BIRDS

Explore their extraordinary world



MIRANDA KRESTOVNIKOFF

Illustrated by

ANGELA HARDING

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For Amélie and Oliver
and in memory of those brave and pioneering Victorian women,
Emily Williamson and Eliza Phillips, who were the driving force
behind the creation of the RSPB
– M. K.

To my father Stephen Harding
– A. H.

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The RSPB is the UK's largest conservation charity, inspiring everyone to give nature a home so that birds and wildlife can thrive again. By buying this book, you are helping to fund the RSPB's conservation work



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INTRODUCTION

Birds have conquered every continent on Earth, making homes in almost every habitat, from the freezing-cold polar regions to the lush tropics. Whether it's powerful golden eagles swooping down to pounce on their prey to urban pigeons pecking on pavements or fluttering sparrows in hedgerows, birds can be spotted the world over.

Birds evolved from dinosaurs, but what set them apart was their incredible ability to fly. Unlike reptiles, they had a unique way of escaping hungry predators and moving to new places – flight.

Flight requires a lot of energy, so birds needed to adapt: feathers cover their bodies for warmth and create streamlined flight and many birds developed hollow bones to lighten the load and increase efficiency in the air.

Flight gave birds the ability to conquer the skies, some choosing to spend many years on the wing before landing to breed, others undertaking vast migrations to new lands in search of food and warmer climates.

Flight isn't birds' only remarkable feature. They produce some of the most beautiful sounds in nature and many have astonishingly colourful and elaborate plumage. Sadly, this has often resulted in species becoming endangered due to people's desire to collect and wear their feathers. This is not the only danger these graceful creatures face; while some species thrive in our towns and cities, others are fast disappearing due to loss of habitat as the human population expands.

Now, more than ever, we need to ensure there is space and resources to support the variety and beauty of all bird species on earth.

Curlew (above)



BIRDS OF PREY

There are more than 500 birds of prey (also known as raptors) across the world, including eagles, owls, falcons and hawks. They come in many different shapes and sizes, but they all have one thing in common – they eat flesh. Using their sharp talons and hooked beaks, they grab and kill their prey or feast on the bodies of animals that are already dead.

Meat eaters Perched patiently and hidden in the bushes, sparrowhawks can launch an attack at speeds of up to 50 km an hour. Their long legs give them a powerful push from their perch, and their short rounded wings and light body allow them to twist and turn easily. They fly very low to the ground, using their long tail to help them steer and can tuck their wings in tightly to fit through the smallest of spaces. These clever birds have learnt that garden birds resting on a feeder can offer an easy meal.

Fish eaters Seeing an osprey swoop down over the water and grasp a fish, sometimes weighing almost as much as itself, is a magnificent sight. Pale-coloured feathers on its belly helps it to blend in with the bright sky, making it difficult for fish to spot. As it swoops down over the surface of the water, its wings stretch out wide to slow its descent and its long legs extend to grab its prey. Rough scales on its feet hold the wriggling fish in place and elongated, curved and backwards-facing talons spear the flesh to secure it while a long, hooked beak tears the flesh from the bones. Ospreys can even close their nostrils to keep out water during dives and they have dense, oily plumage, which prevents their feathers from getting waterlogged.

Fish is a high-protein meal and other raptors take advantage of this: fish eagles such as the American bald eagle (so-called because, from a distance, the white feathers on its head make it look bald) is also a master of the water, feasting on enormous Pacific salmon as well as waterbirds, such as egrets, who live close by. These eagles also build impressive nests, which the same pair adds to every year when they return to breed.

Sparrowhawk (above)



Osprey



Golden eagles A mythical-like creature, the golden eagle can spot a rodent from around 2 km away and a rabbit from nearly double that distance. It's no wonder, then, that we use the phrase 'eagle eye' to mean someone with very good eyesight! Soaring over remote mountains, this magnificent bird gets its name from the golden tinges on its head and neck feathers.

