

**THANK YOU  
FOR THE DAYS**

A close-up photograph of a dandelion seed head, showing the intricate structure of the seeds and their fine, hair-like pappus. The dandelion is silhouetted against a soft, warm sunset sky with a gradient from light orange to a deeper orange-red. The overall mood is peaceful and nostalgic.

**CROMWELL BOTTOM LOCAL  
NATURE RESERVE**

## DEDICATION

*In loving memory of Sally Henshaw -  
our hearts will always be with you.*



# FOREWORD

This book is inspired by the wonderful contribution of Allan Wolfenden, former Chair of Cromwell Bottom Wildlife Group; the Volunteers who work enthusiastically to develop the nature reserve each week; the brilliant history of the area from Andy Eccles and the photographs and articles that have been received by the Newsletter Team during the period 2016 - 2019. Every quarter a newsletter is produced containing feature length articles from members of the group and it's supporters and fabulous images from the photographers that spend their time at the reserve. The Newsletter team thank each and every person who has contributed to the success of the newsletter.

The following pages contain extracts from the newsletters specially prepared for inclusion in this book and a section of wonderful images all taken on the reserve (unless otherwise stated).

Cromwell Bottom Wildlife Group (CBWG) is a group of committed volunteers dedicated to the conservation and development of this important nature reserve. There are many members and new members are always made very welcome. There are regular work parties; without the dedication commitment of these volunteers the reserve would not exist, CBWG, in partnership with Calderdale Council Public Services Directorate, manages 74 acres of varied habitat including flower meadows, dry and wet woodland, lagoon, a pond dipping platform and bird feeding areas.

The Reserve is located just off the major road A6025 between Brighouse and Elland. You can follow the brown tourist information signs which indicate it is 300 yards away. Follow the road to the car park and walk over the bridge to the entrance of the Reserve. Laying beside the River Calder and surrounded by fields and woodlands, this diverse site is one of the most important for wildlife in Calderdale.

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Designed and compiled by VALERIE BEST (volunteer)  
Edited by LYNDA ORCHARD (Trustee).

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Cromwell Bottom  
Nature Reserve at Dawn -  
Credit Mike Henshaw





Boxing Day Floods 2015  
at Cromwell Bottom -  
Credit Allan Wolfenden





## Part One:

# The Seasons at Cromwell Bottom

## AUTUMN

Allan Wolfenden, former Chair, CBWG

Branching Oyster Fungi  
Tag Loop



Birch Polymore Fungi

**Autumn, for me** is a beautiful time of the year. It's a time when the leaves of many trees are changing colour. As the days get shorter, the nights longer and temperatures begin fall it is a time to put an extra layer of clothing on and respond to nature's invitation to come outdoors and see what it has to offer. Cromwell Bottom Local Nature Reserve is a great place to do that. I like to walk amongst the Silver Birch, Oak and Sycamore trees or take the path to the lagoon so that I can look out over the reed bed. For me, on those cool but sunny autumn days, as colours stand out and shapes become more defined, the reserve becomes a magical place of discovery. Being there helps me to appreciate and value the reserve that I have grown to love. Of course, autumn on the reserve is not just a time for appreciating its beauty it is also a time of activity and endeavour; a busy time both for wildlife and for those of us who help

manage the reserve.

Autumn fungi are particularly fascinating and they are at their best in the Autumn.

It is this time of the year when we get on with the work that needs doing on the reserve that we couldn't do in the summer, not wanting to disturb breeding birds. There is much to do. What can be done on the reserve is always dependent on the number of volunteers that are available.

Also at this time of year we enter the lagoon to cut some of the reeds and trees with the aim of creating a healthy reed bed that is both good for wildlife and gives pleasure to people. Cutting the reeds promotes new reed growth and provides feeding pools and edges for our autumn and winter visiting birds. Every autumn and winter we work at managing the reed bed because we recognise it as an important ecosystem.

# WINTER - Walking in a Winter Wonderland!



**Lagoon in winter & steps to the Bund**  
credit Allan Wolfenden



Snow had fallen throughout the night and it was still snowing as I walked to the nature reserve at Cromwell Bottom. Wrapped up against the cold I walked down the canal towpath, my steps muffled by the deep blanket of snow underneath my boots. In the winter morning light everything looked different.

The nature reserve looked beautiful in its pristine appearance. The branches of trees and bushes, arched over by the weight of snow, seemed to extend a wintry welcome. Blackbirds scurried about in the hawthorn bushes, seeking priceless berries that would still their hunger and fuel their energy. The snow, beautiful to me had made life difficult for them. As I arrived at the Bird Viewing Area I was greeted by the sight of lots of small birds. Each bird, having survived the night, was now intent on consuming as much food as possible in preparation for the cold evening they instinctively knew was coming. As I refilled the feeders and put out more fat balls I thought of how hard winter can be for these birds and hoped that what I was doing would make a difference.

It had stopped snowing as I left the Bird Viewing Area. Following the river path I quickly realised that others were out early

that morning also. Footprints of people and dogs could be seen pressed into the snow giving away their direction of travel on this wintry morning. Suddenly there is the rapid beating of wings on the river. I notice two goosanders flying low down-river, seeking to put distance between us. The only birds that remain are Mallard, who seem impervious to my presence as I choose to linger in the cold air to check out if there might just be an elusive Kingfisher perched on a low overhanging branch. Disappointed I move on, making my way across the bund that separates the Lagoon from the Wet Woodland.

As I walk between the Willows that are on either side of the bund I am struck by how beautiful the reed-bed is covered in its icy garment. No birds to be seen here today but I am not disappointed. I am looking out on a pristine wintry scene that evokes a beauty that brings a stab of joy and contentment within me. That is what nature does, it gives you a sense of connection and wholeness.

As I make my way home, with the snow beginning to melt, I am thankful for my walk to and around the reserve. I relish the hot drink that awaits me and the memories of a winter's day walk that I will hold.

# SPRING

**The spring migration of birds** onto the reserve and North Loop is one that I look forward to each year. From early March, I will be listening and looking out for these new arrivals. Among the first that I expect to see and hear, is the chiffchaff. This a bird that looks very similar to a Willow Warbler (also to be found on the reserve but arriving a little later). The moment the male chiffchaff begins to sing, there is no mistaking its identity. Nonetheless, it is a delight to welcome these warblers back onto the reserve where they will nest and raise their young.

Other warblers to look out for are blackcaps, willow warblers, garden warblers, sedge warblers and reed warblers. For the latter, much patience is required. The best place to see and listen out for them is along the bund path at the edge of the lagoon or at Newt Corner. (Please do not enter the reed bed) The male Reed warbler has a habit of climbing to the top of the reeds in the lagoon, briefly announcing his presence before quickly dropping out of sight again. Most frustrating for the viewer!

Many of you will have seen the Sand martin wall which we put up on North Loop. Hopefully, this year some of the sand martins that have made their way from Southern Africa to feed on the reserve will make it their home. Other long distant migrants that I never tire of seeing are swallows, house martins and swifts. Although they do not breed on the reserve, I love to watch them feeding in flight, mouths agape hoovering up tiny insects in the air.

North Loop, which is presently not open to the public, offers its own unique opportunities. Those involved in monitoring the birds have been able to watch and

record the bird life that lives and feeds there. Most years, we have the opportunity to see and record wheatears (see the photo below). These elegant birds make occasional stopovers on their way to their moorland breeding grounds further north. Another spring visitor to be found on North Loop is the skylark. Skylarks are ground nesting birds whose population has halved since 1990. They face many challenges, not least the destruction and degrading of their habitat. Being ground nesters, they require vegetation in which to nest. Ideally this needs to be between 20cm and 50cm in height. They will consequently fail to breed if the vegetation is either too short or too long. One of the tasks in which we are involved in partnership with CMBC is trying to establish the optimum breeding conditions so that skylarks can thrive on North Loop.

This spring, I will have my binoculars ready and my notebook on hand to enjoy and record these sensational spring visitors.



Wheatear - credit  
Mike Henshaw

# Summer

**Summer is a time I enjoy.** It is a time when the days are usually long and warm. Because of that my walks around the reserve mean I am on the lookout for insects. A walk round the reserve will bring you into contact with bees, wasps, hoverflies, dragonflies, damselflies butterflies and moths. Cromwell Bottom Nature Reserve may not be very large, (it's about 78 acres) but if you look carefully there are some truly special things to be discovered and enjoyed.

The beauty, wonder and amazing habits of insects can easily be overlooked. Recently, I spotted a male banded demoiselle near the bird viewing area.

With its translucent wings and dainty flight pattern it would be easy to mistake it for a butterfly. These are stunning damselflies and it's truly is a joy to see them on the reserve.

It's good to explore. When walking near the pond dipping area I often check for different dragonflies and damselflies. In early summer you are likely to encounter male broad-bodied chasers, red darters and common blue damselflies.

Later in the summer you may well discover large male hawker dragonflies making their territorial flights over the ponds. Look into the depths of the ponds from the dipping platform and you may well see a newt coming to the surface for air. As I take time to watch for whatever may be flying over the water, I marvel at the thought of what is living and developing beneath the water.

When the days are warm it pays to just linger or walk quietly and gently through the meadows or along the paths on the reserve. Take time to sit. Take in the sounds. Look at what you can see with your eyes. Listen to the buzzing of insects. Being in nature is a sensory experience. See how many species you can count. Attempt to identify what you see. Take note of the terrain they enjoy.

Look at the flowers and grasses they are resting or feeding on. Note the time of year they are active. But, above all, revel in the experience.

As you sit, walk or linger enjoy and take delight in what you see. Resist the temptation to dismiss to take it for granted. Since the end of the Second World War, we have as a country, lost 75% of our wild flower meadows with the resulting impact on insects and birds. We are the poorer because of it.

Enjoy your summer walks around the reserve, value what there is to be found and think about how you can help preserve and protect what there is to be enjoyed.

