



# Aviaryum



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COVER TO BE REVEALED



LARGE  
FLIGHTLESS BIRDS

## Southern Brown Kiwi

If there was a prize for the least bird-like bird in the world, it would probably go to the kiwi, of which there are five species in New Zealand. Its feathers look like hair; it obtains much of its food by smell; it cannot see particularly well; its body temperature is lower than that of birds (37-38°C, rather than 39-42°C); it is nocturnal and has no visible wings.

It does lay eggs, as just a handful of mammals do. The kiwi egg is the world's largest by relative size, six times normal for the size of bird, amounting to 25% of the female's body weight (the ostrich egg is relatively the smallest). When close to laying an egg, a female kiwi has no room in her stomach for food! Once it hatches, the kiwi chick is already so well nourished that it can become independent in two weeks. Amazingly, some kiwis lay clutches of two eggs!

Uniquely, the kiwi's nostrils open out at the end of its long, curved bill, and its sense of smell is very keen. It also has long bristles at the base of the bill, and a battery

of highly sensitive touch receptors at the tip. This allows for excellent detection of food such as worms and insects hidden in the soil. Together with an excellent sense of hearing, kiwis have a great set of senses for successful ground foraging at night.

### Key to plate

#### ♂: Cyanobacteria

*Prochlorococcus marshallii*

Diameter: Approx. 0.6µm

This minuscule plankton is one of the most abundant photosynthetic organisms on Earth. One millilitre of seawater can contain around 100,000-1,000,000 *Prochlorococcus* cyanobacteria.

#### ♀: Dinoflagellate

*Ceratium hirundinella*

Diameter: Up to 200µm

During the day, this dinoflagellate extends its 'tendrils' into the water. These contain chloroplasts which are used in photosynthesis.

#### ♂: Diatom

*Ditylum brightwellii*

Length: Up to 300µm

This diatom is a tiny single-celled alga that makes its body out of glass-like silica—meaning it effectively lives in a glasshouse.

#### ♀: Coccolithophore

*Emiliania huxleyi*

Length: Approx. 3.5µm

Coccolithophores have a covering of chalky discs, which reflect sunlight. When *E. huxleyi* blooms, this reflection of light is visible to satellites in space.

#### ♂: Sea sparkle

*Noctiluca scintillans*

Diameter: Up to 2,000µm

This species makes light via bioluminescence: when disturbed, producing an ethereal blue-green glow.

#### ♀: Chaetoceros debilis

Length: Up to 200µm

These microscopic algae join together to form long, spiral-shaped chains.

# Habitat: Grasslands

Grassland forms in the climatic zone between deserts on the one hand and forests on the other. Different grasslands around the world go by different names, such as prairies in North America and steppe in Asia. They may be dotted with lakes and pools. Grasslands with scattered trees are often called savannas.

There are broadly two types. Temperate grasslands, such as those in North America, experience 300–600mm of rain annually, while tropical grasslands have about 500–1500mm. In temperate grasslands especially, birds need to cope with extremes of temperature, in similar fashion to deserts. A winter grassland can be ferociously cold, and many species migrate away.

However, grasslands are relatively rich habitats, providing an abundance of insects and seeds – any species that can eat grass seeds is going to thrive! Some grasslands have high concentrations of herbivorous mammals, providing their own opportunities. Cowbirds in North America were originally followers of bison, while oxpeckers (Buphagus) in Africa eat ticks from animal hides and cattle egrets (Ardea spp) feed on flushed insects at the feet of large animals.

Most grassland birds have cryptic plumage and the majority also nest on the ground. Quite a few are expert runners or have long legs – examples include the tinamous (Tinamidae) and the bustards (Otididae). By contrast, dense grassland doesn't contain many song-posts, so many of the birds here have loud songs or showy display-flights.

## Key to plate

### 1: Brown-headed cowbird

*Molothrus ater*  
Length: 16–22cm  
Once confined to the Great Plains of North America, the cowbird is now an abundant farmland and urban bird. It lays its eggs in the nests of other birds, with almost 150 host species known.

### 2: Rosy-throated longclaw

*Mosonyx omissus*  
Length: 19–20cm  
A ground-living African savanna bird that has greatly elongated hind claws, which help it to walk in grass without losing balance. It eats insects, gathered on the ground, and the male, like many grassland birds, often sings in flight.

### 3: Lesser florican

*Sypheotes indicus*  
Length: 46–51cm  
In the breeding season, the male leaps above the long grass, flaps its wings with apparent desperation, holds

its legs up and drops down again – genuine wild bird comedy. The species lives in India.

### 4: Secretarybird

*Sagittarius serpentarius*  
Length: 125–150cm  
The secretarybird stalks African savannas in search of insects, mammals and famously, snakes. They kill large prey by powerful kicks of their long legs, which are densely scaled to protect from snake bites.

### 5: Spotted nuthatch

*Nuthatch maculosa*  
Length: 23–26cm

A member of the primitive family of Tinamous (Tinamidae) closely related to ostriches and other flightless birds. This species occurs in the plains of central South America. The female may lay four clutches of five eggs a year.

6: Demoiselle crane

### Antreopides virgo

Length: 90–100cm  
It breeds on the broad steppes of Central Asia, usually near water, and feeds mainly on seeds and insects, which it picks from the ground while walking slowly. It migrates south in winter, travelling in elegant V-formations.

### 7: White monjita

*Xolmis rupestris*  
Length: 17–18cm  
The startling white plumage stands out in the South American savanna as this bird perches boldly by tracks or on bushes. It perches high and drops down to catch insects on the ground, often hovering for long periods.

### 8: Ground tit

*Pseudopodiceps humilis*  
Length: 19–20cm  
This is an extraordinary bird that bounds over low vegetation in long

