizzards on the moors. With its head to the wind, it uses its feet to tread and melt the snow beneath it.

BIRDS OF THE MOORS

Inclement weather discourages bird life, especially in winter. Birds of prey feed on chicks, frogs, and rodents. The merlin nests on the North Yorkshire moors. Hen harriers fly above the hillsides, and short-eared owls, peregrines, and kestrels are also seen.

In summer, golden plovers

nest on the moors and the clicking call of the stonechat may be heard. The curlew, with its distinctive long and curving bill, white rump, and yellowish-brown patterned plumage, also breeds here. The black and red grouse and partridge are game birds that favor the moors.

Below: The red grouse is given special treatment because it is a popular game bird.

Below: Sporting his summer plumage, a male stonechat finds food for his young.



Above: The ever-hungry rabbit trims vegetation and is a vital food source for moorland predators.

ANIMALS OF THE MOORS

The moors have a surprisingly rich wildlife, although the insects tend to be smaller and duller than those on warm heaths. Butterflies include the green hairstreak, large heath, marsh fritillary, and mountain ringlet. The bog bush cricket and golden-ringed dragonfly frequent marshy areas. Common frogs spawn in sheltered pools, where palmate newts

can sometimes also be seen.

On Exmoor and Dartmoor semiwild ponies are left to roam but are rounded up and counted each year. On the higher moors of Scotland and the West Country, red deer stags (adult males) fight for does (females) in the fall.

Rabbits and mountain hares burrow in the higher slopes, where they can guard against birds of prey and foxes. The rarest moorland mammal is the Scottish wildcat, which hunts rodents and birds.



Left: A female adder waits for a mouse or frog to cross her path.

Front cover inset: Moors are home to the short-eared owl.

Right: The field vole is also important to the moor's food chain.



Right: Semi-wild Shetland ponies graze freely on the moors. Once a year they are rounded up and counted.