# Part two: The history of Cromwell Bottom

Andy Eccles, Local Historian

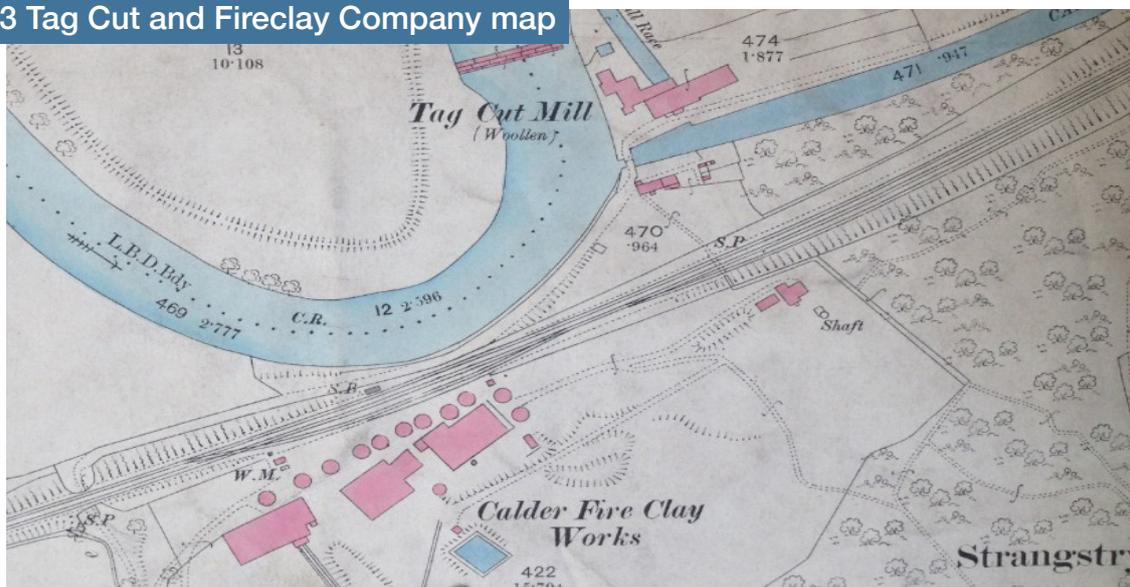
In recent years, Cromwell Bottom was used as a tip for fly ash, bottom ash and boiler slag which are bi-products of burning crushed coal at the former Elland Power Station. These deposits contained dangerous chemicals such as arsenic, cadmium and mercury, to name a few. It was also a household waste tip and gases are still being produced from the decomposing waste materials. There can be up to 147 different gases given off, 40-60% being methane, which is twenty times more hazardous to the atmosphere than carbon dioxide. The gases are piped to a special device where they are burnt off thereby reducing pollutants into the air. The power station was de-commissioned in 1991 and the cooling towers were demolished in spectacular fashion in 1996.

It is remarkable that this once dreadfully unappealing area has now been transformed into an amazing nature reserve and beauty spot, thanks to the thousands of hours of voluntary work carried out by members of

the Cromwell Bottom Wildlife Group since 2011.

Old maps show that a weir has been on the River Calder since the mid 1700's, adjacent to where the power station once stood. Therefore one can assume that a water mill must have been located in the area at that time. Tag Cut Mill was certainly there in the mid 1800's and despite being used for different activities, its fortunes never prospered. It was located on an area of land between the river and the canal therefore a bridge was necessary to gain access from both sides. There is no evidence that a bridge existed across the river from the turnpike road that we now know as Elland Road but when plans for the Manchester & Leeds railway were put forward in the late 1830's, it was considered necessary to create a bridge under the railway, which still exists and leads across to Old Earth and the bottom of Lower Edge Road. Without this bridge, the mill would have been effectively marooned.

1893 Tag Cut and Fireclay Company map



An advert in the Leeds Mercury from 1847 shows that Tag Cut Mill had been used for woollen textile production but when the business failed, the equipment was auctioned. This included a milk cow, a seven years old horse, a stack of hay and a few loads of potatoes. It is difficult to read, it is VERY old!!

**MILL, NEAR ELLAND, which comprises one wool teazer, 30 inches on the Wire; One Shake Woolley, 36 Inch ditto; One Rag Dole; One Scribbler, 63 inch on the Wire; One Scribbler, 34 Inch ditto; One Carding Engine, 32 Inch ditto; One Carding Engine, 30 Inch ditto; One excellent Billy, 80 Spindles; One Billy, 70 Spindles; Pair good Woollen Mules, 280 Spindles, self-acting; good Warping Mill, Creel, &c.; Three Old Scribbling Engines; Driving Straps; Cans and Skeps; Oil Cistern lined with Lead; Vice and Board; Desk; Clock; Patent Beam and Scale; Patent Weighing Machine; Iron Weights; 15 Sheets Scribbled Flocks; 13 Sheets Rag Flocks; Eight Woollen Warps; Quantity of Warping Bobbins; Four-Horse Steam Boiler, with Pipes and Underwork; Sorting Boards; Shut-up Redstead and Bedding in Mill; Six Bindings for Roof, with Ribs and Spars to cover about 20 Yards long; good Single-horse Pack Cart, with Patent Arms; Set Cart Gears; Saddle and Bridle; an excellent DRAUGHT MARE, 7 Years old; useful MILCH COW: about 500 Stone well-got Hay, in Stack; a few Loads Potatoes, &c. &c.**

Important and Extensive Sale of Scribbling, Carding, Piecing, and Finishing Machinery, Power Looms, Fulling Stocks, Dye Pans, and Cisterns, Dyewares, Steam Pipes, Shafting, Raw Material, &c. &c. Mr. THORNTON will Sell by Auction, on Wednesday and Thursday, the 14th and 15th days of April, 1858, on the premises of Messrs. Joseph Shaw and Sons, of Commercial and Tag Cut Mills, Elland, near Halifax,

**A**LL the valuable MACHINERY, and EFFECTS  
(by eminent makers).

IN COMMERCIAL MILLS — Five scribblers, six carders, three 5 ft. piecing machines, two 32 in. piecing machines, one spiko and one tenter hook willow, four pairs of mules, forty-two power-loom, eighty gross 5½ in. bobbins, part cask Gallipoli oil, forty-five sheets of rags, flocks and toppings, one dark brown mare, two carts, one urine barrel, one baling press, mahogany desks, copying press and stand, warping mills, &c. &c.

PLANT AT TAG CUT MILLS, NEAR ELLAND. — Three screw presses, press clogs, press oven, 150 press plates, iron and paper fencing, 150 dozens press papers, four broad tenters, two narrow tenters, shafting drums, and hangers, steam and water pipes, brass taps, pumps, fulling stocks, one twenty-horse steam boiler, wood and stone cisterns, iron dye pans, five tons shumac, peachwood, logwood, together with a large quantity of dyewares and spirits usually found in works of this magnitude, the whole of which is more fully described in small bills, which may be had at the Saville's Arms Hotel, and Commercial Mills, Elland, and of the Auctioneer, New-street, Huddersfield.

Sale at the Commercial Mills on the Wednesday, and at Tag Cut Mills on the Thursday, to commence each day at ten o'clock a.m.

D 4624

In 1858 there was a further auction (see the entry in Leeds Mercury bottom of previous page) when the business of Shaw, Shaw and Abbey was declared insolvent and in the 1880's, gas engineers, Greenwood & Darwin experienced a similar outcome. Was it because of the location that the occupants of Tag Cut Mill suffered the same fate, time after time? What is certain is that by 1907, the mill had been demolished and looking at that area today, alongside the existing weir and close to the gated entrance into the nature reserve, you would never have thought that a large mill was once located there.

It would be appropriate at this stage to briefly mention why the Calder & Hebble Navigation came into being. The Industrial Revolution started in the country around the year 1760 when factories started to take over from the traditional cottage-based industries. The factories attracted migrant workers from rural areas of the country and there was a huge growth in the population of local towns, in particular, Brighouse, Rastrick and Elland. The transport infrastructure was totally inadequate and was unable to cope with the huge amount of raw materials that were needed to feed the new mills. The condition of most roads was dreadful, especially during winter months and the alternative turnpike roads charged expensive tolls. With the increase in the numbers of workers, more housing was required which meant that more stone was needed for building. Stone was also the fashionable construction material used in modernisation programmes in many towns and cities throughout not just the UK but in many developing countries.

A different method of transport was required and preferably, one that could carry much larger loads than horse drawn carts. A national canal system was deemed

to be the answer, especially as canal barges were capable of moving much larger volumes.

The Bridgewater Canal is recognised by many as being the first true canal in this country. It was used to transport coal from the Duke of Bridgewater's mines near Worsley into the heart of industrial Manchester so the fact that the Calder & Hebble Navigation reached Brighouse by 1764 made it one of the earliest waterways and helped to put the town on the map. The navigation had extended to Sowerby Bridge by 1770 where it eventually linked with the Rochdale Canal in 1804, thereby forming an unbroken link between the east and west coasts. The original idea of the navigation was to make the River Calder navigable where possible, but in places where that wasn't achievable, sections of canal had to be built to bypass obstacles such as weirs and rocky shallows. This was the situation at Cromwell Bottom, therefore a section of canal known as Tag Cut was built at the bottom of Strangstry Woods.

At the western end of Tag Cut is an old packhorse bridge which is currently in a poor state of repair and surrounded by weeds and bushes. The bridge was very important as previously mentioned as it was the only way to cross the canal and gain access to Tag Cut Mill from Rastrick and the Lower Edge region. The land between the river and canal was very fertile and was used to graze cattle and grow crops, therefore access was needed to that also. It was at this location where the barges entered or exited Tag Cut from the River Calder which was navigable towards Elland before a further section of canal took the barges in the direction of Salterhebble and then onward to Sowerby Bridge.

