



THERE ARE  
**BIRDS**  
EVERYWHERE

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BRITTA TECKENTRUP

# IT'S A BIRD! (SO WHAT IS THAT?)

There are more than 10,000 species of bird around the world and they all have a beak, two legs, two wings and a feathered body. Mother birds lay eggs with a hard shell to protect the chick that grows inside. After a few weeks, the eggs hatch and the parents feed the chicks until they can take care of themselves.

## BONY SKELETONS

Birds are **vertebrates**, which means they have bony skeletons. Their muscles are attached to their bones, which also protects the bird's soft organs such as the heart. The bones in a bird's skeleton are full of tiny holes, which keeps them light and makes it easier to fly.



## LUNCHBOX

Some birds have a **crop** (a muscular pouch in their throats), where food is stored before it passes into the stomach. The **gizzard** is part of the stomach and birds that eat hard food often have little stones inside it. These stones help to grind the food into smaller pieces so they are easy to digest.

A bird's bones are supported by **struts**.



Struts are structures that help to strengthen the bone and protect it during take off or landing.

## SENSES

Most birds have excellent eyesight and good hearing, but do not have strong senses of smell or taste. Their ears are small holes that are hidden behind their eyes, protected by feathers.



## FLEXIBLE FEET

Bird feet are adapted for walking, perching and holding. Each foot has two, three or four toes. Birds have different shaped feet depending on the environment where they live.



**Ducks** spend much of their time in water and have webbed feet that are perfectly suited or swimming.



**Songbirds** have three toes facing forwards and one toe facing back. This arrangement works well for perching on branches.



**Jacanas** are tropical waders. They can walk on floating lily leaves because they have very wide feet that spread their weight.

## WHY FLY WHEN IT'S FUN TO RUN?

Before humans brought land mammals, such as cats and dogs, to New Zealand, the birds that lived there had few predators. Over time, some of the birds that could safely live and nest on the ground lost the ability to fly.



The **kakapo** is the world's rarest parrot. It only comes out at night and it uses its stout legs to walk, jog or climb.



**Kiwis** have soft, fluffy feathers. They sniff out worms using nostrils at the tip of their beak, which is so sensitive it can feel the wriggling of worms under the soil.



**Takahē** live in pairs and often stay together for life. If one takahē cannot see its partner, it calls 'cooet' loudly so the birds can quickly find each other.

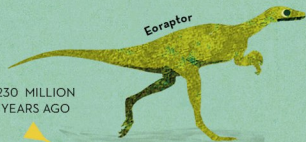


**Weka hens** stay close to the burrow where they hide their cup-shaped nest and eggs. Wekas eat almost anything, from seeds and lizards to rotting meat.

# BIRDS HAVE BEEN AROUND FOR AGES

Birds have been around for a really long time. Many dinosaurs had colourful feathers and, by around 150 million years ago, some of them had evolved (gradually developed) wings. They used their wings to fly into the trees, possibly to escape from predators or to find food. Over time, these flying dinosaurs evolved to become the first birds.

230 MILLION  
YEARS AGO



The ancestors of flying birds were dinosaurs that lived on land. Known as **theropods**, these creatures were small and speedy hunters that feasted on other reptiles and bugs.



Although **Anchiornis** had wings, it probably couldn't fly. It used its long feathered limbs to climb trees instead. This bird-like dinosaur was just 35 centimetres long.



Often called the 'first bird', its thought **Archaeopteryx** could fly short distances. It had feathers, a long bony tail, claws on its wings and a beak that was lined with teeth.



**Confuciusornis** had reddish-brown feathers and claws on its wing tips. It spread its wings to glide between trees, but it may have been able to travel further by flapping them.



Stubby little wings are no use for flying, but they can be used like paddles to swim. **Hesperornis** was a diving bird that, like a modern **penguin**, swam underwater to catch fish.



The first songbirds were perching in trees and singing to their mates more than 50 million years ago. They probably ate seeds, like modern **finches**.



**Presbyornis** was a long-legged bird and is thought to be a prehistoric relative of water-loving birds such as **geese, ducks and swans**.



**Argentavis** was a giant bird with a wingspan of six metres. It was a member of a group of predatory birds called the 'monster birds' and would have dwarfed modern **condors**.



Huge 'terror birds', such as **Titanis**, couldn't fly but they could chase their prey, using their long legs to race across the grasslands of North America.