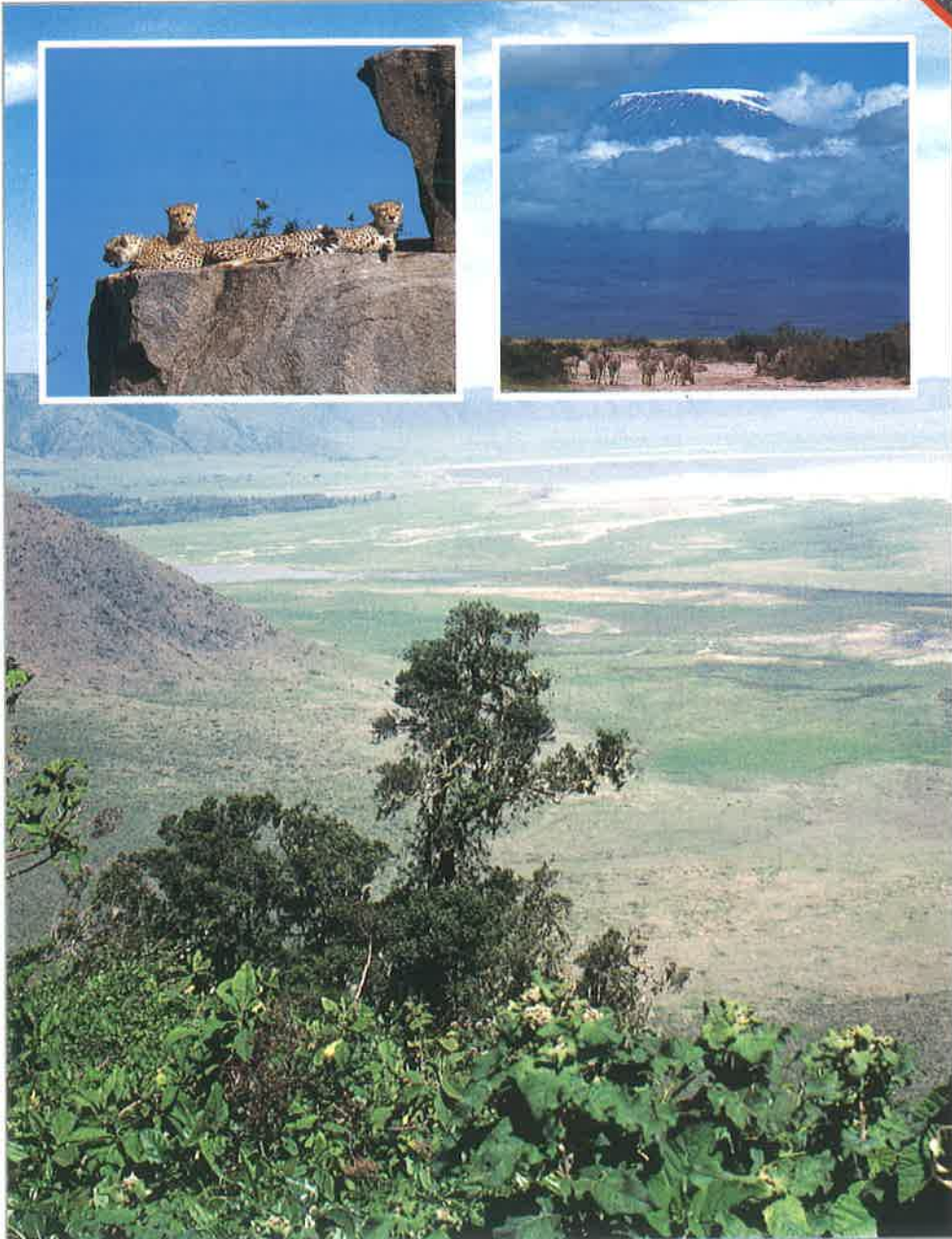


THE AFRICAN RIFT VALLEY & ITS WILDLIFE

CARD 22

KEY FACTS

GROUP 10: WORLD HABITATS



Geologic forces have shaped the African Rift Valley over millions of years, creating a rupture in the land surface that runs almost the entire length of the eastern side of the continent.

HOW THE RIFT VALLEY WAS FORMED

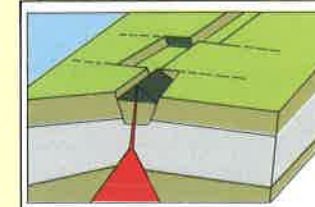
The African Rift Valley is one of many huge fractures on the earth's surface, or *crust*. But most are beneath the sea, so their effects are not obvious. All these fractures result from movements of the earth's crust that cause huge sections, called *plates*, to push and pull against one another over time.

These movements create tension in the rock, pushing up layers and causing them to split along weak lines called *faults*. Different pressures on the sides of each fault often push one side higher than the other. This activity is called an

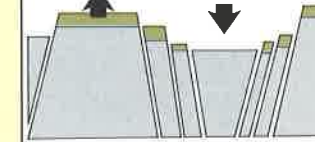
earthquake, and it results in a landscape that has steps, or *escarpments*.

The African Rift Valley is made up of many faults that have been created over the last 40 million years. In some places the rock section between two major faults has sunk, making a steep-sided *rift valley*.

Movement and tension in the earth's crust are also associated with volcanoes. Where the crust is weak, *molten* (hot, liquid) rock spills out to the surface in the form of lava or ash.



Above: A mass of rock between two faults may drop to form a single steep-sided rift.



Above: Pressures on both sides of a fault force rock sections to rise or fall, creating many steps.

LANDSCAPES OF THE RIFT VALLEY



Top left: Volcanic hot springs in Lake Bogoria.

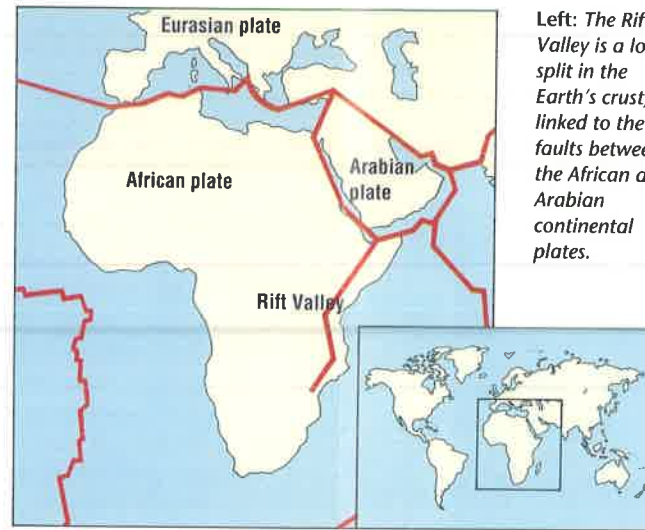
Left: Basalt columns created by volcanic heat and pressure.

