The Wildlife of Staines Moor

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Introduction

Staines Moor, lying just north of the Two Rivers shopping centre in Staines-upon-Thames and just south of Heathrow's Terminal 5, is the largest unspoiled open space in the Borough of Spelthorne in north-west Surrey (formerly south-west Middlesex). It covers 289 acres and is common land, a status first recorded in the Domesday Book compiled in 1067. It is the flood plain of the River Colne, which runs across the Moor effectively dividing it into an eastern and a western part. The Bonehead Ditch, a stream taken off the Colne at the top end of the Moor, runs in a broad loop along the eastern margin before rejoining the Colne by the Staines By-Pass. The Wraysbury River, which runs parallel to the M25, is also taken off the Colne, which it eventually rejoins just above the Two Rivers Centre in Staines. The Colne enters the Thames in Staines by the old Town Hall and just east of Staines Road bridge.

The Moor is part of a larger 513.6-hectare (1,269-acre) designated in 1955 as the Staines Reservoirs biological *Site of Special Scientific Interest (SSSI)* north of Staines. The whole site is part of the South West London Waterbodies Ramsar site and a Special Protection Area. The Staines Moor SSSI also includes King George VI Reservoir which lies to the east. The reservoirs and Moor attract nationally important wintering populations of Tufted Duck, Pochard, Goosander and Common Goldeneye and many migrating birds, including waders, Osprey and Marsh Harrier. The Moor is separated from Wraysbury Reservoir to the west by the M25. The now disused Staines and West Drayton Railway line crosses the western side of the Moor on a raised embankment and is accessible by a footpath along the top of the embankment. The part of the Moor north of the A30 merges into the remnants of Stanwell Moor, now mostly occupied by the small village largely developed in the late 20th-century. Today, Moor Lane effectively marks the western boundary of the Moor.

The Moor consists of species-rich flood meadows of rich alluvial soil on a bed of river sands and gravel either side of a stretch of the River Colne. The soil is more naturally fertile than that of the adjacent large historic parishes to the east, which have thin, less moist humus on gravel-rich clay, formed by the ancient terraces of the Thames like those of the inland parts of the riverside parishes. Being seasonally inundated by the overflowing river,

the Moor has been traditionally grazed by cattle and horses in much the same manner as were Shortwood Common, Dumsey Meadow and Chertsey Meads, the last on the south side of the Thames.

As common land, and part of the *Staines Commons*, the Moor is managed by the Lord of the Manor and the commoners. Historically, the Lord or Lady of the Manor allowed the commoners to use areas of their land which they regarded as waste land. In other words, were of no use to the Lord or Lady of the Manor. The commoners were given certain rights on the land which vary across the country. For the Staines Commons, commoners have the right to graze two cows or one horse, and this right still stands today. Spelthorne Borough Council works with the commoners and the Lord of the Manor to manage the Moor, which is under a time-limited moratorium on development or exploitation. On behalf of the Lord of the Manor, the Council holds a Countryside Stewardship grant agreement with DEFRA and carries out prescribed management to maintain the ecology of the site.

Aerial image of Staines Moor, showing its position centrally between Stanwell Town and Heathrow Airport (north), the King George VI Reservoir (west), Staines town and A30 (south) and the Wraysbury Reservoir and M25 (west).

At the top end of the Moor lie the remnants of a rifle range, established in the early 19th century but was relocated off the Moor in circa 1891. It can be identified as the steep short ridge-like mound adjacent to a shallow pond. The mound was formed by digging out the pond in the late 19th century.

As one of the remaining pastures of the medieval Manor of Staines, the Moor has remained unploughed and free of chemical treatments for one thousand years, making it an ancient and unique habitat. Grazing animals are removed during the winter months to allow the land to recover. Unfortunately and despite its protected status, the Moor is under constant threat from developers and gravel extraction even though much of it has been a designated Site of Special Scientific Interest since 1955.

The flora is species' rich and supports a rich fauna, which can include roe deer, muntjac, foxes, ground nesting birds (including Skylark and Lapwing), waders, birds of prey (including Red Kite, Kestrel, Buzzard, Hobby), and owls that occasionally visit include Barn Owl, Little Owl and Short-Eared Owl, and a rich invertebrate fauna. More than 200 species of bird have been seen on the Moor, a great credit to the site and the numerous dedicated birdwatchers who record such sightings. The large Yellow Ant (*Lasius flavus*) anthills at the north of the Moor, estimated at over 200 years old, are believed to be amongst the largest in the UK, many being more than a metre in diameter.

Common buzzard (left) and Watercress beds along the River Colne (right).

Landscapes from the Moor

Clockwise from top left: view from Rifle butts mound in 1976, view from Rifle butts mound in 202, the grassland invaded by Hawthorne and Bramble in 2024, and the grassland clear of scrub in 1976.

Plants

The dominant feature of the Moor is the River Colne which meanders across it from north to south before exiting under the Staines By-pass. In places it is broad and shallow but where it enters and leaves the Moor it is narrow and deeper. In most years, the margins are heavily grazed by cattle and horses but, during the BSE epidemic and in 2023, grazing did not occur and the fine marginal flora thrived. **Greater Reed Mace** (*Typha latifolia*) and the large grasses **Common Reed** (*Phragmites australis*), **Reed Sweet grass** (*Glyceria maxima*) and **Reed Canary Grass** (*Phalaris arundinacea*) form dense beds along both sides of the river. Amongst these many aquatic flowering plants thrive, including **Watercress** (*Nasturtium officinale*) , **Fool's Watercress** (*Apium nodiflorum*), **Water Mint** (*Mentha aquatica*), **Water Forget-me-not** (*Myosotis aquatica*), **Marsh Woundwort** (*Stachys palustris*), **Figwort** (*Scrophularia nodosa*), **Fleabane** (*Pulicaria dysenterica*), **Gypsywort** (*Lycopus europaeus*), **Flowering Rush** (*Butomus umbellatus*), **Redshank** (*Polygonum maculosum*), **Water-pepper** (*P. hydropiper*), **Gypsywort** (*Lycopus europaeus*), **Greater Water-dock** (*Rumex hydrolapathum*), **Skullcap** (*Scutellaria galericulata*), **Pink Water Speedwell** (*Veronica catenata*) and **Brooklime** (*Veronica beccabunga*). Two alien balsams are common, namely the orange-flowered **Jewelweed** (*Impatiens capensis*) and **Himalayan Balsam** (*I. glandulifera*), whose flowers here ranges from white to deep raspberry pink. Plants such as **Whorl-grass** (*Catabrosia aquatica*) and **Fine-leaved Water-dropwort** (*Oenanthe aquatalis*) can also be occasionally found here.

Clockwise from top left: Water Mint, Marsh Woundwort, Common Reed, and River Water Dropwort.

