

Galapagos Wonder

A Reading A-Z Level U Leveled Book

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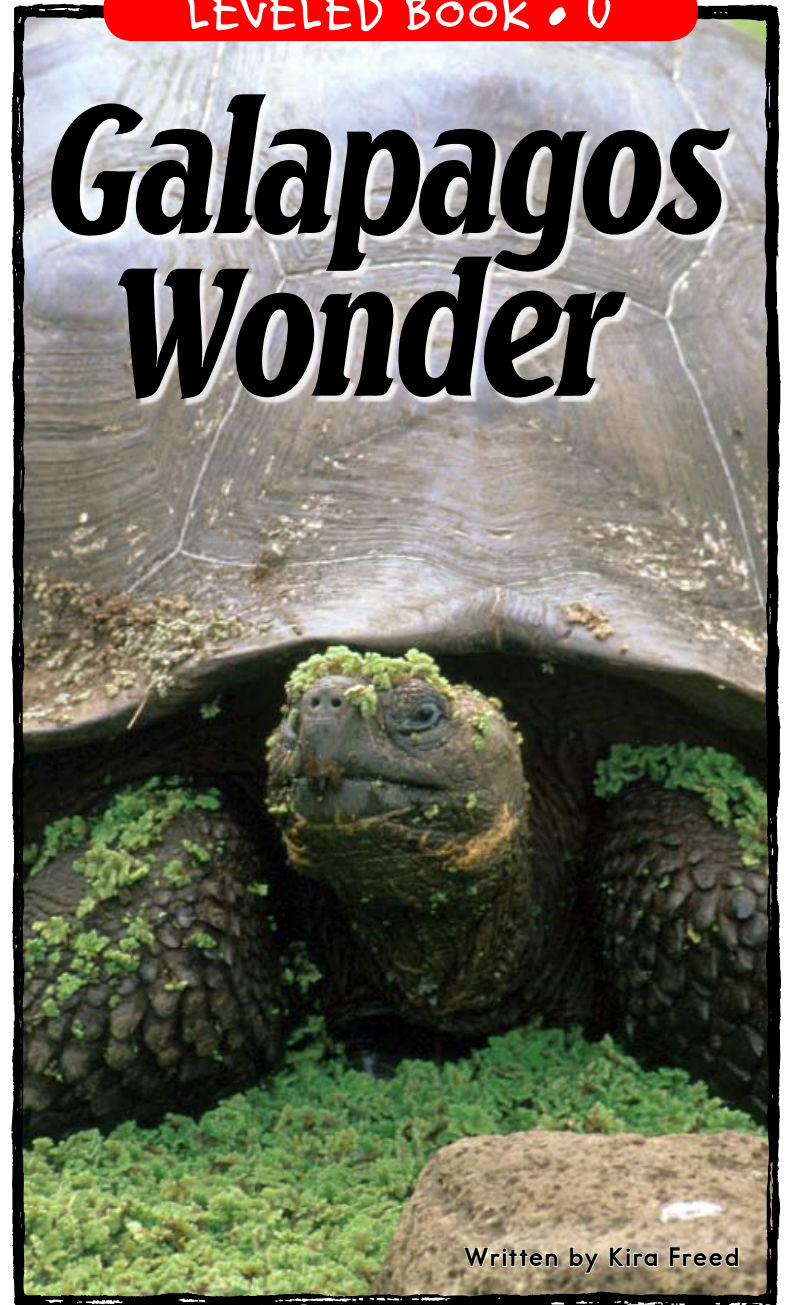


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Galapagos Wonder



Written by Kira Freed

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Title page: A land iguana feeding on a cactus

Page 3: A Sally Lightfoot crab, a common Galapagos invertebrate

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Correlation

LEVEL U

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| Fountas & Pinnell | Q |
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Marine iguana