Golden eagle (left)



Extreme birds

Birds of prey are found across the globe, from the tiny pygmy falcon that lives in the African bush to the huge Andean condor that soars over some of the world's highest mountains.

Fastest The fastest animals on the planet, peregrine falcons, are able to hurtle through the air at up to 320 km an hour and strike their prey with military precision. To reach such an impressive speed, they pull in their wings and dive from a great height using gravity to increase their speed – a move known as a stoop. The streamlined body shape they create is so effective that designers have modelled fighter planes on it.

Largest and smallest The largest bird of prey in the world is the Andean condor, weighing in at up to 15 kg and with a wingspan of 3 m. It soars over the Andes Mountains in South America, using its broad wings to cover huge distances, to find food. Condors have brilliant eyesight, which helps them to spot dead animals to feed on. In contrast, the black-thighed falconet is the smallest bird of prey in the world. It has a wingspan ten times smaller than the Andean condor and weighs a mere 35 g. These tiny birds are agile enough to feed on butterflies and they have learnt to pick the species that aren't poisonous to feed to their chicks.

Tallest The tallest bird of prey, and surely one of the most unusual, is the secretary bird. A resident of Africa, it has a distinctive crest, very long tail and stands up to 1.2 m tall. It is capable of soaring flight but spends most of its time walking on its long legs. Most birds of prey grab their victim with sharp talons, but secretary birds do things differently – they kick their prey instead! Small insects only need to be stamped on a few times but larger prey, such as snakes and hares, need a display of kick-boxing behaviour that is almost comical! However, they have a softer side too: males and females have impressive courtship displays and pair up for life, sleeping side by side in their nests.

Baldest There are around 15 species of vulture found in Europe, Asia and Africa, and they mostly feed on carrion (the remains of prey killed by other predators). Many types of vultures have bald necks. This might not look very appealing, but it's thought that the lack of feathers is helpful when they thrust their necks deep inside carcasses to feed, as any feathers would get caked in blood. New research suggests that vultures have bald heads and necks to help them regulate their body temperature.



Secretary bird



Owls

We tend to think of owls as creatures of the night, but some species prefer to hunt during the day and others at dusk and dawn. You can tell when each species of owl prefers to hunt by looking at the colour of its eyes.

Yellow eyes Owls that have yellow eyes have widespread hunting habits. The great grey owl can hunt at any time of day or night but prefers the early morning and late afternoon. They are an impressive sight to see as they soar over the snow-covered ground in search of small rodents, which they can hear moving beneath a blanket of up to 30 cm of snow.

Orange eyes Most owls that have orange eyes are crepuscular, which means that they are active around dawn and dusk. These owls, such as large Eurasian eagle owls with their distinctive ear tufts, hunt prey including mice, rabbits and birds. Eurasian eagle owls prefer remote places and, while they are mostly nocturnal they can sometimes be seen hunting early and late in the day.

Dark eyes Brown or black eyes indicate an owl that hunts under the cover of darkness. You are more likely to hear these owls than see them. The barred owl of North America is famous for a distinctive series of hoots, which sounds like someone saying, “Who cooks for you? Who cooks for you all?” Owls that hunt at night fly completely silently as the slightest sound could alert prey to their presence. A fine covering of down over their wing feathers helps the owls to surprise their prey by muffling the sound of air passing through their feathers.

Hearing Hearing is perhaps the sense that some owls, like the barn owl, rely on more than any other bird. Despite their big eyes, barn owls cannot see much better than we do in the dark, but their hearing is excellent, which helps them to catch fast-moving small mammals in complete darkness without using their eyesight at all. Their ears are unusual – the left ear opening is slightly higher than the right one, which means that sounds from below reach the right ear before the left one, helping the owl to pinpoint exactly where the sounds are coming from. Along with this, a barn owl’s face is surrounded by stiff feathers, which create a heart-shaped ruff. This channels sounds towards the owl’s ears, a bit like a satellite dish, helping to magnify the sound.