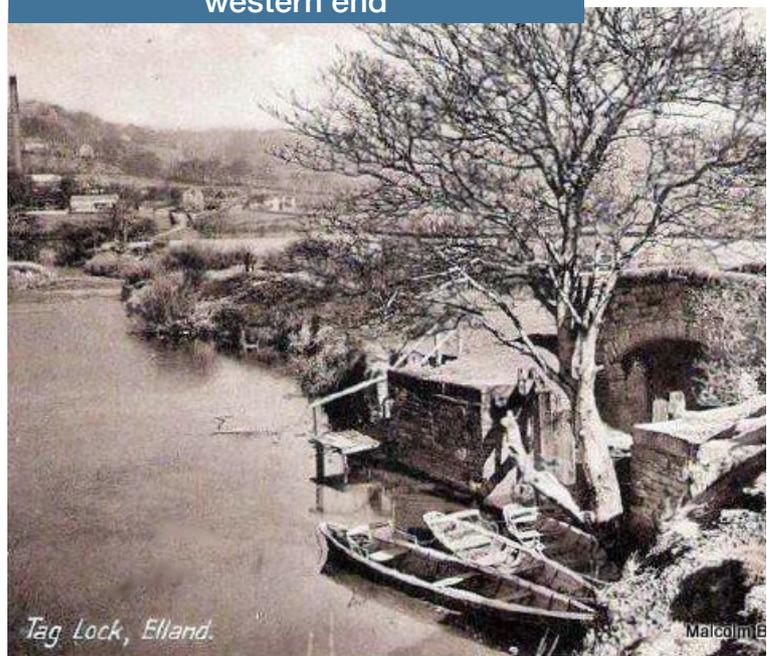


The packhorse bridge, looking down into the entrance at the western end of Tag Cut where the flood lock gates once fitted

The western entrance to Tag Cut is on a bend in the river and during times of flood, the water pressure would have been immense upon the lock gates. It was important that the gates were closed during such events in order that debris couldn't be swept into the canal. The gates also made the canal a safe haven for the barges, so it was important that they were strong and well maintained. Gates located on the upstream of a river were therefore known as flood gates or flood lock gates whilst the gates at the downstream end were conventional locks. The carved stone grooves where the huge gateposts were once fixed can still be seen today by the old packhorse bridge.

Fred Craddock's Boats at Tag Lock western end

During the 1950's, a resident of Lower Edge, Fred Crowther, built a wooden jetty at the entrance to the packhorse bridge and from there, he hired rowing boats to members of the public. There are still people around to this day who fondly remember 'Craddock's Subs' as they were affectionately known. This was due to the fact that most of the boats leaked and along with the oars, the rowers were issued with a ladle can to empty the water out thus preventing your feet from getting wet.



Where does the name 'Tag' come from? Legend has it that the area is haunted by a headless ghost named Tag who drives a carriage pulled by a two-headed horse down Tag Cut. The name derives from a secret passage at Elland Old Hall where there was a room named Tag Chamber.

The geological history of the reserve is interesting and gives an insight into why certain industries such as clay, coal and stone mining became established. Walking eastwards from the old packhorse bridge, there is no initial sign of the old canal. This section has been filled in and is now overgrown with vegetation and trees and then suddenly there is evidence of bright orange coloured water emanating from the Rastrick hillside. To understand what is happening, we have to journey back some 500 million years when this area was positioned at 60°S of the equator. Mudstone was laid down from silt deposits which over time were compressed but being fragile, the mudstone cracked under pressure as the tectonic plates moved northwards and eventually became shale. Move forward to 310 million years ago and the area was positioned near the equator. A large delta spread from Scotland to the Midlands and soft sandstone formed in lagoons whilst coarse sandstone formed the river beds. Plants and trees fell into the lagoons where the hydrogen and oxygen was forced out leaving just carbon which over millions of years turned into coal. The orange coloured water is produced by iron sulphide which is present in the ancient shale and is flowing from old stone and coal mine workings which are now flooded.

The clay deposits in the hillside were ideal for manufacturing bricks and the Calder Fireclay Company can be seen on the 1893 map. It was a huge business which had special tramlines built to deliver the clay to the kilns on the other side of the railway. In 1896, the company was owned by E.J.W. Waterhouse & Son and is listed

as producing not only clay but coal of which there were five types, coking, gas, household, manufacturing and steam. This area produced manufacturing coal and in 1896, the company employed forty underground workers and had eight surface workers. The area latterly contained the brickworks of Samuel Wilkinson & Son who produced firebricks from the blue clay and then went on to diversify into normal brick manufacturers until recent years when they were taken over by Butterly Bricks, which closed down in 1985.

The vast stone deposits in the area were difficult to get from the ground before mechanical machinery made life a little easier for the delvers but on the hillside of Strangstry Woods, the early delvers found that valuable sandstone had been exposed when the Calder Valley was created in the ice age. Delvers would literally pick out the mudstone shale from underneath the sandstone bed, which can be up to 70m thick in places. They would support the stone above with wooden stakes, working deeper into the hillside around fault lines in the rock. Upon removing the wooden supports, the weight of the stone would cause it to fall and break into more manageable sizes. Many delvers were killed whilst using this method. With advances in technology it meant they could delve further down into the rock and create shafts. The stone would then be brought up to the surface via ladders and carried in leather harnesses strapped to the delver. Many fell to their deaths and the average lifespan of a delver was just 45 years of age. In addition to horrific accidents, many delvers died of lung and heart related diseases that went with working underground.

The stone was brought down the hillside to the wharf at Tag Cut where masons would cut stone into required sizes before being taken by barge to the east coast where it was loaded onto ships and taken all over the world.

The coming of the railways in 1840 made it difficult to bring stone down from the woods to the canal as delvers were forced to cross the railway lines. A level crossing was built for the purpose and was staffed by a crossing keeper. As the keeper had to be available at all times, a house was built which used to be known locally as "Red Ellen's" after the nick-name of the widow who lived there. The house was demolished towards the end of the 19th century and hardly any trace of it remains today.

The horse drawn stone wagon was an unwieldy but strong contraption. It had massive wheels which required constant lubrication to alleviate the annoying squeaking. As you can imagine, the heavy wagons caused damage to the poor roads therefore stone flags were laid to stop them becoming bogged down. If you go into the woods between Elland Road and Southowram, you will see some amazing examples of these types of roadways.

Travelling further east along Tag Cut, an old delver's track from Rastrick is clearly evident, traversing the hillside towards the old wharf.

The canal is much wider at this point in order that boats could pass the barges that were moored, awaiting their cargo to be loaded or unloaded. The wharf would have been a hive of industry as carpenters repaired the carts, masons would be trimming stone before loading them onto the barges. Forges would make new horse shoes. Chains used for hauling stone blocks were repaired and iron delving tools were re-sharpened. The stone wharf covered an area of 2 roods and 8 perches which translates to approx. 150 sq. yds but owing to it being narrower at one end, it would have been around 200 yds in length, backing up towards the hillside behind. All this was occurring prior to the present section of canal being constructed between Ganny Lock and Salterhebble, therefore it pre-dates the wharf at Brookfoot. This meant that stone from the Southowram quarries had to be brought a considerable distance to this area, crossing over the river and an abundance of soft ground.



1834 Myers map showing the Delvers track down to Tag Cut Wharf

Much has been written about Tag Cut and some even suggest that it was never used and was a 'white elephant' but it is on record that Richard Brook, a Mirfield contractor and stone merchant, shipped large quantities of faced and common flags, sinks, copings, faced paving, steps and roofing slates from shipping points at Brighouse and Tag Cut. At least 1,302 tons were moved between September 1791 and January 1793 and from 1792, he was consigning stone to London and employing an agent there for its sale. In addition, an advert from the Leeds Mercury in 1867 mentions a freehold estate of land being for sale which comprises of 'all that wood and woody ground called Strangstry Wood situate near to Elland Lower Edge together with the road leading to the stone wharf on Tag Cut, adjoining the Calder & Hebble Canal from which stone is shipped in large quantities.'

After dropping off their cargo, the empty barges brought lime back to Cromwell Bottom for spreading on the land. The acidic boggy ground was drained and woods were cleared to create more farming land. Lime was used to fertilise the poor soil and alleviate weeds such as sorrel, creeping buttercup, nettles, dock and mare's tail by reducing the soil acidity thus discouraging the weeds.



Brick Wall at Eastern end of Tag Cut

It is hard to imagine that in this overgrown wilderness, there once stood a lock-keepers cottage along with a bridge spanning the river, the latter enabling the horses that drew the barges, to cross the river and make their way along the towpath beside Tag Cut.

Lock-keepers cottage at Tag Cut



**Let us pause to think about the name Cromwell Bottom :**

many people think that the name must be something to do with Oliver Cromwell but the name predates the former Lord Protector of the Commonwealth of England, Scotland and Ireland by some 300 years. The name is first mentioned in the 14th century when Robert de Cromwellbotham resided in the area. His daughter, the heiress, married into the de Lacy family who resided at Cromwell Bottom Hall for the next 300 years. The word is thought to derive from the Old English word 'crumb' which meant crooked and 'wella' which was a spring, therefore translating to 'the bottom end of a crooked spring'. Another derivation of the word crumb is krumpel, a German word used to describe someone who was crooked or had skeletal deformities. An additional version, but almost the same is, 'crom' meaning winding and 'well' being old English for a brook, so we have a winding brook.

There are several other names that we find along the 1808 section of canal. There is Crowther Bridge which was so badly damaged in the Boxing Day floods of 2015 that it had to be demolished and rebuilt. When the navigation was first surveyed by John Smeaton in 1757, his map shows Crowther's House near to the location of the bridge. The Crowther's are shown as leasing land in Southowram from Chas. Pitchforth and Lumbley Savil Esq. at the end of the 18th century. Abraham Crowther of Grange House and John Crowther of Cromwell Bottom are mentioned in trade directories from the 1820's and are shown as being card makers from Binns Top. In the 1834 directory there is a William Crowther of Southowram and a John Crowther who are both stone merchants. There are several others from the area of that name, who donated money to the British Bible Society according to their accounts of 1813, including Mr. A. Crowther of Cromwell Bottom. The family are also mentioned in the 1835 West Riding Polling Book therefore must have been a family of some importance and influence.