The river and pond also support an interesting flora; the Colne sees drifts of **River Water-Crowfoot** (*Ranunculus fluitans,* and *Ranunculus penicilatus var. calcareus*), and **Pond Water-Crowfoot** (*Ranunculus peltatus*), and in the pond **Thread-leaved Water-Crowfoot** (*Ranunculus trichophyllus*) has been recorded. Both the river and pond see pondweeds, such as **Opposite-leaved Pondweed** (*Groenlandia densa*) and the hybrid pondweed (*Potamogeton* x*fluitans*), intermingled with **River Water-dropwort** (*Oenanthe fluviatalis*),

Flowering Rush (*Butomus umbellatus*), **Arrowhead** (*Sagittaria sagittifolia*), **Branched Burr-reed** (*Sparganium erectum*) and the giant **Common Club-rush** (*Schoenoplectus lacustris*). **Broad-leaved Pondweed** (*Potamogeton natans*) and **Yellow Waterlily** (*Nuphar lutea*) are common in the Wrayberry river on the west side of the Moor.

Aquatic and marginal plants are also found in the pond by the Rifle Butts mound at the north end of the Moor. **Common Reed** (*Phragmites communis*) dominates the pond and has filled it in the recent past. Now partly cleared over half of the pond is open water. In the shallows **Celery-leaved Buttercup** (*Ranunculus scleratus*), **Lesser Spearwort** (*Ranunculus flammula*), **Water Plantain** (*Alisma plantago-aquatica*), **Needle Spike-rush** (*Eleocharis acicularis*), **False Fox-sedge** (*Carex otrubae*) and **Common Club-rush** (*Eleocharis palustris*) can all be found here.

Unusual and rare plants in the rivers, ponds and wetter areas include **Marsh Arrowgrass** (*Triglochin palustris*), **Lesser Marshwort** (*Apium inundatum*), **Brittle Club-rush** (*Isolepis setacea*) and **Slender Pond Sedge** (*Carex acuta*), **Horned Pondweed** (*Zannichellia palusutris*). The introduced **Sweet Flag** (*Acorus calamus*) is declining here these days. **Water Violet** (*Hottonia palustris*) was last reported some years ago along the northern margin of the Moor but might survive in the soil seed bank. Two **Duck-weeds**, *Lemna gibba* and *L. minor*, are common on the pools and margins of the Colne. The small alien duck-weed like fern **Azolla** (*Azolla filiculoides*) can occur in quantity and can turn the water surface red later in the year.

Flowering Rush (left), Broad-leaved Pondweed (centre), and False Fox Sedge (right).

Far from being uniform, the grassland can be seen as a mosaic of habitats especially in the summer with the drier higher areas reddish brown whereas the lower, seasonally wet hollows, that are scattered across the Moor, are bright green. The main vegetation of the drier areas are fine grasses, sorrels, buttercups and clovers. The main fine grasses of the drier areas include **Common Bent** (*Agrostis capillaris*), **Sweet Vernal grass** (*Anthoxanthum odoratum*), **Timothy** (*Phleum pratense*), **Smaller Cat's-tail** (*Phleum bertolonii*), **Fox Tail** (*Alopecurus geniculatus*), **Red Fescue** (*Festuca rubra*). Coarser grasses such as **Meadow Foxtail** (*Alopecurus pratensis*), **Cock's-foot** (*Dactylis glomerata*), **Wall Barley** (*Hordeum murinum*), **Perennial Rye-grass** (*Lolium perenne*), **Yorkshire Fog** (*Holcus lanatus*) and **False Oat-grass** (*Arrhenathrum elatius*) have invaded theese areas, particularly where the turf has been disturbed. **Sheep Sorrel** (*Rumex acetosella*) and **Common Sorrel** (*Rumex acetosa*) form large stands and their leaves colour the area in red as the summer progresses, the result of red pigments in their leaves and inflorescences. **White Clover** (*Trifolium repens*) and **Red Clover** (*T. pratense*), **Bird's-foot Trefoil** (*Lotus corniculatus*), **Creeping Buttercup** (*Ranunculus repens*), **Meadow Buttercup** (*R. acris*) and **Bulbous Buttercup** (*R. bulbosus*) are abundant.

Sedges are common here, notably **Common Sedge** (*Carex nigra*) and **Brown Sedge** (*Carex disticha*) along with **Wood Rush** (*Luzula campestris*). **Rough Hawkbit** (*Rough Hawkbit*), a buttercup yellow daisy, is common amongst the grasses. **Adder's-tongue Fern** (*Ophioglossum vulgatum*), an indicator of ancient grassland, occurs both on the drier areas and more commonly in some of the damper areas. In the north-western part of the Moor, leading up to the rifle butts mound, **Spiny Restharrow** (*Ononis spinosa*), a pretty pink-flowered spiny pea, forms rounded bushes. It is another indicator of ancient grassland. Ant hills of the Yellow Meadow Ant and Mole hills provide bare soil across the higher ground that allow the less competitive plants to germinate and gain a foothold because they are often outcompeted by the grasses. The ant hills can be picked out easily as they are usually 10-30 cm higher than the surrounding grassland. Their tops and sides are often covered by **Lady's Bedstraw** (*Galium verum*), **Mouse-eared Hawkweed** (*Pilosella officinarum*), and the diminutive grasses **Early Hair Grass** (*Aira praecox*) and **Squirrel-tail Fescue** (*Vulpia bromoides*).

The numerous seasonally flooded hollows across the Moor have a distinctive flora, The hollows, usually only a metre or two lower that the drier areas, indicate previous meanders of the River Colne that are now cut off from the main stream, except in winter, or depressions where soil has been dug out or bombed (during the war). Perhaps the best time to look at the vegetation of the Moor itself is in summer. comprising marsh and semi-aquatic plants, such as rushes (especially *Juncus inflexus*, *J.* and *J. articulatus*), **Flag Iris** *Iris pseudacorus*), **Meadowsweet** (*Filipendula ulmaria*), **Marsh Ragwort** (*Senecio palustris*), **Marsh Thistle** (*Cirsium palustre*), **Water Mint** (*Mentha aquatica*), **Creeping Jenny** (*Lysimachia nummularia*), **Strawberry Clover** (*Trifolium fragiferum*), **Greater Bird's-foot Trefoil** (*Lotus pedunculatus*), **Marsh Marigold** (*Caltha palustris*) and the large **Tufted Hair-grass** (*Deschampsia cespitosa*). Rarer species here include **Devil's-bit Scabious** (*Succisa pratensis*) and **Tubular Water-dropwort** (*Oenanthe fistulosa*), both now restricted to small areas on the Moor. Unusual plants here include **Brown Sedge** (*Carex disticha*), **Meadow Rue** (*Thalictrum flavum*), **Wormwood** (*Artemisia absinthium*), **Upright Chickweed** (*Moenchia erecta*) and **Small Wall-pepper** (*Polygonum minus*). Invasive **Creeping Thistle** (*Cirsium arvense*) and **Spear Thistle** (*Cirsium vulgare*) cover significant areas of the wet hollows, although measures are annually applied to control its spread.