Enormous birds of prey, such as **Teratornis**, were fierce hunters until the last Ice Age 11,700 years ago. As the world cooled down, there was less food to eat and **Teratornis** - along with many other large birds - died out.



TODAY

There are at least 10,350 species of bird alive today and scientists now believe that all of them are closely related to dinosaurs - from the smallest **oriole** to the mighty **golden eagle**.



# WHERE DO BIRDS LIVE?

Birds need a safe home to raise their chicks, in a place where they can find food nearby. They can be found near rivers, coasts, deserts and grasslands, but forests and woodlands are their favourite homes. In fact, there are more types of bird found in forests than any other habitat.

## HIDEY-HOLES

**Hornbills**, **macaws** and **owls** make their homes inside natural tree holes, but **woodpeckers** use their sharp beaks to drill a new hole where they lay their eggs.

## BEST FOR NESTS

Tucked away in a leafy tree, a **goldfinch** nest can be hard to find. That means this little bird's eggs and chicks are more likely to survive.

## CAN YOU FIND?

**Potoos** and **frogmouths** have such good camouflage they are almost impossible to see when they sit perfectly still on a branch. Can you find one of each?

## KITCHEN CUPBOARD

Trees provide plenty of food for birds, from seeds, flowers and fruits to bugs and small reptiles. **Butcherbirds** and **shrikes** first kill their prey, then impale them on twigs or thorns while they eat them and return later for the leftovers.

## A PLACE TO PERCH

There's a bird's eye view from a treetop. Perched high up, **blackbirds** can look out for food, danger or a mate.

# GLOBAL BIRDS

## DESERT BIRDS

Water can be difficult to come across in a desert, but **sandgrouse** have a clever way to solve this problem. Males sit in waterholes where their feathers soak up water, like a sponge. Then they fly back to the nest and the chicks suck on their feathers when they are thirsty.

## MOUNTAIN BIRDS

Enormous **condors** fly above the Andes mountains. They use their broad wings to glide on warm air currents, which lift them high into the sky. Some condors have wingspans of more than three metres.

## GRASSLAND BIRDS

Having long legs and a swift running speed can come in useful in grassland habitats where there are few places to hide and hungry lions prowl. **Ostriches** are flightless birds, but they can race along the savannah at speeds of 60 kilometres per hour.

## GROUND BIRDS

Ground birds often have patterned feathers that help them to hide from potential predators. Female **pheasants** have dull brown feathers that camouflage them when they nest on the ground. You can easily spot their male partners as they have much more colourful plumage.

# WATER BIRDS

Birds from all over the world gather at the Andalusian coast in Spain, where the Atlantic Ocean and Mediterranean Sea meet the land. Alongside rivers and wetlands, birds can find food in the shallow sea waters and rest before continuing their journeys to places where they will nest and lay their eggs.

## OCEAN HABITAT

Out at sea, there aren't many places to stop and rest, or to lay eggs. Many seabirds are long-distance travellers that have to fly for hours - or even days - dipping and diving to find food before they reach their coastal homes.

Large flocks of **shearwaters** skim across the surface of the water looking for fish, shellfish or squid.

## COASTAL HABITAT

Coastal birds gather on Andalusia's high cliffs, where they are safe from predators. They hunt fish in the sea, or pick up worms and shellfish that they find in the soft mud when the tide goes out.

Tough shellfish are too hard for most birds to eat, but the **oystercatcher** has a strong, blunt beak that can easily crack open hard shells.

The **skua** is known as a 'pirate bird' because it attacks other seabirds and steals food from them.

Air sacs beneath a **gannet's** chest feathers work like cushions to soften the blow as it hits the water. Gannets can plunge more than 15 metres into the salty water to catch fish.

## WETLAND HABITAT

Wetlands and rivers are home to many birds, but there's enough food for millions of migrating birds passing through, too. These weary travellers enjoy a well deserved rest before continuing their journeys.

**Puffins** are called 'parrots of the sea' because they stand upright and have colourful faces. They nest at the coast where they hunt slippery sand eels to feed to their chicks.

As it wades through water, the **egret's** feet disturb little fish, frogs or bugs, which the bird snaps up with its long beak.

The **black-winged stilt** has longer legs for its size than any other bird. Long legs are useful when wading through shallow water looking for tiny insects to eat.

## CAN YOU FIND?

**Marsh harriers** nest on the ground, hidden by the tall reeds that grow in wetlands. They hunt mice, rats and voles as well as other birds. Can you find a harrier in its nest?