Top right: Longonot Crater, Kenya.

Right: Flamingos, Lake Nakura.



The African Rift Valley originates in the Middle East and runs nearly the full length of the African continent. It provides a variety of wildlife habitats, ranging from desert to open grasslands to misty mountaintops.



Left: *The Rift Valley is a long split in the Earth's crust, linked to the faults between the African and Arabian continental plates.*

CHAINS OF LAKES

About 30 major lakes lie within the African Rift Valley. They vary greatly in appearance. Many are long, narrow, and very deep. (Lake Tanganyika—5,000 feet deep—is the second deepest lake in the world.) Others are shallow, and some of these dry up entirely during *arid* (dry) years. Some lakes are salty; a few, like Lake Natron, have natural deposits of soda.

Soda lakes are not habitable for most creatures. But large flocks of flamingos can feed in them.

The birds wade in shallow water, which can be boiling hot, sifting for algae and small invertebrates.

Freshwater lakes, such as Lake Naivasha, support abundant bird life, including herons, pelicans, storks, kingfishers, and ducks. Herds of hippopotamuses also live there.

The large western lakes of the African Rift Valley are also home to hundreds of species of fish; Lake Tanganyika has 140 species of cichlids.

HIGHLANDS & VOLCANOES

Some rift mountains, such as Kenya's Mau Escarpment, form steep-sided valleys. Others are chains of peaks or isolated volcanoes.

African mountains provide different conditions from the surrounding lower ground. They attract animals that can grip bare stone, such as the rock hyrax, and cliff-nesting birds like Verreaux's eagle.

In the cool mountain air,

water vapor continually condenses and falls as rain. Humid forests and bamboo *stands* (clusters) cover the lower slopes, providing a home for such animals as colobus monkeys and the Tacazze sunbird.

Many mammals that live in the mountains have narrow ranges. The dry Ethiopian highlands are the only habitat of the mountain nyala.

Left: *The rock hyrax lives in the mountains.*

Right: *More than 100 species of cichlid fish live in Lake Tanganyika.*

Below: *Vultures feed on a zebra carcass on the Serengeti Plain.*



CONTINENTAL RIFT

The African Rift Valley runs more than 4,000 miles, mainly north to south, forming a curve-shaped depression. In some places, the rift's steep-sided valleys are only 25 feet wide; in others, gently sloping valleys spread 250 feet across.

The African Rift Valley actually begins in Turkey; it runs along Jordan and the Dead Sea and

Cover inset left: *Cheetahs soak up the sun on volcanic rocks.*

Cover inset right: *Burchell's zebras graze on the Serengeti Plain.*

into the Red Sea, which contains much marine life. The rift crosses Ethiopia, forming the Afar Depression and the Ethiopian highlands. It continues through the mountains, volcanoes, plains, and lakes of Kenya and Tanzania.

Another branch of the Rift Valley begins about 450 miles to the west, in Uganda. From there, a chain of peaks and lakes passes alongside Zaire, Tanzania, and Malawi, where lakes Tanganyika and Malawi lie. At the rift's southernmost point is the valley of the Zambezi River.



Left: *Though widespread within reserves, lion populations in Africa have been reduced by 50 percent since 1950.*

