

# Birds

Pathfinder Honor  
by Jonatan Tejel



Common kingfisher

# This Honor is a component of the...

Naturalist Master Award



Zoology Master Award





## Requirement

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**Give two characteristics which set birds apart from all other creatures.**

All of the vertebrate have a backbone, but birds have a number of unique characteristics such as:

1 Flight

2 Hard shelled eggs

3 Warm blooded

4 Covered with feathers

5 Hollow bones

6 Bone structure in the eye

7 Keen eyesight

8 Musical voices

9 Ability to sense magnetic fields

10 Very Colourful

# Not quite “unique”

Each of these things seems quite unique, but as we look at the other classes of vertebrate, we find that birds are not the only creatures that can fly. There are **flying fish**, **gliding snakes**, **gliding frogs**, **gliding squirrels** and **bats**. Each class of vertebrates has the capability of crude flight, and bats at least can match the flight ability of the birds. We must also note that not all birds are capable of flight.

Mammals are **warm blooded**, so that is not unique to birds. Whales, frogs and some of the primates **have very musical voices**. Many of the mammals such as meerkats have **good eyesight**, so this is not unique, and **most fish have the ability to sense electro-magnetic fields**.





## Unique things to the class Aves

1

They all lay hard-shelled eggs which they incubate using their body temperature.

2

They all are covered with a feather structure that differs greatly from scales and fur.

3

Hollow bones allow them to fly almost effortlessly.

4

A ring bone in the eyes of birds is what allows them to focus so well and have such keen eyesight.



## Requirement

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**Name three flightless birds, tell what their diet consists of, and name the country or continent in which each one lives.**

# Flightless birds information

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## Southern Cassowary

### New Guinea & Australia

**Diet.** Prefers fallen fruit, but will eat small vertebrates, invertebrates, fungi, carrion and plants.



## Emu

### Australia

**Diet.** Emus eat a simple diet of fruits, seeds, growing shoots of plants and insects. They swallow small stones which stay in the gizzard and help grind up food. They require a large amount of water, drinking 9-18 litres daily.



# Flightless birds information

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## Kiwi

### New Zealand

**Diet.** Kiwi eat small invertebrates, seeds, grubs, and many varieties of worms. They also may eat fruit, small crayfish, eels and amphibians.



## Ostrich

### Savannahs of Africa

**Diet.** Their **diet** consists mainly of roots, leaves, and seeds, but **ostriches** will eat whatever is available. Sometimes they consume insects, snakes, lizards, and rodents. They also swallow sand and pebbles which help them grind up their food in their gizzard, a specialized, muscular stomach.

# Flightless birds information

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## Penguin

### Southern Hemisphere

**Diet.** Penguins eat seafood. Their main diet is fish, though they'll also eat squid, small shrimplike animals called "krill" and crustaceans.



## Rhea

### South America (Brasil)

**Diet.** They enjoy plants, fruits, and seeds but also eat insects, lizards, birds, and other small game. Rheas have a taste for agricultural crops, which earns them the ire of many South American farmers.

# Flightless birds information

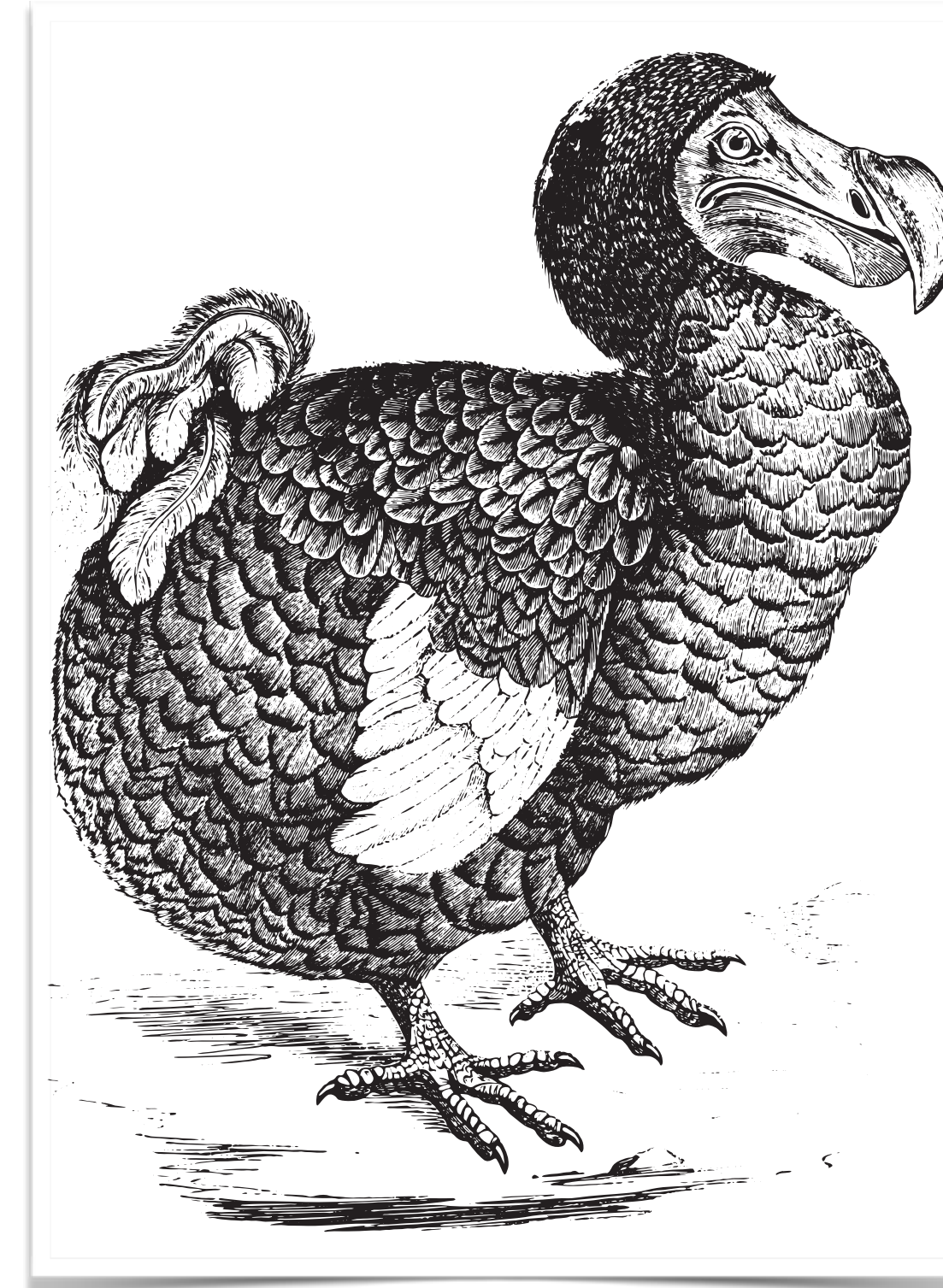
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## Great Auk

### Extinct

**Diet.** Its favourite prey were fish, including Atlantic menhaden and capelin, and crustaceans.



## Mauritius Dodo

### Extinct

**Diet.** In addition to fallen fruits, the dodo probably subsisted on nuts, seeds, bulbs, and roots. It has also been suggested that the dodo might have eaten crabs and shellfish.

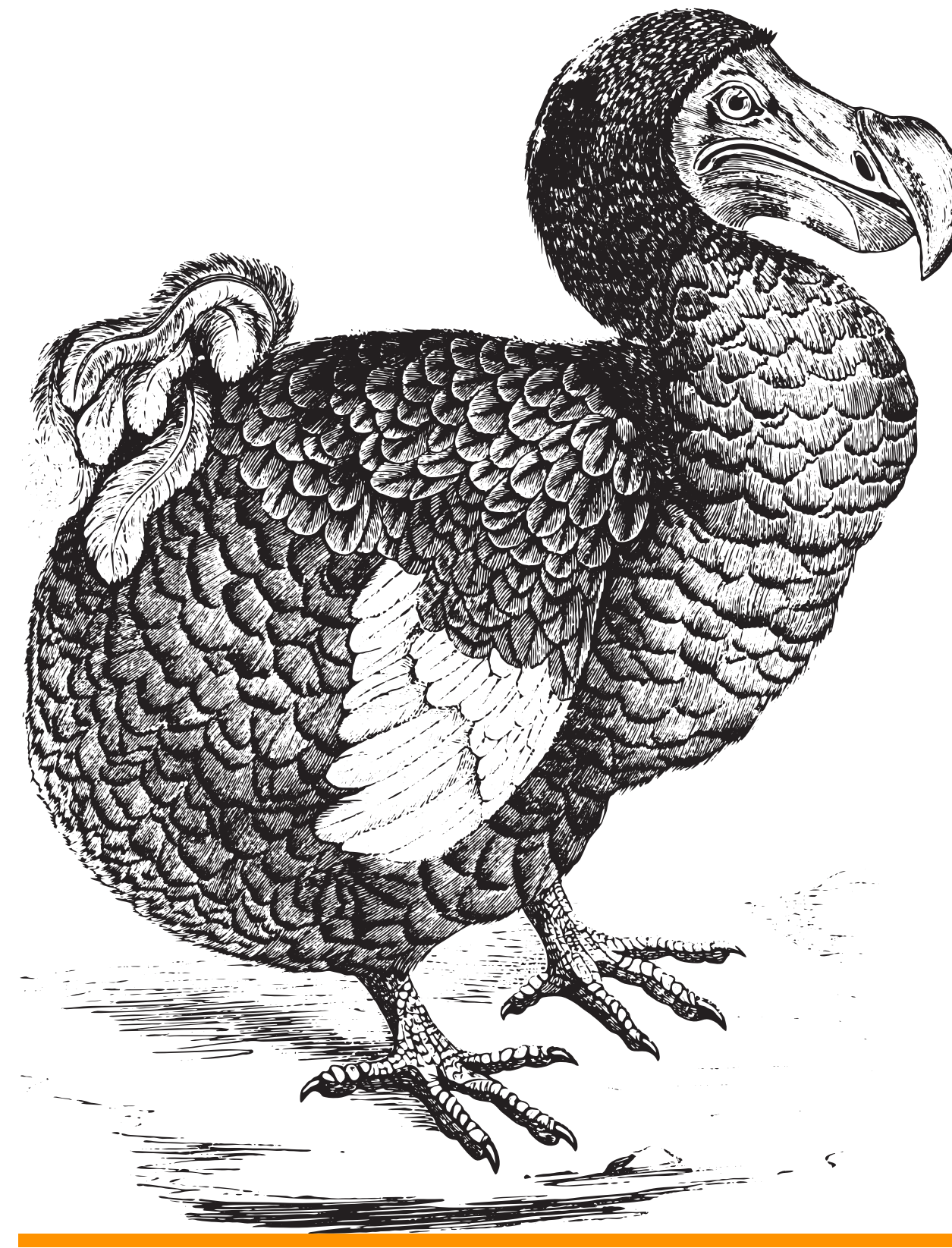
# Reason for Extinction

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Great Auk

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Mauritius Dodo

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Many flightless birds have become extinct because of man and his actions. These two species represent a far larger number that have become extinct at the hand of man.



## Requirement

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**Give the day of the week when birds were created. Find in the Bible the names of five birds and be able to name them from memory.**



## Give the day of the week when birds were created.

<sup>20</sup> Then God said, “Let the waters abound with an abundance of living creatures, and **let birds fly above the earth across the face of the firmament of the heavens.**” <sup>21</sup> So God created great sea creatures and every living thing that moves, with which the waters abounded, according to their kind, and every winged bird according to its kind. And God saw that it was good. <sup>22</sup> And God blessed them, saying, “Be fruitful and multiply, and fill the waters in the seas, and let birds multiply on the earth.” <sup>23</sup> So the evening and the morning were **the fifth day.**

**Genesis 1:20-23**



**Find in the Bible the names of five birds and be able to name them from memory.**

# Name it!



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Psalm 102:6



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Genesis 8:8-12  
Leviticus 11:13  
Job 38:41  
Ezekiel 7:16



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Leviticus 11:13, 17  
Psalm 102:6



