

# Ibises and Spoonbills



**I**BISES AND SPOONBILLS ARE LONG-LEGGED wading birds of ancient lineage and a long historical pedigree; the Sacred ibis was venerated in ancient Egypt, where it was identified with the scribe-god Thoth. The two subfamilies are fundamentally similar, but differ in their distinctive bills. Ibis bills are relatively long, thin, and down-curved; spoonbills' are long, broad, and flattened.

Both ibises and spoonbills feed mostly by feel rather than by sight (see Feeding by Touch). Ibises use their long bill for probing in shallow water, soft mud, holes, under plants, around rocks, in grass and pastures, and even on hard ground. Aquatic ibises tend to have longer, thinner bills than do terrestrial species. Spoonbills feed typically by swinging their open bill from side to side in the water. The wide bill enhances the birds' ability to encounter fish.

## Long Legs and Long Bills

### FORM AND FUNCTION

The ibises include an array of species that are similar in being medium-sized, long-legged birds with

**Above** A Royal spoonbill on its nest. This species nests in colonies ranging from just a few pairs to large numbers, sometimes alongside other waterbirds such as ibises or egrets.

cases are species limits. Several species occur in the New World. In North America, the White ibis was historically the most abundant wading bird where it occurred. A very similar South American species, the Scarlet ibis, is a bright-red variant of the American white; significant interbreeding in northern Venezuela suggests strongly that they are conspecific. The three *Plegadis* species also occur in the New World. Of these, the Glossy ibis is the most cosmopolitan of ibises, and is probably a relatively recent arrival in North America, while the Puna ibis is a species of the high Andes. Several other species, such as the Buff-necked ibis, are South American endemics.

More species occur in the Old World. The *Bostrychia* ibises are found in Africa and its islands. The Sacred ibis group of several related species occurs through Africa, Asia, and Australia. The *Geronticus* species (the Bald and Waldrapp ibises) are cliff-nesting birds of semi-arid mountains.

Several Asian ibises are relictual. Although the

**Above** A White spoonbill pair courting, raised crests. Their relationship is temporary last for the duration of the breeding season. In this bond, paired males sometimes copulate other females, even those that are not breed

population in Southeast Asia (sometime a separate species, the White-shouldered ibis *davisoni*) is, or is nearly, extinct. In the status of the Giant ibis is unclear, and may be functionally extinct. The Oriental cremerly of Japan, China, and Korea, occur only a very limited range.

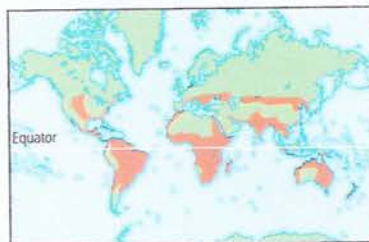
The spoonbills are long-legged, long-birds with a distinctively flattened bill. In the New World, the Roseate, is pink, white. A group of three species related to the Eurasian spoonbill is found patchily distributed in Europe, Africa, Asia, and Australia. The spoonbill itself is the most northern member of the group, continuing to breed in small numbers

**IBISES AND SPOONBILLS**

Order: Ciconiiformes

Family: Threskiornithidae

33 species in 14 genera

**DISTRIBUTION** Worldwide, in temperate and tropical areas.**Habitat** Usually near water, but some are terrestrial.**Size** Length 46–110cm (17–40in); weight 420g–2.1kg (15–73oz). Males are larger than females.

**IBISES** Subfamily Threskiornithinae  
Worldwide, in temperate and tropical zones; most diverse in the tropics. **Size:** Length 46–110cm (17–43in); weight 420g–1.53kg (15–53oz). Males are larger than females. **Plumage:** Diverse, including white, black, brown, gray, buff, and scarlet; darker birds often have glossy bronze or greenish sheens, with no notable sexual dimorphism. **Voice:** Low grunting noises when feeding and noisy during interactions within colony. Distinctive flight and display calls: the American white ibis honks, the Wattled ibis has a deep, raucous call. **Nest:** Ranges from thin platform to substantial structure of sticks, usually lined with finer materials. **Eggs:** 2–3, up to 7; blue to dull white, often with dark spotting. Incubation 20–29 days; nestling period 35–55 days. **Diet:** Most ibises eat an array of invertebrates. Aquatic insect larvae, crayfish, crabs are common in aquatic diets; grasshoppers, worms, beetles, in terrestrial diets. Fish are consumed when available. **Conservation status:** The Giant, Waldrapp, White-shouldered, and Dwarf olive ibises are Critically Endangered. The Oriental crest-ed ibis is Endangered and the Bald ibis Vulnerable.