GRASSY PLAINS

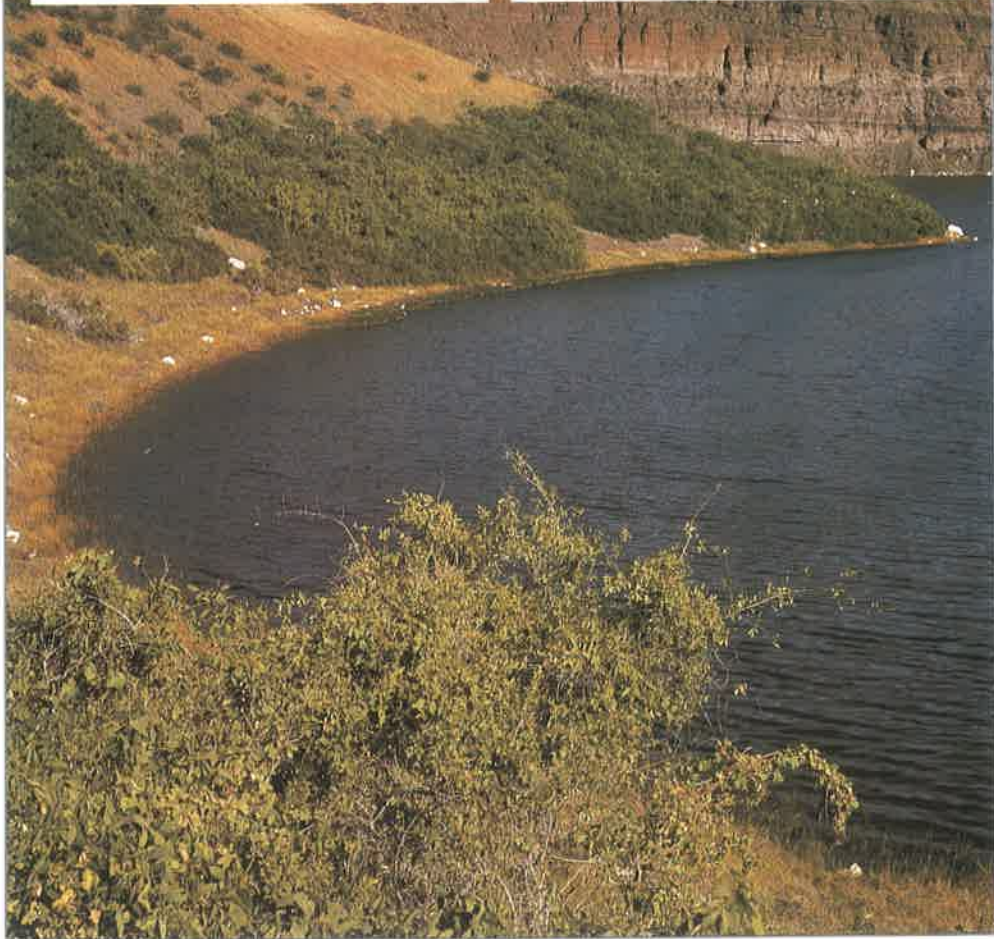
Some of the richest *savannahs* (grasslands) in Africa were created by the Rift Valley's volcanic activity. The volcanic ash of Tanzania's Serengeti Plain restricts tree growth but allows grasses to flourish.

The collapsed Ngorongoro volcano to the east and the Serengeti are both protected areas. They provide grazing for wildebeest, zebras, gazelles, rhinoceroses, and elephants, which in turn support predators, such as lions, cheetahs, leopards, and wild dogs.

LAKE TURKANA AND ITS WILDLIFE

CARD 21

GROUP 10: WORLD HABITATS



Lake Turkana, set in the northern deserts of Kenya, is the largest alkaline lake in the world. Its water is soapy to the touch, but it teems with fish. Birds and crocodiles also abound.

KEY FACTS

LINKS WITH THE NILE

Lake Turkana is isolated from other East African lakes or rivers. Only the Omo River flows in; no rivers flow out.

Despite its isolation, Lake Turkana contains fish that are typical of the Nile. This link is seen in the common names of Turkana fish like the Nile perch and in other fish with scientific names that end in *niloticus* or *nilotica*. The reason for these common species, geologists believe, is that the lake was once connected to the White Nile. Volcanic activity may have created a barrier between the two bodies of water.

Nearly 10,000 years ago, the lake seems to have been 250 feet higher than it is today and could have overflowed down to the Nile. This would explain why the lake's fish were stranded. Some have developed into new races or even species.



The same process happened in miniature on Central Island. As the water level fell, a flooded crater was isolated from the rest of the lake. Over thousands of years, the tilapia

Above: Lake Turkana extends from Kenya's northern border.

stranded in this crater evolved into a species separate from the fish in the main lake.

LOSING WATER

As recently as the 1980s, the water level of Lake Turkana dropped dramatically. Before then, an inlet known as Ferguson's Gulf was a prime feeding site for tilapia and other inshore fish. By the end

of the decade, it had dried out and became a pasture.

The severe droughts of the mid-1980s may have caused the sharp lowering of the water level. Due to the low rainfall in Ethiopia, much less

water flowed down the Omo River—perhaps too little to make up for the lake's loss of water through evaporation.