# Name it!



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**Deuteronomy 14:13**



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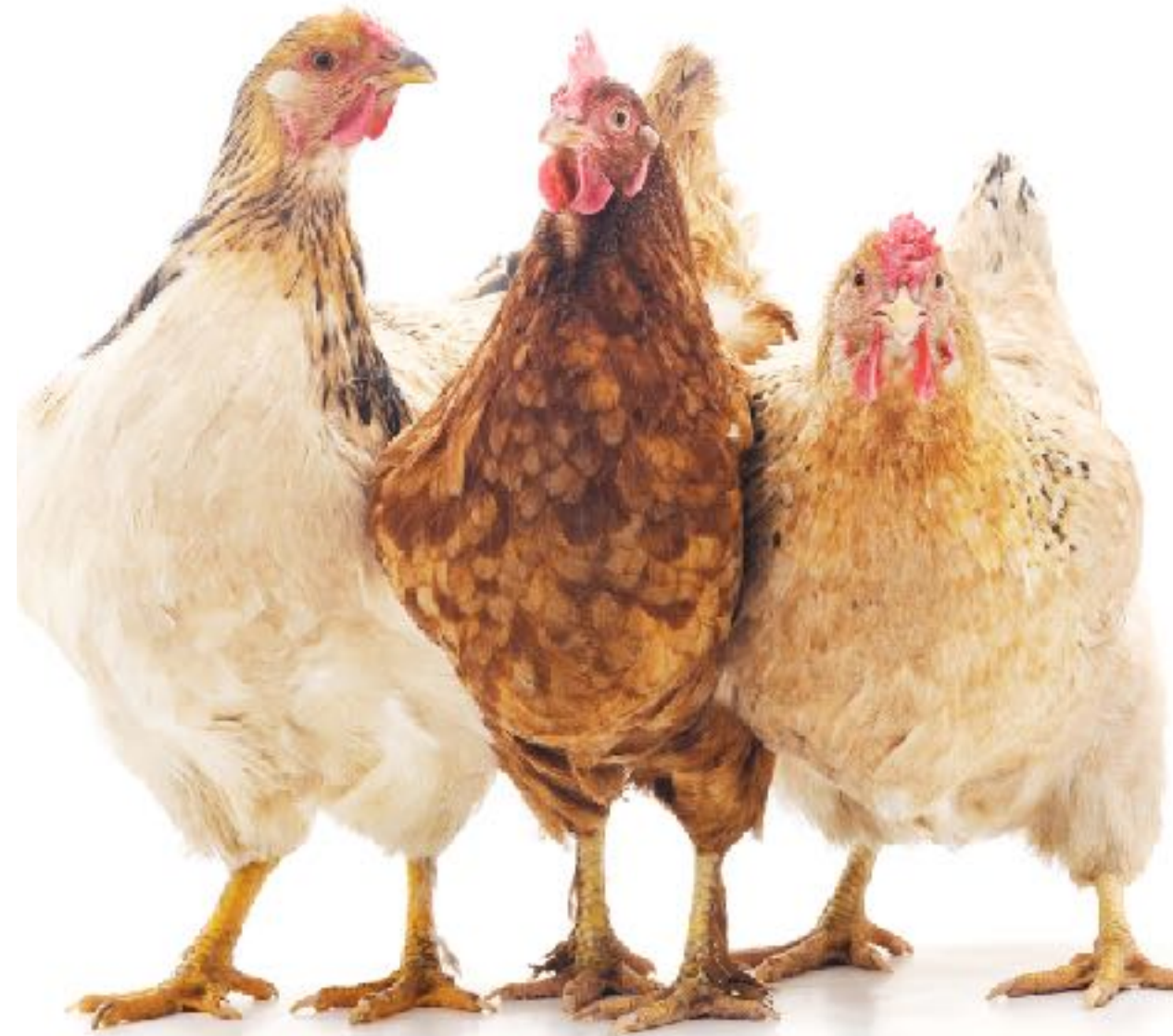
**Genesis 8:8-12**  
**Leviticus 11:13**  
**Ezekiel 7:16**



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**Leviticus 11:16**  
**Job 30:29**  
**Job 39:13-18**  
**Lamentations 4:3**

# Name it!



Matthew 23:37



Genesis 8:8-12  
Leviticus 11:13  
Ezekiel 7:16  
Matthew 24:28



Exodus 19:4  
Leviticus 11:13  
Job 39:27  
Proverbs 23:5  
Isaiah 40:31

# Name it!



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Psalm 84:3  
Isaiah 38:14



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Genesis 8:8-12  
Ezekiel 7:16  
Isaiah 38:14  
John 1:32



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Isaiah 38:14



## Requirement

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**Write or give orally three ways in which God's love and purpose is shown in the creation of birds.**



1

**God created the birds to point to Himself as the provider of all that we need. If He takes care of the birds, He shall surely take care of our needs.**

*Consider the ravens, for they neither sow nor reap, which have neither storehouse nor barn; and God feeds them. Of how much more value are you than the birds?*

Luke 12:24

2

**Birds teach us about God. (Job 12:7-9)**

- God says he will protect us like the mother hen protects her chicks. (Matt. 23:37)
- Jesus said God sees the sparrow fall, and much more He sees us. (Matt. 10:29-31)
- He will give us strength like that of the eagle. (Isa. 40:31)



3

The adaptations of birds (especially their beaks, their legs and feet), the colourful diversity, show us God's creative power.

4

**We ought to trust God totally just as birds do.**

*Look at the birds of the air, for they neither sow nor reap nor gather into barns; yet your heavenly Father feeds them. Are you not of more value than they?*

Matthew 6:26



## Requirement

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**Make a list of thirty species of wild birds, including birds from at least five different orders, that you personally have observed and positively identified by sight out of doors.**

# Orders of Birds in the United Kingdom

Some of the most known

Order	Characteristics	In UK
Anseriformes	The swans, ducks and geese are medium to large birds that are adapted to an aquatic existence with webbed feet and bills which are flattened to a greater or lesser extent. In many ducks the male is colourful while the female is dull brown. The diet consists of a variety of animals and plants. The family is well represented in Britain, especially in winter when large numbers visit from Greenland, Scandinavia and Russia. There are about 160 species worldwide with 62 in Britain.	62
Galliformes	These are terrestrial species. They are variable in size but generally plump. They feed mainly on plant material and lay their eggs in a simple scrape on the ground.	10
Procellariiformes	Procellariiformes are colonial, mostly nesting on remote, predator-free islands. The larger species nest on the surface, while most smaller species nest in natural cavities and burrows. Procellariiformes are monogamous and form long-term pair bonds that are formed over several years and may last for the life of the pair. A single egg is laid per nesting attempt, and usually a single nesting attempt is made per year, although the larger albatrosses may only nest once every two years. Both parents participate in incubation and chick rearing.	18
Pelecaniformes	The Pelecaniformes are an order of medium-sized and large waterbirds found worldwide. They feed on fish, squid, or similar marine life. Nesting is colonial, but individual birds are monogamous.	17





# Orders of Birds in the United Kingdom

Some of the most known

Order	Characteristics	In UK
Accipitriformes	<p>The Accipitriformes are an order of birds that includes most of the diurnal birds of prey – including hawks, eagles, and kites, but not falcons. The Accipitriformes typically have a sharply hooked beak with a soft cere housing the nostrils. Their wings are long and fairly broad, suitable for soaring flight. They have strong legs and feet with claws. Almost all Accipitriformes are carnivorous, hunting by sight during the day or at twilight. They are exceptionally long-lived, and most have low reproductive rates.</p>	27
Gruiformes	<p>The Gruiformes are an order containing a considerable number of living and extinct bird families, with a widespread geographical diversity. Gruiform means “crane-like”. These birds mainly occupy dense vegetation in damp environments near lakes, marshes or rivers. Many are shy and secretive birds, making them difficult to observe. Most species have strong legs and long toes which are well adapted to soft uneven surfaces. Cranes are large, long-legged and long-necked birds. There are about 150 species worldwide, 16 in Britain.</p>	16
Charadriiformes	<p>Charadriiformes is a diverse order of small to medium-large birds. It includes about 350 species and has members in all parts of the world. Most charadriiform birds live near water and eat invertebrates or other small animals; however, some are pelagic (seabirds), others frequent deserts, and a few are found in dense forest.</p>	135 approx



# Orders of Birds in the United Kingdom

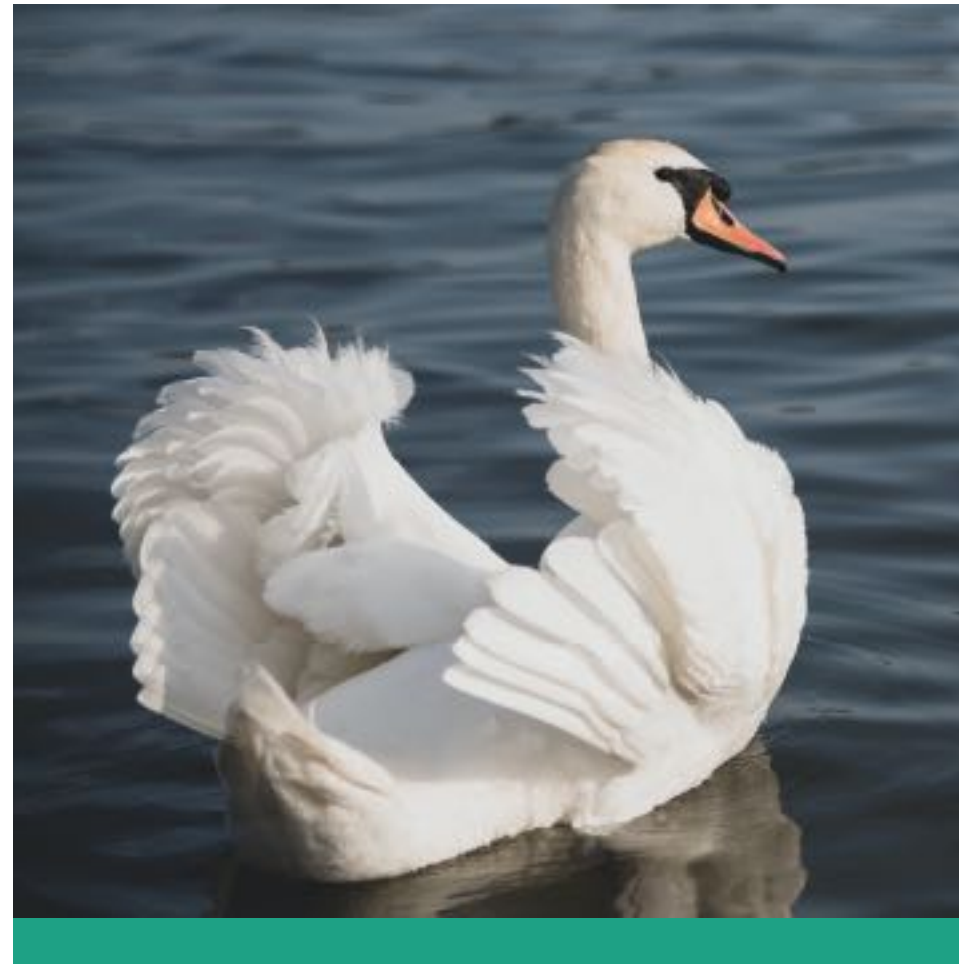
Some of the most known

Order	Characteristics	In UK
Passeriformes	Passeriformes, which includes more than half of all bird species. Sometimes known as perching birds or songbirds, passerines are distinguished from other orders of birds by the arrangement of their toes (three pointing forward and one back), which facilitates perching. (2 slides)	247
Falconiformes	Falconiformes are small to medium-sized birds of prey, ranging in size from the black-thighed falconet, which can weigh as little as 35 grams, to the gyrfalcon, which can weigh as much as 1,735 grams. They have strongly hooked bills, sharply curved talons and excellent eyesight.	10
Strigiformes	The order Strigiformes includes over 200 species of mostly solitary and nocturnal birds of prey typified by an upright stance, a large, broad head, binocular vision, binaural hearing, sharp talons, and feathers adapted for silent flight. Exceptions include the diurnal northern hawk-owl and the gregarious burrowing owl. Owls hunt mostly small mammals, insects, and other birds, although a few species specialize in hunting fish.	9
Columbiformes	These are stout-bodied birds with short necks, and short slender bills that in some species feature fleshy ceres. They primarily feed on seeds, fruits, and plants. Doves and pigeons build relatively flimsy nests, often using sticks and other debris, which may be placed on trees, ledges, or the ground, depending on species. They lay one or two eggs at a time, and both parents care for the young, which leave the nest after 7–28 days.	7



# Anseriformes

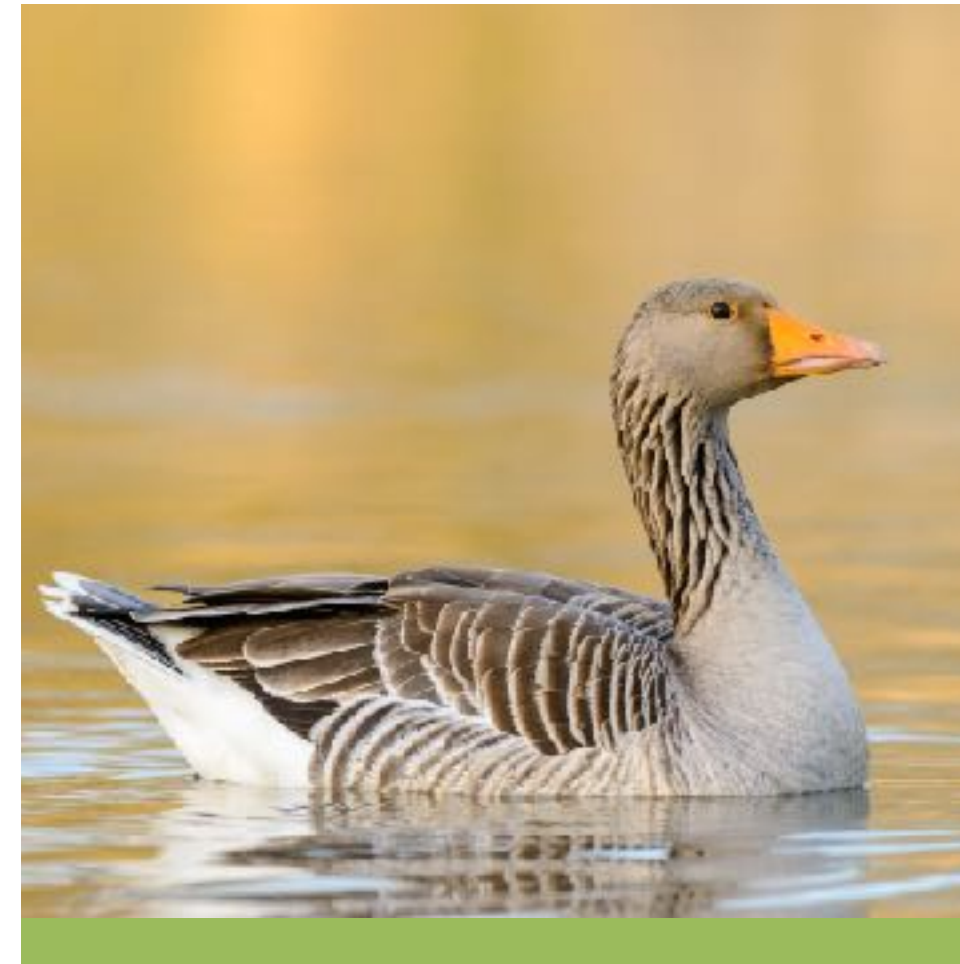
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**Mute swan**