There is another bridge adjacent to the nature reserve which crosses the navigation and goes by the name of Freeman's Bridge. The Freeman family were originally from Fixby but it was William Freeman (b. 1744) who is first shown as acquiring land in Southowram. On a 1786 tax return he is shown as owning mines, quarries, woods, coals, houses, tenements and land. Like the Crowther's, he obtained land from Barbary Pitchforth and leased some out to his sons, James, William and Samuel.

They quarried this area and sent much of the stone to London to pave and kerb the streets. William's eldest son, Joseph, went to work in London as a stone merchant and owned wharves in Paddington and Millwall. He died aged just 39 whereupon the second eldest son, William, went to London to continue the trade and ensure

that Freeman's stone from Cromwell Bottom was used in the capital. He married into the Mowlem family who owned granite quarries in the Isle of Purbeck and Cornwall and the company exhibited at the Great Exhibition amongst many others. They provided stone for many London docks, bridges and roads and lighthouses at Beachy Head, Bishop's Rock and Guernsey. Their stone was also used for the plinth and lodges in front of the British Museum in Trafalgar Square. The Royal Exchange, the steps and landings and terraces at the Crystal Palace and the obelisk for the 1851 Great Exhibition, now erected at Chelsea College, plus many more monoliths and statue pedestals throughout London. They were also involved in paving Queen Victoria Street, re-building Billingsgate Market, Smithfield Fruit & Veg market and many sewerage and railway contracts. Two members of the family left the equivalent in today's money of £27m and £13m respectively, with many other millions being made by various other family members involved in the trade as the company oversaw contracts such as Admiralty Arch 1906-14, New Scotland Yard 1908, re-fronting Buckingham Palace 1913.

The Freeman's who stayed behind in this area created stone staiths along the navigation at Cromwell Bottom in order to load their barges and take the stone down to London. They were instrumental in that particular section of the canal being built between Brookfoot and Elland from 1805-1808 as it was beneficial to have a canal nearer to their quarries as opposed to having to go over muddy ground to the wharf at Tag Cut. That new section of canal was known as Freeman's Cut and the family later opened a new wharf at Brookfoot. Their donations were instrumental in the building of the church and school at Brookfoot.

At Brookfoot in the 1960's, the former gravel pits that had formed as a result of the ice age and then many years of river movement in the valley, were filled with water during a large flood.

It was deemed to be uneconomical to pump them out and continue trading therefore the two newly formed lakes were sold to private enterprise, one now being owned by the Brighthouse Angling Association whilst the other is owned by the White Rose Waterski Club.

All good things must come to an end as the saying goes and with the opening of the railways in 1840, the canals took a massive hit as goods could be transported much quicker by rail. The canal owners were forced to reduce their prices in order to compete, yet the Calder & Hebble Navigation Company continued to make a profit for many years. Between the 1st and 2nd World Wars, traffic on the canals had diminished. Stone ceased to be transported by water as most of the quarries closed during the 1st WW and only one in this area re-opened at the end of that war. The canals were used mainly for transporting coal, though Sugden's still brought their raw materials to their flour mills in Brighthouse until the 1960's. Trade on Tag Cut was greatly reduced after the new section between Brookfoot and Salterhebble was completed in 1808 although, whilst not used as a through route, it continued to serve the local quarries at Rastrick until their closure. A decision to finally abandon the cut was made in 1948, and over the ensuing years nature started

to reclaim the land as trees and weeds took over. The western end was blocked up and the packhorse bridge was bypassed via a pathway on the filled in section of the cut. The lock gates at the eastern end were removed and the entrance was blocked with a brick wall. As the autumn leaves and weak branches fell from the trees, year upon year, the water silted up and the canal became a shadow of its former glory. Nature brought other wildlife to the area and the cut has now become one of the most prolific breeding grounds for damselflies in the country, and thanks to the volunteers from the Cromwell Bottom Wildlife Group, pathways have been created to form part of the nature reserve scenic walk around what has been named Tag Loop. The Cromwell Bottom area has had an interesting and diverse history which makes the area so fascinating and attractive to visitors. The Canal & River Trust also have many volunteers who help to keep the current navigation in a reasonable condition and free from debris and also help with the renovation and upkeep of buildings like the lock-keeper's cottages and garden areas. Canal boat holidays are also back in fashion and with the tarmacking of the towpath from Brighthouse Basin to Sowerby Bridge, it has now become busy throughout the year with walkers, joggers and cyclists as well as many visitors to the Nature Reserve, so the area has come full circle. This once thriving industrial area which echoed with the sounds of industry has now become a busy place once again, but with people enjoying leisure activities as opposed to work!

