

THE CHELTENHAM PEREGRINES (2009 to 2020)

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Introduction

Single Peregrines had been seen occasionally for several years on the tower of Christ Church in Cheltenham. In 2009 I thought there were two and they might have tried to breed. After the time when any young would have hatched and church members were about to be taken up to hold an event on the roof, Martin Chapman (who was then responsible for the church fabric) and I, went up to have a look. The birds had laid three eggs but these were distributed over the flat roof with gutters on two sides to remove rain water. The eggs had rolled away from each other and one was in the gutter. The birds needed some help to breed successfully and so we proposed designing a nest box and putting it on the tower for the 2010 breeding season.



On January 23rd 2010, after I had obtained a Schedule 1 species licence, we put up a tray of gravel with some cover from the weather. The same design has recently been used successfully at a church in Taunton.

The 175 year old wooden spiral staircase ends up in a wooden cabin with a door opening onto the roof. Several holes were made in the sides of the cabin and door so that discreet observations could be made. In later years, a young bird sometimes looked into a hole as this photograph shows.

A CCTV camera with Pan/Tilt/Zoom was set up during 2011 (and updated to HD in 2018) and provides a picture on a monitor in the church and at my home. In 2010 I stood in the cabin to wait for events to unfold in order to observe the birds and to take photographs with the birds unaware of my presence. With the CCTV view at home, if there was some activity - perhaps the male plucking prey, I could be at the church and up the tower by the time the chicks were being fed (although now ten years later I struggle to run up the 212 steps!). I move the camera from home to follow the action and the current view is continuously recorded and is copied to my computer later. With the new camera I am now able to take photographs from home.

Pre-laying Activity

One or both birds are occasionally present in the first two months of each year and more frequently in March. In the last two weeks of March both the male and female, usually separately, enter the nest box to stand in the gravel. If they both come into the box they bow their heads down and make reassuring clucking calls to each other. A scrape is formed by sitting down and pushing their legs out backwards and wiggling the body to make a depression in the gravel. The female also pecks at the stones and draws them towards her.

Copulation is sometimes heard but seldom seen as it takes place on the pinnacles of the church. The latter are difficult to see from the cabin and impossible with the CCTV as the camera cannot tilt upwards. Copulation was never observed on the tower floor.

Egg Laying

The first egg to be laid in the nest box was on April 27th 2010 which was a very late date for Peregrines. Over the next eight years the first egg was laid about three weeks earlier which is a more usual date. For the last six years the date varied from March 28th to April 7th as shown in Table 1.

In 2010 and 2011 only approximate dates and times of egg laying could be made by checking progress by visiting the top of the tower. In 2012 to 2018 the CCTV was available and so times could often be determined to the minute (or even the second). There are several clips of the egg actually dropping from the



female. When she is facing the camera, the time the egg dropped can be estimated from her actions (raising her tail, pushing and jerking).



In 2010 three eggs were laid (as was the case in the unsuccessful previous year). Subsequently, four eggs have always been laid but in two of those years only three chicks hatched. The female only intermittently sits on the first egg since Peregrines do not incubate continuously until the clutch is almost complete. It was noticeable in some years that the last egg was whiter than the reddish colour of the others (see photographs).

After an egg has dropped, the female usually remains absolutely still for some time. This is especially true for the first egg of the year when she remains motionless for an hour or more. The typical time between each egg is from 53 to 60 hours. In 2012 and 2014 there were accurate times for the first to the last of the four eggs and the total times were about seven days (3 hours less in 2013 and 11 hours more in 2014).

The CCTV view of the laying of the third egg in 2018 can be seen on the youtube link;
<https://www.youtube.com/watch?v=X7MZaG2AoZc&list=PLTM1gWldEpiI34d5mZViY08dKPwLYectw>

Viewing the clips from youtube the tab can be closed at any time and closing the tab when it has finished will prevent another clip from being automatically loaded.

In the photo, the egg is a rich colour because it is less than a second after it has emerged and has not yet dried. In the second photo, the female inspects all four eggs a minute after the last was laid in the middle of the night.



Incubation

During incubation, the female often sleeps for a few minutes at a time. When there is an exchange of duties there is some posturing with the male appearing quite cautious of the female. The incubating bird often shifts the eggs around to turn them and pulls in some gravel towards her/him to stop the eggs rolling away.

When the clutch of four eggs is complete, the male takes turns to incubate the eggs. Every few days I looked back through the recordings for 2018 to see how many times and for how long he sat on the eggs each day.