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Resident  
breeding  
species



**Greylag goose**

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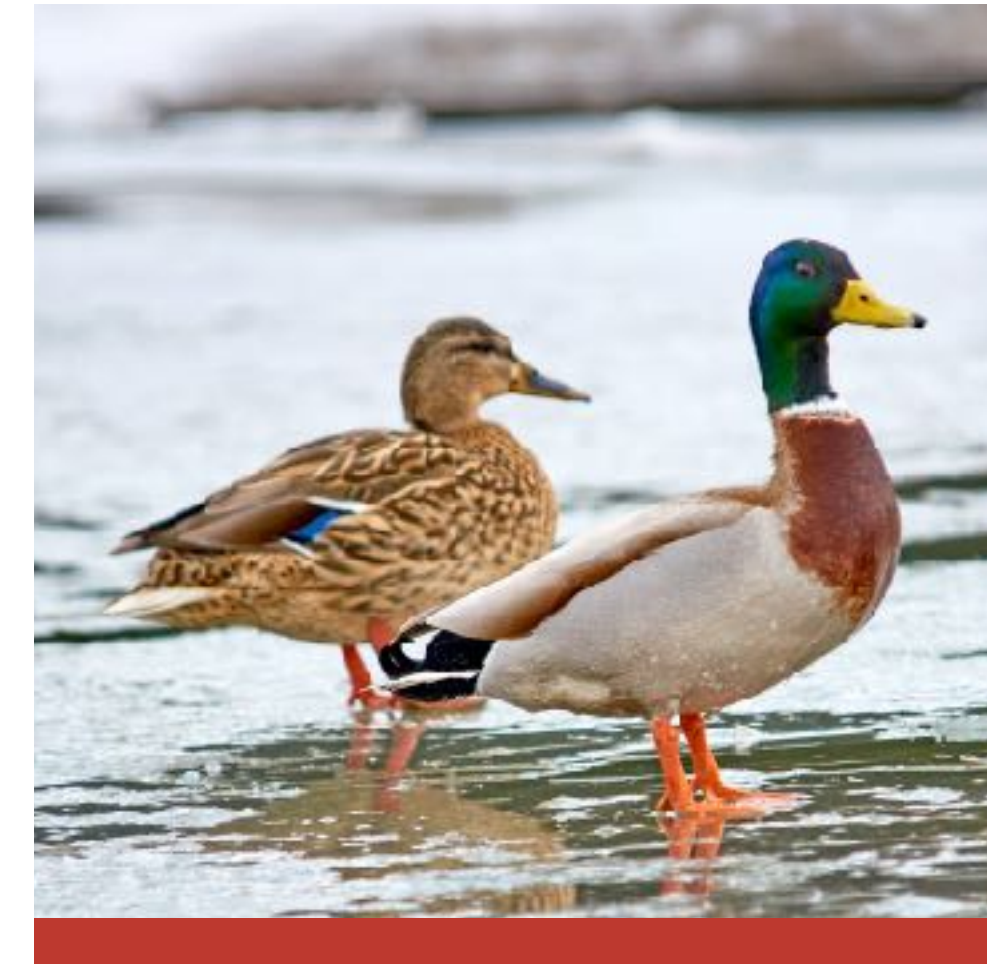
Resident wild  
and feral populations,  
winter visitor



**Common shelduck**

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Resident breeder  
and winter visitor



**Mallard**

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Resident breeder,  
winter visitor and  
naturalised releases

# Galliformes

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**Red grouse**

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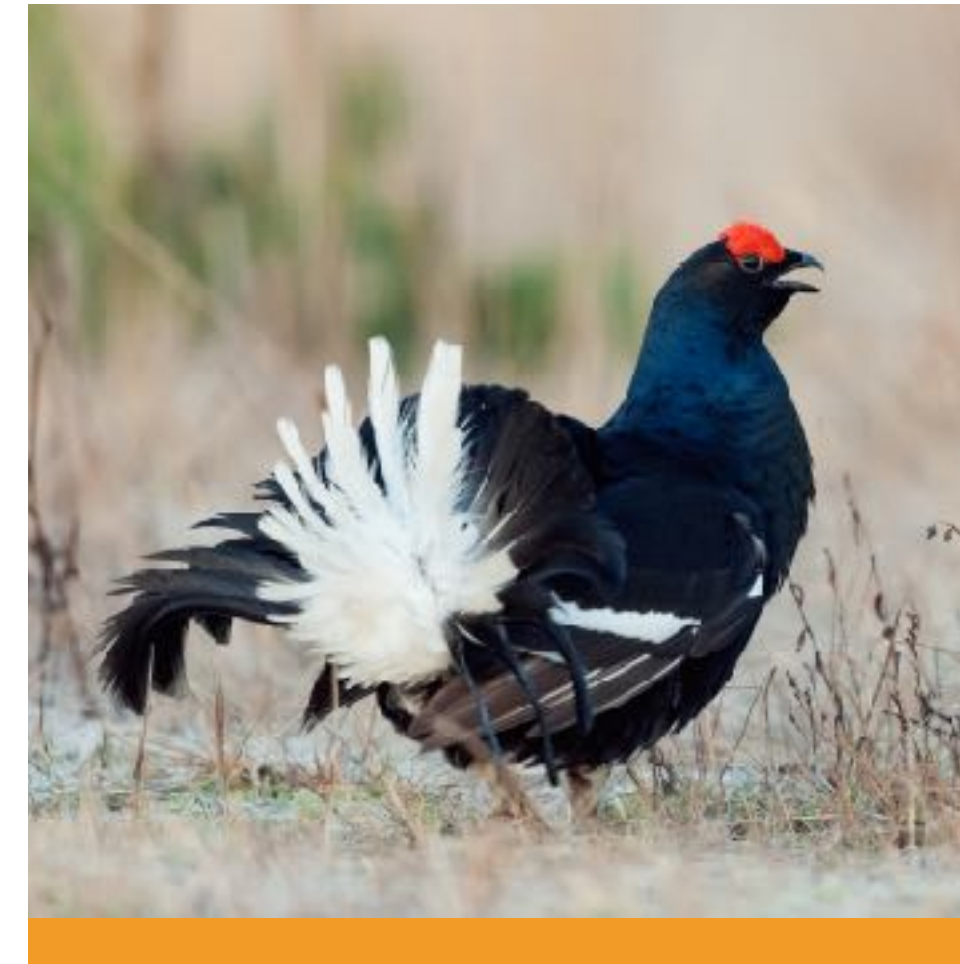
Resident  
breeding  
species



**Red-legged partridge**

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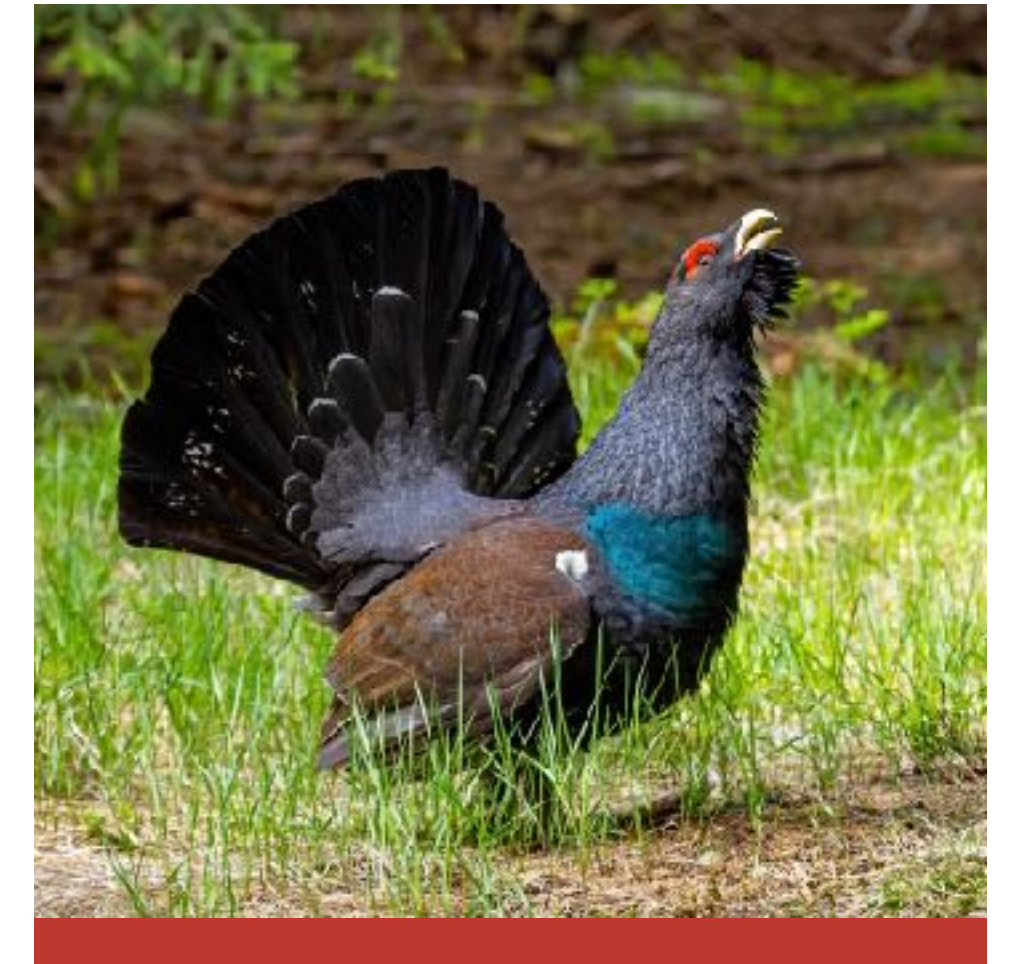
Resident  
Introduced  
population



**Black grouse**

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Resident  
breeding  
species



