THE EYE BROOK RESERVOIR

INTRODUCTION

In the making of iron and steel, an adequate and constant supply of water is obviously necessary for cooling and other purposes. Thus it was that the Eye Brook Reservoir came into being.

During the planning of Corby Steel Works, it was thought that the building of a storage reservoir would be a needless expense and that the water already obtained from Blatherwycke lake and Thrapston gravel pits would be a sufficient supply. However, the drought in 1933 and 1934 was so severe it caused the planners to alter their ideas, resulting in an Act of Parliament being passed to allow the building of the reservoir to take place. This special Act entitled the Corby Steel Works to impound all the water from the Eye Brook except for 700,000 gallons daily to run under the dam as compensation water.

The construction of the dam began in 1937, and was finished in 1940. By December 1940, the water started to overflow and the first supply of water to Corby Steel Works was made in the last week of that year.

During the last thirty-three years much work and planning has gone into landscaping of the ground surrounding the reservoir, making what is now a beautiful stretch of water that enhances the area while serving a useful purpose in industry.

Eunice Robinson 1974

THE STEEL WORKS

Prosperity came to Corby with the modern world's demand for steel. It sprang up into a steel town when it was discovered that an ironfield, covering 26,000 acres, lay under and around it, containing 500,000,000 tons of low-grade iron ore. These large deposits of iron ore made possible the economic production of iron and steel in massive quantities and resulted in the establishment of the new Stewarts and Lloyd's steel works in Corby and the extension of existing mining and works in the locality, promoting industry and increasing employment.

The manufacture of iron and steel is largely dependent on an adequate supply of water and the existing supply from Thrapston and Blatherwycke was insufficient and had to be augmented. This meant a survey of the surrounding area to find a suitable valley across which a dam could be built and which would not be too far from the steel works. The Eye Brook valley was chosen.

SITUATION

The Eye Brook rises at Tilton, in Leicestershire, and flows for approximately 10 miles before reaching the reservoir. From Finchley Bridge, between East Norton and Allexton, on the A47 road, it forms the boundary between Leicestershire and Rutland until its confluence with the River Welland, just below Caldecott. Therefore the reservoir is divided between the two counties.

The Eye Brook Reservoir is more or less central to the towns of Market Harborough, Kettering, Oundle and Oakham, and the nearest main road is the A6003, which runs between Kettering and Oakham. Access to the reservoir by the main gate is opposite the pumping station on the Great Easton road.

DESCRIPTION AND GEOLOGY

The Eye Brook Reservoir was built by Stewarts and Lloyds, under the Corby (Northants) and District Water Company Acts 1931 and 1934. This special Act enabled the Water Company to purchase 555.842 acres of land from several different landowners in the

area.

The cost of the dam was low compared with other reservoirs owing to its accessibility and the natural materials for its construction being at hand.

The reservoir was formed by building an earthwork dam 1,695 feet long across the shallow valley of the Eye Brook. Although much fertile farmland was inundated there were no houses or farms in the valley, so no buildings were destroyed by the flooding. The earth dam has a 'puddle' clay core, two to three feet wide, going down to a maximum of eighty feet; the weight of earth on either side holds it in place, and this is the real seal of the dam. ('Puddled', literally, means puddled in by tramping with the feet.) The maximum breadth of the dam, from toe to toe, is 290 feet and tapers to 15 feet at the top where the dam wave wall projects 6 feet above top water level. The upstream face is of rough limestone, protected by thin concrete slabs, the other side being sown with grass. The upkeep of the grass on the dam is vitally important to prevent erosion and is mown by a flail, behind a tractor, which was originally developed for cutting banks alongside motorways.

The total capacity of the reservoir is 1,781 million gallons and measures 406.270 acres, with a perimeter of, approximately, five and a quarter miles. The maximum depth of water, 39 feet 6 inches.

The average is 17 feet 6 inches. Top water level is 227.50 feet O.D. (Liverpool.)

The geological survey shows that the bed of the reservoir and the headwaters of the stream are on the Middle Lias with Marlestone Rock outcropping approximately halfway down the catchment area. There are also small outcrops of Northamptonshire sand (ironstone) towards the top of the hills. The Marlestone Rock and the ironstone, which are thin layers compared with the clays, feed small springs of very hard water, which give a fairly constant run-off of just over half-a-million gallons a day, which constitutes the brook's dry weather flow.

