

= Osprey =

The osprey ( *Pandion haliaetus* ) ? also called fish eagle , sea hawk , river hawk , and fish hawk ? is a diurnal , fish @-@ eating bird of prey with a cosmopolitan range . It is a large raptor , reaching more than 60 cm ( 24 in ) in length and 180 cm ( 71 in ) across the wings . It is brown on the upperparts and predominantly greyish on the head and underparts .

The osprey tolerates a wide variety of habitats , nesting in any location near a body of water providing an adequate food supply . It is found on all continents except Antarctica , although in South America it occurs only as a non @-@ breeding migrant .

As its other common names suggest , the osprey 's diet consists almost exclusively of fish . It possesses specialised physical characteristics and exhibits unique behaviour to assist in hunting and catching prey . As a result of these unique characteristics , it has been given its own taxonomic genus , *Pandion* and family , *Pandionidae* . Four subspecies are usually recognized , one of which has recently been given full species status ( see below ) . Despite its propensity to nest near water , the osprey is not classed as a sea eagle .

= = Taxonomy and systematics = =

The osprey was one of the many species described by Carl Linnaeus in his 18th @-@ century work , *Systema Naturae* , and named as *Falco haliaetus* . The genus , *Pandion* , is the sole member of the family of *Pandionidae* , and used to contain only one species , the osprey ( *P. haliaetus* ) . The genus *Pandion* was described by the French zoologist Marie Jules César Savigny in 1809 .

The osprey differs in several respects from other diurnal birds of prey . Its toes are of equal length , its tarsi are reticulate , and its talons are rounded , rather than grooved . The osprey and owls are the only raptors whose outer toe is reversible , allowing them to grasp their prey with two toes in front and two behind . This is particularly helpful when they grab slippery fish . It has always presented something of a riddle to taxonomists , but here it is treated as the sole living member of the family *Pandionidae* , and the family listed in its traditional place as part of the order *Falconiformes* . Other schemes place it alongside the hawks and eagles in the family *Accipitridae* ? which itself can be regarded as making up the bulk of the order *Accipitriformes* or else be lumped with the *Falconidae* into *Falconiformes* . The Sibley @-@ Ahlquist taxonomy has placed it together with the other diurnal raptors in a greatly enlarged *Ciconiiformes* , but this results in an unnatural paraphyletic classification .

= = = Classification = = =

The osprey is unusual in that it is a single living species that occurs nearly worldwide . Even the few subspecies are not unequivocally separable . There are four generally recognised subspecies , although differences are small , and ITIS lists only the first two .

*P. h. haliaetus* ? ( Linnaeus , 1758 ) : Palearctic .

*P. h. carolinensis* ? ( Gmelin , 1788 ) : North America . This form is larger , darker bodied and has a paler breast than nominate *haliaetus* .

*P. h. ridgwayi* ? Maynard , 1887 : Caribbean islands . This form has a very pale head and breast compared with nominate *haliaetus* , with only a weak eye mask . It is non @-@ migratory . Its scientific name commemorates American ornithologist Robert Ridgway .

*P. h. cristatus* ? ( Vieillot , 1816 ) : coastline and some large rivers of Australia and Tasmania . The smallest and most distinctive subspecies , also non @-@ migratory .

Recently , *P. h. cristatus* has been given full species status as eastern osprey .

= = = Fossil record = = =

To date there have been two extinct species named from the fossil record . *Pandion homalopteron* was named by Stuart L. Warter in 1976 from fossils of Middle Miocene , Barstovian age , found in

marine deposits in the southern part of California . The second named species *Pandion lovensis* , was described in 1985 by Jonathan J. Becker from fossils found in Florida and dating to the latest Clarendonian and possibly representing a separate lineage from that of *P. homalopteron* and *P. haliaetus* . A number of claw fossils have been recovered from Pliocene and Pleistocene sediments in Florida and South Carolina . The oldest recognized Pandionidae family fossils have been recovered from the Oligocene age Jebel Qatrani Formation , of Faiyum , Egypt . However they are not complete enough to assign to a specific genus . Another Pandionidae claw fossil was recovered from Early Oligocene deposits in the Mainz basin , Germany , and was described in 2006 by Gerald Mayr .

#### == Etymology ==

The genus name *Pandion* derives from the mythical Greek king of Athens and grandfather of Theseus , *Pandion II* . Although *Pandion II* was not used to name a bird of prey , *Nisus* , a king of Megara , was used for the genus . The species name *haliaetus* comes from Ancient Greek *haliaetos* ??????? from *hali-* ???- , " sea- " and *aetos* ????? , " eagle " .