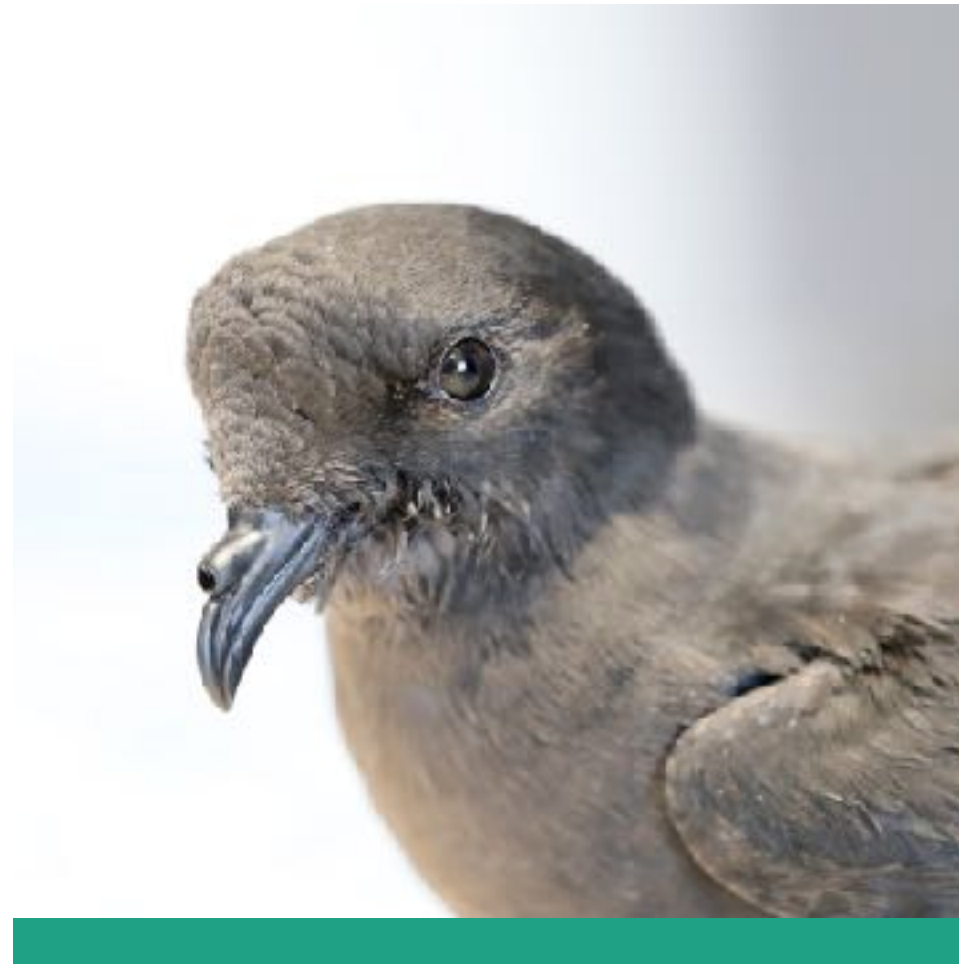
**Western capercaillie**

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Reintroduced  
population

# Procellariiformes

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European storm petrel

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Breeding  
summer  
visitor



Great shearwater

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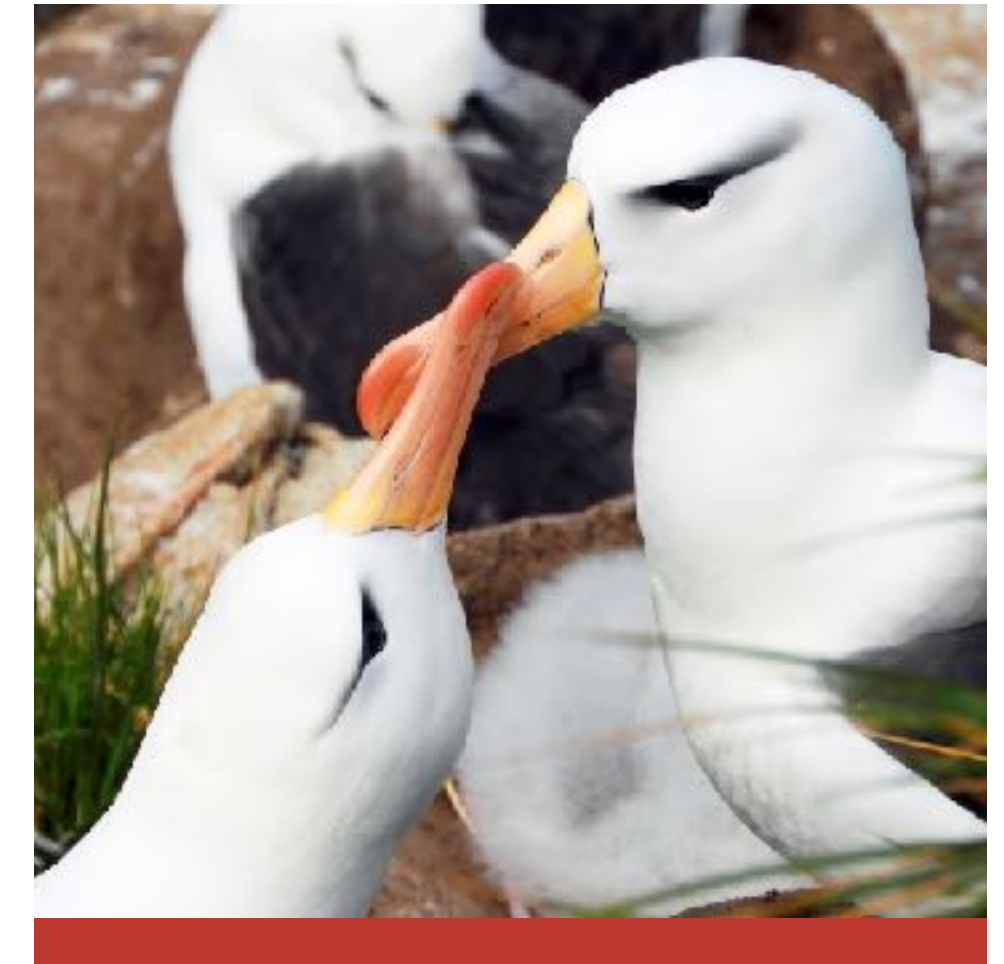
Passage  
migrant



Northern fulmar

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Resident and  
migrant breeder,  
passage migrant



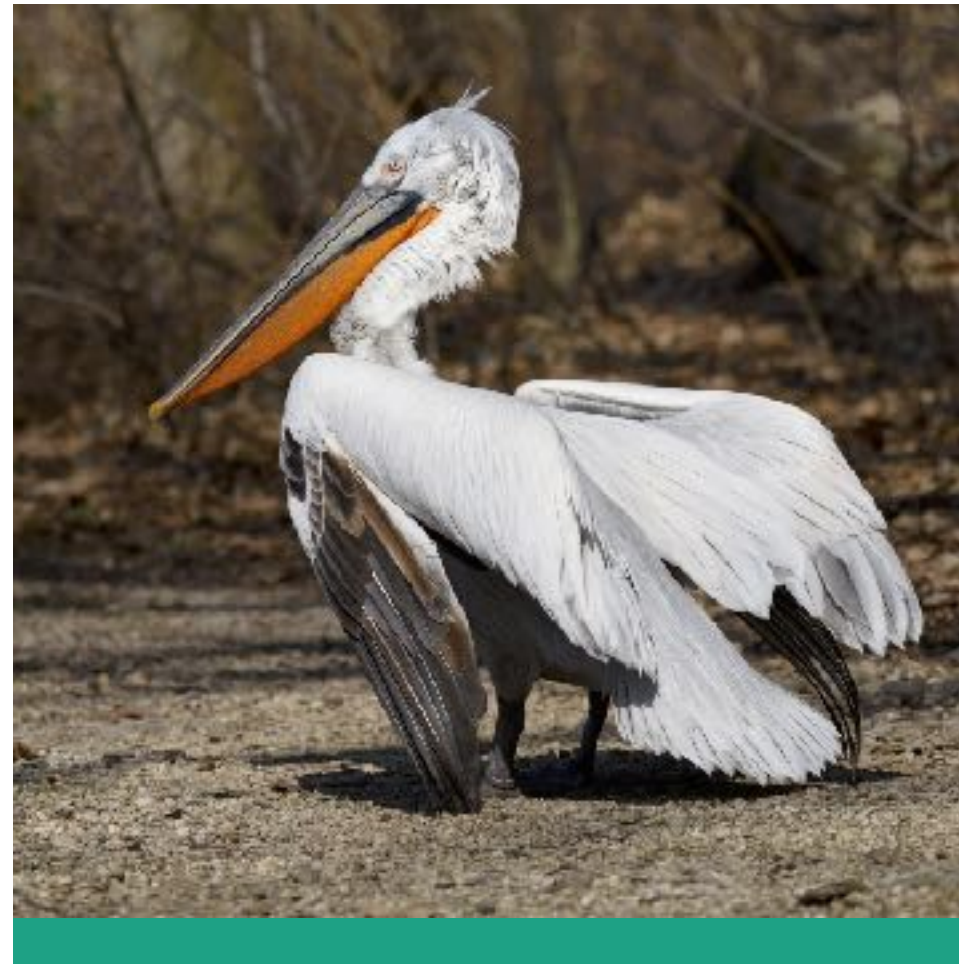
Black-browed albatross

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Rare vagrant

# Pelecaniformes

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**Dalmatian pelican**

Very rare  
migrant



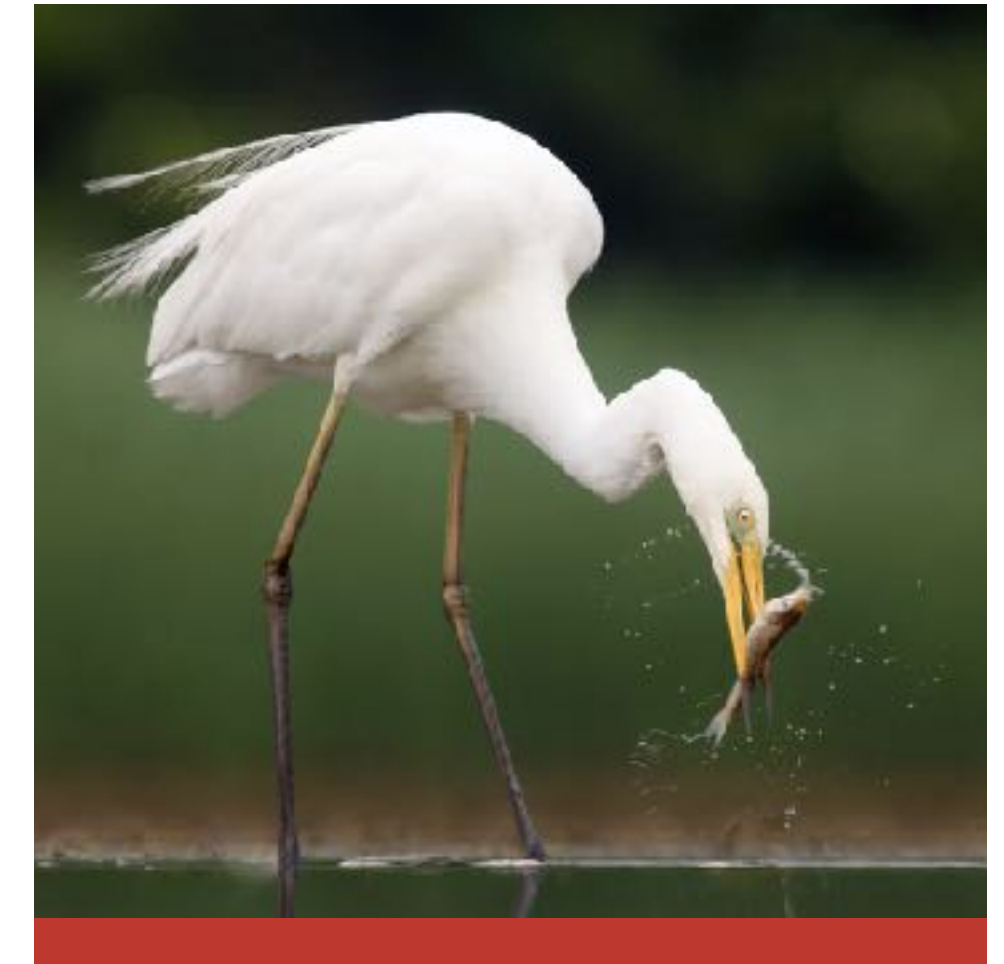
**Great bittern**

Resident breeding  
species and  
winter migrant



**Cattle egret**

Scarce but  
increasing resident,  
recently bred



**Great egret**

Resident breeding  
species, first bred 2012

# Accipitriformes

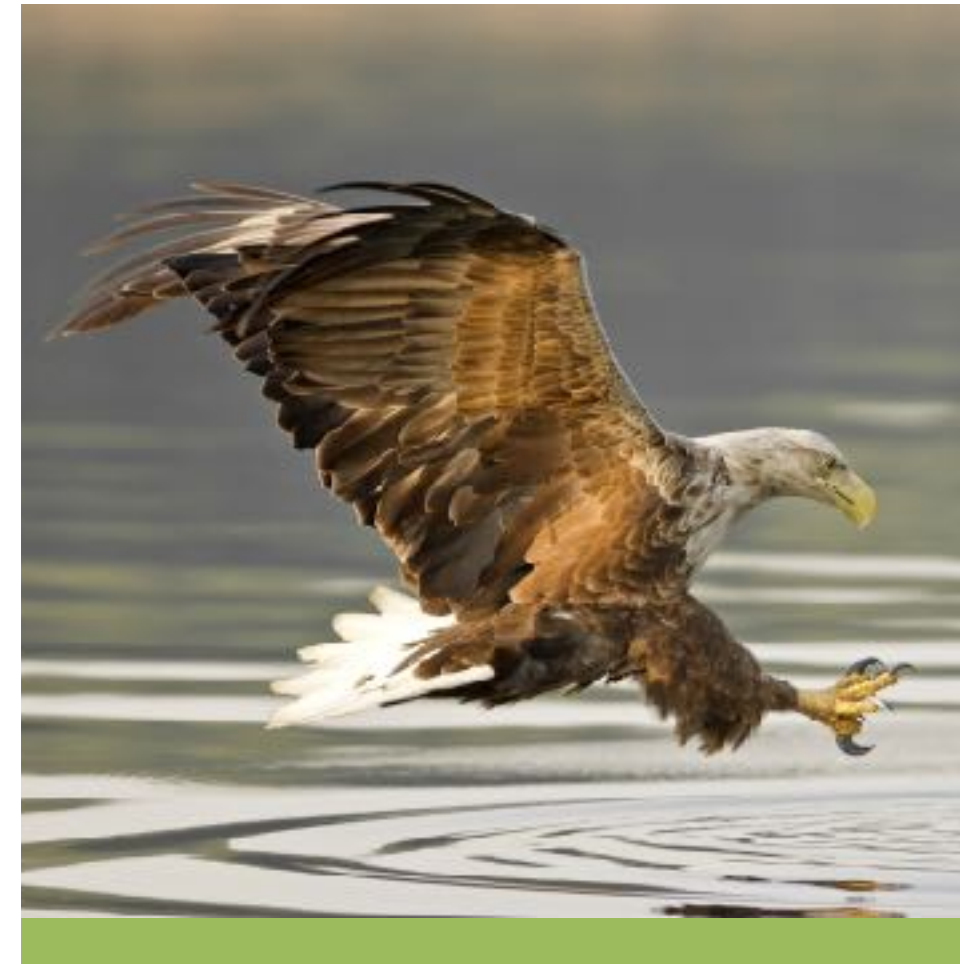
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**Red kite**

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Resident breeder  
and widespread  
introductions



**White-tailed eagle**

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Resident breeder  
and widespread  
introductions



**Golden eagle**

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Resident  
breeding  
species