In winter, surface water feeds the stream, which easily runs to spate once the clays are saturated. There are no towns and only small villages in the catchment area, and the brook itself suffers very little pollution, as is proved by the fact that it has been regularly fished for trout for many years.

CATCHMENT AREA

This extends over 23.20 square miles and before the last war, there was hardly a ploughed field in it, most of it being permanent grassland, which had not been ploughed for well over a hundred years. This afforded some of the best grazing land for bullocks in the country, and constituted the shires of foxhunting. Gradually as farming prospered, more and more land has been ploughed, until now half the catchment area is arable.

The highest point in the catchment area is Robin-a-Tiptoe near Tilton, where the land stands just over 700 feet high, and therefore falls a matter of 500 feet to the reservoir. This is comparatively steep for the East Midlands of England.

The villages in the catchment area:- Loddington; East Norton; Belton; Allexton; Wardley; Stockerston and Stoke Dry, have had little new development, although the Eye Brook's dry weather flow has increased slightly due to the effluent from them.

FUNCTION OF THE WELLAND AND NENE RIVER AUTHORITY

Samples of water are taken weekly from the inlet and outlet of the reservoir and tested for pollution. These tests show that the reservoir is still very fertile and the effects of pesticides and inorganic fertilizers, used in agriculture, have not been noticeable at all. The Forestry Commission owns woods in the vicinity of the reservoir, and it was feared that the toxic spray used on the trees might affect the fish, but no problems from it were encountered.

The sewage capacity of villages in the area is carefully checked and they are not allowed to expand unless their sewage works are adequate to deal with the additional outflow. Only after sudden storms has there been anything unpleasant noticed, when the plant has been unable to cope, but with so much water the pollution has made little difference due to dilution.

The Welland and Nene River Authority are responsible for the banks of the stream above and below the dam, but not the reservoir itself. Anyone fishing in the reservoir has to have a River Authority licence, as all fishing in the area is under their control. 90% is coarse fishing; although, where trout waters come within their boundary these also are their responsibility, even though privately owned.

From the lst. of April 1974, the Welland and Nene River Authority is to be disbanded, along with a great number of other Boards, and will become Regional Authority No. 5, out of eleven in the country.

Most concern is shown by the Welland and Nene River Board over the discharge of water from the Steel Works into the Willow Brook. Before the Works and New Town were built, the dead dry weather summer flow was barely one million gallons daily. Owing to the Works' effluent, Corby sewage, and a small quantity of Mines' dumping, the minimum dry weather flow is now not less than nine millions gallons daily, and is expected to increase as Corby Town grows.

The worst stretch of the Nene River basin is near Corby, where the northern and southern streams of the Willow Brook are classed as of "poor quality", requiring some improvement as a matter of urgency. In the early days of Corby steel works, a serious outflow of phenols occurred, In consequence, the Willow Brook between Weldon and Deenethorpe was fenced off. The Corby (Northants) and District Water Company continues to maintain this fence and supply cattle troughs to the adjoining fields.

Unfortunately, from time to time, there are comparatively minor outbreaks of oil or phenols, and the fish in Deene Lake are killed off. The River Authority contended, on one occasion, that some fish were killed at Blatherwycke, and the British Steel Corporation was prosecuted, with fines and costs amounting to £90.

USE OF LAND WITHIN THE BOUNDARY FENCE

There are over 140 acres of land around the Eye Brook Reservoir, within the boundary fence which, on the Rutland side, is almost all woodland. On the Leicestershire side it is left as open parkland making a pleasing contrast. It was originally planned that the Leicestershire side should also be planted with trees, but as it was wartime and labour was scarce and trees difficult to obtain, planting was postponed until the war was over. Eventually, the idea was abandoned altogether and a number of park trees substituted to give a contrast to the Rutland bank. This enabled the public to have an uninterrupted view of the water from the road alongside.