A notable feature of the Moor is the number of plants found there that are more usually associated with chalk grassland. The riverbanks are noticeably raised above the level of the surrounding grassland. This occurred when the river was regularly dredged in the past, an event that has not occurred for over 30 years. Unusual plants found on the raised banks which have a significant Calcium carbonate content, making the habitat more akin to chalk rather than neutral grassland, the Colne arising in the Chilterns to the north. The most prominent of these is **Musk Thistle** (*Carduus nutans*), a branching thistle with a large nodding head of rich purple flowers. It is readily seen along the raised banks of the river. **Chalk Knapweed** (*Centaurea debeauxii*) is, as its name suggests, a chalk grassland specialist but it occurs here. A few plants of **Knotted Clover** (*Trifolium striatum*), a plant characteristic of the seaside, persist on the bank above the bridge on its western side. Another typical chalk grassland plant is **Quaking Grass** (*Briza media*), which is now rather rarer than it was 20 years ago in the grassland.

Invasive plants are a continuing problem on the Moor. The drier areas are being invaded by **Bramble** (*Rubus* spp.), **Hawthorn** (*Crataegus monogyna*), **Nettle** (*Urtica dioica*) and **Ragwort** (*Senecio jacobaea*). The first two benefit birds, especially finches and pipits, but severely reduce the nationally much rarer dry grassland habitat, used by other breeding birds such as Skylark, Lapwing and Redshank. The Ragwort hybridises freely with Marsh Ragwort around the seasonal pools.

The damper hollows have, in recent years, been invaded by the robust and coarse **Flag Iris**, Reed Sweet Grass and rushes (*Juncus* spp.) but careful examination shows that many unusual species survive, albeit in reduced numbers.

Clockwise from top left: Adder's-tongue Fern, Autumn Hawkbit, Strawberry Clover, Devils'-bit Scabious, Greater Bird's-foot Trefoil, and Spear Thistle.

Mammals

Mammals are not especially evident on the Moor but you can see plenty of **Rabbits** (*Oryctolagus cuniculus*) on early morning or late evening walk. They live communally and mainly have their burrows along the margins of the Moor and along the embankment of the disused railway line. They often use the anthills as look-out spots and as latrines. Many of the anthills have bare tops where the rabbits have scratched them and are often covered in many round rabbit droppings. Recently, rabbit numbers have plummeted probably as a result of introduced viral diseases. They attract predators: birds, such as Buzzard, Sparrowhawk and Red Kite. The **Fox** (*Vulpes vulpes*) also predates rabbits and can often be seen at dusk, skulking along the margins of the Moor. Their dens are mostly on the railway and roadside embankments.

Another voracious predator of rabbits is the **Weasel** (*Mustela nivalis*), a tiny member of the Polecat family. Pencil thin and about 15 cm long it can outrun and kill an adult rabbit with ease. Stout (*Mustela ermina*) may also occur on the Moor but no authenticated record has been made in recent years.

A larger member of the same family is the **Otter** (*Lutra lutra*), which is not resident but has been reported in recent years using the Colne as a highway to the Thames. Otters are fish feeders but will also take young birds and eggs.

The **Mole** (*Talpa europea*) is common across the Moor in both dry and wet grassland, evidence by lines of freshly excavated soils heaps which indicate where the Mole has surfaced in its everlasting hunt for earthworms. Molehills provide open soil for seeds of annual plants to germinate and survive to flowering.

Smaller mammals in the grassland include **Wood Mouse** (*Apodemus sylvaticus*), **Bank Vole** (*Myodes glareolus*) and **Short-tailed Field Vole** (*Mycrotus agrestis*). Their burrows and runs are found in the drier parts of the grassland. The Wood Mouse, reaching 10cm long and abundant in all habitats here, is dark brown with a tail up to 10 cm long, big ears and a pointed muzzle. It eats fruit, seeds and invertebrates. Both voles have much shorter tails, less than 5 cm long. The Bank Vole, 8–12cm long, is a warm brown with small ears and eyes. It runs rather than jumps and feeds on seeds, leaves and fruit. The Field Vole, 8–11 cm long,

with a 2–5 cm long tail, by contrast is grey-brown with tiny ears and eyes. It is a common but shy vole and makes tunnels in leaf litter and grass, eating shoots and roots. The mice and voles here are predated by several raptors, notably Kestrel, Barn Owl, Tawny Owl, Short-eared Owl and Buzzard, and also by Fox and Weasel.

Three species of shrew are found on the Moor but they are rarely seen, usually only when found dead at the hands of a predator. The **Common Shrew** (*Sorex araneus*), 5.7cm long, with a 3–5.5 cm tail, is grey-brown above, with a pale grey underbelly, and a long quivering snout. It is our commonest species, and a voracious predator of invertebrates. The larger **Water Shrew** (*Neomys fodiens*), that reaches 10cm long with a 5–8 cm long tail, is seldom seen but frequents the banks of the Colne and Bowhead Ditch where it eats frogs and fish. It has a slate grey back with a white underside and its bite is poisonous to small creatures. In contrast the Pygmy Shrew is smaller than a harvest mouse. It is brown above and grey below and measures only 4–6.5cm long, with a 3–4.5 cm long tail. It lives in dense vegetation along the river and in the wet hollows where it preys on spiders, woodlice and beetles.

Brown Rat (*Rattus norvegicus*) is a common mammal along the river, often using bank-side burrows to nest. Flooding pushes it away from the river during the winter and spring. It is a scavenger but will eat eggs and young birds whenever the chance occurs.

Fox (left) and Water Shrew (right).

Two introduced mammals have had a major impact on the Moor, the American Mink and the Grey Squirrel. The **American Mink** (*Neovison vison*), an animal that resembles a small otter at first sight, originated from ill-judged releases by animal-rights activists from Mink farms up and down the country. Fortunately, they are subject of an active programme to

remove Mink from the countryside but it has proved to be difficult to exterminate them completely as they move freely along our river-systems and can still be found throughout the country. Mink exterminated the **Water Vole** (*Arvicola amphibius*) from the Moor some years ago. However, Water Voles are being actively bred for release in selected sites where their predators have been controlled. The Moor would make an excellent site for a reintroduction in the future.

Grey Squirrel (*Sciurus carolinensis*) is another North American native that was released into the wild here in late Victorian days. It has spread across most of the country eliminating the native Red Squirrel wherever they meet, often by spreading squirrel pox, a disease to which the native squirrel is particularly susceptible. It also has a significant effect on our native biota. Squirrels debark young trees, effectively killing them. They also take nesting sites of native birds, such as the Nuthatch and woodpeckers, and predate young birds and animals.