Over the 30 days before hatching there was one period of incubation (including one day of no incubation) by the male on 9 days (30%), two periods on 13 days (43%) and three on 8 days (27%). In terms of total time spent incubating (rather than days) the percentage for one period was 15%, for two 48% and for three 37%.

The single incubation period was on average 2.4 hrs, with two periods the average total time was 5.5 hrs and for three it was 6.9 hrs. These may seem rather a small number of hours but typically, from about 20.00 in the evening to 06.00 in the morning, the female remains incubating the eggs all night long.

When there were two incubations by the male the first period was usually the longest. In the case of three incubations the third was usually the longest and the middle incubation the shortest.

The male is significantly smaller than the female and when the female leaves the eggs they are often well separated. The male arrives and usually has some difficulty stepping over the eggs and covering them. Occasionally he will leave one out as shown here and may not notice for up to an hour. Fortunately this must have always been on a warm day otherwise the egg may not have developed.



In the video below, the female flies off the four eggs and the wide spacing of the eggs can be seen. The male flies in and, as usual takes time to cover them, moving the eggs so that they fit well beneath him while occasionally falling over in the effort.

<https://www.youtube.com/watch?v=yMO8s-wcAVE&index=6&list=PLTM1gWldEpiI34d5mZViY08dKPwLYectw>

In this following video, the female flies in and suggests it is time for the male to depart.

<https://www.youtube.com/watch?v=IMP9f0yMDCK&index=5&list=PLTM1gWldEpiI34d5mZViY08dKPwLYectw>

The incubating bird is always alert even when the eyes are closed. Although traffic noise and building works from below are surprisingly loud, it is only a new or odd noise which alerts the bird and familiar sounds are not a bother however loud they are. When the bell tolls, although it will always make me jump, the eyes do not even open. However a new or odd noise from builders or the road will immediately cause the bird to be alert.



Hatching

About 37 days after the first egg is laid the first chick is hatched. This is usually fairly obvious as the female will be sitting in a different way with her wings hanging loose and perhaps standing. It is often difficult to determine the time of hatching as the action can be obscured by the female. In addition, a hole in the egg can be seen several hours before the chick finally struggles free of the shell and so it is difficult to define a time for hatching. From the first to the fourth chick took four days and six hours in 2014 as shown in Table 1.

A newly hatched chick is not immediately fed by the female, even if she is feeding other chicks. It would appear that the chick has to dry out first and be able to raise its head and beg before it receives its first tiny morsel.

Feeding

The male usually provides the plucked prey to the female and she feeds it to the chicks, tearing off small bits which she transfers carefully from her bill to the bill of the chick whilst making loud encouraging clucking calls.

In the first year in 2010, the female spent a lot of the time standing up, with the young by her legs, shielding them from the sun with partly raised wings. There was barely enough room for all the young to keep in the shade. Not only were the eggs a month later than expected, the sun had been very strong and bright in the mornings for many weeks. I had assumed the tower was aligned east-west and with the box along the south wall it would face north. In fact the alignment is 45 degrees from this, so that the box actually faced north-east and thus got more morning sun than I had anticipated! For subsequent years an extra sidepiece was made and the roof was extended to provide more shade.



The chicks put on weight at a rapid rate and changes could be seen almost daily. The last born is always much smaller than the others for many weeks. It can have a torrid time at first fighting for its life, sometimes on its back with its legs waving in the air and generally being ignored.

Here is a clip from the first day in the life of a last hatched chick. It is the chick on the right on its back!
<http://www.youtube.com/watch?v=VPU0o1vGuKc> It does struggle up eventually but ends up facing the wrong way!



The last born is often nearest the female when she comes in with food but initially the food is usually taken by a taller chick behind the smaller bird. However, the latter gets plenty of food when the larger chicks become full.

Sometimes I wonder that the chicks survive at all. Here is a clip where the chicks are becoming too big for the male to brood easily even though they are only one week old. The male is smaller than the female and has shorter legs and can be rather clumsy as shown in the following link where he puts all his weight on the throat of one of the chicks as he moves out and the incoming female is rather concerned!

<http://www.youtube.com/watch?v=8ops9NYxvd0>

The female looks after them very well and the male brings in food on demand. All four chicks are fed in these clips from 2015.