It was in the winter of 1939, that a start was made on afforestation near the Stoke Dry gate, planting Scots pines 5 feet apart. Working down towards the dam , Japanese and European larch, spruce and

Lawson cypress were planted. The concrete road approach to the dam was bordered with ornamental hardwoods.

There are many more hardwoods towards the dam end of the reservoir than towards the North end. As the larch were felled they were replaced with oak with a nurse crop of either Scots pine or Norway spruce. The oak, which are indigenous trees to the district, have grown well and are now topping their nurse crop. The hardwoods have grown better than the conifers, although they were grown six years later as replacements. The plantation has been thinned three times and the trees are now standing approximately fifteen feet apart. Trees will continue to be a mixture, the old larch gradually being replaced by willows and hornbeam, with Scots pine and oak at the back of these. Trees are grown purely for amenity and not as a commercial crop.

The grazing rights of the land are let to one farmer, Mr. Charles Northen, whose (often unusual breeds of) cattle can be seen amongst the trees in the woodland or in the pasture on the other side of the water.

When the reservoir was finished, the consulting engineers decided that the verges could be grazed by sheep only and not by cattle. It was then found that the grass got very rank, as sheep are selective feeders,' so eventually it was decided to allow cattle to graze, although they do on occasion go into the water.

The cattle do very well in the woods and whilst they trample between the trees in search of fodder, they keep down the brambles and undergrowth which would otherwise flourish. Naturalists argue that this destruction of the undergrowth deters many wild birds from nesting in the woods and they would prefer it if it was left to grow undisturbed as cover for the animals and birds. The area is classed as a nature reserve and bird sanctuary.

Under the Special Act, the Corby (Northants) and District Water Company was obliged to erect a stockproof fence round any part of the reservoir which was not already fenced and they also had to make up and repair other fences that were in poor condition The quick hedges that were planted grew remarkably well. It is of interest to see the difference in the condition of the Company's hedges and other hedges, due to proper maintaining. Hazel is specially grown for stakes and, in various ditches, willow for binders, to be used when hedges have to be cut and layered. There is also a small nursery where a few trees, quick and privet plants are grown for replacement.

A concrete road extends from the gate on the Great Easton road up to the dam and then, on either side of the water, dust tracks run to join the public road at the Stockerston end of the reservoir, so that the whole is accessible to vehicles.

DOMESTIC SUPPLIES OF WATER

Although the Eye Brook Reservoir was built to supply water for the steel works, the Water Company were obliged, by the Special Act, to supply water also to the villages immediately surrounding Corby, as well as to the town of Corby itself. In addition, Kettering was to receive 500,000 gallons a day and Market Harborough and Uppingham smaller amounts. This was supplied as raw chlorinated water because the filter station had not been Completed. Wellingborough urgently required water and a supply was made to that town in May 1941. By 1942, the filter station had been completed and filtered water was then supplied to these towns.

The filter station was designed by the engineers on the same lines as upland reservoirs, with rapid gravity filters, but the quality of the water from the Eye Brook was quite different and was extremely difficult to filter and the water, though sterile, often had obnoxious tastes.

In 1948, the Mid-Northamptonshire Water Board was formed and took over the whole domestic distribution system of the Corby (Northants) and District Water Company, under an amendment to the Special Act. They purchased the Company's filter station, water tower and distribution mains. The new Water Board depended to a large extent for its supply of water on the new reservoir at Pitsford, and until this was brought into use in 1957, raw water from Eye Brook Reservoir was used.

The Eye Brook Reservoir water is now used only to supply the Steel Works in Corby and other works associated with it, and also farms. Before the war, few farmers on Stewarts and Lloyds large estate had an adequate supply of water. With the necessity to produce food during the war, a start was made to supply cattle troughs on some of these farms, and this policy has continued so that now practically the whole of the estate is now properly watered.

OTHER WATER SUPPLIES TO THE STEEL WORKS

The original water supply to the blast furnaces in use before Corby Steel Works were built in 1933, was taken from the large Clayhole. This was a disused borrow pit from brick works which closed nearly 100 years ago. The Clayhole has no natural feeder stream or spring. It is filled by surplus water running down the south Willow Brook. The Clayhole capacity when full is 26.4 million gallons and the area 4.3 acres. Although the available water is not much, it is an invaluable source that can be used for an hour or so during peak periods of demand. It is pumped by remote control and can be stopped or started from Corby Works.