Seven of the Moor's mammals are bats. Not all are recorded regularly here but some are readily spotted, especially at dusk. The commonest bats on the Moor are two of the smallest species, the **Common Pipistrelle** (*Pipistrella pipistrella*) and **Soprano Pipistrelle** (*Pipistrella pygmeus*). They are almost impossible to separate morphologically but can be distinguished by their echo location, detectable using a bat detector. Of the other five bats on the Moor our largest species is the **Noctule Bat** (*Nyctalus noctula*). The river acts as an insect collecting corridor for **Daubenton's Bat** (*Myotis daubentonii*), which flies along the river dipping down to the surface at regular intervals.

Cattle and horses graze on the Moor from Spring until the end of the year.

Reptiles and Amphibians

Grass Snake (*Natrix helvetica*), a snake often associated with water, is found on the Moor, where an abundance of prey maintains its small population. **Common Frog** (*Rana temporaria*) can be found in the damp hollows and Butt's Pond, occasionally in large numbers. The large and much noisier **Marsh Frog** (*Pelophylax ridibundus*), readily recognised by its penetrating call and greenish colour with a yellow stripe down its back, is well establish here. **Toad** (*Bufo bufo*) also occurs on the Moor but its abundance is a matter of speculation. Both breed in permanent ponds, rather than in the river. **Common Newt** (*Lissotriton vulgaris*) is also found in the pond and permanent pools and also breeds there.

Common Frog.

Fish

The River Colne is mostly broad, shallow and fast-flowing on the Moor but with occasional narrower, deeper, slower-flowing stretches. In the fast-flowing section the gravel beds provide suitable conditions for spawning fish. The commonest species here are **Chub** (*Squalius cephalus*), **Dace** (*Leuciscus leuciscus*), **Gudgeon** (*Gobio gobio*) and **Roach** (*Rutilus rutilus*). **Rudd** (*Scardinius erythrophthalmus*) and **Bleak** (Alburnus alburnus) may also swim here. **Brown Trout** (*Salmo trutta*) have occasionally been caught here and **Pike** (Esox lucius) and **Perch** (*Percha fluviatilis*) occur there in the river in small numbers. The rarest fish is the **Barbel** (*Barbus barbus*) which is a bottom-dwelling fish that is occasionally caught on the Colne. The Spelthorne stretch of the Thames is well-known for 10lb plus fish. Until recently,

the weir on the River Colne in the Two Rivers centre in Staines impeded fish moving up the Colne from the Thames. However, a fish ladder is now operating that should allow movement of fish both ways. Finally, **Eel** (*Arguilla arguilla*), formerly abundant in the Thames and its tributaries, is still found here but its numbers have declined dramatically in recent years.

Birds

Staines Moor is one of the richest and most accessible sites in the London area for bird-watching, nearly 200 species of bird having been recorded there. In the summer, a number of species breed in the grassland and bushes on the Moor, notably **Skylark** (*Alauda arvensis*), **Meadow Pipit** (*Anthus pratensis*), **Linnet** (*Cardulis cannabina*), **Grey Wagtail** (*Motacilla cinerea*), **Redshank** (*Tringa totanus*) and **Lapwing** (*Pluvialis squatarola*), the last two only occasionally these days because of harassment by crows, magpies and foxes. Dog-walkers are asked to keep their dogs under control in the breeding season so that nests are not disturbed. The Yellow Ant hills attract **Green Woodpeckers** (*Picus viridis*) which feed on the ants. Their activity is often apparent by examining the destroyed tops of the ant hills.

The riverside stands of grass and reed allow **Reed Bunting** (*Emberiza schoeniclus*), **Reed Warbler** (*Acrocephalus scirpaceus*), **Sedge Warbler** (*A. schoenobaenus*), **Mallard** (*Anas platyrhynchos*), **Coot** (*Fulica atra*), **Moorhen** (*Gallinula chloropus*) and, in most years, **Mute Swan** (*Cygnus olor*) to breed successfully. The dense reed beds at the north-eastern edge of the Moor also have other breeding warblers, such as **Cetti's** (*Cettia cetti)* and **Grasshopper Warblers** (*Locustella naevia*). **House Martin** (*Delichon urbica*), **Sand Martin** (*Riparia riparia*) and **Swallow** (*Hirundo rustica*) take advantage of the wealth of insect life on the rivers and ponds. In the autumn, their young are often hunted by a Hobby or two. **Kingfisher** (*Alcedo atthis*) can often be seen darting along the river but probably does not nest on the Moor.

In summer, **Grey Heron** (*Ardea cinerea*) and **Little Egret** (*Egretta garzetta*) are regularly seen fishing in the shallow water along the Colne, while a **Great White Egret** (*Ardea alba*) has occasionally dropped in.




Clockwise from top left: Grey Heron, Kingfisher, Redshank, and Little Egret.

The raptors **Tawny Owl** (*Strix aluco*), **Kestrel** (*Falco tinnunculus*), **Hobby (***Falco subbuteo*), **Sparrowhawk** (*Accipiter nisus*), **Red Kite** (*Milvus milvus*) and **Common Buzzard** (*Buteo buteo*) are all now resident and breeding locally if not on the Moor itself. **Peregrine** (*Falco peregrinus*) occasionally drop in on the Moor.

Migrating birds seen on the Moor include **Tree Pipit** (*Anthus pratensis*), **Yellow Wagtail** (*Motacilla flava*), **Whinchat** (*Saxicola rubetra*) and **Wheatear** (*Oenanthe oenanthe*). The water attracts migrating wading birds, such **Bar-tailed Godwit** (*Limosa limosa*), **Grey Plover** (*Pluvialis squatarola*), **Ringed Plover** (*Charadrius hiaticula*), **Little Ringed Plover** (*C. dubius*), **Greenshank** (*Tringa nebularia*), and **Green Sandpiper** (*Tringa ochropus*), which have all been recorded on passage. In the spring and autumn, migrating birds use the Moor and the adjacent reservoirs in numbers. **White-fronted Geese** (*Anser albifrons*) have also

been recorded. In most years **Cuckoo** (*Cuculus canorus*) is heard on the Moor where the warblers must be a significant attract ion for it.

Kestrel (left) and Short-eared Owl (right).

Red-backed Shrike (*Lanius collurio*) and **Great Grey Shrike** (*L. excubitor*) are occasionally seen, but the site's star bird in 2009 was the long-staying Asiatic **Brown Shrike** (L*. cristatus*), usually a winter resident of India. It was the first ever recorded from inland Britain for this species.