Here is a part of a feeding session at about a week old:

<https://www.youtube.com/watch?v=IKR4h1orXJE>

and a few days later

<https://www.youtube.com/watch?v=3ZjFSJBbsKc&spfreload=10>

Because these videos are filmed with a camera they have sound and the clucking calls are from the female.

The chicks all had subtle differences in character, for example, some were bolder than others in exploring the floor of the tower. One was always more determined than the others to jump off the gravel tray and the others would follow during the subsequent weeks. The female was seen to grab hold of the scruff of the neck of a small chick trying to leave the box and haul it back from the edge and quite a fight ensued (see photo). Important if the nest was on a cliff or perched on a building with a drop below!



In 2018 on May 28th at 15.52 the small male chick at about 2½ weeks old decided to explore the tower floor but could not get back on to the gravel tray with the other chicks. He remained on his own, cold and unfed until the female finally managed to haul him back 1½ days later, using her bill on his neck at 1.30 at night on May 30th. Soon after this it rained. He was finally fed that morning at day break and must have been rather close to failing to survive.

In most years all the chicks are out and about by the time they are three weeks old and increasingly the female is usually standing guard from a position low on a nearby pinnacle rather than being in or near the nest box.

Videos of the chicks being fed are often interesting. In the following clips it is the male who is in charge of the one week old chicks.

https://www.youtube.com/watch?v=_lt1xnTYLMY&list=PLTM1gWldEpil34d5mZViY08dKPwLYectw&index=9

Here is a photo of all four chicks after about 2½ weeks. Colour rings are placed on the chicks after about 3 weeks and in the second photo the chicks are feeding the day after they have been ringed.



After three weeks (the male chick in 2018 has gone on a walk about again!);

<https://www.youtube.com/watch?v=UtpCteWFCh4&index=11&list=PLTM1gWldEpil34d5mZViY08dKPwLYectw>

After four weeks;

<https://www.youtube.com/watch?v=ji3U9B3WGSE&index=13&list=PLTM1gWldEpil34d5mZViY08dKPwLYectw>

Outside the nest box after five weeks;

<https://www.youtube.com/watch?v=Hu4d6gnFFeo&list=PLTM1gWldEpil34d5mZViY08dKPwLYectw&index=14>

Here is a camera video where the sound of the chicks is audible.

<https://www.youtube.com/watch?v=Uvp503BRzUw>

Sorry about the bells tolling halfway through the clip. The birds never respond in any way to this loud but familiar sound even when an adult is sitting on the eggs with nothing else to do but stare into space.

A Day in the Life of One Month Old Peregrine Chicks

It is interesting to review a typical 24 hour period in the life of the Peregrine chicks. The four chicks were hatched between May 15th and 18th in 2012 and the date chosen was June 12th when the chicks were about one month old. The infra-red light (left by BBC Springwatch) gives good views of night time activity.

Generally the female remains on the pinnacles keeping an eye on her chicks. The male appears to do all the hunting for prey. On this day, except for the first feed in the morning the male took the prey directly into the nest box in the morning period but on two out of the four occasions he was immediately moved aside by the female who then fed the chicks. In the afternoon, on all three occasions, the male fed the chicks on the tower floor.

During the night the male Peregrine came into the nest box once but no food was fed to the chicks and for several hours he sat on the nest box roof. The first time the chicks were fed was at 4.00 and again at 5.43, 6.36 and at 8.14. There was a gap until 12.37 until they were fed again and the chicks were soon full up and disinterested. A few scraps were also fed to two chicks at 13.12. The last feed was at 15.48 and continued until the chicks were full although scraps were fed by the male to one chick at 18.34. In total the chicks were fed about seven times - most frequently early in the morning. The total time spent feeding the chicks in the 24 hour period was 90 minutes and on three occasions the chicks were full up with food still available.

In this photograph, it appears as though the birds are looking at me. They are looking at the male which has landed on the cabin with food just above my head.

The Chicks become Juveniles

After four weeks, the young are often lying together, touching bills and preening each other:

Preening become increasingly important when they are on their own and is interspersed with short sleeps. Irrespective of the actual date of hatching it soon becomes clear that the males are smaller than the female young.

Aircraft and the flying parents are watched intently and nearby wasps and flies cause much movement of the head as the eyes focus on them. The young often sit on stone pillars I had arranged on the tower floor and look up begging for food from their parents sitting on the pinnacles.

Even after 6 weeks all four young are still sleeping together in the box and there is not much room for them all. Eventually they prefer to stand on the ledges around the outside of the church tower, like their parents, staring into the distance or down at the traffic and people below. Presumably they remain there during the night as the box is increasingly often empty.