**Long may it continue!**



Trackway leading down to the eastern entrance to Tag Cut

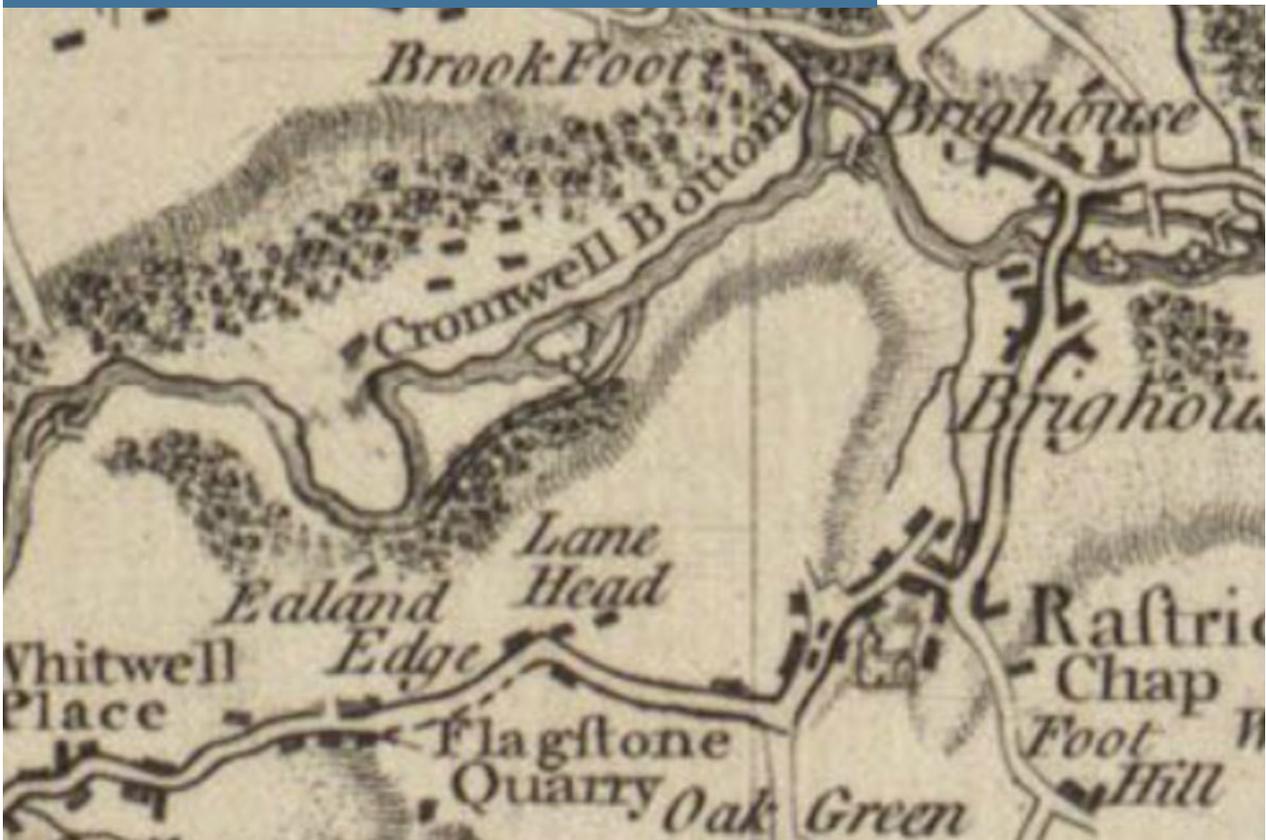


Entrance to the western end of Tag Cut and the Packhorse Bridge

Boating at Tag Lock



1775 Thomas Jeffries map showing Tag Cut prior to the present canal being completed in 1808



# Part Three

## Photography



BULLFINCH (M) - CREDIT ALLAN WOLFENDEN



CHAFFINCH - CREDIT MIKE HENSHAW



JUVENILE BARN OWLS - CREDIT GRAHAM HAIGH



KINGFISHER - CREDIT BARRY NIELD



ROE DEER - CREDIT STEVE MIDGLEY



SEDGE WARBLER - CREDIT MIKE HENSHAW



ROBIN & YOUNGSTER - CREDIT CHRIS LATHAM



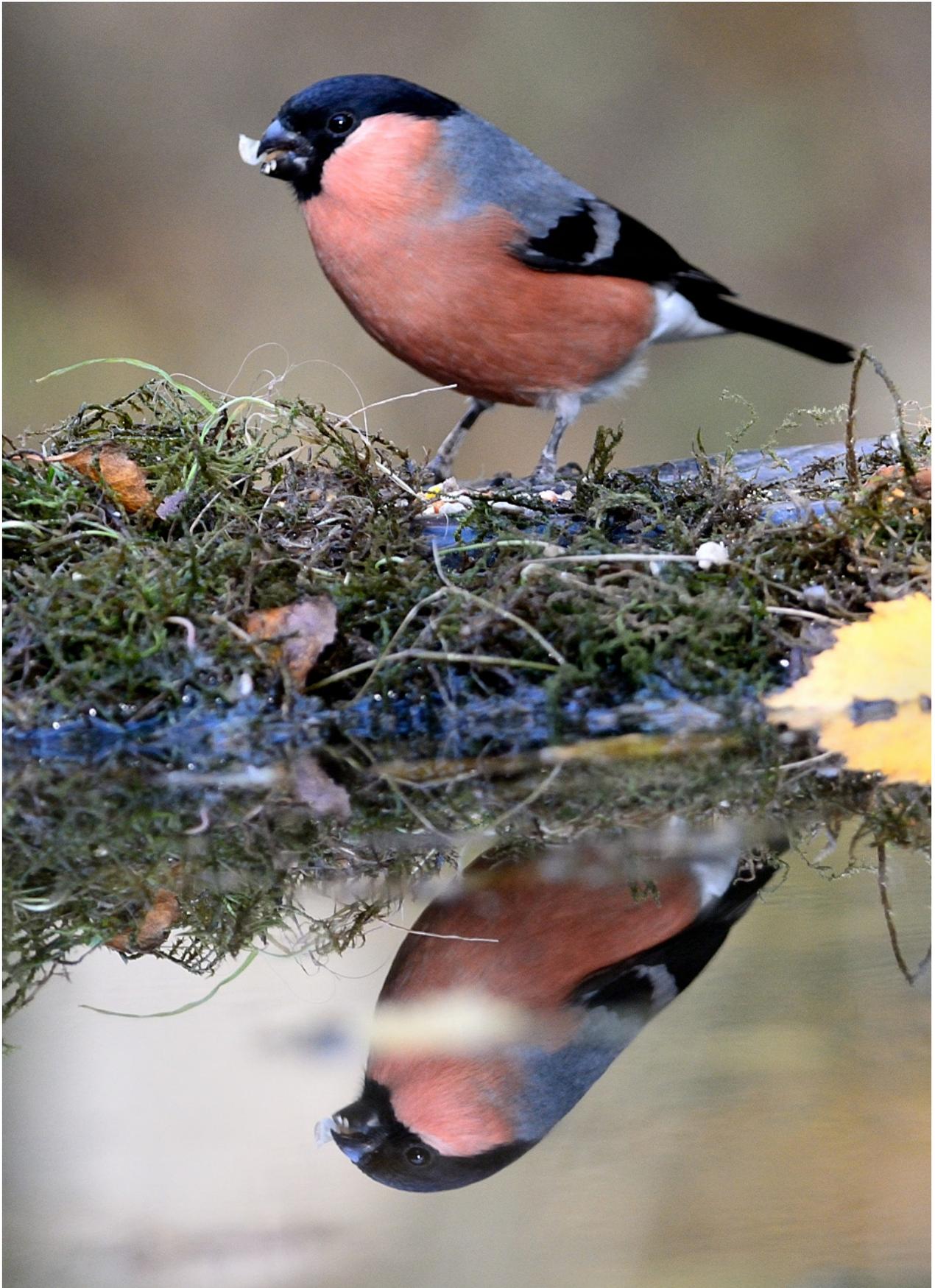
GREAT CRESTED GREBE - CREDIT MIKE HENSHAW



FOX - CREDIT STEVE MIDGLEY



BLUE TIT - CREDIT CHRIS LATHAM



REFLECTIONS OF A BULLFINCH ON WATER - CREDIT GRAHAM HAIGH



JAY DROP IN! - CREDIT CHRIS LATHAM



TAWNY OWLET - CREDIT DAVID LANGLEY



FEMALE BANDED DEMOISELLE - CREDIT GRAHAM HAIGH



MALE BANDED DEMOISELLE - CREDIT GRAHAM HAIGH



SPARROWHAWK (F) - CREDIT MIKE HENSHAW



LONG TAILED TIT - CREDIT CHRIS LATHAM

# part four: newsletter articles

## BATS & BAT WALKS AT Cromwell bottom

Allan Wolfenden, David Langley

During the summer and autumn seasons we hold a number of bat walks at Cromwell Bottom Nature Reserve. Our aim is simply to enable people of all ages to see and hear some of the bats that regularly feed on the reserve and surrounding area. Bats in the UK are nocturnal and use echo-location to catch moths and midges.

The sounds bats make while hunting are often inaudible to our ears, though some children can hear them. To help us hear and identify the bats we took along our bat detectors (along with our torches) and headed onto the reserve. The reserve looks and feels very different in the dark. It felt like we were going on an adventure. Standing as a group, listening for those tell-tale clicks or hoping to see the shadow of a bat turning in swift pursuit of its food, gave us all a sense of anticipation. We were not disappointed. Even the rain we experienced on one of our walks did not deter the enthusiasm of the group or the bats we are looking for.

Mostly on our walks we hear and see Common Pipistrelle and Daubenton's bats but we do have Noctule bat's also on the reserve.

To see and hear them was like having another world briefly opened up to us. What a privilege it feels to witness and be part of it.

Our bats in the UK might not be as cute looking as some animals but I think they are truly amazing. The fact that they, like birds can fly and use echo-location to catch their food sets them apart as being truly astonishing. Being truly amazing in the great scheme of things, sadly, isn't enough these days. The truth is many bats are in decline and need our help by protecting the places where they roost in summer and winter. Some bats will roost in trees, mines and in the roof spaces of houses, but others will use bat boxes. Think about putting up a bat box where you live.

Bats survive the harsh UK winter by hibernating in their winter roosts, waking up only occasionally if the weather turns milder to briefly eat and drink before returning to their roosts to continue their sleep. So, keep your eyes open on those mild winter evenings for one of nature's most amazing creatures and join us when those warmer evenings return to learn more about the bats of Cromwell Bottom.



**Far left top - Common Pipistrelle credit hugh clark, BCT**  
**Far left bottom - Daubenton credit Hugh Clark - BCT**  
**Right - Noctulle credit Martin Celluch - BCT.**

IMAGES SUPPLIED TO NEWSLETTER TEAM BY BAT CONSERVATION TRUST.

# BIRD SURVEYS

Mike Henshaw

Having been a regular visitor to Cromwell Bottom for over 50 years I have seen many changes – from farmland to gravel pits then fly ash lagoons, then to a tip, followed by landscaping into the area that we now can walk around and enjoy!

The bird species have changed because of the varied habitats. It is now possible, because of the surveys and sightings, that we are now building up a good picture of the status of all the flora and fauna of the reserve.

Since 2007 many species have been recorded such as Cuckoo, Hobby, Peregrine, Red Kite, Little Egret, Green Sand piper, Water Rail, Hen Harrier and Osprey. Because of the feeding regime Redpolls and Siskins are easily seen along with many other species. The surveys also help us build a picture for future management of the reserve and we now have over the last 3 years Linnet, Skylark and Meadow Pipits regular in one area and we also hope for breeding Lapwings in the near future. We have installed a new Sand Martin wall, as reported in the last issue of the newsletter, and we hope for those visitors too.

It is not just birds that we survey! We monitor plants that are rare to Calderdale and some of the areas are fenced off to avoid destruction. We do Orchid counts too and monitor Butterfly, Dragonfly and Damselfly on the reserve.

With the increase in house building in our area Cromwell Bottom Nature Reserve will become a green oasis for people to enjoy in the future, away from the madding crowd, so if you walk round the reserve tell us what you see so we can update our records and knowledge for the future.

When we are on our surveys many people ask where the notes end up.

Firstly they are logged on the site and group records and then passed on to the recorder of the Halifax Birdwatchers club for a yearly publication for Calderdale. They are then passed to the British Trust for Ornithology (BTO) who put the information onto their national database, which has records for the whole of the UK and Europe.

To put this into perspective in 2017 they had over 6 million records on their database! The information is continually gathered and in the last 4 year survey from 2007 - 2011 over 1700 of us took part and the results were published in the Bird Atlas of Breeding and Wintering Birds of Britain and Ireland. This will be used as a reference work for many years to come, including the government of the day.

So, our notebook and pen is the start of a long journey for our site records and please do bear in mind that we take notes on every visit and not just on survey days!

# BIG BUTTERFLY COUNT

Steve Blacksmith

The Big Butterfly count attracts many people, and young people are always welcome on Halifax Scientific Society walks held at Cromwell Bottom Nature Reserve. Children especially love using the nets – for amphibians in spring, and insects in summer. This year we had just one young man brought along by his grandparents and all had a thoroughly good time!

Unfortunately butterfly sightings were down on last year, but it has been a peculiar season, with an icy blast dubbed the “Beast from the East” paying us two visits in spring, and then a record-breaking hot spell before the July butterfly count. In late February the cold spell was said to be the coldest in 27 years.

Summer temperatures are hotter for a longer time than I can remember, seemingly even longer than the legendary 1976. I can attest that this year many lawns went straw-coloured all over – not just in patches - for the first time in my memory (I’ve worked as a gardener since my early 20s.) Also the “Siddal Hills”, that bank of south-sloping fields also sometimes referred to as Southowram Bank, turned as tawny as summer Spanish hills, again something I’ve never seen before. We no longer record weather at HSS, but full details for the whole of the country can be seen at [Climate/UK/summaries](#), provided by our wonderful Met Office.



COMMON BLUE BUTTERFLY  
CREDIT MIKE HENSHAW

An especially looked-for species known to be at Cromwell Bottom, Common Blue, was not seen, but on a different day Lynda Orchard reported a Purple Hairstreak, which has been reported here by other watchers. It’s not surprising, considering the two large oak woods on either side of the valley, and the plentiful young oaks coming up on the Reserve. Purple Hairstreaks are dependent on oaks and have had a terrific year this year according to Andy Cockroft, our new in 2018 Butterfly and Moth Recorder at Halifax Scientific Society. This butterfly count was organised before Andy joined us, and he had to work on the day, but was busy at the new moth trap here in the evening and overnight. Well done Andy and all of you there - you’ve got to have some dedication to stay up most of the night!