Some birds stay all winter, travelling between the Moor and the adjacent reservoirs. These include **Redshank**, **Ruff** (*Philomachus pugnax*), **Snipe** (*Lymocryptes minimus*) and **Dunlin** (*Calidris alpina*). **Osprey** (*Pandion haliaetus*) and harriers have been recorded on passage. Winter is also a good time to spot **Water Pipit** (*Anthus spinoletta*), **Stonechat** (*Saxicola torquata*), **Fieldfare** (*Turdus piliaris*) and **Redwing** (*T. iliacus*). The Moor regularly supports a large flock of overwintering **Golden Plover** (*Pluvialis apricaria*). It also supports a large population of wintering wildfowl, which frequently includes **Goosander** along with **Shoveler** (*Anas clypeata*), **Teal** (*A. crecca*) and **Wigeon** (*A. penelope*) on the River Colne. In recent years the Moor has held up to ten wintering **Short-eared Owls** (*Asio flammeus*) and has had the occasional visit from a **Barn Owl** (*Tyto alba*) and **Little Owl** (*Athene noctua*).

Other birds to look out for at appropriate times of year include **Garganey** (*Anas querquedula*), **Water Rail** (*Rallus aquaticus*), **Spotted Flycatcher** (*Muscicapa striata*), **Mediterranean Gull** (*Larus melanocephalus*) (usually among **Black-headed Gull**), **Stock Dove** (*Columba oenus*), **Woodlark** (*Lullula arborea*), **Tree Sparrow** (*Passer montanus*) and **Redpoll** (*Carduelis flammea*). Wintering **Firecrest** (*Regulus ignicapillis*) are increasingly common.

Clockwise from top left: Redwing, Meadow Pipet, House Martin, Green Woodpecker, Reed Warble, and Fieldfare.


Lapwing (left) and Stonechat (right).

Invertebrates

Several surveys undertaken on the Moor in the past 15 years have shown that a rich assemblage of invertebrates, some of them of national importance for their rarity, are found in its various habitats.

The wetland habitats on Staines Moor support a rich invertebrate assemblage with aquatic beetles (Coleoptera), dragonflies and damselflies (Odonata) and flies (Diptera) well represented. The water levels vary through the seasons, and the fluctuations through the seasons can be extreme with many of the seasonal hollows desiccating then refilling after heavy summer downpours. If these pools dry early in the summer, then many of the key species would be able to complete their life cycles.

More information is needed to assess the current hydrological regime on the Moor, but the water table level is highly significant and changes to it can have negative impacts on the wildlife. Here, apart from butterflies, it is only possible to mention a selection of the more interesting spiders and other insects found on the Moor.

Butterflies and Day-flying Moths

Within the Borough, Staines Moor is the most important refuge for grassland and hedgerow butterflies. In all, over 20 species have been recorded there. The margins of the Moor have extensive patches of nettles and thistles, plants that attract a number of larger and more rapidly flying butterflies. **Peacock** (*Aglaia io*), **Small Tortoiseshell** (*A. urticae*), **Red Admiral** (*Vanessa atalanta*), and **Comma** (*Polygonia c-album*) are amongst the earliest butterflies to appear in the spring, emerging as overwintering adults from hibernation on warm sunny spring days. They all lay their eggs on nettles with the next generation merging as adults in July and August. The closely allied **Painted Lady** (*Vanessa cardui*), a long-distance migrant from the Continent, appears in summer and heads for the thistle patches where it lays its eggs, its larva feeding on thistle leaves.

Another very early butterfly in the spring is the beautiful **Brimstone** (*Gonepteryx rhamnae*), the males of which are sulphur yellow, while the females are greenish white. Like the hibernating nettle-feeders, it overwinters as an adult. The foodplants of its larvae are Buckthorn and Alder Buckthorn, small trees and bushes associated with river margins and marshes. The next generation emerges in July and enters hibernation as the temperatures drop in autumn.

Spring is really with us when the **Orange-tip** (*Anthocaris cardamines*) and **Green-veined White** (*Pieris napi*) butterflies are on the wing in April and early May. Both lay their eggs on cresses, mainly on Lady's Smock and Hedge Mustard, both of which are common here. The latter has a second brood in the summer. Slightly later, the **Small White** (*Pieris rapae*) emerges and lays its eggs on a variety of cresses and, annoyingly, on cabbages, cauliflowers, brussel sprouts and their relatives.

The **Speckled Wood** (*Pararge aegeria*), common along the edge of the Moor and along the path on the old railway embankment, is one of the earliest butterflies to appear in springtime, having overwintered as a chrysalis, and it is also one of the latest to be flying, occasionally lingering into early November. It usually has two broods a year but can, in a good year, have three. **Holly Blue** (*Celastrina argiolus*) also frequents the edges of the Moor,

especially where Ivy (*Hedera helix)* thrives. The Spring brood lays its eggs on the flower buds of the Holly, the autumn brood on Ivy.

Clockwise from top left: Small Copper, Peacock, Cinnabar moth caterpillar, female Small Blue Meadow Brown, and Brown Argus.

The Moor is a significant refuge for several species that depend upon the grassland and its associated flora of clovers, sorrels and Lady's Smock (*Cardamine pratensis*). The clovers and other legumes, such as Bird's-foot Trefoil are foodplants of the **Common Blue** (*Polyommatus icarus*) and **Brown Argus** (*Aricia agrestis*), both of which have thriving colonies on the Moor. They are both double brooded with an early summer brood appearing in June and a later brood flying in late summer and autumn. The **Small Copper** (*Lycaena phlaeas*) is also common on the Moor and depends on the abundant Sheep Sorrel and Sorrel as a foodplant. It also has two and, occasionally, three broods a year.

The appearance of The **Meadow Brown** (*Maniola jurtina*) and **Gatekeeper** (*Pyronia tithonius*) emerge in late june and early, whose larvae (caterpillars) feed on the grasses of the Moor, herald the start of summer. The former can still be found flying into September. The allied **Small Heath** (*Coenonympha pamphilus*), the third and rarest, is a nationally declining species. Unlike its larger relatives, the Small Heath has two broods on the Moor, the first in late spring and the second in late summer.

In summer three species of skipper can be found on the Moor. The first to appear is the **Large Skipper** (*Ochlodes sylvanus*), readily distinguished by it large size and pale yellow marks on the tawny upper wings, readily seen when the butterfly is at rest as the wings are usually held at an angle from the body. By mid-June, two smaller skippers appear in some numbers and can often be found sipping nectar from the thistle and Fleabane (*Pulicaria dysenterica*) flowers. The **Small Skipper** (*Thymelicus sylvestris*) and **Essex Skipper** (*T. lineola*) are both tawny but lack paler markings on their forewings. They are difficult to tell apart but have differently coloured tips to their antennae. The former has brown tips, whereas the latter has black ones. All the skippers have larvae that feed on grasses.