It is also possible that water has drained away. For a lake lacking an outlet, the water is not as salty as it should be. Some geologists think the lake has an underground outlet that siphons away water. A new fissure may have caused even more water to disappear underground.



Left: The drop in Lake Turkana's water level has affected the livelihood of local fishermen.

Lake Turkana has several other African and European names, including Basso Norok and Lake Rudolf. Perhaps the most evocative name is the Jade Sea, which suggests the lake's huge size and the green color of the algae in its waters.

The lake is home to many species that are also found in the Nile River.

A SEA IN THE DESERT

Lake Turkana lies in Africa's giant Rift Valley. Extending as far as the border between Kenya and Ethiopia, it is the farthest north of East Africa's great lakes. It is 165 miles in length and averages 18 miles in width, making it the third largest of the Rift Valley lakes, after Lakes Tanganyika and Malawi. Like these lakes, it has a long and narrow shape, but it is far shallower, with a maximum depth of only 240 feet. Three long-dead volcanoes rise above the water, forming North, Central, and South islands.

Lake Turkana seems to lie in

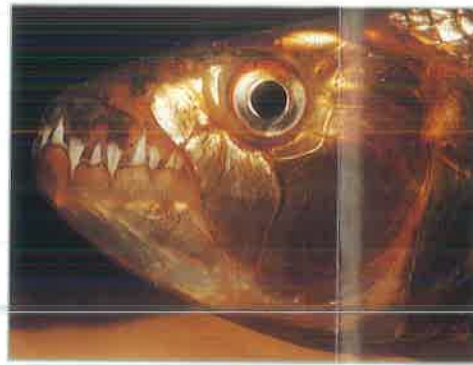
an arid plain. Except for the palms, shrubs, and marsh plants around the shore, little vegetation grows in the area. Few rivers cross the valley—most dry up in the summer heat. The only permanent waterway feeding the lake is the Omo River, which enters at the northern end.

No river flows out of the lake, so dissolved salts carried down the Omo accumulate as water evaporates from the lake's surface. The salts give the water a high alkaline content, but it is not too high for algae, plankton, crustaceans, and fish.

Front cover:
Crater Lake on
Central Island.

Front cover
insets: Lake
Turkana is
home to the
yellow-billed
stork (left) and
the crocodile
(right).

Right: The
African spoon-
bill feeds on tiny
lake creatures.



Left: The tiger fish is a large predator in Lake Turkana's deeper waters.

Right: The Nile bichir is a primitive fish that inhabits the shallow bays.



Right: The giant heron hunts along the shores.



Below: Some skimmers stay all year in a colony on Central Island.



FISH

About 37 species of fish live in Lake Turkana. Six species are found only in the lake, including a cyprinid and a spotted cichlid, both of which feed on small aquatic animals and are themselves food for larger fish.

The abundant tilapia feed on algae and aquatic vegetation near the lake shore. The female carries fertilized eggs in her mouth. Even after they hatch, the fry (young) continue to swim into her mouth for safety. In Turkana tilapia can weigh 12 pounds—five times more than tilapia in other African lakes.

A small form of the Nile perch inhabits deeper waters, while a much bigger form lurks in the shallows. These giant Nile perch, weighing up to 200 pounds, can easily catch tilapia unless their quarry escapes into water too shallow for them to swim in.

In the warm, shallow bays at the northern end of the lake, the snakelike Nile bichir basks near the surface. The Nile electric eel, which hides by day and hunts at night, can generate an electric field around its body. This allows it to detect its prey of small fish and snails in murky water.

CROCODILES AND BIRDS

The world's largest concentration of crocodiles—about 13,000—can be found along Lake Turkana's northeastern shore. The alkaline water has discouraged poaching of the crocodiles because it causes growths that make their skins undesirable. The crocodiles prey mainly on Nile perch and tilapia, but they are also a danger to people.

The abundant fish in the lake attract many birds.

White and pink-backed pelicans and long-tailed cormorants hunt for surface fish. Yellow-billed storks, African spoonbills, egrets, and herons search the shallows for aquatic prey, and greater and lesser flamingos sieve algae and tiny animals from the water. Ospreys regularly nest on the lake's islands, and an African skimmer colony breeds on Central Island.