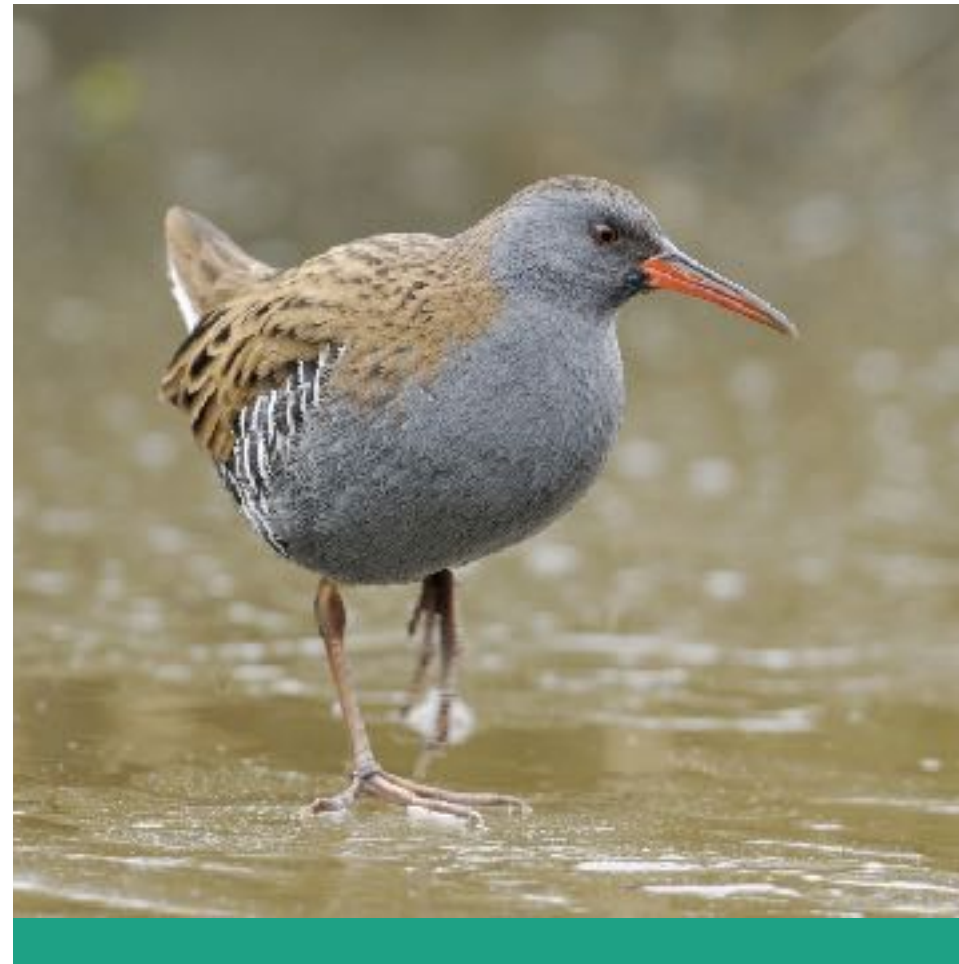
**Osprey**

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Breeding  
summer visitor

# Gruiformes

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**Water rail**

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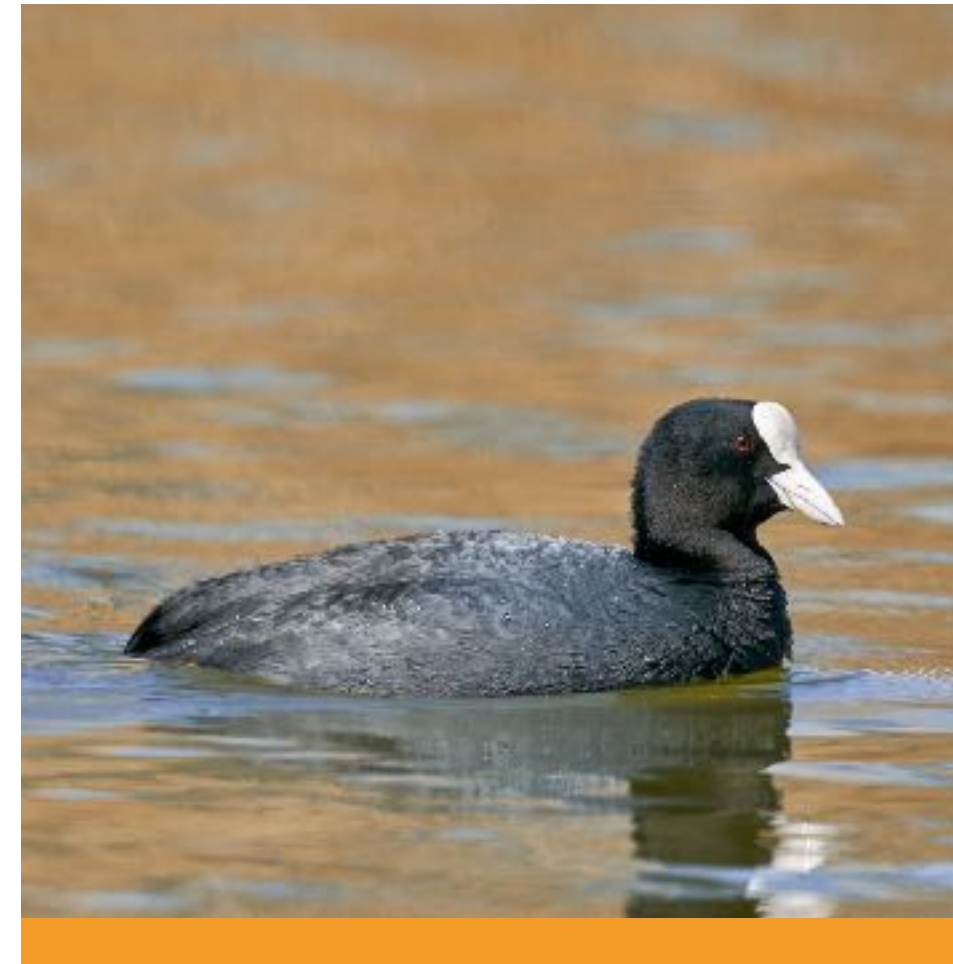
Resident  
breeding  
species



**Common moorhen**

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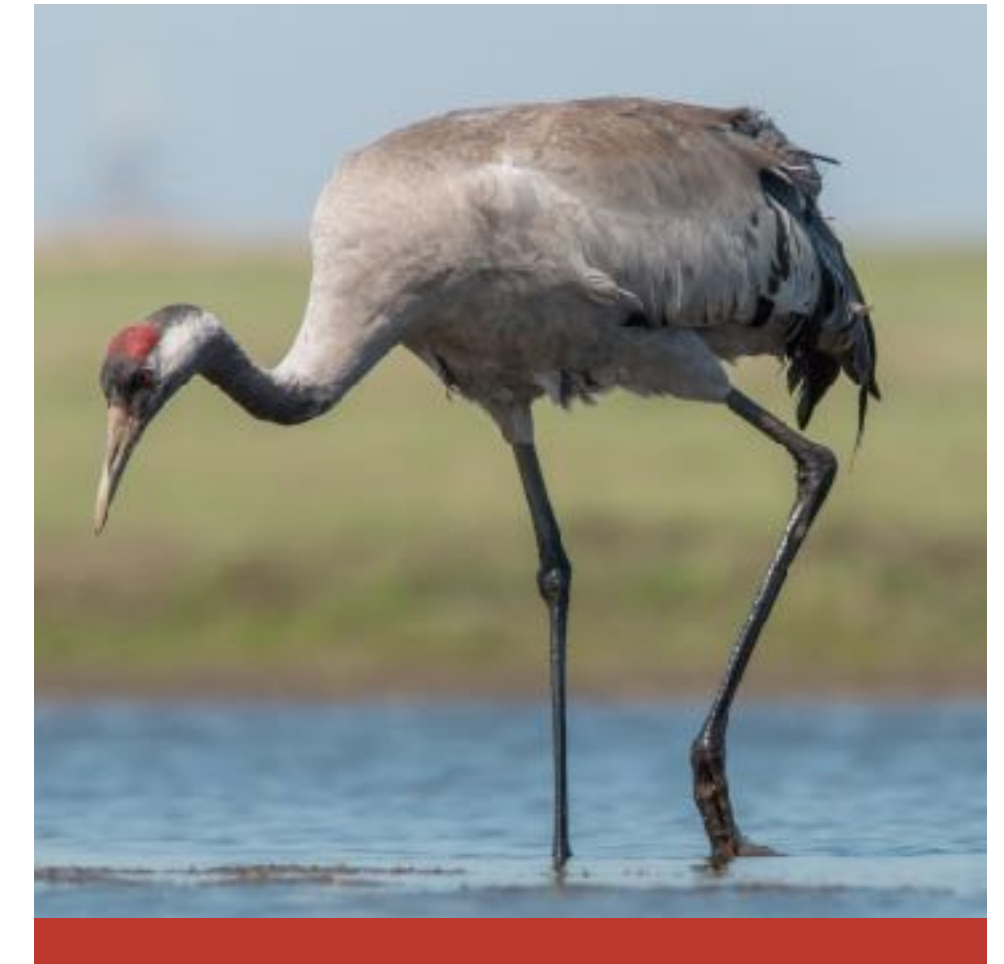
Resident  
breeding  
species



**Eurasian coot**

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Resident  
breeding  
species



**Common crane**

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Resident breeding  
species and  
passage migrant