The **Large White** (*Pieris brassicae*) is also native and has the same shortcomings of its smaller relative, relishing cabbages and other brassicas. However, large numbers of Large Whites in late summer are likely to be migrants from the Continent, rather than home-grown adults.

Another long-distance migrant that appears sporadically on the Moor is the **Clouded Yellow** (*Colias croceus*), another butterfly whose eggs are laid on clovers, alfalfa and other legumes.

Day-flying moths can be readily mistaken for butterflies at a casual glance. Common species on the Moor are the **Cinnabar Moth** (*Tyria jacobaeae*) which has black upperwing marked with a red strip and red underwings. It is probably better-known in its larval stage, its black- and yellow-ringed wasp-coloured caterpillars feeding on Ragwort. Another black and red moth here is **the Six-spotted Burnet** (*Zygaena filipendulae*), a grass-feeder whole mature caterpillar forms a silvery-yellow, almost translucent chrysalis closely stuck along its length to the stem of a grass and from which the moth emerges from the top end. More recently, the beautiful **Jersey Tiger** (*Euplagia quadripunctata*) has started to appear here. It used to be a national rarity confined to the Channel Islands and the Dorset Coast but it appeared in London some 20 years ago and has spread rapidly along the Thames Valley. It has blackish brown upperwing crossed by white lines and a brilliant yellow or orange underwing. Being larger than the Cinnabar or Burnet, it is often mistaken for a butterfly. **Humming-bird Hawkmoth** (*Macroglossum stellatarum*) is an occasional visitor, most migrating here from the Continent.

Gatekeeper (left), Green-veined White (centre), Jersey Tiger moth (right).

Dragonflies and Damselflies

Apart from butterflies, Dragonflies are the showiest insects on the Moor but need care in their identification because males and females often have distinct colouration. The largest is the **Emperor Dragonfly** (*Anax imperator*) with a body up to 84 mm long. The male's body is an iridescent blue and beautifully marked with a rich blue body and a black longitudinal stripe along its back, while the female is iridescent green, also with a longitudinal black line along its abdomen.

The Hawker dragonflies are almost as large and some as colourful. The **Common Hawker** (*Aeschna juncea*) reached 80 mm long and registers as brown and blue in flight. Both male and female have narrow yellow stripes ion their thorax and a black body with blue round pairs of spots along the abdomen. Its wings have a marked yellow front edge. The **Southern Hawker** (*A. cyanea*) reaches 75 mm long and has a green blue and black marked thorax and abdomen. It appears greener in flight than the Common Hawker. Both breed in the ponds on the Moor. Later in the year, from August onwards, the smaller **Migrant Hawker** (*A. mixta*), which reached 64 mm long, is not uncommon. It has distinctive long appendages at the tip of its abdomen.

Earlier in the year in May and June, a significant population of the **Hairy Dragonfly** (*Brachytron pratense*) can be found here. Its markings are similar to those of the Common Hawker but its thorax is hairy.

Perhaps the most distinctive dragonfly on the Moor is the **Broad-bodied Chaser** (*Libellula depressa*). The males have a broad pale blue abdomen and wings with black triangles at their base. The female is similar but with a golden yellow body. The **Four-spotted Chaser** (*Libellula quadripunctata*) has a narrower broad or reddish brown body and wings with four black spots on their forewings. The **Black-tailed Skimmer** (*Orthocentron cancellatum*) is another sexually dimorphic species, reaching 50 cm long. The male has a tapering pale blue body with a black tip, while the female has a yellow body with a lateral black stripe along each side.

Three red dragonflies are common here. The **Common Darter** (*Sympetrum striolatum*), **Ruddy Darter** (*S. sanguineum*) and **Red-veined Darter** (*S. fonscolombii*) have red-bodied males, the females having a yellowish-brown body.

Damselflies are very well represented on the Moor's rivers and ponds. Male **Beautiful Demoiselle** (*Calopteryx virgo*) and **Banded Demoiselle** (*C. splendens*), common in the vegetation each side of the Colne, are perhaps the easiest damselflies to identify, emerging in late May and surviving into early autumn. Both have irridescent blue bodies but the former has black forewings and the latter a black mark in the upper half of each forewing. The females of bot species are duller, with the Beautiful Demoiselle having an olive-green body and unmarked wings, the Banded having an emerald-green body and shiny yellow-green wings. **Emerald Damselfly** (*Lestes sponsa*) appears later from June onwards. The males have metallic green bodies with a pale blue tail ring. It prefers ponds, including that by the Butts. Two red bodied damselflies occur here. The body of the **Large Red Damselfly** (*Pyrrhosoma nymphula*) is 33-36 mm long, while that of the **Small Red Damselfly** (*Ceriagrion tenellum*) is usually smaller at 25-32 mm long. The thorax of the former is black with red stripes, whereas that of the male of the latter is red whereas the female' thorax is black and red.

The **Azure Damselfly** (*Coenagrion puella*) is common here. Its males have a body with alternate black and light blue rings along it, the female's body is green and black, booth having clear wings. The similar **Common Blue Damselfly** (*Enallagma cyathigerum*) has similarly marked males but the penultimate black area on the body is three segments long and much longer than the other rings. Its female is black and creamy white ringed along its body. **Variable Damselfly** (*Coenagrion pulchellum*) is another similar species reported from the Moor. It can be slightly larger than the two mentioned above but appears darker blue and has more black colouration on its body. The male **Blue-tailed Damselfly** (*Ischnura elegans*) is slightly smaller and has a black body with blue on the 8th abdominal segment. Its female is variable is usually similar to the male in colouration. Other damselflies that occur here include **Red-eyed Damselfly** (*Erythomma najas*) and **Small Red-eyed Damselfly** (*E. viridulum*).

Clockwise from top left: Common Darter, Broad-bodied Skimmer, Banded damselfly, and Western Willow Spreadwing.

Bees, Wasps and Ants

The most notable feature of much of Staines Moor is it numerous and large anthills, which are considered to be amongst the largest and oldest in southern England. Some are more than a metre across and rise 30 cm above the surrounding ground. They are the work of the **Yellow Ant** (*Lasius flavus*). The anthills provide opportunities for animals to survey the surrounding vegeation, especially for rabbits and small birds on the look-out for predators. Annual plants and plants intoelrant of competion from aggressive grasses also depend upon the anthills, the bare soil on the top allowing their seeds to germinate and survive to flowering and fruiting. Another unusual and nationally rare ant here is The **Bicolored Tree-**

ant (*Lasius brunneus*) is a black and orange ant which lives on both living and dead trees, nesting in cavities in the trunks and branches.