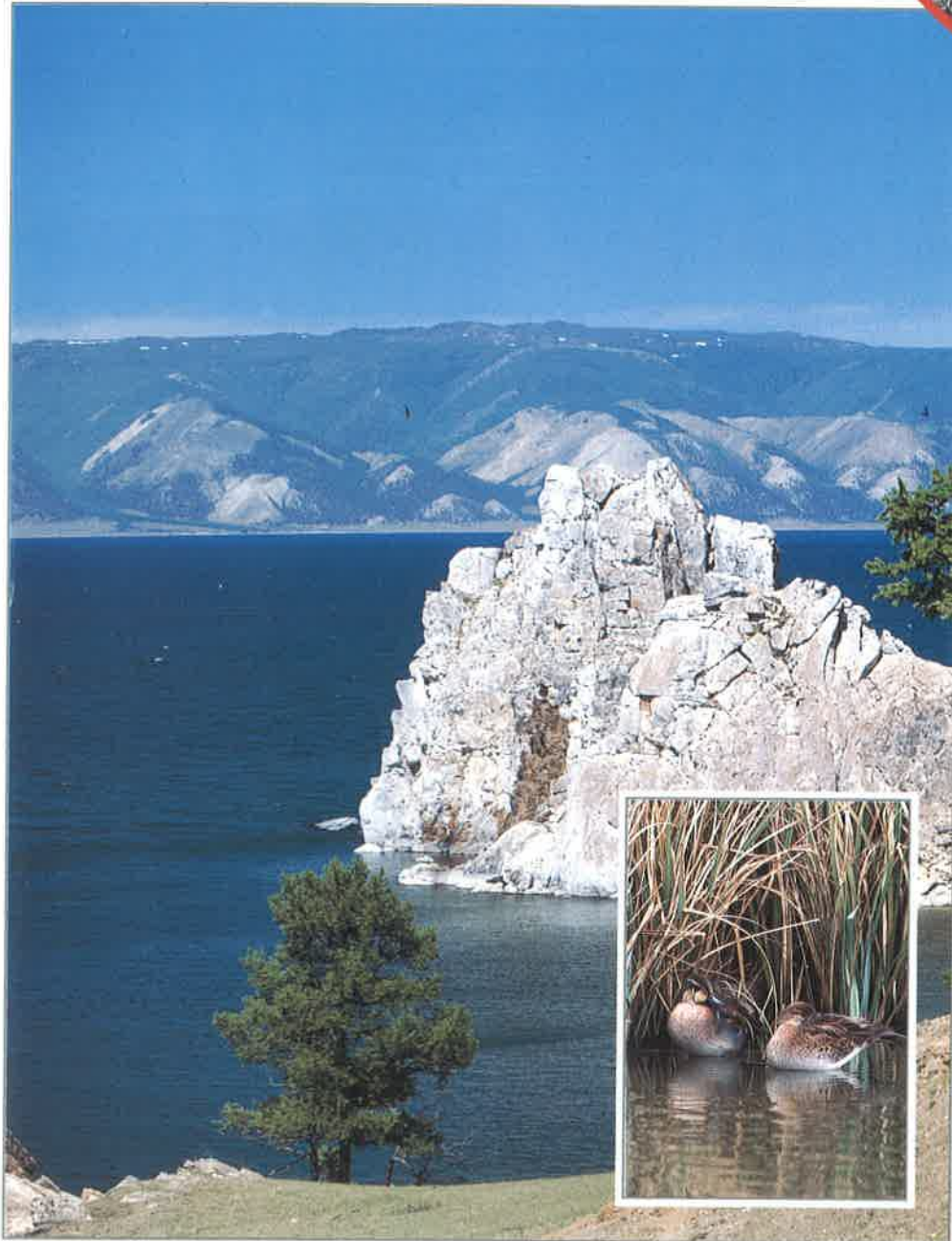


Left: The pink-backed pelican is a common sight at Lake Turkana. It does not use the pouch under its beak for storing food, as many people believe. Like all pelicans, it uses the pouch to scoop fish up from the water.

LAKE BAIKAL AND ITS WILDLIFE

CARD 20

GROUP 10: WORLD HABITATS



Lake Baikal is located in southwestern Siberia—exactly halfway between Moscow and Tokyo. It is home to some of the most diverse wildlife in the world.