Galapagos tortoise



Galapagos penguin

Introduction

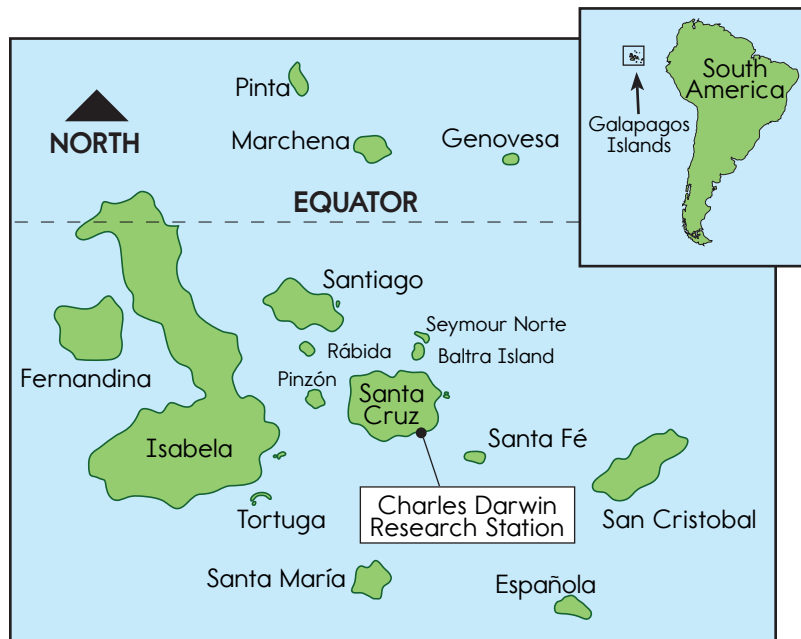
Imagine a place where thousands of black lizards stretch out on lava rocks to soak up the morning sun. Imagine a place where giant tortoises feed on cactus plants that grow as big as trees. Imagine an island on the equator where penguins swim and fur seals rest on coral beaches. Welcome to the Galapagos Islands.

These islands have fascinated people since the first visitors arrived in 1535. The volcanic landscapes and exotic wildlife spark our imaginations. Formed from fire, these islands remind us of the raw power of our planet. And they remind us of rapidly disappearing, unspoiled places where nature remains mostly untouched by development and technology.

Location

The Galapagos Islands are located in the Pacific Ocean, about 966 kilometers (600 mi) off the northwestern coast of South America. They lie along the equator and are part of the country of Ecuador. There are five major islands and many smaller ones of various sizes.

The climate of the islands is surprisingly cool for their location on the equator. This is due to the Humboldt **current**, cold waters that flow north from Antarctica. The cold waters explain why animals usually found in colder climates, such as penguins and sea lions, can live in the Galapagos.



The rugged coastline is an attraction of the islands.

Geology

The Galapagos Islands were created by volcanic activity, and they continue to be among the most volcanically active islands in the world. Scientists believe that the islands are located over a “hot spot” beneath the earth’s crust. Hot spots contain more heat than other areas, causing molten lava to rise up through the crust. Scientists think that each island was formed from solidified lava building up on the sea floor and eventually piling up above the surface of the water.

First Contact

The Galapagos Islands were first discovered in 1535 when a ship carrying the bishop of Panama to Peru was blown off course. The bishop recorded his observations of the islands in a letter to the king of Spain. At that time, there were no humans living on the islands.

During the 1700s and 1800s, the Galapagos became a **refuge** for pirates and whalers because of the islands' remote location. Giant tortoises were a favorite food source because they were easy to capture and keep. The numbers of these gentle creatures were reduced from several hundred thousand to about 15,000 by the year 1800.



Whaling ships often stopped at the Galapagos Islands.



Darwin's visit to the islands at the age of 24 helped him develop the theory of natural selection.