The abundant flowers on the Moor are attractive to a large range of bumble bees, solitary bees and wasps. **Small Garden Bumble Bee** (*Bombus hortorum*), **Tree Bumble Bee** (*B. hypnorum*), **Large Red-tailed Bumble Bee** (*B. lapidarius*), **White-tailed Bumble Bee** (*B. lucorum*), **Eary Bumble Bee** (*B. pratorum*), **Buff-tailed Bumble Bee** (*B. terrestris*), and **Common Carder Bee** (*B. pascuorum*) all forage here.

The solitary bees are more difficult to identify, although better field guides now exist than previously. The striking russet red and furry **Tawny Mining Bee** (*Andrena fulva*) is often seen on the Moor but other species of *Andrena* are less easily identified.

Three nationally scarce or rare bees found on the Moor are: *Andrena florea*, a solitary bee which feeds on White Bryony, is nationally very local but common in the County (Baldock, 2008); *Macropis europaea*, a medium-sized shiny black solitary bee forages on the flowers of Yellow Loosestrife is very local in wetlands, river and canal margins in southern England and East Anglia; a solitary mining bee *Lasioglossum malachurum* nests here in bare open ground.

Common Wasp (*Vespula vulgaris*), **German Wasp** (*V. germanica*), **Median Wasp** (*Dolichovespula media*) and the smaller **Saxon Wasp** (*Dolichovespula saxonica*) are common while the much larger yellow and brown marked **Hornet** (*Vespa crabro*) is increasingly seen here. A number of solitary wasps are found here but not readily identified.

Beetles

Beetles are probably the most diverse group of invertebrates on the Moor but not the most obvious ones. Several, however, are readily identified. The **Stag Beetle** (*Lucanus cervus*), our largest beetle, and **Lesser Stag Beetle** (*Dorcus parallelipedus*) have been recorded on the margins of the Moor. It is often seen at dusk flying in a characteristic manner with the body at an acute angle to the ground. The male has antler-like pincers and

the female much smaller ones. Its larvae live in the wood of tree trunks. Ground beetles are common, including **Violet Ground Beetle** (*Carabus violaceus*), **Ridged Violet Ground Beetle** (*C. problematicus*), **Bronze Ground Beetle** (*C. nemoralis*), **Moorland Ground Beetle** (*C. arvensis*), **Red-thoraxed Ground Beetle** (*Calathus melanocephalus*) and **Shining Green Ground Beetle** (*Agonum marginatum*) should be looked for. A rare ground beetle found here is *Demetrius imperialis* a distinctive ground beetle found amongst emergent vegetation.

Soldier Beetle on Ragwort (left), Yellow-Meadow ant hill (centre), Stag Beetle (right).

Soldier beetles are commonly seen on flowers on the Moor, the commonest being **Red Soldier Beetle** (*Rhagonycha fulva*) . which has a red head and brownish red body with a black margin. Another red beetle is the **Cardinal Beetle** (*Pyrachroa coccinea*) which is brighter red with a black head and a broader body than the Soldier Beetle. Several ladybirds are found here. Their larva feed on aphids. Several species can be identified by counting the number of spots on their red back. Look out here for **2-spot** (*Adalia bipunctata*), **7-spot** (Coccinella septempunctata), **10-spot** (*Adalia decempunctata*) and **11-spot** (*Coccinella undecimpuncata*) and **24-spot Ladybird** (*Subcoccinella vigintiquattuorpunctata*). The commonest species nowadays is the invasive **Harlequin Ladybird** (*Harmonia axyridis*), a large species up to 8 mm long with a variable number of black spots, sometimes with a paler halo around them. The yellow-backed **22-spot Ladybird** (*Psyllobora vigintiduopunctata*) is another that is readily identifed. The distinctive emerald green **Swollen-Thighed Beetle** (*Oedemera nobilis*) is commonly found on composite flowers. Only its male has swollen thighs on its back leges.

The Moor's rivers and ponds are a significant refuge for aquatic beetles. The most easily spotted is the **Whirligig Beetle** (*Gyrinus substriatus*), a small, glossy black, surface

dwelling beetle that wizzes around on the surface of the water. A number of local and nationally scarce species are also found in the ponds and rivers here. These include ***Hydroglyphus pusillus***, a small diving beetle found especially in new and in small shallow ephemeral ponds. The **Lesser Spangled Diving Beetle** (*Graphoderus cinereus*) is a beautiful water beetle with a very scattered distribution in England. It is abundant in the Butts Pond and adjacent pool behind the spoil heap, the only Middlesex locality for this species. The **Semi-black Diving Beetle** *Hydaticus seminiger***)** is a medium-sized black diving beetle with yellow edges. It occurs in a stagnant often shaded water on weedy pond margins. Local but increasingly recorded across England and Wales. *Rhantus grapii* **i**s a c.11mm long black diving beetle, found in mossy pools, and is local in Surrey and rare in Middlesex. The **Supertramp** (*Rhantus suturalis*) is a dark or yellowish brown c.12mm long diving beetle, found in silted ponds. Two unusual water-scavenging beetles: *Anacaena bipustulata***,** locally scarce in southern England, is a small domed water beetle found at the margins of still and slow moving water in silt and plant debris.

The rare **Domed Water Beetle** (*Berosus affinis*) is an uncommon elongate beetle found in a variety of ponds especially newly cleared or created ones. *Peltodytes caesus* is a very local small water beetle found in weedy ponds and still waters.

Several other notable beetles recorded on the Moor. In the wetter parts of the Moor, a small orange beetle *Noterus crassicornis* is a rarity in Surrey proper not recorded since 1944 (the Moor being in VC 21, formerly Middlesex for recording purposes). The **Dusky Paederus** (*Paederus fuscipes*)**,** a small rove beetle looking like an earwig but lacking the terminal pincers, is found in rich marsh and poor fen habitats. It is rare in Surrey and Middlesex. A **Camphor Beetle** (*Stenus butrintensis*) is typically found amongst tall emergent vegetation around the ponds, overwintering in *Typha* stems. The small black pollen beetle *Meligethes ochropus* **(Nationally Scarce B)**, local and scarce in England, Is locally abundant on the flowerheads of Marsh Woundwort (*Stachys palustris*). **Speedwell Weevil** (*Gymnetron villosulum*) is a small but distinctive weevil that lives on the water speedwells, *Veronica catenata* and *V.anagallis-aquatica*. It is a very local species but it can be abundant when found.

Hawthorn Jewel Beetle (*Agrilus sinuatus*) **i**s a metallic purple beetle on hawthorn and pear. ***Trachys scrobiculatus*** is a small jewel beetle which mines the leaves of Ground Ivy (*Glechoma hederacea*). The elongate black tumbling flower beetle ***Mordellistena parvula*** breeds in small branches wood of various hardwoods, including Field Maple and Hornbeam. The tiny **Withy Longhorn** (*Gracilia minuta***)** was once widespread in UK, but underwent a serious decline in late 20th Century. Adults have been found on cut bramble stems along old railway line.