**SPOONBILLS** Subfamily Plataleinae  
Worldwide, primarily in tropics, but also in temperate zones. **Size:** Length 60–100cm (23–38in); weight 1.3–2.1kg (45–73oz). Males are larger than females. **Plumage:** White or pink; juveniles of white species are darker, those of Roseate spoonbills lighter, than adults. **Voice:** Spoonbills are relatively quiet birds, with soft flight calls and subdued grunting, hissing, and soft bill-clapping noises at nest. **Nest:** Substantial structure of sticks. **Eggs:** Usually 3–4, up to 7; dull white to buff, sometimes with darker spots. Incubation 20–32 days; nestling period 45–50 days. **Diet:** Small fish, shrimps and other crustaceans, aquatic insects. **Conservation status:** The Black-faced spoonbill is Endangered.

See Ibis and Spoonbill Subfamilies ▷

◀ **Left** With its bald, red, vulture-like head, the Waldrapp ibis is a highly distinctive member of the ibis and spoonbill family. With only 65 breeding pairs left in the wild (in Morocco), there are plans to reintroduce the species to central Europe, Spain and Italy, from where it has been absent since the 17th century.

endangered spoonbill, the Black-faced of East Asia. The African spoonbill is found through much of that continent, and the Yellow-billed spoonbill occurs in Australia.

Plumage and skin color are important characteristics among ibises and spoonbills. Most are basically white, black, or brown. Some species, such as the Sacred ibises and the Yellow-billed spoonbill, develop breeding plumes along the back, and some also on their breast. The otherwise white Oriental crested ibis takes on an adventurous gray feather color during breeding. Some ibises and spoonbills are crested, others have featherless heads, necks, sides, or underwings. Sacred ibises lack feathers over the entire head and neck, and the exposed skin usually shows diagnostic skin colors; for example, the face and an expanded throat pouch of the American white ibis turn bright red during courtship, and the head of the Indian black ibis is covered with bright red bumps. Juveniles are generally duller than adults, markedly so in the American white ibis where the juvenile has a brown back, and are also more feathered. Part to all of the face of spoonbills (and the entire head of the Roseate spoonbill) is featherless and distinctively colored black, yellow, or green.

Habitat use is diverse across the family, but ibises and spoonbills most typically occur in open, damp habitats. Spoonbills and aquatic ibises prefer open marshes, ponds, and shallow coastal situations. Terrestrial ibises, such as the Bald and Waldrapp, favor open grasslands, pastures, and semi-arid environments. A few, such as the Olive, Spot-breasted, and Madagascar crested ibises, are forest birds. Ibises such as the Sacred, Buff-necked, and Bald, are attracted to fires, the latter species nesting during the fire season. Most species are typical of lowland wetlands, forests, and coastal habitats. Some species and races, such as the Puna ibis and populations of the Buff-necked and Olive, are found at high altitudes in mountainous regions.

### Feeding in Flocks

#### DIET AND FEEDING

Using their tactile foraging techniques, ibises catch slow-moving or bottom-dwelling prey, while spoonbills catch fish and crustaceans. For example, the American white ibis primarily eats crayfish and fiddler crabs, whereas the Roseate spoonbill eats small fish, shrimps, snails and aquatic insects. In wetlands, both ibises and spoonbills capture a variety of insects, frogs, crustaceans, and fish. Terrestrial species, on the other hand, catch insects, worms, and other invertebrates. Ibises scavenge; the Sacred ibis often feeds on carrion and on broken waterbird and crocodile eggs.

Research has found that the Glossy ibis eats

considerable amounts of plant material in Cuba, particularly rice. This is a remarkable discovery in what had been considered a predatory family, in which modest consumption of plant material was thought to be limited to terrestrial species.

Most ibises and spoonbills are social. They form flocks that fly from place to place and feed in small to very large aggregations. Many species fly in compact flocks or in long, undulating lines, alternating flapping and gliding flight. Birds returning to roost together can number in the thousands. Most forage socially, and even the more solitary species, such as the Green and Black ibises, tend to forage in pairs and small groups. Social species form aggregations at suitable foraging sites, often with other wading birds, which together can number in the thousands. In such situations, they tolerate other birds in close proximity and often move in unison, probably benefiting from the disturbance caused by their fellow diners. Other wading birds follow ibises, feeding in their wake.