A smaller Clayhole alongside has no connection to the largeone. Both these Clayholes were enclosed with an unclimbable fence in 1965.

The Thrapston Gravel Pits were developed as an underground water source, but as the level of the water never lowered it was decided, by the then Nene River Board in 1948, that the water must come from the river. A lease was entered into by the Corby (Northants) and District Water Company with the Thrapston Gravel Company, for the water rights of the lake they were forming with their gravel workings. This, over the years, has extended from about 25 acres to 158 acres. Before the war the River Nene's dry weather flow was very small, and in the drought of 1947, this source was virtually non-existent for several weeks. With modern piped water supplies and sewage the flow at Thrapston is now well above the three million gallons daily which the pumps can deliver. Thrapston pumping station is near Islip Mill and has two Electrically driven 350 h.p. pumps, one standby to the other. The pipeline more or less follows the Thrapston Corby road for eleven miles.

Blatherwycke was an ornamental lake, formed by damming the Willow Brook at the time of the Irish Famine to provide work for the Irish labourers. A mill was built, but by 1933, it was out of use. A lease was taken out for 50 years by the Water Company, which provided that Stewarts and Lloyds could take water from the lake and have possession of the mill buildings, while also maintaining the dam.

Two 125 h.p. pumps were installed in the basement of the mill feeding to Corby through a 14 inch main to deliver two million gallons daily. Another pump has been installed which has increased the flow to three and a quarter millions daily. These pumps can be started by remote control the same as the one at the Clayhole.

The water entering Blatherwycke Lake is from the three Willow Brook branches in Corby, and also from Gretton Brook which runs into the Willow Brook at Bulwick. Since the works and New Town were built the Willow Brook's dry weather flow has increased by eight million gallons daily, which will provide a safe future supply of water over the three and a quarter million gallons daily already being pumped.

The Water Company holds a lease of Deene Lake which gives it the right to take water from the lake, but this right has never been used. Deene Lake is valuable to the Company for pollution samples, which are taken by the Welland and Nene River Authority.

In 1936, before the Eye Brook Reservoir was built, other sources of water that could be obtained quickly were sought. One of these was the Duddington Abyssinian Tube Wells system , where the ironstone water was almost artesian and quite independent of the level of the adjoining River Welland. Investigation proved that the wells could produce at least one million gallons daily in the driest of weather. Borings vary from 18 feet to 26 feet deep and two pumps can deliver 1.2 m.g.d. Duddington water is no longer used for the works since Eye Brook Reservoir was built, but as it is good quality well water it is used by the Nene and Ouse River Authority to supply Wittering Aerodrome and other villages in that area,

The acute water shortage between 1933 and 1936, caused wells to be dug at Great and Little Oakley, but both these and their mains have since disappeared. Two boreholes at the Chase and Bullimore Farms at Brigstock were sunk, and though no accurate estimates have been made it is thought that the supply might be between and 1 million gallons daily, as the four inch pumps used did not lower the level of the water. These now supply farms.

Corby Works uses a very large quantity of water which is re-circulated many times through cooling and cleaning plants. All the effluent flows into Blatherwycke Lake, which is then again pumped back into the water system of the Steel Works to go again through all the processes. Water supplied from Eye Brook Reservoir, Thrapston and Blatherwycke is only make-up water, probably 5 to 10% of the water required if there was no recirculation. At the beginning of 1967, a Candy filter plant was installed in the rolling mills to effect a further re-circulation, and by returning surplus water to the central water station. This had the effect of reducing the water requirements to 7.5 million gallons daily.

EYE BROOK RESERVOIR SIPHON SPILLWAY

The top water level of the Eye Brook Reservoir was raised 2 feet 6 inches by placing 16 ferro-concrete, self-priming, selfregulating siphons on top of the bellmouth spillway, without alteration to the dam, thereby enlarging the capacity of the reservoir from 1,520 to 1,780 million gallons.