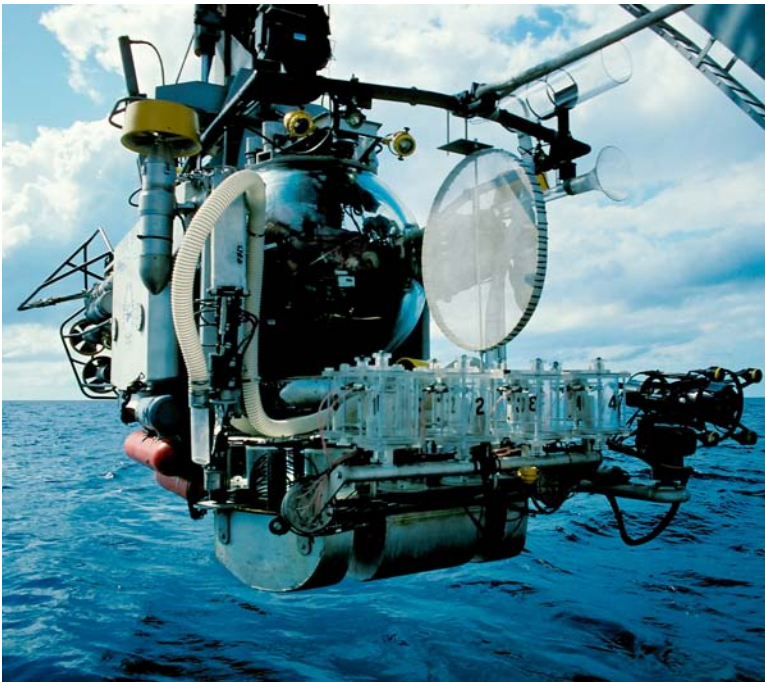
Darwin's Visit

The most famous visitor to the Galapagos Islands was Charles Darwin, a British **naturalist** who sailed there in 1835. He collected many wildlife **specimens** and wrote detailed accounts of his observations.

Darwin was fascinated by the amazing **diversity**, or variety, of life on the islands. He noticed that similar **species**, or kinds, of animals developed different traits on different islands. Because of his work, we now understand much more about variety in nature.

Wildlife

Scientists and tourists alike have been fascinated by the diversity of native animal and plant life on the Galapagos Islands. New species are continually being discovered. A 1996 expedition took scientists 914 meters (3,000 ft) under water to study the ocean surrounding the islands. Many new species were discovered, including jellyfish, deep-sea moray eels, sea cucumbers, and a deepwater red octopus. The scientists discovered a new species of marine life on almost every day of their expedition.



The 1996 expedition used the Johnson Sea Link Submersible.

Reptiles

Some of the Galapagos's most famous residents are its reptiles. The islands were named for one of the most well-known reptiles, the giant tortoise. These gentle **herbivorous** (ur-BIV-or-us) reptiles can live 150 years or more. Males can grow to 1.8 meters (6 ft) in length and can weigh up to 300 kilograms (660 lbs). Fourteen different kinds of



Dome-shaped shell

Galapagos tortoises used to exist. Several kinds have become extinct, and the others are now protected.

Galapagos tortoises are divided into two groups based on the shape of their shell, or **carapace**. One group has a round, dome-shaped shell, a short neck, and short legs. The other group has a saddle-shaped shell that is raised in front, a long neck, and long legs.

