



Ruby-Throated Hummingbirds & Cardinal Flowers

A glimmer of ruby red streaks across the sky, gone in a flash. Reaching speeds of up to 64 kilometres per hour, the ruby-throated hummingbird (*Archilochus colubris*) moves so quickly it appears as little more than a blur of wings to the human eye. Although it is one of the smallest birds on Earth, it takes a huge amount of energy to keep the hummingbird moving at such pace – and this tiny creature needs to consume almost double its body weight in food each day.

The cardinal flower (*Lobelia cardinalis*) is a favourite source of nectar for the ruby-throated hummingbird. The flower's vivacious red colouring is not only attractive to this little bird, but their deep tubular shape is also perfectly suited for long, slightly

curved beaks. Like two pieces of a jigsaw puzzle, the ruby-throated hummingbird and the cardinal flower are an exact fit.

In fact, cardinal flowers are so well-adapted to suit the feeding habits of ruby-throated hummingbirds, they don't even offer a 'platform' for animals to rest on whilst they feed. The hummingbirds don't need one – they can hover in the air. Their wings beat at unimaginable speeds of 40 to 80 times per second, producing their distinctive 'hum'. In return for food, the hummingbirds pollinate the cardinal flowers. Because of the symbiotic adaption of these flowers, the ruby-throated hummingbird and the cardinal flower have become almost entirely dependent on each other for survival.



Aldabra Giant Tortoises

Seychelles Magpie Robins

Located in the tropical Indian Ocean, the picturesque Seychelles are a collection of 115 islands. Aside from tropical beaches and warm climates, they are also famed for the many animals that call the islands home, some of which are found nowhere else in the world.

The Seychelles magpie-robin (*Copsychus sechellarum*) is native to these islands, and is in fact not a magpie or a robin at all. An endangered species, its existence was once threatened by the destruction of its luscious habitat and the introduction of predators such as cats and rats. In fact, its numbers were reduced so severely that it was thought that only 16 birds remained in 1970. Thankfully, much has

been done to save this little bird between then and now, and the population has blossomed to steadier numbers in recent years. Although conservation has much to do with its survival, the clever magpie-robin also developed some unique relationships with the other islands inhabitants for its own benefit.

The Aldabra giant tortoise (*Aldabrachelys gigantea*) is perhaps the most iconic resident of the Seychelles. Weighing up to 250 kilograms, this enormous reptile spends much of its time wandering through the shade, grazing on the various plant species that are on offer. Due to its weight, the legs of the tortoise sink into the soft ground, disturbing the soil as it walks. This reveals a feast of tasty worms and insects for the magpie-robin to enjoy, and so, like a faithful follower, it sticks close to the Aldabra tortoise, following it wherever it goes. In return, the magpie-robin keeps the Aldabra tortoise clean, pecking the ticks and parasites out from the folds of its skin.



Marine Iguanas

Sally Lightfoot Crabs

Battered by ferocious winds, stormy seas and scorching temperatures, the creatures that live on the Galápagos Islands in the Pacific Ocean need to be tough, smart and persistent in order to survive.

Famously visited by Charles Darwin during his voyage on the *H.M.S. Beagle*, one of the islands most iconic inhabitants was described by the naturalist as the 'imp of darkness'. Darwin was referring to the marine iguana (*Amblyrhynchus cristatus*) – the only lizard species on Earth that lives and forages by the ocean.

Almost as black as the rocks on which it lives, the marine iguana is perfectly camouflaged with its slippery surroundings.

Warming itself after the chill of night, its tough skin and long claws enable it to

latch securely to the rocks to bask and raise its body temperature with the rising sun. This is vital as the iguanas will soon lower their body temperatures again, by diving into the freezing ocean to look for food such as algae and seaweed. This adaptation has meant survival for the marine iguanas, as food on the islands is scarce. However, it is a task that's not taken lightly – cooling their body temperature down to such levels slows the marine iguana's heart rate and they can only spend 10 minutes at most in the water.

In stark contrast to the black and grey tones of the marine lizard, the vibrant Sally Lightfoot crab (*Grapsus grapsus*) displays fiery shades of red and orange drenched with blue. Walking on tiptoes, these agile movers look as though they are dancing across the rocks, moving forwards, backwards, left and right, battling slippery surfaces and ocean spray with ease. But, even the most active of crabs get a little tired sometimes. It is far more relaxing to navigate the tough terrain by hitching a ride on one of the passing iguanas – there might even be a tasty snack, such as a tic or morsel of dead skin, to be had at the same time. This extraordinary and somewhat comical sight is one of the most iconic of the Galápagos Islands.





Capuchin Monkeys

Balsa Tree Flowers

White-headed capuchin monkeys (*Cebus imitator*) spend much of their lives high in the Ecuadorian jungle treetops. They are social creatures, with up to 40 members living in one family. Aside from a midday nap when temperatures can soar to around 35 degrees Celsius, these primates can spend almost the entire day feeding. The rainforest provides a rich and varied diet, from nuts, berries and sweet fruits to insects, spiders and birds' eggs. Most importantly for the capuchin monkey, an abundance of flowers can also be found here to devour – studies have indicated that these animals feed on as many as 95 different plant species.

In much the same way that bees pollinate flowers in an English

country garden, capuchin monkeys play a special part in the spreading of pollen in the rainforest. Weighing about as much as an apple when fully-grown, white-headed capuchin monkeys are perfectly suited to finding delicate flowers that are hard to reach, or entangled in vines. Pressing their small faces deep into the petals to reach the sweet nectar inside, some of the pollen from the stigma is transferred to their facial fur. Feeding from flower to flower, the pollen dust is transferred. Some flowers species are particularly attractive to these primate pollinators, such as the flowers that grow on the balsa tree (*Ochroma pyramidale*). With wide, cup-shaped petals and long stamens, these flowers have evolved to ensure as much pollen dust is transferred as possible.

It is not often thought that mammals such as monkeys play a role in plant pollination, but it is true that they have an important role in some South American jungles. In fact, many other species including lizards and birds are also key pollinators for plants – not just insects.