The origins of osprey are obscure ; the word itself was first recorded around 1460 , derived via the Anglo @-@ French *ospriet* and the Medieval Latin *avis prede* " bird of prey , " from the Latin *avis praedæ* though the Oxford English Dictionary notes a connection with the Latin *ossifraga* or " bone breaker " of Pliny the Elder . However , this term referred to the Lammergeier .

#### == Description ==

The osprey is 0 @. @ 9 ? 2 @. @ 1 kg ( 2 @. @ 0 ? 4 @. @ 6 lb ) in weight and 50 ? 66 cm ( 20 ? 26 in ) in length with a 127 ? 180 cm ( 50 ? 71 in ) wingspan . It is , thus , of similar size to the largest members of the *Buteo* or *Falco* genera . The subspecies are fairly close in size , with the nominate subspecies averaging 1 @. @ 53 kg ( 3 @. @ 4 lb ) , *P. h. carolinensis* averaging 1 @. @ 7 kg ( 3 @. @ 7 lb ) and *P. h. cristatus* averaging 1 @. @ 25 kg ( 2 @. @ 8 lb ) . The wing chord measures 38 to 52 cm ( 15 to 20 in ) , the tail measures 16 @. @ 5 to 24 cm ( 6 @. @ 5 to 9 @. @ 4 in ) and the tarsus is 5 @. @ 2 ? 6 @. @ 6 cm ( 2 @. @ 0 ? 2 @. @ 6 in ) . The upperparts are a deep , glossy brown , while the breast is white and sometimes streaked with brown , and the underparts are pure white . The head is white with a dark mask across the eyes , reaching to the sides of the neck . The irises of the eyes are golden to brown , and the transparent nictitating membrane is pale blue . The bill is black , with a blue cere , and the feet are white with black talons . A short tail and long , narrow wings with four long , finger @-@ like feathers , and a shorter fifth , give it a very distinctive appearance .

The sexes appear fairly similar , but the adult male can be distinguished from the female by its slimmer body and narrower wings . The breast band of the male is also weaker than that of the female , or is non @-@ existent , and the underwing coverts of the male are more uniformly pale . It is straightforward to determine the sex in a breeding pair , but harder with individual birds .

The juvenile osprey may be identified by buff fringes to the plumage of the upperparts , a buff tone to the underparts , and streaked feathers on the head . During spring , barring on the underwings and flight feathers is a better indicator of a young bird , due to wear on the upperparts .

In flight , the osprey has arched wings and drooping " hands " , giving it a gull @-@ like appearance . The call is a series of sharp whistles , described as cheep , cheep or yewk , yewk . If disturbed by activity near the nest , the call is a frenzied cheereek !

Osprey call

#### == Distribution and habitat ==

The osprey is the second most widely distributed raptor species , after the peregrine falcon . It has a worldwide distribution and is found in temperate and tropical regions of all continents except Antarctica . In North America it breeds from Alaska and Newfoundland south to the Gulf Coast and

Florida , wintering further south from the southern United States through to Argentina . It is found in summer throughout Europe north into Ireland , Scandinavia , Finland and Scotland , England , and Wales though not Iceland , and winters in North Africa . In Australia it is mainly sedentary and found patchily around the coastline , though it is a non @-@ breeding visitor to eastern Victoria and Tasmania . There is a 1 @, @ 000 km ( 620 mi ) gap , corresponding with the coast of the Nullarbor Plain , between its westernmost breeding site in South Australia and the nearest breeding sites to the west in Western Australia . In the islands of the Pacific it is found in the Bismarck Islands , Solomon Islands and New Caledonia , and fossil remains of adults and juveniles have been found in Tonga , where it probably was wiped out by arriving humans . It is possible it may once have ranged across Vanuatu and Fiji as well . It is an uncommon to fairly common winter visitor to all parts of South Asia , and Southeast Asia from Myanmar through to Indochina and southern China , Indonesia , Malaysia and the Philippines .

= = Behaviour and ecology = =

= = = Diet = = =

Fish make up 99 % of the osprey 's diet . It typically takes fish weighing 150 ? 300 g ( 5 @.@ 3 ? 10 @.@ 6 oz ) and about 25 ? 35 cm ( 9 @.@ 8 ? 13 @.@ 8 in ) in length , but the weight can range from 50 g ( 1 @.@ 8 oz ) to 2 kg ( 4 @.@ 4 lb ) . Virtually any type of fish in that size range are taken .

Ospreys have vision that is well adapted to detecting underwater objects from the air . Prey is first sighted when the osprey is 10 ? 40 m ( 33 ? 131 ft ) above the water , after which the bird hovers momentarily then plunges feet first into the water .

Occasionally , the osprey may prey on rodents , rabbits , hares , amphibians , other birds , and small reptiles .

