



SPRING 2021

Migration watch

Report from Richard Creighton

As the current migration season is drawing to a close, migrant watches from both Marriages Hill and Clays are less necessary, however, if there is a period of unusually cold weather later this winter, cold weather movements may occur, recording these movements will be rewarding.

Ringling at Peewits Gorse

Ringling has been more sporadic this year due to the present circumstances,

however Tim and I have made as many visits as possible and have generated some interesting data.

Yellowhammer Ringing Project

I have also been continuing with my project to ring Yellowhammers to provide some information on breeding success, by comparing proportions of juvenile birds to adults.

One Yellowhammer ringed as an adult bird in the Manor Farm area on 29th November 2019 has been controlled (recaptured

by another bird ringer), at Battlesbury Bowl on 23rd October 2020, whilst this is not a long distance movement, it does illustrate the fact that this sedentary species does make local movements.





Habitat improvement at Peewits Gorse.

Tim and I will be continuing with the program of habitat management at Peewits Gorse as soon as the current regulations are relaxed. The work implemented last year has been very successful, with Gorse benefiting from the removal of some of the larger Sycamore and Hawthorn.

Moth recording

A moth light was left out at the ringing site at Peewits Gorse on 11 occasions when ringing operations were planned for the next day, and the weather was suitable, this resulted in the capture of 461 moths of 100 species, the most interesting capture was a Clifden Nonpareil on 18th October, a very large colourful moth.



Clifden Nonpareil
18 October 2020, Peewits Gorse

Below is a table of birds recorded on a monthly basis throughout 2020.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	
Swift	0	0	0	0	13	0	529	6	0	0	0	548
Skylark	8	0	3	0	0	0	0	2	157	500	25	695
Swallow	0	0	0	12	27	0	2	348	525	100	5	1019
Starling	0	13	350	0	0	0	0	0	4	256	299	922
Fieldfare	0	19	15	0	0	0	0	0	0	155	0	189
Redwing	0	5	41	7	0	0	0	0	3	784	5	845
Grey Wagtail	0	0	0	0	0	0	0	1	13	5	1	20
Alba Wagtail sp.	0	0	2	0	0	0	0	0	10	99	0	111
Meadow Pipit	1	3	270	79	0	0	0	6	557	254	11	1181
Tree Pipit	0	0	0	0	0	0	4	49	4	0	0	57
Chaffinch	0	3	14	6	0	0	0	0	42	651	41	757
Linnet	0	1	20	167	0	0	0	63	127	178	6	562
Lesser Redpoll	0	0	0	0	0	0	0	0	3	13	0	16
Goldfinch	0	0	20	6	0	0	0	0	21	102	13	162
Siskin	0	0	1	0	0	0	0	0	109	22	10	142



Fieldfare



Sky lark



Corn bunting survey

Carried out by **Tim Ridgers-Steer**

Pertwood farm is well known for its breeding population of Corn Buntings. This farmland bird is the largest of the Buntings; its dramatic population decline in the UK makes it a red list species. However, it can be seen on Pertwood in large numbers throughout the year. I carried out a Winter count over the weekend of 9TH November 2020. Visibility was poor due to heavy fog. However, the overall count was a reassuring total of 300 birds.

Had the visibility been better I'm sure that number would have been higher.

The largest concentration was around Windy ridge, feeding on the remaining strips of Sunflower and Cosmos. Another 15 were seen at Penn Hill, with another 30 feeding on the stubble behind Glebe Barn.

Other sightings over the winter so far, include, Merlin, Peregrine,

Kestrel, Sparrowhawk, Buzzard, Red Kite, Redwing, Fieldfare, 500 Linnet, 250 Skylark, 30 Meadow Pipit, 8 Reed Bunting, Song thrush, Blackbird, 500 Starling, 25 Yellow Hammer, Goldcrest, Blue Tit, Great Tit, 3 Snipe, 4 Wren, 12 Stonechat, 20 Chaffinch, 4 Bullfinch, also a female Brambling. This is a finch very similar to a chaffinch that migrates from Scandinavia for the winter; it is always a delight to see one.

Livestock at Lower Pertwood Farm

Lower Pertwood Farm acts as the host for the Dufosee family. High quality Ruby Red cattle spend most of spring, summer and autumn at Lower Pertwood Farm, mostly on the ancient down lands. We have 400 acres of ancient down land which is protected. They contain burial mounds, ancient Celtic farm systems and many other features which need to be preserved. However, the down lands themselves benefit from grazing by both sheep and cattle. Because we don't have over winter facilities for cattle this arrangement where well-managed livestock farmers like Jim & Joe Dufosee (**see: <http://www.blackhillorganiclivestock.uk>**) are able to work in partnership with us to provide the type of organic pasture management that we need and which these ancient down lands need. The Dufosees have chosen Ruby

Red cattle which are perfectly ideal for our environment.