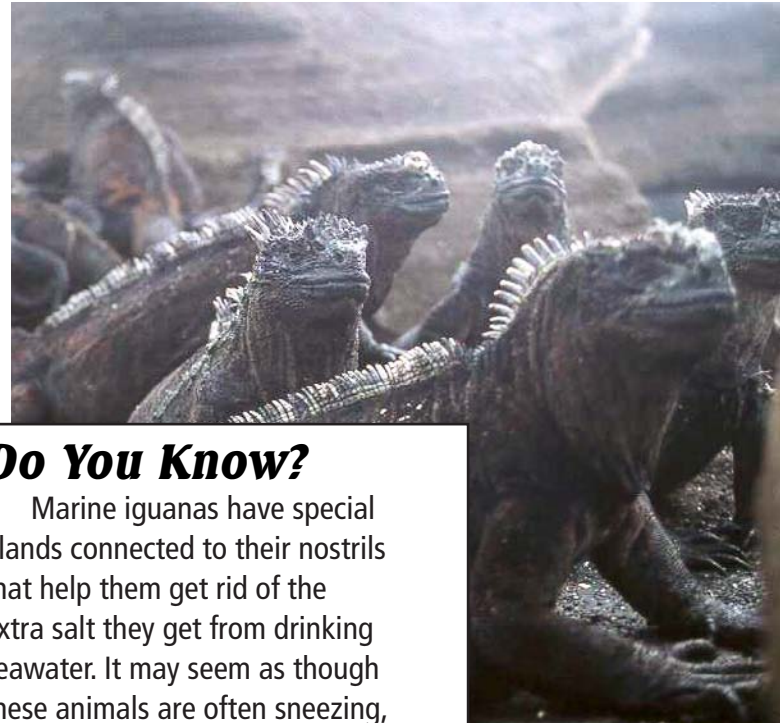


Saddle-shaped shell



A marine iguana

Marine iguanas, the world's only seagoing lizards, are another well-known Galapagos reptile. They have been compared to small dragons because of their leathery skin, curved claws, and back spines. They can grow to a length of 1 meter (3.3 ft). These tropical lizards are able to stay under water for up to an hour while feeding on red and green algae, their main food source.



Do You Know?

Marine iguanas have special glands connected to their nostrils that help them get rid of the extra salt they get from drinking seawater. It may seem as though these animals are often sneezing, but they're just getting rid of salt.

Marine iguanas gather on shore.

Marine iguanas have dark skin that helps them absorb the sun's heat after they emerge from the cold ocean waters. Marine iguanas also control body temperature with their posture. They often sun themselves on lava rocks as the sun rises in the morning. When the heat becomes too intense, they raise up on their legs to protect their underside from the hot rocks and to increase air circulation. After a day in the cold ocean waters, they pile up together at night to conserve body heat.

Mammals

Many Galapagos mammals are animals normally found far from the equator. Galapagos sea lions are the marine gymnasts of the islands. Their playful antics amuse tourists, who sometimes receive friendly nips from these animals. Sea lions live in large colonies. Female sea lions, known as cows, gather on beaches to nap. Adult males, or bulls, are **territorial** and extremely aggressive during the mating season.



Sea lion

Galapagos fur seals are rarer than sea lions. Fur seals were hunted nearly to extinction because of their thick fur, which was valuable. Unlike sea lions, fur seals live in smaller groups and prefer steep, rocky shores. They fear humans and are difficult to approach.



Fur seal

Birds

Many of the Galapagos's most interesting residents are birds. Frigate birds are among the most striking birds in the world. They can measure up to 1 meter (3.3 ft) tall and have a wingspan up to 2.1 meters (7 ft). During the mating season, hundreds of males gather to attract the attention of females. Each male inflates his bright red throat sac like a balloon while shaking outstretched wings and making repeated piercing cries.



Do You Know?

A male frigate bird can inflate its throat sac to the size of a soccer ball.



Galapagos penguin

Galapagos penguins are among the most surprising native animals on the islands. We usually think of penguins as living close to Antarctica. Galapagos penguins are the most northern penguin. They weigh only 2 to 2.5 kg (4.5–5.5 lbs) and stand 40 to 45 cm (16–18 in). One of their big challenges is to stay cool in the tropical heat. They do this by holding out their wings so that air moves around the sides of their bodies. They also stay cool by keeping their feet shaded or by taking a refreshing dip in the ocean.

Galapagos penguins swim underwater at high speeds, using their wings as propellers and their feet as rudders. They feed on small fish that they catch by hunting in groups. They live in colonies and mate for life.



Scalesia forest

Plant Life

The plant life on the Galapagos Islands is just as remarkable as the animal life. There are about 560 kinds of native plants, and almost one-third of them are found nowhere else on Earth.

The scalesia (ska-LEE-zee-yuh) tree is a unique Galapagos plant. It is a member of the daisy family and can grow to a height of 24 meters (78 ft). It grows in humid areas at higher elevations and is often covered with tropical flowers called orchids.

The prickly pear cactus grows low to the ground on many of the islands, but on the island of Santa Fe it grows into trees. The pads, flowers, and fruit of this cactus are a favorite food of land iguanas. They often roll the cactus pads on the ground to remove the spines before eating them. These creatures often sit under a tree waiting for a pad to drop to the ground.



A tree-sized prickly pear cactus

Threats to Survival

Almost all of the island chains in the world have experienced the loss of many of their native plants and animals. The Galapagos Islands have lost few native life forms so far, though serious threats exist.