Long-eared owl (left)



SEABIRDS

The sea is a challenging place to live, but many birds are highly adapted to life on the open ocean and only come ashore to mate and breed. Seabirds are found from the shoreline to the open ocean and feed in many different ways: gannets and terns dive into the water from great heights to catch their target, cormorants chase fish underwater and gulls pick their prey off the water's surface.

Waders Oystercatchers, sandpipers, avocets and phalaropes, are often found along the shoreline where water meets the land. In areas where they migrate, these birds will flock together to provide safety in numbers. Different species feed on the variety of high-protein invertebrates that lie hidden in the mud. Many waders have sensitive nerve endings at the end of their beaks, which enable them to feel prey hidden in mud or soft soil. Some larger species, particularly those adapted to drier habitats, will eat larger prey, including insects and small reptiles.

Often the length of a bird's beak can give you a clue to what they eat. The extremely elegant, long beak of the curlew, with its curved end, allows these birds to grab food hiding deep in the mud that birds with shorter beaks, such as dunlin and turnstone, just can't reach. Redshanks, with their bright orange-red legs, have long beaks too, allowing them to search deep into the mud for worms and crustaceans.

Curlews (above)



Redshank (above) Oystercatcher (below)

Seabirds of warmer waters

Seabirds are found in every ocean across the globe – warmer waters offer bountiful food and many tropical seabirds are more colourful than their colder water cousins.

Blue-footed boobies Blue is not a common colour for a bird's beak and feet, but it certainly stands out on the blue-footed boobies found in the Galapagos. The bluer their feet, the more attractive a male is to a potential mate. Males perform strange dance moves, showing off their feet to curious females with a high-stepping strut.

Frigate birds Male frigate birds are distinctive with their dark plumage, long, forked tails and enormous red throat sacs, which they inflate to attract a mate. Strangely for a seabird, they are not good swimmers and don't even have waterproof feathers! However, they are experts at stealing food from other birds or snatching it from the water's surface.

Terns Terns are delicate seabirds and can be found worldwide. When it comes to breeding, they have little or no regard for nest building and many make their nests in little more than a bare scrape in the ground! The fairy tern takes this to the extreme, laying an egg directly onto a branch with no protection from the elements. Although the branch offers protection from ground predators, there is still a huge risk that high winds will knock the egg off its perch. However, should disaster strike, the mother tern is quick to lay a new egg and take the risk all over again.



Blue-footed boobies



Seabirds of colder waters

Spending most of their lives out at sea, we learn most about seabirds from studying them during their brief time on land, mostly nesting and breeding on isolated islands away from predators and human threats. A visit to a seabird colony is an amazing experience – the sight and sound, not to mention the smell, is unforgettable!

Gulls Gulls are an incredibly successful group of birds. Intelligent and resourceful, many have moved from their coastal habitats into towns and cities to take advantage of the leftovers and habitats created by humans. They have gained a reputation for stealing food, attacking and mobbing other birds.

Great black-backed gulls Aggressive predators that patrol colonies of nesting puffins, these birds are always on the hunt for sick and injured adults and unattended chicks who might stray from the safety of their underground burrows.

Kittiwakes In contrast, kittiwakes, with their black-tipped wings, are smaller. Their name is derived from their shrill 'kittee-wa-aaake' call.

Great black-backed gull and puffins (above)



Gannets One of the world's most impressive seabirds is the gannet, nesting in colonies like vast cities, which are busy, noisy and smelly! Famous for their fish-eating ability, gannets hunt by diving into the sea at speeds of 100 km an hour from an impressive height of up to 30 m. This potentially fatal manoeuvre is made possible by a number of adaptations, including: nostrils hidden inside their mouth; air sacs in the face and chest, which cushion the impact when they dive into the water, and eyes located far forward on the face, allowing them to judge distances accurately.

Gannets (left)