Flies

Flies are numerous in both numbers and species on the Moor and imporatant pollinators os the flowers there. They range from the familiar Buebottles and Greenbottles to Cranefllies, Dungflies, Robberflies, Gnats, Mosquitoes, Hoverflies, Beeflies and Robberflies.

The cowpats and Horse droppings attract **Yellow Dungfly** (*Scathophaga stercoraria*). In summer hoverflies are often abundant on flowerheads. The largest is the magnificent wasp look-alike **Hornet Hover-fly** (*Volucella zonaria*). Adults reach 20 mm long and their larvae are parasites in wasp nests. Several smaller species are simi;arly marked with black- and yellow-banded bodies. These include **Humming Syrphus** (*Syrphus ribesii*), **Yellow-barred Peat Hover-fly** (*Serimyria silemtis*) and **Common Twist-tailed Hover-fly** (*Sphaerophoria scripta*). The increasing frequently spotted *Volucella inanis* **(**Nationally Scarce B) is another large yellow and black banded hoverfly, which develops in the nests of social wasps *Vespula* and *Vespa* species. It as spread rapidly in the last few years, and is now a not infrequent species in southern England. A similarly hovering and darting fly is **Dark-edged Bee-fly** (*Bombylius major*), often seen in early spring visiting flowers. In summer craneflies are common on the Moor. Both **Common Cranefly** (*Tipula oleracea*) and **Giant Cranefly** (*Tipula maxima*) are abundant.

Among the more unusual flies encountered on the Moor are the following that are nationally scarce: **Flecked General** (*Stratiomys singularior*), a large yellow and black fly which breeds in standing water, has been found at edge of the Butts Pond; **Black Colonel Soldierfly**

(*Odontomyia tigrina*) , is a black soldier fly associated with lush emergent vegetation at the margins of standing water. It is local in England and Wales; A picture-winged fly *Campiglossa malaris* has been reported here but, since the fly review this has been found at scattered localities in the South-East, it should be reassigned RDB3 status; three nationally scarce chloropid flies *Melanochaeta pubescens*, *Oscinimorpha arcuata* and *Trachysiphonella scutellata* have been recorded from the Moor; and two small orange snail killing flies, *Pherbellia nana* and *Psacadina verbeckei* are found in a range of wetland habitats where they attack a wide range of aquatic snails.

Spiders

The largest spider here is the **Wasp Spider** (*Argiope bruennichi*), a relatively recent addition to the British fauna. Its female is the most readily identifiable spider in the country with a large ellipsoidal body, 11-15 mm long, marked with yellow and black bands, the yellow paler towards the thorax. Its legs are also banded with black and creamy white. In contrast the male is small with a slender brown and white doted body, 4-5 mm long.

Other spiders of interest include the tiny **Ray Spider (***Theridiosoma gemmosum*), a locally scarce orb spider found in wetlands. Another nationally scarce species is *Marpissa muscosa*, our largest jumping spider, which is found under bark, and on tree trunks. It also occurs on fence posts where some bark as been left attached. It is widespread on hedgerow trees across the Moor. A false crab-spider *Philodromus albidus* is nationally scarce but quite widespread in Surrey and the south of England. It is found mainly on oak trees.

Wasp Spider: female and male spiders (left), female spider (right).

Threats to the Moor

Although Staines Moor has survived almost intact since the Domesday Book was compiled, it has not escaped unscathed, and it remains threatened today. Piecemeal removal of small parts of the Moor have been on-going for centuries. Roadbuilding, notably the M25, Moor Lane and the Staines Bypass have eaten into the margins of the Moor, separating small fragments from the main area, rendering them ungrazeable. The cut-off fragments lose their grazing and quickly develop into scrub and woodland.

Utilities have also built pipelines and pylons on the Moor. The area that has been disturbed by this work is still readily identifiable because it has a distinct and coarsely weedy flora when compared to the remaining grassland.

The removal of clay and the digging out of the pond in the northwest corner of the Moor caused disturbance that continues to the present day. However, this is as nothing compared to the building of the railway across the Moor in Victorian times, which involved importing large quantities of stone and other materials to build up the embankment to support the rails. It is evident today that the vegetation of the surviving embankment, comprising brambles, Hawthorn and Sallow in dense thickets, contrasts starkly with that of the Moor.

The major threats to the Moor today are threefold: namely, flood control, gravel-digging and the proposed rail-link to Heathrow. Flood control or lack of it is a continuing problem, particularly for the Moormasters who want to graze the Moor with cattle and horses. The Environment Agency continues to use the Moor as a flood relief scheme with the grassland often inundated for several weeks each year. Flooded grassland cannot be grazed. This has encouraged the growth of rank vegetation such as Nettle and Creeping Thistle to the detriment of the grassland flora.

Increased severity and frequency of flooding can make access for visitors more difficult.

The ownership of Staines Moor lies with the Lord of the Manor, currently a gravel-extraction company who would like to dig it for gravel. The proximity of the Moor to London, which has a continuing and increasing appetite for building, means that its gravel is an increasingly valuable commodity. However, digging it for gravel would mean the end of over 1000 years of history and the end of its rich and peculiar biodiversity. No matter how it is dressed up post-extraction, the current vegetation and wildlife cannot be recreated by landscaping the infilled gravel-pits when digging is complete. Biodiversity is not a numbers game, where the number of plants, bird and animal species can be counted and compared with what was there before. It is a question of complex interactions of the organisms that have been destroyed being irreparable. For example, the successful translocation of wetland habitats is a very difficult process, the most high-profile instance in recent years involved similar habitat to that present at Staines with *Glyceria maxima* dominated fen. The Newbury bypass was delayed whilst the population of DesMoulin's Whorl Snail (*Vertigo moulinsiana*), was relocated, but the colony died out at the receptor site within a decade (fide Buglife, 2008).

Finally, the inexorable increase in the size and traffic of Heathrow threatens the Moor and its hydrology. A railway spur from Staines to Heathrow terminal 5 may well take traffic off the roads around the airport but, if it is taken across the Moor, it will cause irreparable damage to the SSSI. The hydrology of the Moor, with three rivers flowing across it, is fragile, particularly with the Environment Agency's short-term approach. Construction

of a rail link will involve heavy machinery affecting a footprint far larger than that of the eventual track. We have already seen the effect of the old railway and of the pylons and pipe-laying on the Moor, which is still visible decades after it was undertaken.

The nub of this is '**Do the citizens of Spelthorne wish to retain its oldest landmark?**'. If they do, then we need the stakeholders (the Lord of the Manor, the Moormasters, the Council, and importantly, the public) to ensure that Staines Moor and its unique wildlife has a secure future.

Mute swans on River Colne.