The bellmouth spillway, with a top water level of 225 O.D. was designed to discharge a maximum flood of 4,000 cusecs (cubic feet per second), before the level of the reservoir reached 229 ft. O.D. At this same level the siphon spillway will discharge the same amount of water, although its crest is 227.50 O.D. thus the top water level is raised by 2 ft. 6 ins.

The spillway is approximately 60 feet long by 40 feet wide and discharges into a diversion tunnel beneath the dam, with a concrete tailbay downstream. Work on the construction of the siphons was started in April 1955, and finished in October of that year when eight siphons were built into and upon the long sides of the old bellmouth spillway, making sixteen in all.

The siphons are arranged to go off in pairs except the last six which, if the water ever rose high enough, would all go off together. There is six inches difference between the lowest siphon lip level and the highest. With these differences in the levels there is a slow and gradual start to the spillway's discharge, which prevents sudden flooding in the village of Caldecott, one mile below the dam. When flooding occurs here the main road becomes impassable. As the siphons prime in stages they automatically regulate themselves to the flow of the water in the reservoir and the discharge will increase or decrease as the flood rises or subsides.

The design of the siphons was produced by Laboratoire Dauphinois d'Hydraulique, (Neyrpic), Grenoble, France, and were used in that country for hydroelectric purposes.

CALDECOTT PUMPING STATION

The pumping station is situated one and a quarter miles below the dam of the Eye Brook Reservoir on the side of the Great Easton road near Caldecott. In that distance the ground, measured from the bottom of the reservoir, drops by just over 18 feet, so the water runs by gravity to the pumping station. From here the water has to travel up to the top of Rockingham Hill, which is 252 feet higher than the pumping station and consequently requires very powerful pumps to deliver it.

In the pump house are four pumping sets, each giving 1,600 gallons per minute, driven by Mather and Platt motors. One, two and three can be used together; the fourth is a spare. There is a diesel alternator standby which can generate enough current to drive one pumping set. The main electricity supply comes from Slawston, in Leicestershire; if that fails then a switchover to the Lincolnshire supply can be made. Each of these supplies can maintain a full load.

The water is delivered into the Water Company's service reservoir in Corby Works, which holds 750,000 gallons of water. The water level in this service reservoir is maintained by remote control electronic systems in the pump house at Caldecott. This cuts out the pumps when the water in the service reservoir reaches 10ft. 6ins., and cuts them in again when the water drops to 9ft. 6ins. Because of the distance between the pumping station and the service reservoir, there is half an hour's delay between the pumps switching on and the water being delivered. When the water reaches the crest of Rockingham Hill it then runs by gravity into the works, as the pipeline has a gradual descent.

There is a large cylindrical tank outside the pumping station which contains liquid chlorine, this is added to the water at the rate of one part per million to clear the pipes of mussel growth and algae.

Near the pumping station are the four staff houses built in 1954, and the foreman's house built in 1949. Alarm bells and telephones have been installed in the houses in case of a fault developing in the pumping system or other emergency.

EYE BROOK RESERVOIR FISHING AND FISH FARMING

The Eye Brook Reservoir attracts fly-fishermen from all parts of the country to fish its waters for brown and rainbow trout. Here, in this beautiful setting with tranquil, rural surroundings, it provides many hours of quiet pleasure for anglers away from the pressures of modern life.

The season opens on April lst. and closes on the 30th. of September. The hours of fishing are from dawn until approximately one hour after sunset except for the boats, which cannot be taken out before 8-30 a.m. Fishing is by permit only and costs £1.50 per person per day from bank or boat; a boat costs £2 extra.

The 400 acres of water can become very rough in high winds and in such dangerous conditions a red flag is hoisted near the fishing hut to warn fisherman that no boats are allowed on the water. Each boat has its own trolley and can be winched into or out of the water.

On the day sheet in the boathouse every fisherman must record the number and weight of fish caught.