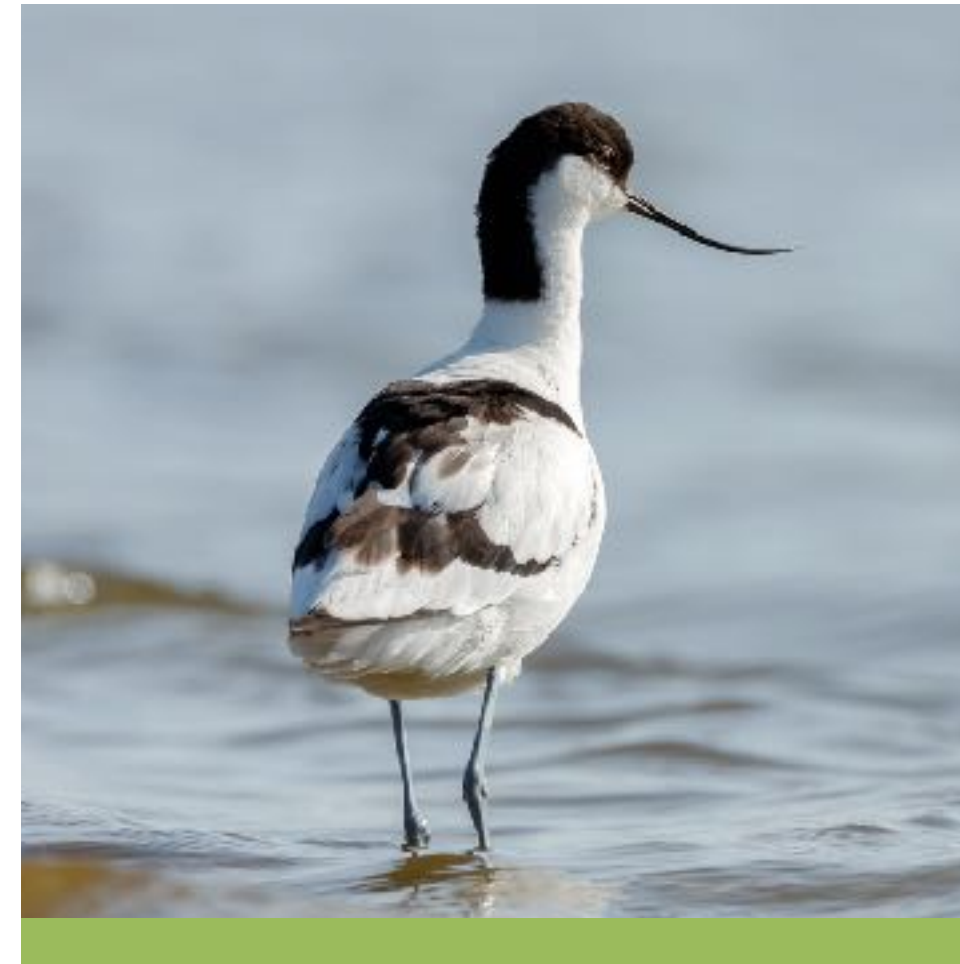
# Charadriiformes

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Eurasian oystercatcher

Resident  
breeding  
species



Pied avocet

Resident  
breeding  
species



Ringed plover

Resident  
breeding species  
and summer visitor

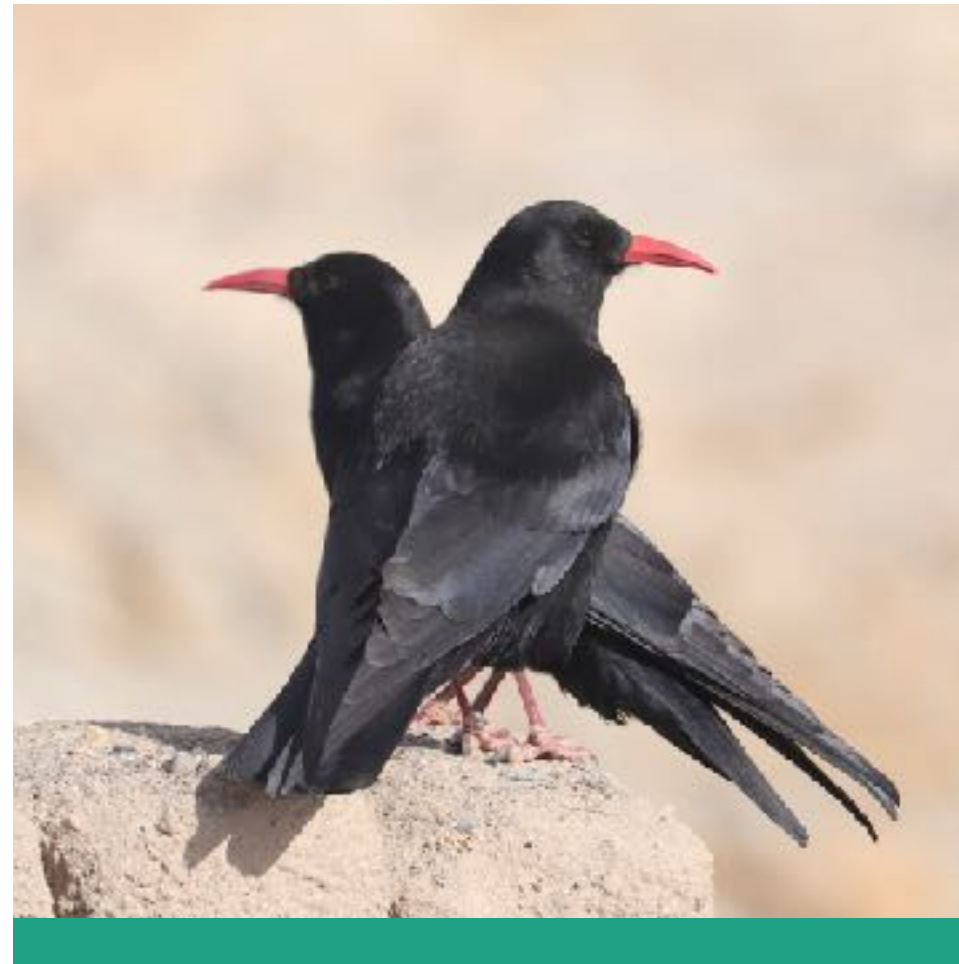


Northern Lapwing

Resident  
breeding  
species

# Passeriformes

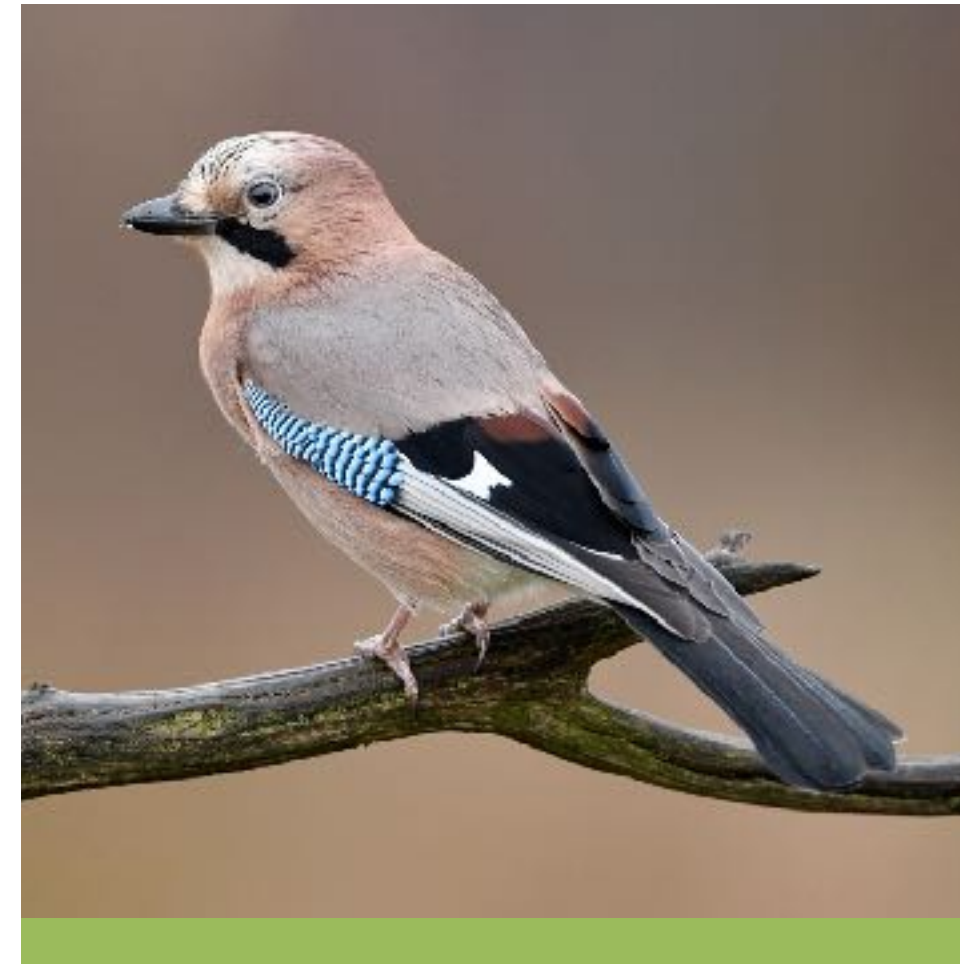
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**Red-billed chough**

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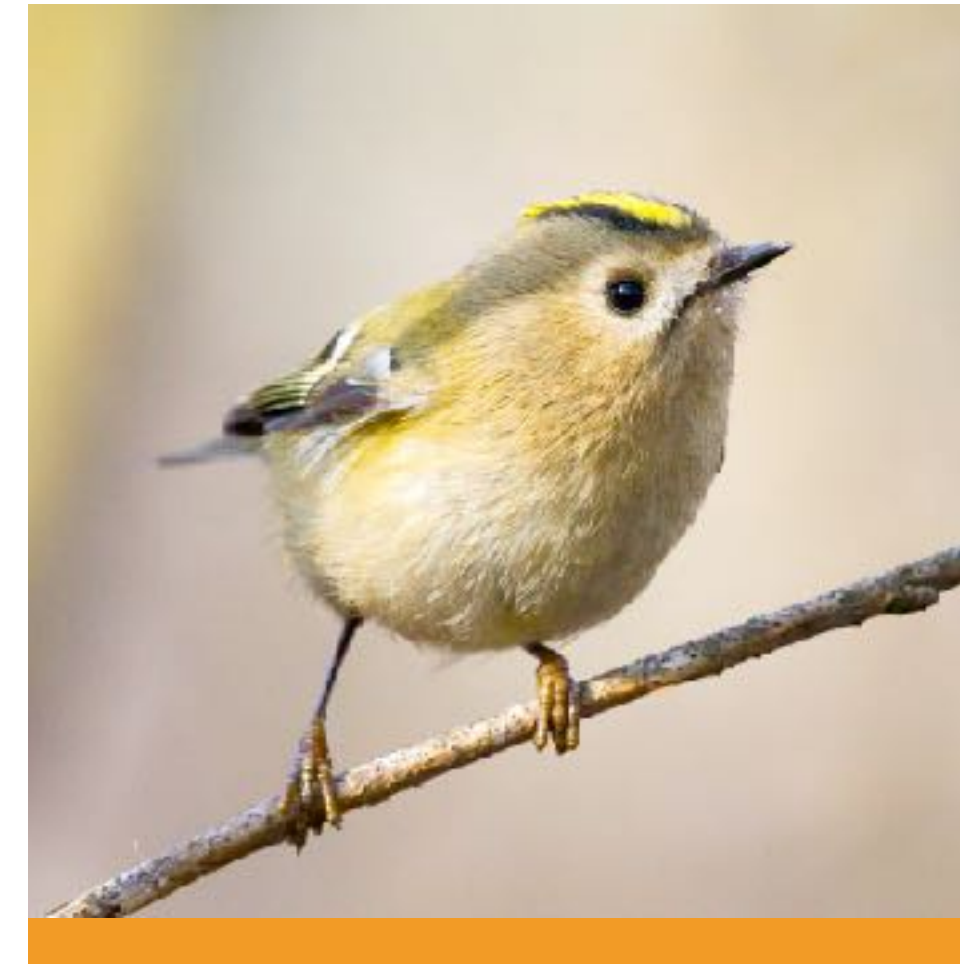
Resident  
breeding  
species



**Eurasian jay**

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Winter  
visitor



**Goldcrest**

---

Resident  
breeding  
species



**Eurasian skylark**

---

Resident  
breeding  
species

# Passeriformes

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Eurasian blue tit

---

Resident  
breeding  
species



Great grey shrike

---

Winter  
visitor



Eurasian magpie

---

Resident  
breeding  
species



Common raven

---

Resident  
breeding  
species

# Falconiformes

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**Common kestrel**

---

Resident  
breeding  
species



**Merlin**

---

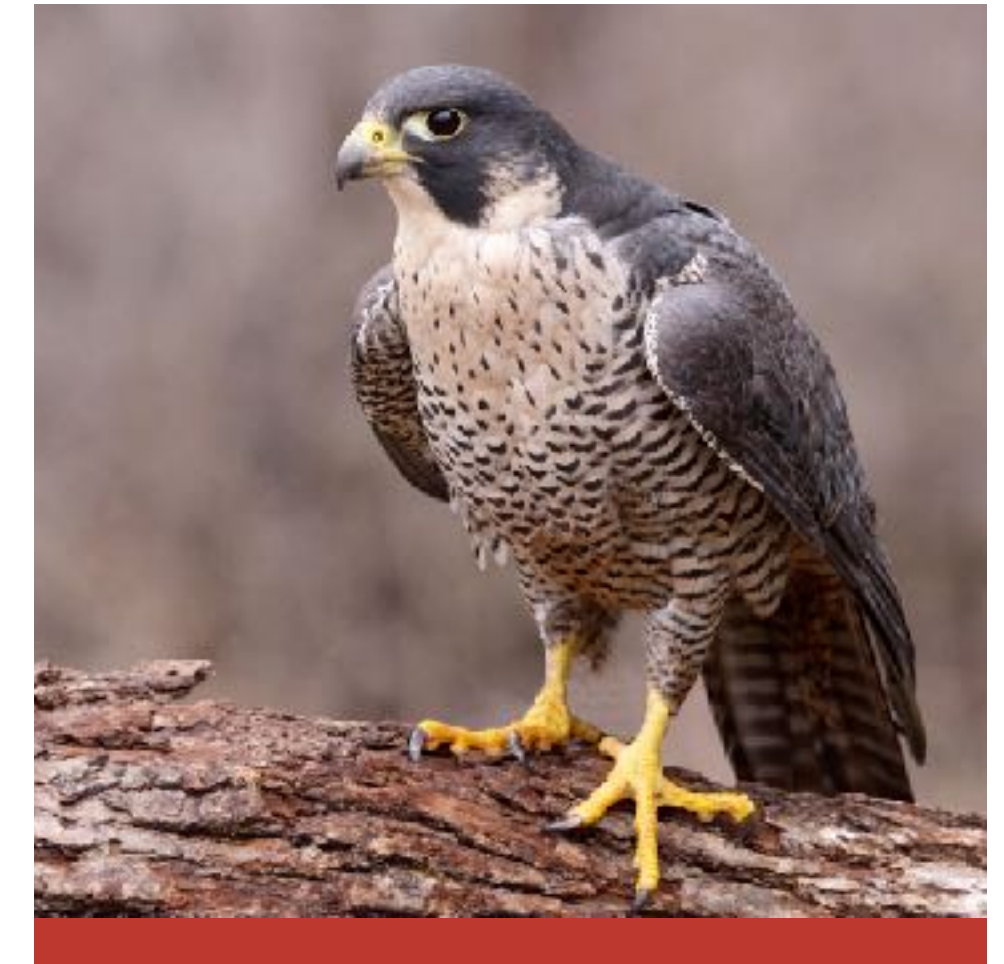
Resident  
breeding  
species



**Eurasian Hobby**

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Breeding  
summer  
visitor



**Peregrine falcon**

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Resident  
breeding  
species

# Strigiformes

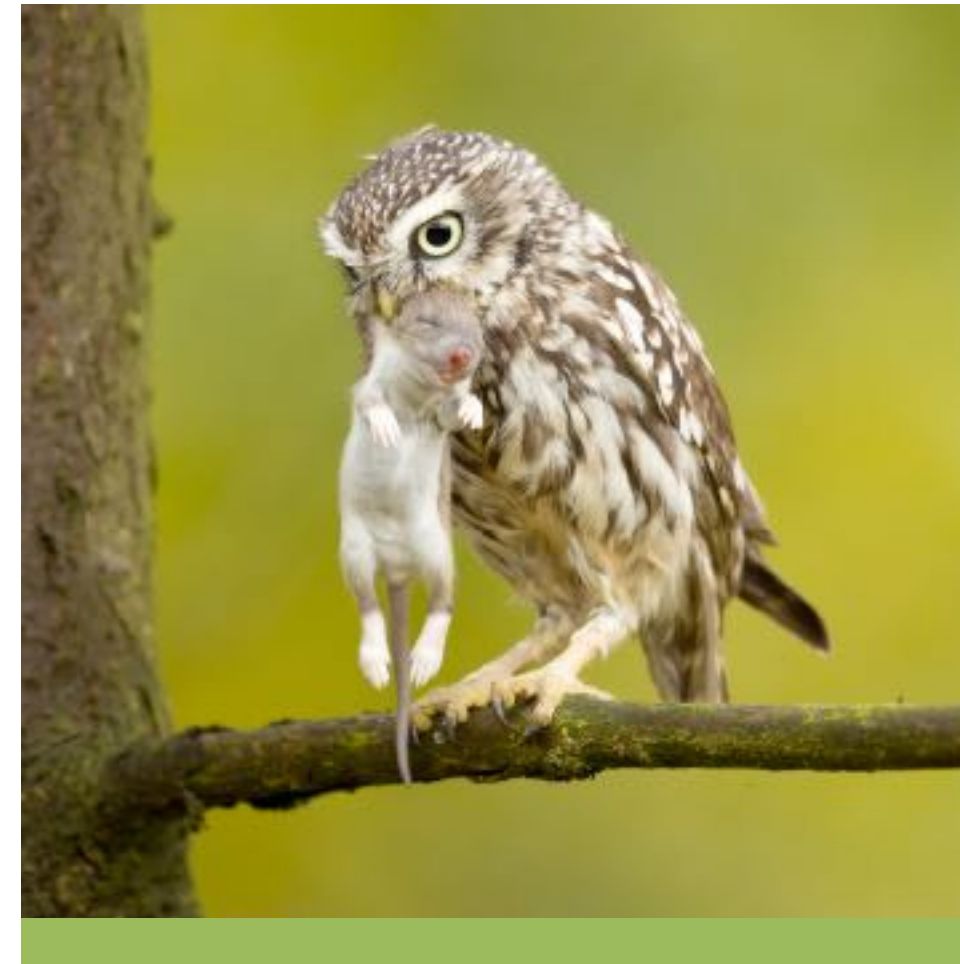
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**Barn owl**

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Resident  
breeding  
species



**Little owl**

---

Resident  
introduced  
population



**Tawny owl**

---

Resident  
breeding  
species



**Short-eared owl**

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Resident  
breeding species  
or winter visitor