This is the list I noted on 14<sup>th</sup> July:

7 sightings of white species (unidentified)  
1 Green-veined White  
2 Meadow Browns  
2 Small Coppers  
1 Peacock  
1 Ringlet

2 Small Skippers  
1 Comma  
3 Cinnabar Moth Caterpillars on Ragwort  
3 Six-spot Burnet Moths (identity carefully checked by local expert Brian Cain.)

# DRAGONFLIES

Allan Wolfenden

Dragonflies are amazing and beautiful insects, delicate yet powerful, having a predatory and carnivorous lifestyle. It has been calculated that they have a 95% success rate when hunting.

Dragonflies can do this because of three amazing features they possess:

Firstly, Dragonflies have 360 degree vision, made possible because of the compound eyes they possess. Nearly all its head is made up of its eyes. Having 30,000 eye facets it can easily lock onto the prey it has selected. Secondly, Dragonflies are able to move each of their four wings independently of each other thereby enabling them to fly and turn in any direction. They can turn quickly, hover

for over a minute and reach speeds of 18 miles per hour.

Thirdly, they have fearsome jaws which they use to tear the wings off the prey they have caught. (The word Dragonfly means order of toothed ones) Once caught there is no escape, a terrifying thought if you are a Gnat, Mosquito, or other flying insect.

Please let us know if you see any dragonflies or damsel flies in the summer months ! Also, take a look at the British Dragonflies Society website - they have loads of very interesting and informative information.



COMMON DARTERS MATING IN NEW PONDS

- CREDIT ALLAN WOLFENDEN

# BLUE BEETLES

John Murray

## 100's of Beetles; 1000's of holes....

First spotted on the nature reserve in the summer of 2017, infestations of tiny metallic-blue beetles, about 6mm long, attracted to the leaves of Alder trees. The nature reserve has quite a population of these trees in damp and shady locations.



The internet teaches us that the adult Alder leaf beetle (*Agelastica alni*) is an invader from Europe, thought to be extinct in the UK, until it reappeared in Lancashire in 2004, from where it has spread into neighbouring areas. They are said to do no permanent damage to the trees but in bad cases of infestation they can strip the whole tree of leaves. The Alder has its own built-in defence mechanism, releasing hormones that digest the attacker and encourages them to find other trees which may be willows, hazels or unaffected alders.

The life cycle is very interesting. The female beetles lay eggs on the underside of the leaves in May-June, which then hatch out in 7-14 days to produce black caterpillar-like larvae. After 3 weeks of eating leaves the larva pupates in the soil for 7-11 days and the new generation of beetles emerge in August and continue their leaf eating activities. The adult beetle hibernates in the soil and leaf litter in October to re-emerge in April to lay eggs and die.

At the time of writing there are still a few beetles to be seen. By the time this is published they will probably have all disappeared. But keep looking! You never know what you'll see with global warming and all that! My picture was actually taken on site in late October. The critters won't stop falling off the leaves!

# BIRD MIGRATION

Jane Uttley, Mike Henshaw

## BIRDS' BIG DECISION

Birds have a big decision to make at this time of year, when the daylight hours are lessening. Do they decide to stay here and brave out the winter or fly south to warmer climes? Their decision is governed by their genetic make up and evolution. The resident birds eg garden birds and the crow family - corvids, stay in the same area where they were fledged; they eat a variety of foods found all the year round and have various strategies

to withstand the bad weather.

However, other birds who are dependent on insects and other invertebrates have to fly south to warmer conditions to find their food. eg swallow, martins, warblers and cuckoos. Some of them fly to Africa - across the Sahara - cuckoos to West Africa (see BTO cuckoo tracking project), swallows even fly down to South Africa! Willow warblers cross the desert but chiffchaffs with shorter wings only go as far as North Africa.

The birds who breed in the high Arctic, eg waders, swans, geese, many ducks and winter thrushes have to move south to escape the below zero temperatures on their breeding grounds. Many of these finish up in Continental Europe and Great Britain.

## BARRIERS TO MIGRATION

The birds which travel south overland have traditional places where they can stop to rest and re-fuel on the way. However many of them cross large stretches of water, deserts and mountains, all of which prove challenging. The Sahara is a huge stretch of desert which is usually crossed at 'one go' and at night. Some small birds follow the Atlantic coast skirting the desert areas. The Mediterranean Sea is crossed at the narrowest points, Gibraltar, through Italy, the Greek islands or the eastern coast. The North Sea is an exhausting barrier for birds coming from Scandinavia and Europe. The birds come to us because the Gulf Stream causes our winters to be milder. Birds feed up as much as possible before setting off, so that they have the body fat to sustain them when navigating these barriers.

## OTHER DANGERS



WIGEON - WINTER VISITOR FROM THE NORTH  
- CREDIT MIKE HENSHAW

1. Predators - vultures, hawks, falcons and eagles have learnt that smaller birds at this time of year are easy prey, especially juveniles.

In fact Elanora Falcons nesting on the Mediterranean islands delay their egg laying so that they are ready to catch birds migrating south to feed to their young. Flying in flocks and at night is one method of avoiding predators.

2. Adverse weather - many birds especially young ones can be blown off course and become completely lost, landing in very unusual places. American birds found in Great Britain. Head winds can make the journey longer and more tiring; hence the reports of exhausted birds landing on ships in the North Sea.

3. Hunters - deaths from natural hazards are far out numbered by the 1000s of birds slaughtered by humans, ostensibly for food. Many countries have banned the practice but do not police it well enough so it continues. Turtle doves and quail are just two species nearly wiped out.



WHITETHROAT - WINTERS SOUTH OF SAHARA  
- CREDIT MIKE HENSHAW

# HONEY BEES IN CALDERDALE

## Newsletter Team in conjunction with Roger Pool, Chair Of Halifax And District Beekeepers Association

The Newsletter team were invited to visit Roger Pool, Chair of Halifax Bee Keepers Association, at his apiary in Ripponden. On 6th April we set off with some trepidation to a field where Roger had several hives. We donned our white suits and head gear (or rather Val didn't, on the spurious grounds of taking photos instead) and off we went straight into the centre of things.

Roger had been worried that there would be no activity as the weather had been cold and damp. Fortunately for us, it was a lovely warm afternoon, the second in a row and when we got close to the hives, Roger was delighted and relieved to see that the bees were flying and had been collecting willow pollen. The returning bees had the baskets on their legs full of bright yellow pollen ready for the workers to use inside the hive to feed the colony. He told us that over winter the colony feeds on the honey made last season and that one of the best sources of pollen and nectar in the autumn is balsam.

Roger then opened up one of the hives to show us what was happening inside. He explained that the majority

of the 30,000 bees in the hive are female, predominantly workers, who do everything to keep the hive healthy and productive. They guard the entrance to the hive to keep strangers out, they build the comb, tend the queen, feed the larvae, and the drones, even fanning the hive with their wings to keep it cool in the summer. These workers work really hard spending three weeks as house bees and three weeks as gatherers.

The few males in the hive are called drones and their only purpose in life is to fertilize the queen. When new queens hatch they fly out of the hive to meet up with the drones. The queens mate with several of them and retain the sperm inside them for the rest of their lives – two to three years. This means that all of the thousand eggs that she lays each day will be fertile.

The workers feed a few larvae on royal jelly, which is a mixture of nectar and honey, and these will become queens.

When the workers decide that the queen is becoming too old they release pheromones to stimulate the queen larvae to hatch.

The first one to do so kills all the other queens to ensure her place. It's tempting to think, as I did, that the queen is in charge of the hive but in reality, she's just an egg laying machine. The workers take care of everything including driving out the old queen. They bully her until she leaves the hive, taking half of the workers with her in a swarm to form a new colony.

Roger has some smaller, insulated breeding hives where queen larvae are collected to give to others setting up new hives. These bees are given a sugar solution and protein mix over the winter to give them the best start.

HONEYBEE BELOW - CREDIT  
CHRISTINE BELSHAW, HBKA



# UNDENIABLY INTERESTING FACTS ABOUT HOVERFLIES

## Allan Wolfenden

When the warmer weather arrives it is a time when insects on the reserve become active. One particular insect always gets my attention, it is the Hoverfly. Hoverflies are attractive hyper-active flies that can be found darting backwards and forwards and often hover over the flowering plants they like to feed on. Only a few millimetres in size, they are like miniature helicopters, brightly coloured they can be mistaken for wasps or bees.



***Volucella pullicens***

This mimicry is part of their survival strategy, tricking any potential predators into thinking they are dangerous. They are the great pretenders of the insect world. In fact far from being dangerous, hoverflies are harmless as they can neither bite or sting . Though they capitalise on looking very similar to wasps and bees there are in fact other notable differences other than not having a sting. One notable difference between hoverflies and wasps is in the size and placement of their antenna. The antenna of the hoverfly is much smaller than that of the wasp and is situated on the front of the head. (See photo)

Another notable difference is in the shape of their abdomen. Again, unlike wasps, hoverflies have only one pair of wings that are usually held backwards in a V shape when resting. Because of this they feed on the nectar of flowering plants. Hoverflies are important for the pollination of the flowers which they visit to feed on. It has been suggested that they are the second most important group of pollinators, after wild bees.



**SYRYPHUS RIBESII**

Look out for the different hoverflies that can be found on the reserve. *Volucella pellucens* (pictured above) , *Volucella zonaria*, *Helophilus pendulus* and *Syrphus ribesii*.

**BOTH IMAGES - CREDIT ALLAN WOLFENDEN**

# LEAF FALL HOW IT IS TRIGGERED BY LIGHT IN AUTUMN

## Bel Hale

We all know that sunny, frosty days in early autumn make autumn leaf colour brighter & more vivid. But few of us understand why leaves change colour and how they end up falling off the tree. You may be surprised to find out that the first trigger is Midsummer Day!