With regards to sheep, we act as hosts to Poll Dorset and Dorset Horn sheep which are also fully organic. Sheep are a major contributor to sound organic management principles because they can be used selectively to hard graze certain fields in order to eliminate the weed burden and place the field in the best possible position to be used for an arable crop.

Grass lands at Lower Pertwood Farm are extremely healthy due to the natural environment that we have created and we are more than happy with the rate of growth of our grasslands and the health of our pastures. Planting rye grass and red clover leys is very much part of the arable rotation which fits perfectly with the livestock strategy.



Trees

We are delighted to have been successful in our application for 950 free trees from TCV (The Conservation Volunteers) I Dig Trees. These are due to be delivered at the beginning of February.

Planting woodlands, sequestering carbon, beautifying the countryside.

From the time that the current owners purchased Lower Pertwood Farm we felt that we had responsibility to use the land wisely.

Perhaps the highest priority that we gave to ourselves was to plant indigenous trees. To date 18,600 trees have been planted since we purchased the farm with another 3,000 to follow in the next 12-months.

Essentially the approach was as follows. Low lying areas that tended to be too wet for reliable arable use. Because the farm is topographically very diverse. We go from almost the highest point in Wiltshire right down to the Wylde River at Longbridge Deverill. Some of the lands along the river tend to flood in winter and we cannot prepare them for crops, and even when we do some of the crops cannot cope with the amount of moisture residing there. However, we started planting trees in some of these fields like Lower Lord's which is near to our grain silos. The trees thrived and have actually outgrown many of the others simply because they have access to unlimited moisture. Encouraged by this we have now added Johnny's Ground which is across the track from Lower Lord's where another

2800 trees will be planted. This will be managed by an acknowledged professional in this field with over 50-years' experience. He has planted many of the great forests on some of the biggest estates in Britain. The selection of trees that have been chosen is as follows:



- Oak
- Sycamore
- Hornbeam
- Field maple
- Birch
- Wild cherry
- Crab apple
- Rowan
- Thorn

It is probably true to say we are running out of space when it comes to planting trees but we have a lot of in-filling work to be done. Long before we came to Lower Pertwood Farm, the ivy was left unchecked and this has pulled down quite a number of trees leaving gaps in the woodlands. These will be in-filled.

Our policy is to plant trees on a relaxed random basis and not attempt to achieve a forestry effect. We do not plant them for commercial gain because they will be allowed to grow as large as they like for as long as they like. The benefits of planting trees are enormous and it is not necessary in this newsletter to expand upon that. Certainly, the planting of trees has been identified by the United Nations as the key strategy to reducing carbon levels in the atmosphere.





Tree and Hedge Planting

since 2014

Over the last 6 years a significant amount has been planted on the farm. This has included hedging, trees and shrubs. All planting has been with native plants much of which were sourced from a family run tree nursery in Gloucestershire. The planting has been wide ranging from long runs of roadside hedging to larger fields and smaller copses.

Hedging.

An estimated 19,250 hedge plants have been established, most of which have been planted on the field edges adjacent to the A.350. This number of plants equates to approximately 4.8 kilometres (2.9 miles). Most of these were planted in the winter of 2014/15. Despite the exposed locations, they have established well, and sections have been topped so they are kept relatively low in the landscape. Most of the plants are quick thorn but there are other native hedge plants such as guelder rose, wayfaring tree, spindle and blackthorn.

Tree planting.

Since 2014, there have been a number of woods planted. The largest being a field of over 8.00 hectares at the southern tip of the farm and a field of over 5 hectares near the north

of the farm. These areas have done well and have favourable ground conditions for planting. Other, smaller, areas have been planted, in particular adjacent to the western side of the A.350 where recent planting has been carried out to link up previously planted roadside copses. Some of these areas are particularly exposed and planted in fairly dense grass, so establishment for trees in these areas can be slower than elsewhere. However, most trees eventually get away. Species planted include the following:

Trees: Oak / Beech / Small leaved lime / Hornbeam / Wild cherry / Field maple / Crab apple / Wild Service Tree.