In May of 1940, 30,000 fry and 15,000 yearling brown trout were put into the reservour soon after the dam was built. In 1941 between 6,000 and 10,000 1 1/2 lb. trout died. The biologist's report said this was due to asphyxiation caused by the high temperature of the water and the oxygen demand of the rotting vegetation in the bottom of the new reservoir. The remaining fish recovered when the water became cooler. Hatching of bought ova was begun by the Company, but was discontinued owing to the disappointing results. It was then decided to stock with larger, older fishi as it was useless to put fry into the water when the larger fish were present to prey on them. These fish were not less than 12 inches long and weighed about 12 ounces and the fishing, which up till then, had been poor, began slowly to improve. By 1962, each fisherman averaged one fish per visit and the peak was reached in 1967, when 15,000 fish were caught in 13,000 rod days. 33 fish per acre are are now caught every year compared to the nearest rival of 15 fish per acre.

A check has,always been kept on how many fish are put into the reservoir and how many are taken out. In the early years when the fishing results were so poor, it was considered turning the reservoir over to sailing, but this was not accepted.

The Welland and Nene River Authority drag the reservoir for coarse fish, usually in the autumn, and use them to stock their rivers. In 1951 and 1952, roach were caught by the million, but the following year there were very few owing to the heavy stocking with trout which fed on them.

The trout farming is improving and the Company is able to raise five to six inch yearling brown trout to twelve inch fish by August when they are less than two years old, and the rainbow trout can be brought up to twelve inches in fifteen to eighteen months. The raceways were built in 1961, especially for the purpose of raising fish. They are one hundred yards long and thewater that runs through them is from the main to Caldecott Pumping Station. They are situated alongside the tailbay, which is itself used for rearing fish in the summer months when there is little likelihood of the reservoir overflowing. One year the Company lost all the trout out of the tailbay through an unexpected flood in April. The tailbay is divided into three sections; the first two by weirs with wire screens across them and the third is dammed by a temporary screen. The fish are fed automatically with artificial pellets from hoppers suspended over the water and operated by compressed air from a one horse-power motor. They are wired to a time switch and can be regulated to go off for five seconds at whatever time the clock is set in the 24 hours by remote control. The hopper holds about 30lbs. of food and delivers 8ozs at each ‘blow’. The alternative to this method of feeding would be by hand two or three times a day, whereas the automatic feeders can be set to deliver from a dozen to twenty feeds daily.

Earth ponds have been built in the woods on the Rutland bank below the dam to take advantage of the extra water that is available in the winter when the tailbay cannot be used. They are 15 feet deep and are supplied by water siphoned from over the dam which drains back above the compensation weir. The raceways, the earth ponds and the tailbay are covered with light netting to keep off birds and other predators.

The fish are put in the earth ponds between October and December and, when the reservoir begins to lower, transferred to the tailbay where they stay until reaching the 12 ins. 12 oz. size and are put into the reservoir.

BIOLOGY

The storage of the reservoir is small in proportion to its area on account of its shallowness and the low rainfall. As the water goes down in the summer, large areas of the bed of the reservoir are exposed and quickly grow a luxuriant crop of vegetation. This is broken down again as the reservoir fills. The alternate growing and rotting contributes to heavy annual growths of plankton which used to make the water difficult to filter and also produced the bad tasted. Fish thrive in the reservoir; the species making the most growth also changes. At first the stickle backs grew in profusion only to disappear after three years and then the roach population multiplied into millions. During the first three years that trout were put in they grew to an enormous size, since then they have not grown at anything like the same rate. When conditions are favourable to a particular species it tends to overgrow itself until all the particular food on which it thrives is gone and the balance is restored.

From the time the reservoir was filled records have been kept of the principal biological occurrences and fortnightly samples of water are sent to the Freshwater Biological Association for a plankton count and chemical analysis.

BIRDS

Reservoirs and man-made lakes inland have altered the geographical distribution of birds and the Eye Brook Reservoir is no exception. Birds are now more secure in this country than they were in the nineteenth century, mainly because of the popularity of bird watching and the appreciation of wildlife in general. The reservoir is remarkable for the number and variety of the birds that have been seen within the boundary fence, and at times there are thousands of them on the water and around the edge feeding on the plentiful supplies of fish, crustacea and algae. There is little pollution from the birds as is shown by the monthly bacteriological analysis.

The accompanying list of birds was compiled by the Leicestershire and Rutland Ornithological Society and include those which have rarely or never been seen in the area before. This Society's members have permits which allow them to study the birds from inside the boundary and a special hide has been built on the water's edge especially for this purpose. The key to it is obtainable from the secretary of the Society upon application.