During the spring, as the sun moves nearer the Tropic of Cancer, light levels increase and so do the levels of the green pigment, chlorophyll, found in leaves. This is why plants look so lush in spring & early summer! Chlorophyll captures the sun's energy during photosynthesis creating sugars, which plants use to grow, and oxygen, which we all breathe. (Pic 1 Cellular structure of leaf).

After Midsummer, as the sun moves back towards the Tropic of Capricorn, light levels begin to reduce, growth begins to slow, and their energy is put into flower, fruit and seed production.

Plants begin to look less green & less vibrant as summer advances because they do not need as much chlorophyll. However, chlorophyll is a complex molecule which costs the plants energy to create, so rather than waste it, they re-absorb it back into their systems.

Think of green leafy vegetables going yellow in your fridge! It's because of lack of light (Pic 2 radish leaves).

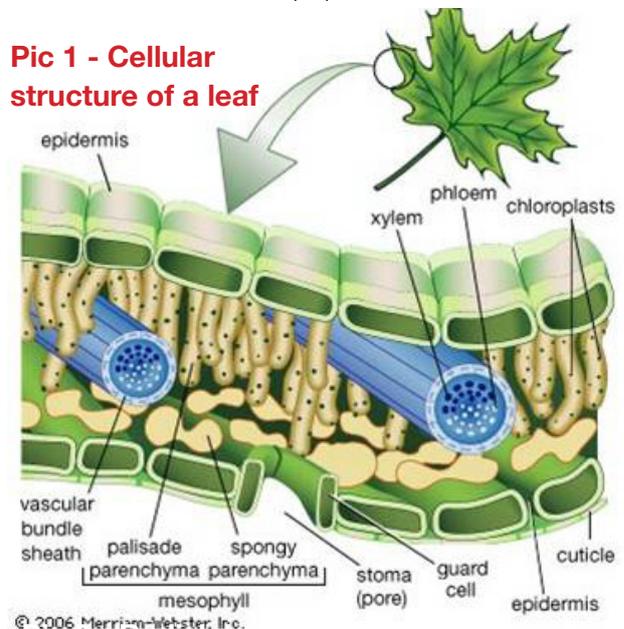
But why do leaves fall? The changeover from leaf production to flower, fruit and seed production creates a need to channel nutrients away from the leaves and into the flowers. The tree does this by laying down a barrier of cork cells, called the abscission layer) across the bottom of the leaf stalk. By autumn, this cork layer completely seals off the leaf stalk and the leaf falls. (Pic 3 cork abscission layer).

Leaf colour isn't only determined by chlorophyll. There are other pigments underlying the green. It is combinations of all the pigments which create the different shades of green leaf colour. So, when the chlorophyll is re-absorbed, the

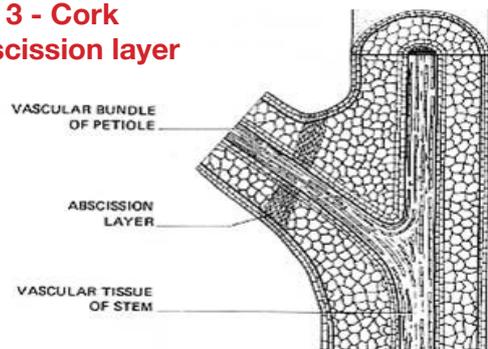
other pigments are unmasked and this is what causes our glorious autumn colour each year!

PIGMENT	COLOURS
Chlorophyll	green
Xanthophyllis	yellow
Flavone	yellow
Flavonol	yellow
Carotene	yellow, orange, red
Lycopene	red
Anthocyanin	red, blue, purple, magenta

**Pic 1 - Cellular structure of a leaf**



**Pic 3 - Cork abscission layer**



# MOTHS & MOTH TRAPPING AT CROMWELL BOTTOM

Barry Nield, Charlie Streets

I hear you – Moths? Who cares about moths? Most people's contact with moths would be dead ones on a window ledge or the racket on the window glass trying to get to your light.

There are plenty of day flying moths of course, and moths that don't come to "Lights" or very rarely get attracted to them. At Cromwell Bottom we used to do a Moth Night – normally once a year, around mid-August time.

After realising just a couple of hours one day out of 365, does not give you a decent idea of the moths frequenting Cromwell Bottom, we started to use the trap to catch specimens and then get pictures of some of the stunning moths that exist out there. Some have fantastic colours, unbelievable patterns, and outstanding camouflage capabilities. Since starting we have got a bit more organised in recording the

species we catch. I have also acquired a couple of good up to date Identification books, for using on the night. On our previous moth nights, I think 28 species was the most recorded on a night. We are now regularly pulling in 60-70+ species a night, with our total so far well over 200 species. This means that already we have over 150 species we didn't even know existed at Cromwell Bottom.

## MICROLEPIDOPTERA - Charlie Streets

### NEW TO CALDERDALE

During the summer months the moth trapping team were fortunate enough to record four new species of micro moths for Calderdale.



The first of those was the Black-headed Birch Leaf folder (*Acleris logiana*) on June 30th. Despite the Mercury Vapour bulb running throughout the night this micro decided to slum it by resting by the outside light of the cabin! Up until 1990 this species was only recorded in Scotland until it gained a foot-

hold in southern England. As it spread northwards it reached Yorkshire in 2010 where it is still classed as a very rare local resident. It seems improbable that there are any resident populations in Yorkshire so this individual was likely a wanderer from the south and unlikely to reappear any time soon.



On the same day a second prized specimen was found as we emptied the trap at the end of the night. It was a Pyralid – Fenland Pearl (*Anania perlucidalis*). The markings are quite similar to its larger cousin the Mother of Pearl but it is around half the

size. Pyralids are a large family of moths which, although diverse in appearance usually have the distinctive habit of resting with their antennae along their back where the wings meet.

The Fenland Pearl is another species whose range is expanding, so much so that there were only two records in Yorkshire up until 1989 but now it is relatively common and widespread in damp areas with thistles.



The third species was the Mouse-ear Groundling (*Caryocolum fraternella*) on July 21st. At just 6mm in length and a rather nondescript brown colour to the naked eye it is not surprising that this species has either been overlooked or ignored in the past. It is a member of a large family of moths, the Gelechids, which birders would describe as "little brown jobs". The most recognisable features are the palps which are very long and swept back over its head, these are sensory organs used to detect food. The larval food plants, Common Mouse-ear and Stitchwort are present on the reserve so there may be a resident population.



Finally on August 3rd (saving the best until last) a rather exotic sounding False Cacao Moth (*Ephestia unicolorella*) turned up in the trap just before dawn. This is another Pyralid with the swept back antennae, but this one was relatively plain and there are similar looking confusing species so I sent the specimen off to Yorkshire micro moth expert Harry Beaumont to dissect the moth to confirm its identity. It is new to Vice County 63 (South West Yorkshire) and only the second for the whole county. Unusually the larvae are thought to feed on dried plant material such as old berries and dead Ivy stems.

## THE HIGHS AND LOWS OF MOTH REARING - CHARLIE STREETS

I was on a field trip to Tag meadow on July 15th this year mainly searching for leaf mines. After a short while I came across this rather spectacular looking caterpillar feeding on a small Crack Willow tree. It's the larva of a freshly moulted Sallow Kitten – you can see the freshly discarded larval skin to the right of the photo. Owing to its fascinating life cycle and the fact I had never encountered this species before in any of its incarnations I decided to take this one home to rear through, and so started a remarkable chain of events.

With no Crack Willows close to home I soon weaned it on to Goat Willow leaves which it ate with great gusto. That was until twelve days later when, for no apparent reason it remained motionless clinging to the top of its rearing tub upside down. Confident it was preparing to moult in to its final instar I was not the least bit concerned..... I should have been!



Sallow kitten at Tag Meadow



A couple of days of inactivity was followed by plenty of activity of all the wrong kinds. Every moth rears worst nightmare began to unfold as a small grub began to emerge from the abdomen of the Kitten, then another and another until they seemed to be appearing from every segment. In total twenty, fully fed parasitic wasp grubs had emerged fully grown and ready for pupation. If you thought things couldn't get any worse for the Kitten then read on.!



At this point you'd think the shameless grubs would quickly disperse and shuffle off the edge of the leaf to find sanctuary in the leaf litter below, but no. They all remained in close proximity to their "mother" to spin their woolly cocoons to pupate in – but why? I think I know why, having read about similar behaviour in wasps that use ladybirds as their hosts. Here's what I believe had happened; whilst the grubs were feeding internally (endoparasitoids) they used their mandibles to sever the six motor-neurons that control their hosts leg movement, as well as this the grubs were careful to eat only non-essential tissue such as body fat and the reproductive parts, so in essence the Kitten larva is STILL alive but immobile, a perfect sentry for the wasp grubs as they prepare to pupate.



Just five days later and the tiny Braconid wasps emerged in synchronicity ready to fly off and over winter as adults ready for next spring when they will search out more hosts to continue their life cycle.

ALL IMAGES - CREDIT CHARLIE STREETS, BARRY NIELD

## SUMMARY - Barry Nield

There is no doubt that running a trap on the Reserve on a regular basis from spring to autumn will yield many more scarcely recorded micros – not to mention their larger cousins.

At the time of writing, our species list is running at 246 for the year, with a few more trapping sessions to go. It is fantastic that we have been finding moths new to Calderdale, and infrequent West Yorkshire sightings too, these do perk up one's enthusiasm. I have personally seen so many new ones at Cromwell Bottom that were previously not recorded, some not very exciting to look at, others have been remarkably stunning, whether brightly coloured, well camouflaged, or just unusual wing shapes.