# Columbiformes

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Mourning dove

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Vagrant



Collared dove

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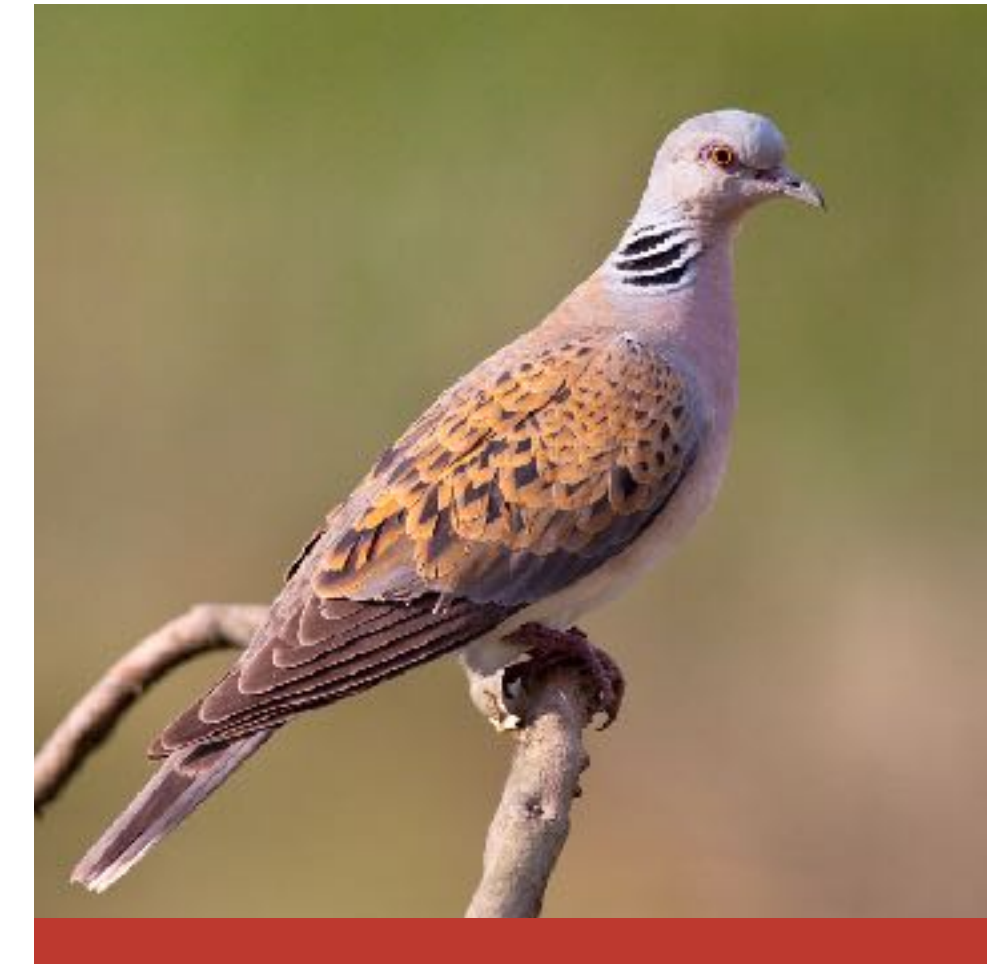
Resident  
breeding  
species



Rock pigeon or feral pigeon

---

Resident



Turtle dove

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Summer visitor



## Requirement

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**Make a list of five species of wild birds that you personally have positively identified by sound out of doors.**



Who We Are?

# Mallard

Listen to the sound  
and memorise it.





Who We Are?

# Merlin

Listen to the sound  
and memorise it.



Who We Are?

# Barn Owl

Listen to the sound  
and memorise it.



Who We Are?

# Common Raven

Listen to the sound  
and memorise it.



Who We Are?

# Collared Dove

Listen to the sound  
and memorise it.

# Who Am I?

---

1

- A. Mallard
- B. Merlin
- C. Barn Owl
- D. Common Raven
- E. Collared Dove

# Who Am I?

---

2

- A. Mallard
- B. Merlin
- C. Barn Owl
- D. Common Raven
- E. Collared Dove

# Who Am I?

---

3

- A. Mallard
- B. Merlin
- C. Barn Owl
- D. Common Raven
- E. Collared Dove

# Who Am I?

---

4

- A. Mallard
- B. Merlin
- C. Barn Owl
- D. Common Raven
- E. Collared Dove



# Who Am I?

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5

- A. Mallard
- B. Merlin
- C. Barn Owl
- D. Common Raven
- E. Collared Dove



## Requirement

**Do the following:**

**Find a bird's nest, identify the species of the bird that built it, describe the nest in detail, observe the nest for five days, and report what happened at the nest on each of the days.**

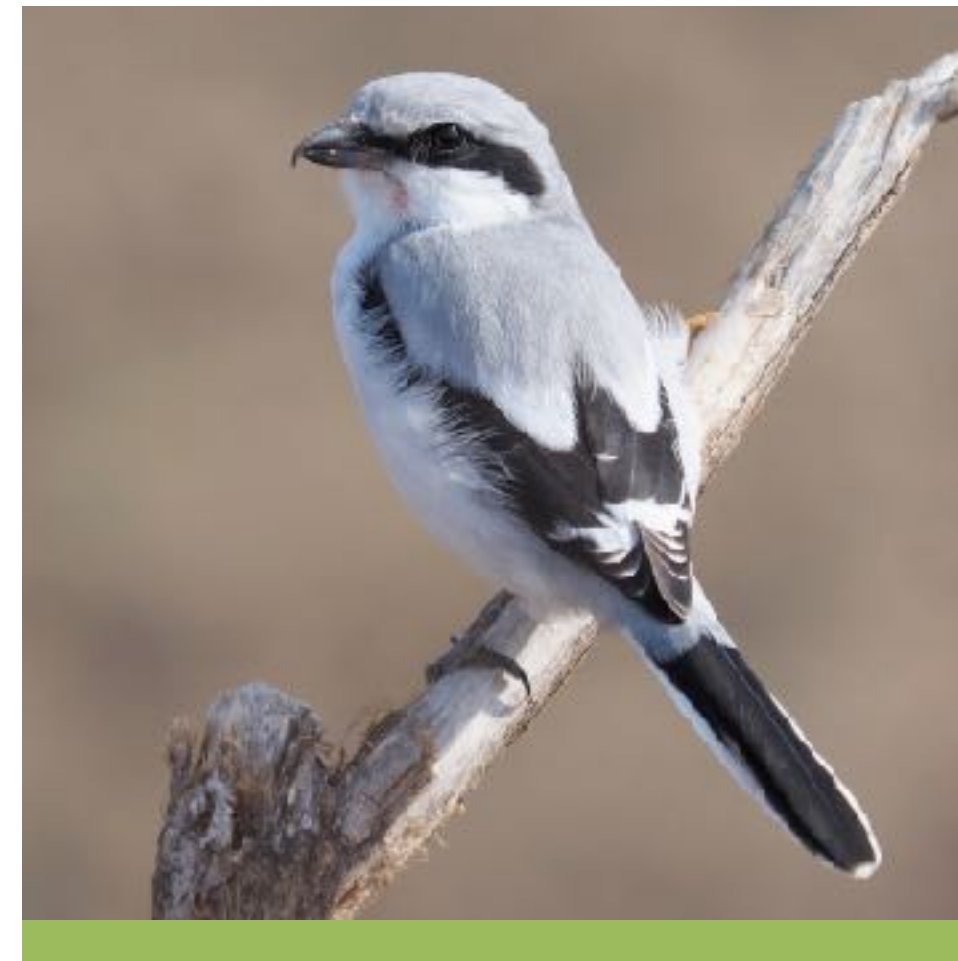


# Birds Nests Types

- 1 Cup nests
- 2 Scrape nests
- 3 Burrow nests
- 4 Cavity nests
- 5 Platform nests
- 6 Pendant nests
- 7 Sphere nests
- 8 Mound nests

# Bird Nest Designs

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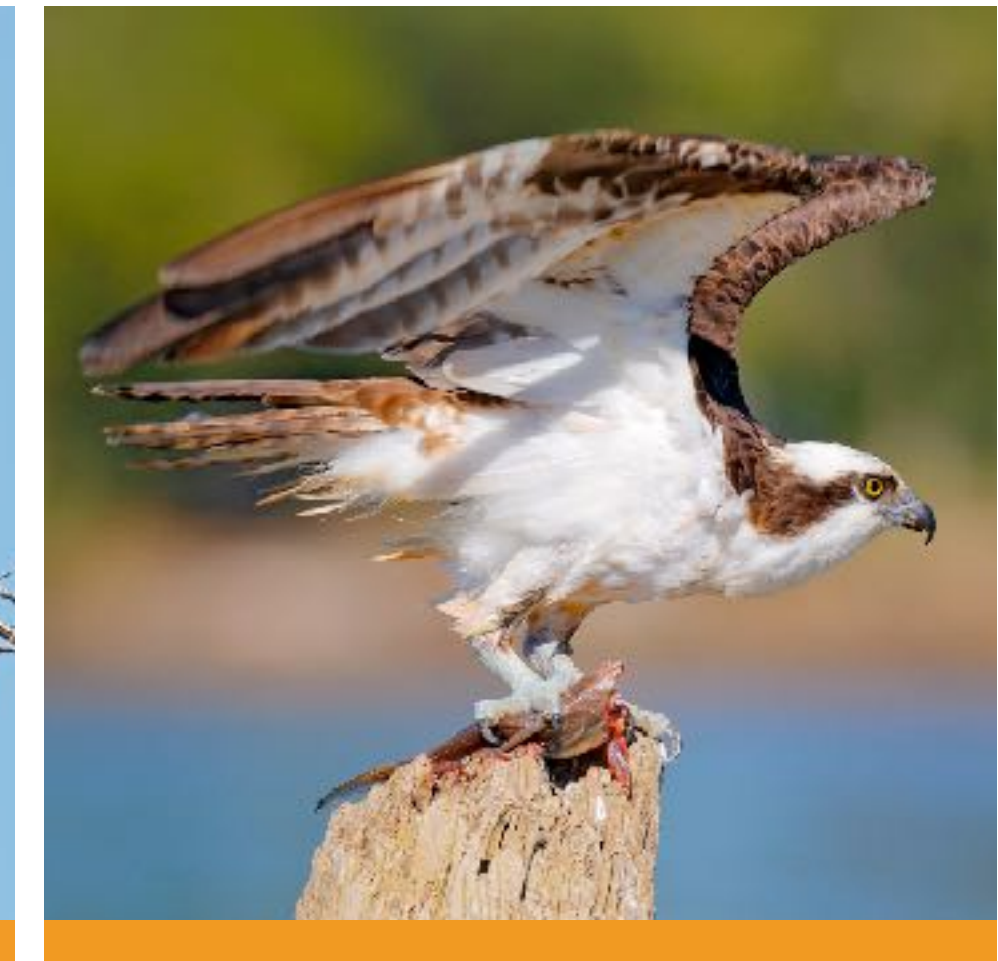
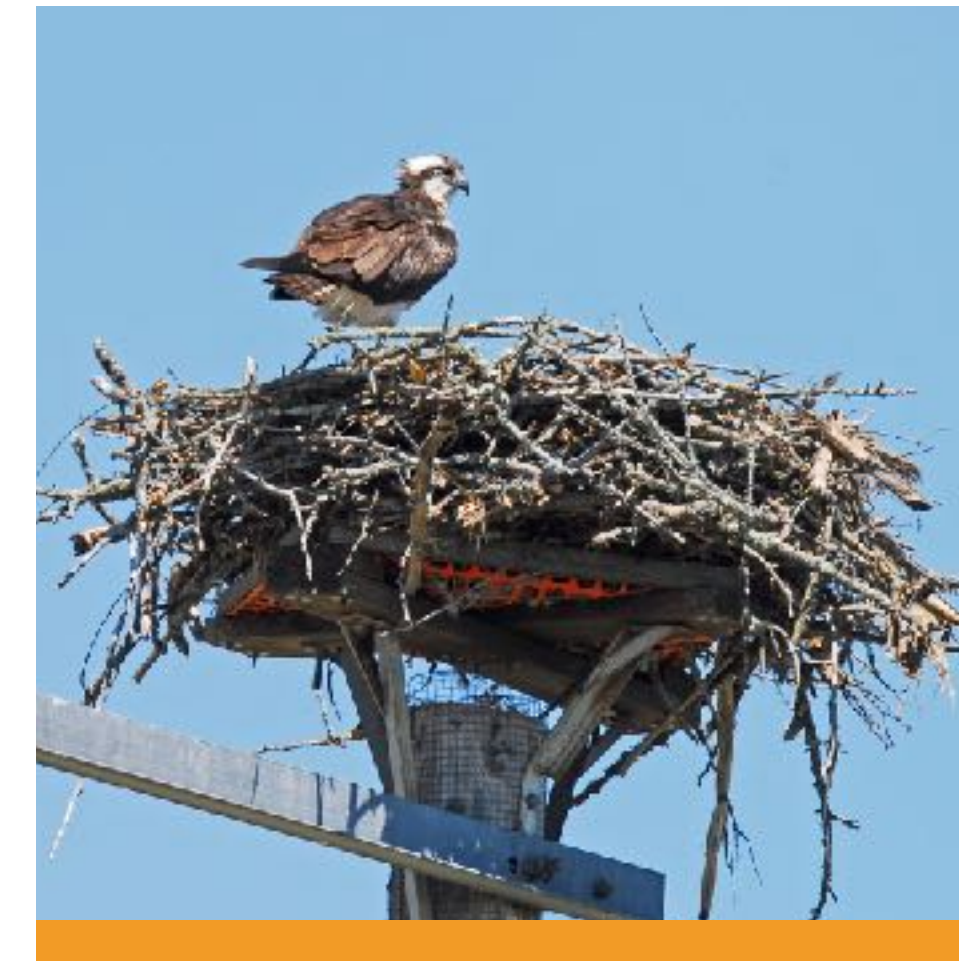


*Type of nest: Cup*

Bird name: **Great grey shrike nest**

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A simple cup-shaped nest is the most familiar, common nest type. The overall size, dimensions, and depth of the cup may differ, and some birds build distinct inner and outer cup layers.