One completely irrelevant but interesting item is that, during the last war, Wing Commander Guy Gibson and his brave companions practised on several consecutive evenings aiming dummy, bouncing bombs on the Eye Brook dam before going to Germany with the real thing to breach the Mohne dam.

LEICESTERSHIRE AND RUTLAND ORNITHOLOGICAL SOCIETY

List of birds recorded within the boundary fence of the Eye Brook Reservoir. 1974

Great Northern Diver	Woodcock	Blue Tit
Red-throated Diver	Curlew	Coal Tit
Great-crested Grebe	Whimbrel	Marsh Tit
Red-necked Grebe	Black-tailed Godwit	Long-tailed Tit
Slavonian Grebe	Green Sandpiper	Tree Creeper
Black-necked Grebe	Wood Sandpiper	Wren

Little Grebe
Cormorant
Heron
Bittern
Spoonbill
Mallard
Teal
Garganey
Gadwall
Widgeon
Pintail
Shoveler
Scaup
Tufted Duck
Pochard
Ferruginous Duck
Goldeneye
Long-tailed Duck
Velvet Scoter
Common Scoter
Red-breasted Merganser
Goosander
Smew
Shelduck
Grey-lag Goose
White-fronted Goose
Pink-footed Goose
Brent Goose
Canada Goose
Mute Swan
Whooper Swan
Bewick's Swan
Buzzard

Common Sandpiper
Redshank
Spotted Redshank
Yellowleg
Greenshank
Knot
Purple Sandpiper
Little Stint
Temminck's Stint
Pectoral Sandpiper
Dunlin
Curlew Sandpiper
Sanderling
Ruff
Black-winged Stilt
Grey Phalarope
Red-necked Phalarope
Stone Curlew
Greater Black-backed Gull
Lesser Black-backed Gull
Herring Gull
Common Gull
Little Gull
Black-headed Gull
Black Tern
Common Tern
Arctic Tern
Roseate Tern
Little Tern
Sandwich Tern
Stock Dove
Wood Pigeon
Turtle Dove

Mistle Thrush
Fieldfare
Song Thrush
Redwing
Blackbird
Wheatear
Stonechat
Whinchat
Redstart
Black Redstart
Robin
Grasshopper warbler
Reed Warbler
Sedge Warbler
Blackcap
Garden Warbler
Whitethroat
Lesser Whitethroat
Willow Warbler
Chiffchaff
Goldcrest
Firecrest
Spotted Flycatcher
Hedge Sparrow
Meadow Pipit
Tree Pipit
Pied Wagtail
Grey Wagtail
Yellow Wagtail
Woodchat Shrike
Starling
Greenfinch
Goldfinch

Sparrow Hawk	Cuckoo	Siskin
Hobby	Barn Owl	Linnet
Peregrine	Little Owl	Redpoll
Merlin	Tawny Owl	Bullfinch
Kestrel	Short-eared Owl	Chaffinch
Red-legged Partridge	Swift	Brambling
Partridge	Kingfisher	Yellowhammer
Pheasant	Green Woodpecker	Corn Bunting
Water Rail	Greater Spotted Woodpecker	Cirl Bunting
Moorhen	Lesser Spotted Woodpecker	Reed Bunting
Coot	Skylark	Snow Bunting
Oystercatcher	Swallow	House Sparrow
Lapwing	House Martin	Tree Sparrow
Ringed Plover	Sand Martin	Gannet
Little Ringed Plover	Carrion Crow	Shag
Kentish Plover	Hooded Crow	Squacco Heron
Grey Plover	Rook	Ruddy Duck
Golden Plover	Jackdaw	Egyptian Goose
Turnstone	Magpie	Marsh Harrier
Snipe	Jay	Osprey
Jack Snipe	Great Tit	Bar-tailed Godwit
Stone Curlew	Glaucous Gull	Kittiwake
White-winged Black Tern	Caspian Tern	Collared Dove
Long-eared Owl	Hoopoe	Woodlark
Willow Tit	Ring Ousel	Pied Flycatcher
Wood Warbler	Rock Pipit	Great Grey Shrike
Twite	Crossbill	Avocet

End.