The most serious problem is the presence of non-native species brought by humans. Cats, dogs, pigs, goats, horses, donkeys, cattle, and rats have all been brought to the islands. Many of them have become **feral**, or wild, and have multiplied rapidly.



Cows and other non-native animals interfere with the native ecology.

Tortoise eggs and hatchlings are eaten by many feral animals, as are other native animals. Feral animals also eat plants that native animals would otherwise eat. The islands have many programs to destroy the non-native animals so that the native **ecology** can be restored. And scientists are raising tortoises in captivity to try to boost their numbers and increase their survival rates.

Another serious problem is the increasing number of people on the islands, both residents and visitors. In 1940, only 600 people lived on the islands. But in 1949, many people moved to the islands after a major earthquake in Ecuador. Tourism in the Galapagos Islands skyrocketed in the 1980s, bringing more residents and many more visitors. By 1997, the population on the islands had grown to about 15,000.

With more people come many risks. New harmful species are more likely to be brought to the islands. Natural resources are being overused for building materials and firewood. More animals are being hunted for food and export, both on land and in the ocean. Pollution from tourist and supply boats is increasing. In 2001, an oil tanker ran aground off one of the islands, causing a huge oil spill. Experts from around the world worked with the government of Ecuador, local scientists, and others in a massive cleanup effort.



The oil tanker Jessica runs aground.

To help preserve the Galapagos Islands, the government of Ecuador declared 95 percent of the land a national park in 1959. In 1986, a law was passed to protect 69,930 square kilometers (27,000 sq mi) of the ocean waters around the islands.

Strict laws now limit visitation to the islands. Visitors must be accompanied by certified guides who are trained to keep conservation in mind at all times. Visitors are not allowed to bring food or drink in order to prevent the introduction of foreign plant seeds, insects, or bacteria. The laws also protect animals and plants from human interference, such as touching, feeding, or littering.



Boat tours are carefully controlled to help protect the wildlife.



Scientists clean a bird rescued from the 2001 oil spill.

In 1959, the Charles Darwin Foundation was created to help the government of Ecuador make smart decisions about conservation on the islands. This foundation operates the Charles Darwin Research Station on Santa Cruz Island so that scientists and the public can continue to learn about these extraordinary islands. Many educational programs, both on the islands and around the world, help teach the public about Galapagos conservation efforts.



The isolation and ruggedness of the Galapagos Islands might help preserve their unique ecology.

Conclusion

Our planet is now facing the mass extinction of up to 75 percent of all life forms. The Galapagos Islands are one of the last places on Earth that contain so many rare life forms in such a small area. Many are found nowhere else on Earth.

Scientists, conservationists, and other concerned people who value nature are working to safeguard the Galapagos Islands for future generations. These islands are a natural treasure that must be preserved and protected.

Explore More

At the Library

Ask your librarian to help you find books on the Galapagos Islands. You can find books of Galapagos photographs, history, and modern science. You can also look for books on individual plants and animals from the Galapagos. You may even find travel books in which people describe their trips to the islands, some of them written long ago.

On the Internet

- A. In the address window, type *www.google.com*.
- B. Type *Galapagos* in the search window and click on "Google Search."
- C. Read the colored links. Click on one that looks interesting. When you want to explore other links, click on the "Back" button at the top left to return to the Google search page.
- D. Try other searches, such as *Charles Darwin*, *Galapagos tortoise*, or *frigate bird*.

Glossary

| | |
|--------------------|---|
| carapace | a tortoise's upper shell (p. 10) |
| current | a flow of water as in a river or ocean (p. 5) |
| diversity | a wide variety of many things (p. 8) |
| ecology | the environment and organisms of a place (p. 18) |
| feral | escaped human control and run wild (p. 18) |
| herbivorous | eating only plants (p. 10) |
| naturalist | a scientist who studies nature (p. 8) |
| refuge | a place where something can be safe (p. 7) |
| species | a group of living things that are physically similar and can reproduce (p. 8) |
| specimens | examples of something used for study (p. 8) |
| territorial | relating to behavior used to guard or defend territory (p. 13) |

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