*Type of nest: Platform*

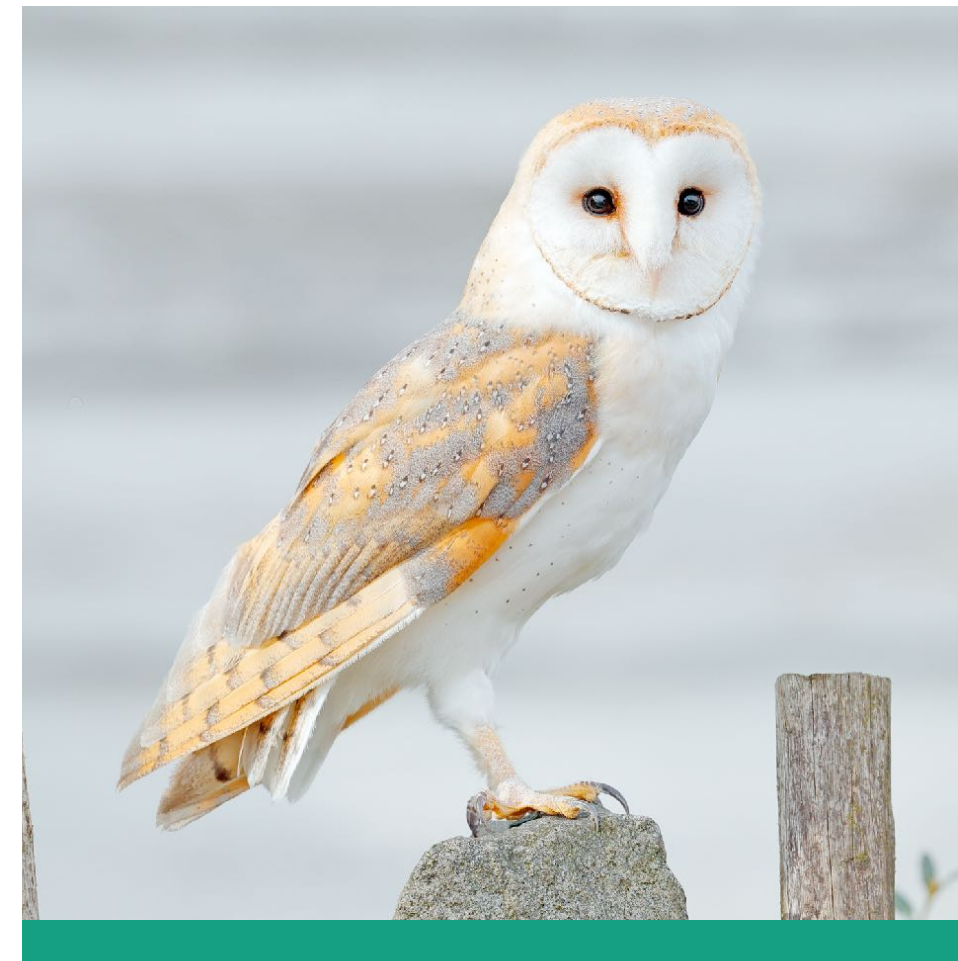
Bird name: **Osprey**

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A platform nest is a relatively large, bulky structure often built of larger twigs or sticks. The surface is typically flat or may have a very shallow depression, but not enough to be considered a deliberate cup.

# Bird Nest Designs

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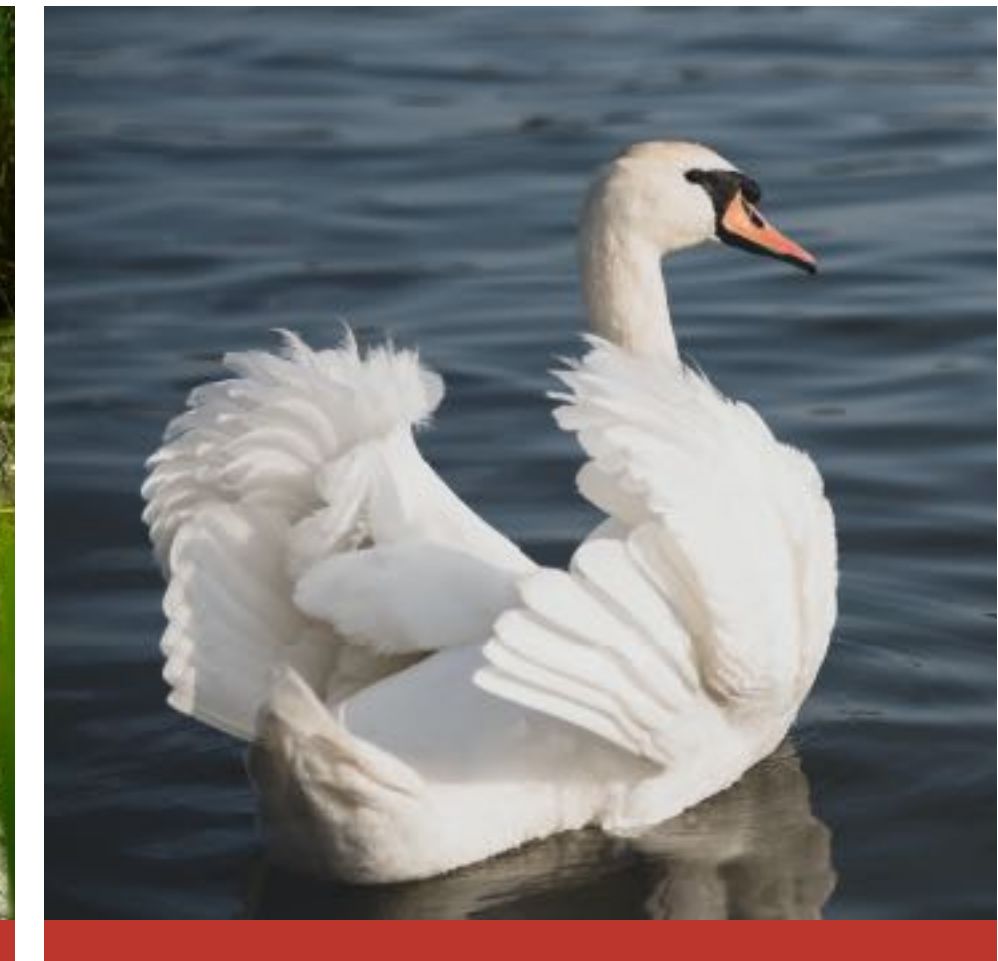


*Type of nest: Cavity*

Bird name: **Barn Owl**

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Cavity-nesting birds are common and will either excavate their nesting cavities or use natural cavities in trees, snags, or cacti.



*Type of nest: Mound*

Bird name: **Mute swan**

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A mound nest is built on the ground but is a relatively large accumulation of nesting material in a tall cone or bell-shaped structure.

# Bird Nest Designs

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## Scrape

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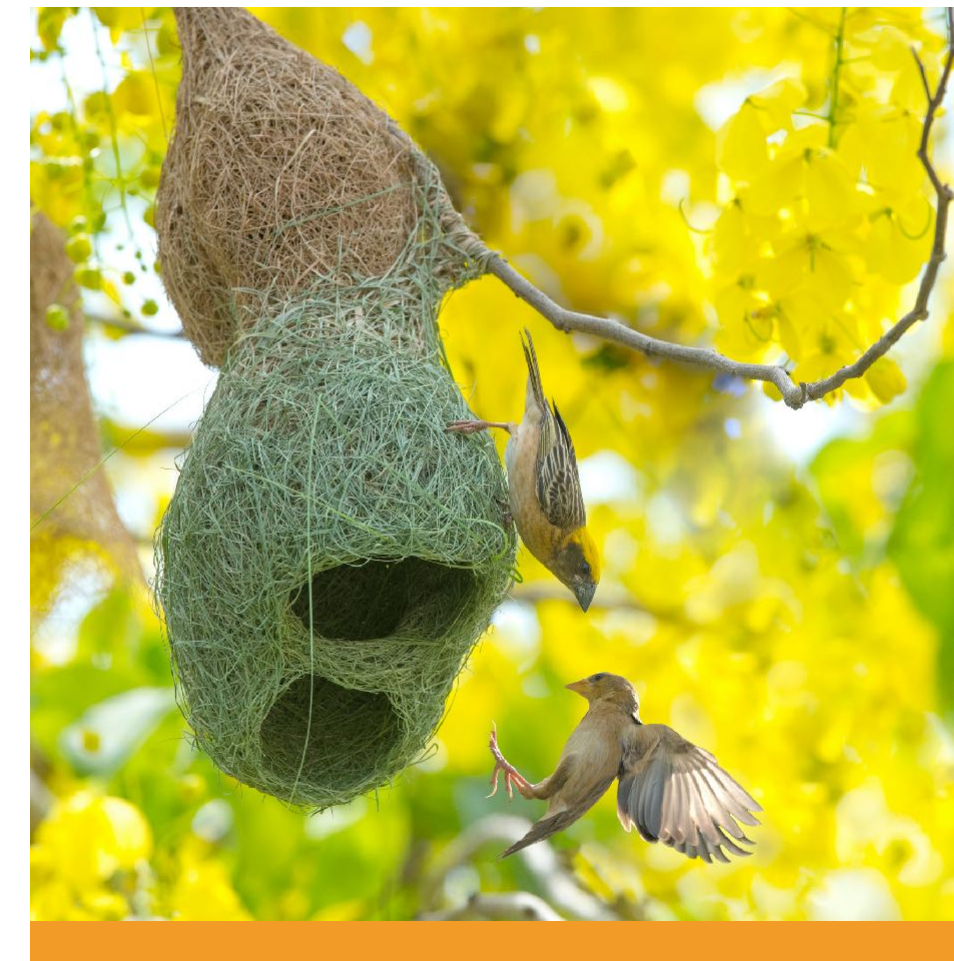
A basic scrape is a shallow depression on the ground without much nesting material, though it may have a light lining of down, grass, pebbles, weeds, or other debris.



## Burrow

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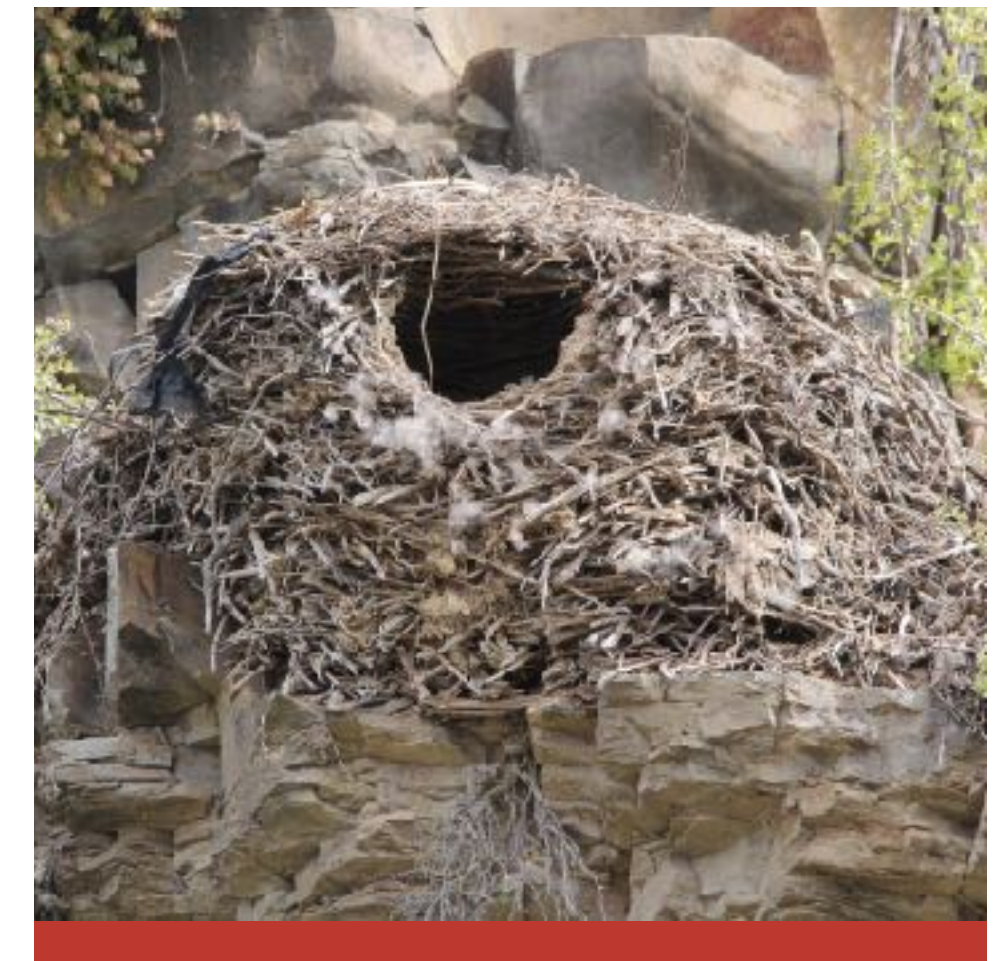
A nesting burrow is dug into the ground and may be a shallow cave or could have a long tunnel leading to a nesting chamber.



## Pendant

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Pendant nests are elaborately woven sacks that dangle from branches, giving birds in the nest great protection from predators. Some are not suspended very far from the branches while others may hang several feet below their attachment point.



## Sphere or Dome

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A sphere or dome nest is almost completely enclosed and provides great protection and camouflage.

# Give your answer

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Identify the name  
of the bird that  
built this nest

Describe the  
nest in detail



# Birds

Pathfinder Honor  
by Jonatan Tejel



Common kingfisher