KEY FACTS

CONSERVATION

As industry in the Soviet Union expanded, Lake Baikal became an ideal location for new factories. Today, about 60 industries line the lake shore. Two of the largest are a paper pulp factory and a plant that manufactures cellulose (wood fiber used as raw material).

The effect of these factories on the lake's delicate ecological system has been ruinous. Every year the factories pump millions of cubic feet of waste into the lake, including heavy metal pollutants such as zinc, mercury, and tungsten.

Nearly four million square miles of forest have been destroyed by pollution. Pollutants are also killing the lake's wildlife. An example is the yellow-winged cottid, a native fish that spawns near one of the factories. Its mating relies on its sense of smell, which is being destroyed by waste pumped from the factory. The fish are decreasing in number. Since they are an

Right: A bird watching party ventures into the large tracts of coniferous forest on Lake Baikal's shore. Many such areas are protected.



Right: Since the founding of reserves, the sable is recovering from depletion by fur trappers.



Below: Brown Bear Coast, the wooded shore of the Baikal State Reserve, provides a safe habitat for wild species.

important part of the food chain, their decrease affects other animal species.

BARGUZIN NATURE RESERVE

The Barguzin Nature Reserve was created to protect sables. In the nineteenth century the money from one silver-black sable pelt supported a family of four for a year. By the early twentieth century, only 300

sables were left as a result of uncontrolled hunting. Since the founding of the nature reserve, sable numbers have increased.

Barguzin contains 40 different animal species, including bears, lynx, reindeer, elk, squirrels, and musk deer. The reserve also has more than 600 different plant species, from tropical fronds to dwarf birch trees of the tundra.



Lake Baikal is a unique wilderness.

Its abundant wildlife has evolved over

26 million years to become a delicately

balanced ecological system unlike any found

elsewhere in the world. Its environment is

seriously threatened by pollution.

UNIQUE PURITY

Lake Baikal is so pure that, when the water freezes, it is possible to see 40 feet through the ice. Drivers even use the water to fill their car batteries. The continuous movement of the water—both horizontally and vertically—circulates oxygen to the bottom, allowing plants and animals to live there and keep the water clean. The world's second deepest lake is Tanganyika in Africa, which

can support life only in the upper half of its water.

The most important creature for keeping the water pure is the epishura. This tiny shrimp is less than one sixteenth of an inch long, yet there may be as many as three million per square yard in some areas. The epishura feeds on algae, and its population is abundant enough to purify the upper 150 feet of water three times a year.



GOLOMYANKA

The golomyanka is a unique fish. At six to eight inches long, it is transparent and shiny with a pink tint. The fish has no air bladder, but it can

Front cover inset: Male and female Baikal terns are native to Lake Baikal.

live 4,500 feet below the surface, where the pressure is great enough to crush steel. Half of the golomyanka's body content is oil; when it is removed from water it loses its color and dissolves.

The golomyanka is the only

ECOSYSTEM OF THE LAKE

Baikal is the most remote lake in the world, enabling its wildlife to evolve without interference. It is a delicate ecosystem (ecological system) of nearly 2,000 plant and animal species, two thirds of which cannot be found anywhere else in the world.

Lake Baikal contains unique fish, including the golomyanka, grayling, sturgeon, sig, and omul. In the lake are 258 species of gamarid, a freshwater shrimp.

The resident nerpa seal is the only freshwater seal in the world. Many people living on the shore rely on the seal for their livelihood. Each year about 5,000 seals are gathered, but under strict controls. The population remains stable at about 70,000.

DID YOU KNOW

- Lake Baikal is about 26 million years old, and it is more than 5,000 feet deep.
- From north to south, Baikal is longer than the area between Montreal and New York City.
- The shores of Lake Baikal move three quarters of an inch away from one another

each year. In two million years, Lake Baikal may become the world's next ocean, splitting Siberia in half.

- Baikal contains a fifth of the world's fresh water. If all other sources dried up today, the lake contains enough water to supply every human being for the next 40 years.



Above left: One of Lake Baikal's many freshwater shrimp species.

Right: The bizarre golomyanka.



Left: Lake Baikal's location in Asia.



Above: Seals bask on the frozen lake.



Below: The lynx roams in lake side reserves, protected from Siberia's biting cold by its short but thick coat.