# NEST RECORDING

## Steve Blacksmith, Chair, Halifax Scientific Society

The BTO (British Trust for Ornithology) has a long-established Nest Recording Scheme, and says that this, along with the ringing and tagging schemes, provides some of the most valuable data about birds' survival rates. The scientists at the BTO can spot changes in brood size, whether a species is failing at egg or chick stage, and if neither, but bird numbers are falling, indicating that it is not at the breeding stage they are in trouble.

To count the eggs or young it's useful to hold a small mirror over the nest. A photo with a compact camera also sometimes reveals more chicks than you see at the time of visiting! Some species, such as dunnock, are prone to "explode" from the nest before they are quite ready, and may not survive, so not too many days are required before returning to provide a proper record.

The dunnock is a dull looking bird but its eggs are little turquoise gems. It was the first nest I found as a young boy – I was lucky to be born just after egg-collecting became discredited. Not that I would condemn people; it was thought of and often written about in the 1940s and 50s as a harmless hobby for boys.

Perhaps the most interesting nest I've found is a goldcrest's in a garden conifer. The eggs were minute, and the chicks when they first hatched were smaller than some bumble bees!

I enjoy finding ground-nesting birds. If you flush a sitting bird by accident it's best to make a quick note of the contents and how to re- find the nest then keep walking in the direction you were going. The adults will be watching from a safe distance and will forget the experience just as if a cow has walked too near. Meadow pipits are common on rough land round the moorland edges, yet their nests are a challenge to find. The reward is a sight of the beautifully marbled eggs in the smooth, neat cup. The fledglings often leave the nest before they can fly, hopping off into the grass.

Recording the commoner birds like blue tits in boxes is equally valuable to the BTO. A site like Cromwell Bottom can provide a long series of records which are also interesting for the reserve's archives.

It is important to record ALL active nests found, not just those considered to be interesting; and failing nests, which are very common, are EQUALLY IMPORTANT to record.

Meadow pipit nest  
IMAGE CREDIT  
- STEVE BLACKSMITH



# POND DIPPING

Simon Day, Jane Uttley



Over the weekend of January 19<sup>th</sup> , 20<sup>th</sup> and 21<sup>st</sup> a band of stalwart volunteers including Graham Haigh, David Langley, David H, Allan Wolfenden, Alan, Nigel Reed and Simon Day were seen to be splashing energetically around in the water hammering in the upright posts, some of them to a depth of 1.5 metres. It was very hard work but once the first post was in situ then the rest followed which was (allegedly) a little easier! Climbing gear, carabiners and wet suits were all in full use!



A ramp for wheelchair access is now built, along with a fence for safety. A wheelchair friendly pathway is to follow.

Funding was provided by People's Postcode Lottery. A brass plaque has been put up and the Wildlife Group have been busy promoting the new facility to local schools, cubs, brownies, scouts, and welcoming children from all over West Yorkshire. It has been a huge success and many people will enjoy it for years to come!



# THE JOY AND HAZARDS OF SPIDERING

Bruce Hoyle

The nursery-web spider (*Pisaura mirabilis*) is the only member of the genus *Pisaura* in the UK. This spider is common and widespread throughout Britain but is scarcer in Scotland. They are found throughout Europe, southern Russia, China and North Africa also islands such as Madeira and the Canary Islands.



Its abdomen is slender and tapers towards the rear. The male has similar and more pronounced markings. A distinguishing feature is the clear but variable pale stripe running down the carapace. The female can be 15mm long and the male slightly smaller. She is a hunter so does not build a web to trap insects; instead she catches prey in low vegetation or on the ground. During courtship the male will present her with a gift wrapped in silk, the larger the gift the longer he can stay, sometimes feigning death before his hopeful escape. She carries her large egg cocoon around under her body and when the young are due to hatch will build a "Nursery tent" in the top of long grass, around May. This tent looks like a dense sheet web and serves as some protection for the young spiders. The young will feed from the left over eggs and drink water condensing around the tent. As they grow they will prey on fruit flies. These distinctive spiders occur in small numbers on long grass at Cromwell Bottom.

## BRIDGE SPIDERS



*Pisaura mirabilis*  
Image credited to  
Chris Sutcliffe

As visitors and especially those of us who went on bat forays in the evening, the Bridge Spider, *Larinioides sclopetarius* came into the conversation as they are very visible on the Footbridge in their large orb webs. Some of the webs can be 2' across. These spiders make their home amongst the girders of bridges and occasionally vegetation nearby. Further into the reserve, the Bailey Bridge also has lots of webs. It has been named "Spider Bridge" because of these webs seen on its grey girders. During daylight if you look very carefully, they can be spotted in crevices of the metal work on both bridges.

It's usually the female that lurks in the centre of her web at night. Large flies and moths appear to be the main

food but midges seem to be an irritation as the spider tries to dislodge them, usually unsuccessfully as the web becomes festooned with them. This spider can be up to 12mm long and if you gently touch her she will sometimes lift her legs in a threat posture.

Spider bites are very rare and normally harmless. In Britain we have very few that can pierce the skin. The smaller male hides on the edge of the web and takes his chance with the female. They may live up to a couple of years. August and September are the best months to see them but they do occur throughout the year. These spiders occur more in the south of England and the Midlands and sporadically in Scotland, also Northern Europe

# SWALLOWS

Allan Wolfenden

The swallow is a common sight on the reserve in spring having flown 10,000 kilometres from South Africa. It can be seen throughout spring, summer and into early autumn before it makes its long and hazardous return journey. Though it is possible to get a few very early arrivals in March most arrive here in the UK in April and stay until September or early October. The Swallow's dark glossy blue back, pale undersides and rust coloured throat make it one of our most elegant summer migrant visitors to the UK. They are very agile fliers and use their long tail streamers to help them twist and turn in flight as they pursue flying insects, catching them in their open mouths. It is a delight to watch them feeding over the reserve, a sight which never ceases to excite and thrill me. Swallows nest in barns, outbuildings and under the eaves of houses, building an



open cup shaped nest on ledges that are situated above ground away from ground predators.

Their nest is made from plant material which

is cemented together by mud and saliva collected in their mouths. Where nesting opportunities are more difficult to come by, swallows have been known to use artificial nests which have been used by breeding pairs to provide suitable nesting opportunities. Nest building takes a lot of energy and effort. It is estimated in a recent BTO study that it may take 1300 trips to collect mud pellets in order to bind their nest together. It's not surprising therefore that many Swallows choose to repair previous nests rather than completely rebuild a new one. It means that they can get on sooner with the urgent task of creating the next generation.

The swallows breeding season can fluctuate and its success is very much dependent on the weather. If conditions are good, and there are lots of flying insects available, swallows can have two and possibly three broods while they are here. The nest can contain four or five eggs which are



incubated for about eighteen days. The young swallows are fed by both parents and it has been estimated that parents may at times feed their young four hundred times in a day. Juvenile swallows leave the nest after about twenty days. It is estimated that there are about 570,000 breeding pairs of Swallows in the UK. Swallows in the UK are classified as Amber List species under Birds of Conservation Concern review. This was possibly been brought about by changes in South Africa, where they spend the winter, the hazards they face on their migration route across the Sahara Desert and a reduction of insects in some areas due to changes in farming practices. We celebrate their presence with us on and over the reserve but we cannot take them for granted. Loss of suitable habitat for feeding and breeding continues to mean they face immense challenges, not least finding suitable nesting places.

Images credit - Allan Wolfenden

# TO RESCUE A TOAD OR TWO!

Steve Blacksmith, Amphibian and Reptile Recorder,  
Halifax Scientific Society

An evening activity from March to early April is Toad Patrolling. I've been doing it for years. The first I heard about it was when someone asked me if I'd seen the "March of the Toads". He meant the migration from their summer/wintering grounds to the ancestral ponds they breed in. When I went to look at the road he told me about, I was appalled to see how many toads were getting run over and no-one doing anything to prevent it.

There are colonies of toads that need help at Thornhill Beck Lane, Brighthouse, also at the new road built at Copley (I predicted there would be a toad crossing here), and at Boulderclough Dam at Sowerby. Another new one has been found at Cottonstones where Charlotte Weightman has volunteered to be manager on the Froglife Charity register. If you do this, you get organising help, insurance cover, and volunteers pointed your way. In return, they ask you to send your records in.

What's it like to rescue toads? As soon as the temperature rises in mid-March to about 10c it's worth going along, it doesn't matter if it's wet or dry. They start popping out on to the tarmac from drystone walls and roadside herbage. They usually all head in the same direction, toward the pond. Very often there will be a male on the back of a female (she is much bigger and quite able to carry him). You often hear the chirping of the males. They do this when bumping into each other in the bucket, or when kicking out with their back legs to push another male away from the female he has clasped "in amplexus".

Most of the toads move just after dusk, so staying an hour-and-a-half or couple of hours is quite adequate. Sometimes drivers

will stop to ask you what you are doing and are usually very interested. I think it is best to have hi-viz jackets, gloves, white buckets, torches, and put notices up near the crossing. The Council will help with these if asked, as will Froglife. When you get a good covering in the bottom of the bucket, it's time to take them to the pond. (Don't forget to count them and keep a notebook). If you can get near enough to the water you see them swim off to find mates, or if already coupled, the female swims with four legs, and the male with just his back legs - he's not going to let go of his hard-won female! As with frogs, which also clasp 'in amplexus', the male ejects all his sperm at once, just as the female



is ejecting all her eggs. With frogs we can survey by the clumps of spawn, as each clump represents one female, but with toads the

strings of different females' spawn often gets tangled, so the best way to survey them is count them while rescuing them on the road. You also sometimes find newts walking to their ponds. Frog timing has only a short overlap, as they usually spawn before toads, and they don't get run over so often, probably because they can travel much faster with their great big leaps.

IMAGE ABOVE - TOAD ON ITS WAY TO  
THE BREEDING POND  
- CREDIT STEVE BLACKSMITH



**Cromwell  
Bottom  
Wildlife Group**

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