= = = Adaptations = = =

The osprey has several adaptations that suit its piscivorous lifestyle :

reversible outer toes ,

sharp spicules on the underside of the toes ,

closable nostrils to keep out water during dives , and

backwards @-@ facing scales on the talons which act as barbs to help hold its catch .

dense plumage which is oily and prevents its feathers from getting waterlogged .

= = = Reproduction = = =

The osprey breeds near freshwater lakes and rivers , and sometimes on coastal brackish waters . Rocky outcrops just offshore are used in Rottnest Island off the coast of Western Australia , where there are 14 or so similar nesting sites of which five to seven are used in any one year . Many are renovated each season , and some have been used for 70 years . The nest is a large heap of sticks , driftwood , turf or seaweed built in forks of trees , rocky outcrops , utility poles , artificial platforms or offshore islets . As wide as 2 meters and weighing about 135 kg , large nests on utility poles may be fire hazards and have caused power outages .

Generally , ospreys reach sexual maturity and begin breeding around the age of three to four , though in some regions with high osprey densities , such as Chesapeake Bay in the U.S. , they may not start breeding until five to seven years old , and there may be a shortage of suitable tall structures . If there are no nesting sites available , young ospreys may be forced to delay breeding . To ease this problem , posts are sometimes erected to provide more sites suitable for nest building . In some regions ospreys prefer transmission towers as nesting sites , e.g. in East Germany .

The platform design developed by one organization , Citizens United to Protect the Maurice River

and Its Tributaries , Inc. has become the official design of the State of New Jersey , U.S. The platform plans and materials list , available online , have been utilized by people from a number of different geographical regions . Osprey @-@ watch.org is the global site for mapping osprey nest locations and logging observations on reproductive success .

Ospreys usually mate for life . Rarely , polyandry has been recorded . The breeding season varies according to latitude ; spring ( September ? October ) in southern Australia , April to July in northern Australia and winter ( June ? August ) in southern Queensland . In spring the pair begins a five @-@ month period of partnership to raise their young . The female lays two to four eggs within a month , and relies on the size of the nest to conserve heat . The eggs are whitish with bold splotches of reddish @-@ brown and are about 6 @.@ 2 cm x 4 @.@ 5 cm ( 2 @.@ 4 in x 1 @.@ 8 in ) and weigh about 65 g ( 2 @.@ 3 oz ) . The eggs are incubated for about 35 ? 43 days to hatching .

The newly hatched chicks weigh only 50 ? 60 g ( 1 @.@ 8 ? 2 @.@ 1 oz ) , but fledge in 8 ? 10 weeks . A study on Kangaroo Island , South Australia , had an average time between hatching and fledging of 69 days . The same study found an average of 0 @.@ 66 young fledged per year per occupied territory , and 0 @.@ 92 young fledged per year per active nest . Some 22 % of surviving young either remained on the island or returned at maturity to join the breeding population . When food is scarce , the first chicks to hatch are most likely to survive . The typical lifespan is 7 ? 10 years , though rarely individuals can grow to as old as 20 ? 25 years . The oldest European wild osprey on record lived to be over thirty years of age . In North America , great horned owls ( *Bubo virginianus* ) , golden eagles ( *Aquila chrysaetos* ) , and bald eagles ( *Haliaeetus leucocephalus* ) are the only major predators of ospreys , capable of taking both nestlings and adults . However , kleptoparasitism by bald eagles , where the larger raptor steals the osprey 's catch , is more common than predation . The white @-@ tailed eagle ( *Haliaeetus albicilla* ) , which is very similar to the bald eagle , may harass or predate the osprey in Eurasia . Raccoons ( *Procyon lotor* ) can be a serious threat to nestlings or eggs if they can access the nest . Endoparasitic trematodes ( *Scaphanocephalus expansus* and *Neodiplostomum* spp . ) have been recorded in wild ospreys .

#### = = = Migration = = =

European breeders winter in Africa . American and Canadian breeders winter in South America , although some stay in the southernmost U.S. states such as Florida and California . Some ospreys from Florida migrate to South America . Australasian ospreys tend not to migrate .

Studies of Swedish ospreys showed that females tend to migrate to Africa earlier than the males . More stopovers are made during their autumn migration . The variation of timing and duration in autumn was more variable than in spring . Although migrating predominantly in the day , they sometimes fly in the dark hours particularly in crossings over water and cover on average 260 ? 280 km ( 160 ? 170 mi ) per day with a maximum of 431 km ( 268 mi ) per day . European birds may also winter in South Asia , an osprey ringed in Norway has been recovered in western India .