Sycamore has also been planted in places. To some extent this has replaced ash which cannot be planted due to the widespread infection of ash by Ash Dieback (*Hymenoscyphus fraxineus*)

Shrubs: Hazel / Guelder rose / Wayfaring tree / Spindle / Common dogwood.

All trees are protected with tree shelters to help prevent damage from deer.

It is very important to be aware of species diversity when considering planting. There are a number of reasons for this. Firstly, and possibly most important, this helps mitigate

against the risk of tree diseases, which now seem to be more common in recent years. However, the Ash Dieback is the biggest blow to our trees in living memory and much needs to be done to bring us back to 'square one', with felling and restocking. Another factor for diversity may be to cater for a wider range of wildlife. Also, inevitably, some species may establish and grow easier than others.

A total of approximately 12,800 trees and 3000 native shrubs have been planted on the farm since 2014.



Bee Report

By Jonathan Powell



We are pleased to give an update on the free living honey bees project at Pertwood Organic Farm. The project was set up to provide more options for honey bees to nest around the farm and thus hopefully increase the number of bees. This increase would contribute to the pollination of flowers as part of the organic system, including special mixes of flowers which fix fertilising nitrogen into the soil, provide nutrients to the grazing animals and well ... just look great along the side of the A350!



Even in October the farm tracks are lined with flowers



Helen checks for bees in one of the Log Hives

Prior to this project the spaces that bees could use for nests were limited to chimney stacks and even underground concrete water meter chambers: all unsuitable. The natural homes of bees - hollows in trees - had all but gone. Whilst the farm is quickly increasing the area of wooded habitat, it will take 100's of years for these trees to age and become suitable for honey bees. So, while we wait, we are providing some alternative accommodation.

For those of you who have been following this project you will know that in 2016 we created a cavity inside an ash tree which was populated by a wild colony of bees within two days of its construction. Additional bee nests (think of a bird box, but much larger and made from really thick wood), have been dotted around the farm to provide nest sites for swarms from the original ash tree colony. This article follows an October 2020 visit where we checked up on the progress of all the nesting locations to see how the bees are doing.

The weather was terrible, and no bees in their right mind would be out and about. But we had a special technique to help us determine if the nests were occupied when the bees were not flying.

A long tube was put up to the entrance and gently blown into. In the populated hives, the bees buzzed back as they felt the air movement and CO2. All it took was to put an ear to the tube and we heard this unmistakable buzz of life.

Using the tube we were able to determine that the log hive in the picture and another tree box hive nearby were populated with honey bees. Sadly, a hive further up the field which used to have a strong colony was silent.



This bee box also contains a thriving colony of bees

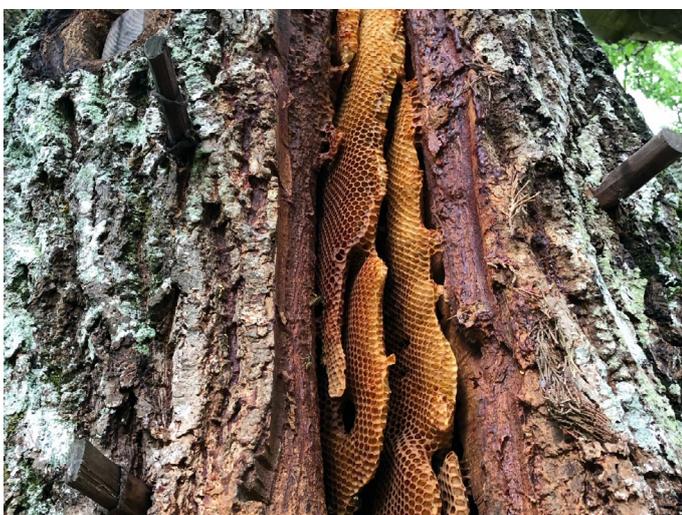
From the original ash tree hive in 2016 there are now two honey bee colonies ... that we know of. It may not seem a big change, but this project has always been delicate; we started from just one nest and have resisted the urge to artificially boost nature. The intention was always to provide agency to the bees rather than push expansion artificially. We take heart that the project has expanded, but the small increase reflects how difficult it can be to recover natural systems when so much of the original habitat that supported them has been lost.

The original tree hive inside the ash tree is now empty, yet surprisingly has become of special interest. Nests typically last 3-6 years, although we know of some that have lasted for decades. But once a nest becomes unoccupied what happens in this mysterious chamber, and when can it be recolonised? These questions have been little researched. We know that in managed hives beekeepers typically clean them once a colony dies; indeed, it is considered good practice to thoroughly clean a hive with a blow torch to

prevent disease. Wild colonies on the other hand are never cleaned out, and yet several studies show that they have higher resistance to diseases and their nests do not create disease hotspots. So, what happens in the wild? Are nests cleaned, and if so, how?