Ibises tend to eat small prey that are swallowed quickly, avoiding loss to piratical attacks. Ibises are diurnal, although spoonbills more often feed crepuscularly and at night. Along the coast, the feeding schedule is determined by tides. Communal

roosts, which are located near feeding groves and may be shared with herons, storks, and cormorants, have been known in some species number in the tens of thousands of birds. Roost sites may be temporary, lasting only as nearby food supplies; alternatively, they persist for years. More solitary species roost or with just a few other birds.

### Stretching and Bowing

#### BREEDING BIOLOGY

Most species nest colonially, but some, such as the forest-nesting Olive and Spot-breasted, nest alone. The Hadada, even though high when not breeding, nests solitarily. Isolated places, such as islands or trees surrounded by open ground, are often chosen for nesting. Ground predators are less likely to gain access





Most species place their nests in bushes or trees, but considerable variability occurs. The American White ibis nests in trees, on bushes, in reeds, or on the ground, while Buff-necked ibises nest in pairs in palm trees, in marshes, on mountain cliffs, or on the ground. Several terrestrial species, including the Bald, Waldrapp, and Wattled ibises, nest on cliffs. Hadadas sometimes nest on telegraph poles. Black ibises take over old raptor nests.

In pair formation, display accessories, such as the red throat pouch of the American white ibis, the head color of the Roseate spoonbill, and the black plumes of the Sacred ibis, are at their annual peak. In the few species studied well, the male

**▲ Above** A Puna ibis suns itself after bathing, showing off its glossy green wing feathers. Found in Peru, Bolivia, and Chile, this species frequents large marshes and damp pasturelands where it forages on muddy flats, along creeks, and in short grass.

**◀ Right** Sacred ibises in the Ngorongoro crater, Tanzania, East Africa. Occurring in groups ranging from a few birds to flocks of hundreds, the Sacred ibis was worshiped by the ancient Egyptians as the god Thoth. Today, farmers have good reason to be grateful to it, since it helps control crop pest numbers.

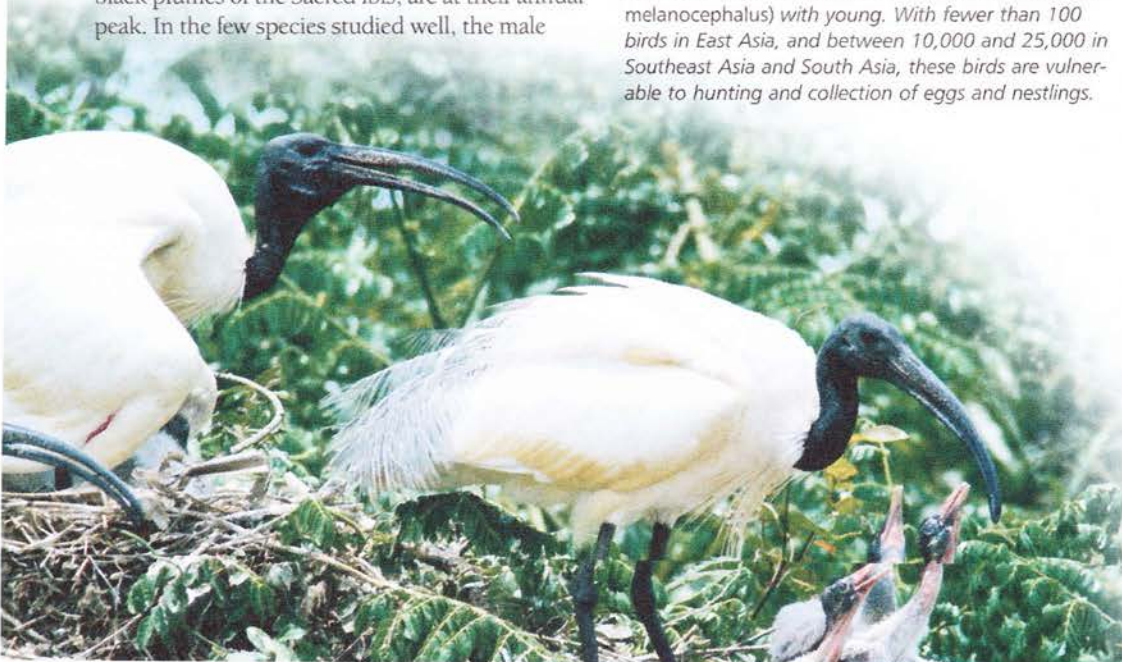
**▼ Below** A pair of Black-headed ibises (*Threskiornis melanocephalus*) with young. With fewer than 100 birds in East Asia, and between 10,000 and 25,000 in Southeast Asia and South Asia, these birds are vulnerable to hunting and collection of eggs and nestlings.