#### = = Status and conservation = =

The osprey has a large range , covering 9 @,@ 670 @,@ 000 km<sup>2</sup> ( 3 @,@ 730 @,@ 000 sq mi ) in just Africa and the Americas , and has a large global population estimated at 460 @,@ 000 individuals . Although global population trends have not been quantified , the species is not believed to approach the thresholds for the population decline criterion of the IUCN Red List ( i.e. , declining more than 30 % in ten years or three generations ) , and for these reasons , the species is evaluated as Least Concern . There is evidence for regional decline in South Australia where former territories at locations in the Spencer Gulf and along the lower Murray River have been vacant for decades .

In the late 19th and early 20th centuries , the main threats to osprey populations were egg collectors and hunting of the adults along with other birds of prey , but osprey populations declined drastically in many areas in the 1950s and 1960s ; this appeared to be in part due to the toxic effects of insecticides such as DDT on reproduction . The pesticide interfered with the bird 's calcium metabolism which resulted in thin @-@ shelled , easily broken or infertile eggs . Possibly because of

the banning of DDT in many countries in the early 1970s , together with reduced persecution , the osprey , as well as other affected bird of prey species , have made significant recoveries . In South Australia , nesting sites on the Eyre Peninsula and Kangaroo Island are vulnerable to unmanaged coastal recreation and encroaching urban development .

= = Cultural depictions = =

The Roman writer Pliny the Elder reported that parent ospreys made their young fly up to the sun as a test , and dispatch any that failed .

Another odd legend regarding this fish @-@ eating bird of prey , derived from the writings of Albertus Magnus and recorded in Holinshed 's Chronicles , was that it had one webbed foot and one taloned foot .

There was a medieval belief that fish were so mesmerised by the osprey that they turned belly @-@ up in surrender , and this is referenced by Shakespeare in Act 4 Scene 5 of Coriolanus :

I think he 'll be to Rome

As is the osprey to the fish , who takes it

By sovereignty of nature .

In Buddhism , the osprey is sometimes represented as the " King of Birds " , especially in the ' The Jataka : Or , Stories of the Buddha ' s Former Births ' , no.486.

The osprey is mentioned in the famous Chinese folk poem " guan guan ju jiu " ( 呱呱 ) ; " ju jiu " ?? refers to the osprey , and " guan guan " ( 呱 ) to its voice . In the poem , the osprey is considered as an icon of fidelity and harmony between wife and husband , due to its highly monogamous habits . Some commentators have claimed that " ju jiu " in the poem is not the osprey but the mallard duck , since the osprey cannot make the sound " guan guan " .

So @-@ called " osprey " plumes were an important item in the plume trade of the late 19th century and used in hats including those used as part of the army uniform . Despite their name , these plumes were actually obtained from egrets .

The Irish poet William Butler Yeats used a grey wandering osprey as a representation of sorrow in The Wanderings of Oisín and Other Poems ( 1889 ) .

The osprey is depicted as a white eagle in heraldry , and more recently has become a symbol of positive responses to nature , and has been featured on more than 50 international postage stamps .

The cap badge of Rhodesia 's Selous Scouts ( 1973 @-@ 1980 ) was a stylized osprey .

In 1994 , the osprey was declared the provincial bird of Nova Scotia , Canada . It is also the official bird of Södermanland , Sweden .

The osprey is used as a brand name for various products and sports teams . Examples include : the Ospreys ( a Welsh Rugby team ) ; the Richard Stockton College Osprey , ( a NCAA Division III intercollegiate athletics team of the U.S. State of New Jersey ) ; the first college in the nation ( and the only one for many years ) to adopt the osprey as its mascot and athletic team name , North Florida Ospreys ( a NCAA Division I intercollegiate athletics team ) , the Missoula Osprey ( a minor league baseball team ) ; the Seattle Seahawks ( an American football team of the National Football League ) ; the Wagner Seahawks ( a NCAA Division I intercollegiate athletics team ) ; the Cold Spring Harbor Seahawks ( a High school football team in Cold Spring Harbor , New York ) ; the Peninsula High School Seahawks ( a High School Football Team in Gig Harbor , Washington ) ; and the St. Mary 's College of Maryland Seahawks ( a NCAA Division III intercollegiate athletics team ) .

Examples of the osprey used as a mascot include : Ozzie Osprey ( of the University of North Florida ) ; Talon the Osprey of New Jersey 's Stockton University ; Sammy the Seahawk ( of University of North Carolina Wilmington ) ; the Wells International Seahawks ( of Bangkok , Thailand ) ; the Salve Regina Seahawks ( of Newport , Rhode Island ) ; the LA Harbor College Seahawks ( of South Bay ) ; and " Rowdy the Riverhawk " ( of the University of Massachusetts Lowell ) .