We inspected the empty ash tree hive last year just after it was abandoned, and although there was interest, other colonies decided not to swarm into it.

In a natural nest, the comb and nest walls are normally covered in sticky red propolis, a resin based material created by the bees which is anti-microbial and anti-fungal. The propolis creates a nest atmosphere but only in nests which have high thermal inertia and insulation e.g. a tree. The atmosphere protects the bees from pathogens and also stabilises the tree cavity. If the bees quickly reoccupy the nest with a new swarm, all is fine to continue where the previous colony left off. But if there is a gap, nature breaks down old comb before the bees start again.



The ash hive shortly after the colony left it, covered in thick red propolis



The ash tree hive - Nature's clean up squad in action.

We opened the ash hive again on this visit to see what the comb was like after a year and a half. 



The picture above of the same nest shows that almost all of the comb has been eaten by wax moth and the detritus is being processed further by earth worms (4m up a tree!) and other micro organisms. This slow but very thorough breakdown is thought to be one of the mechanisms which prevents disease replication in honey bee colonies. Literally everything, including the propolis, is consumed many times over. With less than a quarter of the comb remaining, the rest of the nest is empty and will likely be ready for bees again in the spring.

This breakdown is slow and looks a mess but it is actually all part of a symbiotic cycle between the bees, wax moths and other creatures/bacteria. So, one colony died, but not before establishing two daughter colonies; besides, the nest now teems with many other organisms.

As we went around the farm checking the various nest boxes we found this oddity.



An insulated bee box donated by www.justbeecohives.com with honey bee comb outside.

Clearly, a swarm found this nest and spent some weeks outside, as shown by the comb on the exterior, but for some reason they did not go inside. In an effort to find out what happened, we looked closely at the comb.

Firstly, we noticed there were a few scattered raised open cells in the centre of the comb which, due to their shape, must have once had male drone larvae in them. The fact that they were randomly distributed, clustered in the centre and not at the edge, and smaller than normal drone cells suggests they were laid by sterile worker bees. Female worker bees lay unfertilised eggs (that hatch as drones) after about 30 days of being without a queen due to the absence of queen pheromones.

Looking further at the comb, we saw no signs of extensive honey gathering. Had honey been stored the comb it would have been raided by

stronger colonies as the nest failed, and the edges of the comb holding capped honey would have been ripped open and serrated by the raiding bees. In other words these bees lacked purpose to gather honey.

The very existence of the comb showed that the scout bees looking for new nests thought this location was good, but the bees did not enter the hive - again indicating the arriving swarm lacked purpose.

We also noted that the comb was pure white. If a queen had been laying eggs, we would have seen a darker yellow at the centre of the nest as the bees would have been constantly feeding the developing bees with pollen, staining the comb. The lack of colour suggests the bees lacked young bees to feed.

From these clues, we speculated that a reasonable sized swarm attempted to enter, but the queen likely never made it with them into the nest. Possibly she was an old queen and unable to fly, or she was lost on the way. Perhaps they waited for the queen, staying under hive and slowly diminishing for over a month until eventually they all died or dispersed to the two nearby colonies. We will never know for sure, however we are reminded that the act of reproduction is an uncertain event for bees.

In summary, then, we can say that the original ash tree hive, from which many swarms issued, is now in a state of cleansing and renewal. Two swarms have made it through their first season, with a third sadly lost, and yet another large swarm that disappeared into the surrounding countryside. The project is revealing the many connections between honey bees and other organisms that co-exist with the bees. This project is one of many similar projects that are being created for free living bees around the world. You can find more projects here.



Looking ahead at Pertwood Farm, we now have two young colonies which will be in their second season, just perfect for swarming in 2021. We hope then that we will have 3-4 colonies, but it's all up to the bees and nature where this project goes. These colonies are delicate threads in a tapestry of natural relationships. Nature transitions away from relationships that do not work and flourishes where the relationships between organisms and the environment are mutually supportive. At Pertwood we want to listen to bees and seek ways to support them. Once the bees thrive in all areas of the farm we will know whether we've listened (and acted) with true understanding.

The main yard



The main yard has undergone a total reconstruction over the last year and is almost complete.



This is a Field Maple tree being planted in the centre of the yard and we are just in the process of building a circular stone wall around it.