chooses a potential nest-site from which rise, using stretching and bowing displays and vocalizations to advertise themselves. Female to land near the male, assuming a submissive posture, and he at first repulses them. When she accepts a female, the pair engages in mutual preening, and preening. Solitary species use loud vocalizations to advertise themselves and maintain contact.

The male usually gathers nest material and presents it to the female, who builds the nest. The Hadada, stick-passing and mutual preening are particularly ritualized. Both sexes defend the nest site from takeover and stick pilfering. Copulation takes place at the nest, and in colonial species promiscuous copulations with neighbors are frequent. In most species, eggs are laid at 1–3-day intervals, and are incubated by both sexes. Both sexes incubate the eggs, and subsequently feed the young regurgitated food, place them in a shallow depression, and then pull down the parent's gullet.

The young develop rapidly, especially their legs and feet, and are soon able to leave the nest.





species, they roost in groups. Fledging depends on the availability of food, and failure at any stage is not uncommon if they die out. The nesting cycle usually lasts five to six months, with re-nesting sometimes occurring after a failure. In most species, the parents care for the chicks at fledging, but in some, like the Waldrapp ibis, they remain in family groups for some time.

Because of the dependence on food supplies, local conditions determine breeding seasons. Different species have quite different breeding schedules in various parts of Africa, coinciding with seasonal rainfall patterns. Even in a single area the breeding schedule may vary from year to year, and different species in an area nest at the same time. In the tropics, the Green ibis nests in the wet season, the African white-necked ibis nests in the dry, presumably because of different choices of prey. Tropical species, such as the Spot-breasted, appear to breed throughout much of the year.

Most species, especially solitaries, tend to be nomadic, occupying an area year-round. Those in temperate areas undertake seasonal migrations toward the tropics. In subtropical and

semi-arid regions heavily influenced by seasonal rainfall patterns, many species tend to be nomadic; the Australian white ibis is a good example, moving around from place to place following rainfall and water patterns, and nesting when and where water conditions become suitable. The juveniles of most species disperse after nesting.

Migrations of ibises have figured prominently in human cultures. Along the Euphrates, the Waldrapp ibis's return in spring was celebrated by a festival, as a fertility symbol and guide to Mecca. The Waldrapp ibis nested not only in the Middle East but also as far north as the Alps, where it was noted in 16th-century natural history writing. Similarly, the seasonal occurrence of Sacred ibises along the Nile was associated with the annual flood that was crucial to farming.

### On the Brink

#### CONSERVATION AND ENVIRONMENT

Given the importance of the Waldrapp and Sacred ibises to ancient cultures, it is particularly poignant that the two species no longer occur in the areas of their greatest historical significance. Their disappearance is due principally to hunting

and habitat destruction, the two main forces affecting ibises worldwide. In the wild, the Waldrapp ibis is now confined to a small area of North Africa. Hunting, harassment, and habitat change led to its decline in Turkey, despite intervention through captive breeding; captive Waldrapp ibises now outnumber those in the wild. The Sacred Ibis has been absent from Egypt since the first half of the 19th century. Similarly, the Oriental crested ibis, widely distributed in Japan and China until the early 20th century and in Korea until World War II, is now among the most endangered ibises, numbering only in the dozens in the wild. Loss of suitable habitat – pine forests surrounded by swampland – probably contributed to its demise.

The spread of scrubby vegetation has affected the habitat of the Bald ibis in southern Africa, and the Giant ibis, populations of the Black ibis, and the Black-faced spoonbill are all nearing extinction. Subfossils from Hawaii and Jamaica show a repeated evolution of flightlessness among ibises on islands, followed by human-induced extinctions. More recently, less distinctive island races have died out or are on the brink of extinction due to a combination of killing and habitat loss. JAK