First Flights

As the youngsters become older they flap and stretch their wings particularly if the wind is strong and often stand on the nest box where the wind is stronger.



After six weeks they are ready to attempt to fly and this always occurs on a very windy day. The young carry out vigorous wing flapping and stand right on the edge of the parapet for ages, every now and again almost being blown off. In 2010 I watched a youngster looking down for more than half an hour then suddenly there was a stronger gust of wind and it was gone. I walked the area for some hours expecting to find the youngster on the ground. It was interesting to see the adult female

appeared to be also looking for it, doing circles at low level downwind of the church. I did not find it but when I came back from a few days away from Cheltenham it was on the tower! A new flying youngster needs several attempts to land successfully back on the tower and for the first few days can be often seen on lower roofs after failed attempts.

There have been three instances when a bird has become grounded and could not take off again. In the "wild", on a cliff or in a quarry, it would continue to be fed by the adults on the ground but in an urban environment this is not possible. The youngster has to be caught, carried through the church, up the steps to the top of the tower and let



out through the door with minimum disturbance to the bird or the other young on the tower. Each rescue is different for several reasons but all were successful. In 2014 the congregation were waiting to go in for Sunday Service and the bird in my arms hissed a lot as we passed by and many took a step backwards! On another occasion a bird was carried on a mop passed from garden to garden.

In 2015 the first juvenile flew on a windy day but appeared to be stuck halfway down a face of the church in the evening. Early the following morning I hurried to the church worried that the bird might have become stranded on the ground. In fact it was on top of a pinnacle so it must have managed to fly up. It was being mobbed by Lesser Black-backed Gulls while the adults watched in a surprisingly relaxed manner. The juvenile then flew down to the floor of the tower and ate some prey vigorously while the other juveniles present were disinterested. Later that day all four juveniles were happily sleeping together.

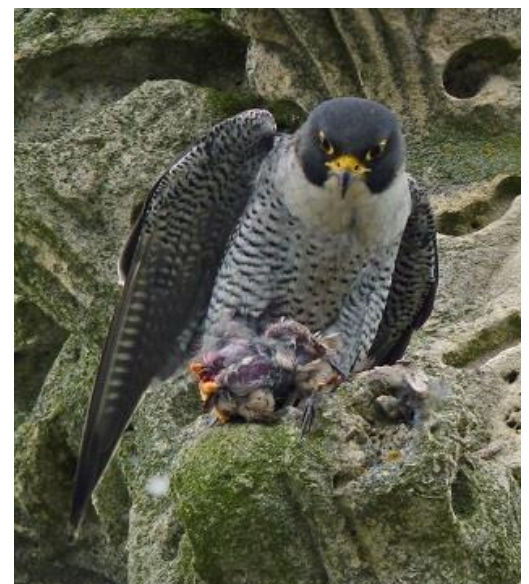
Thirty three youngsters have been fledged over nine years at Christ Church which is an average of 3.6 per year and which is much higher than would be expected in the 'wild' on cliffs or in quarries.

Continuing Dependence on the Parents

The young play together occasionally. One would take a feather or discarded leg and jump around with it and the others would follow. If a more substantial piece of prey is found it defends it by opening its wings over it (mantling). They also make short flights from the tower with quick and shallow wing beats and beg at the adults for food.

There was unexpected behaviour by an adult early one July and also in September when the nest box was entered and several scrapes in the gravel were made. Perhaps they were sad to see their young leave.

When the male brings in prey, often to the top of the cabin, he plucks it and the juveniles usually remain on the tower floor, begging (whining) continuously. Plucking the prey is arduous work and takes about 20 to



30 minutes. When the feathers have been removed, the juveniles often fly to the prey and grab it. Back on the tower floor they mantle the prey to prevent the adult taking it back - which occasionally happens. If there are no juveniles on the church the male stops plucking and looks around for the juveniles to appear.

During August the adult male increasingly declines to pluck the prey but drops the bird on to the tower floor. The juveniles at first do not know how to deal with this and leave it then return and eventually attack the head as a means of getting some meat without the chore of plucking the feathers.



When the young bird is full up but there is still prey left, the juvenile will try and hide the remains for later. There are not many places to hide it but the juvenile will try behind the nest box or in the gutter. He or she is often worried about it for a few minutes and returns several times to move it and appears reluctant to leave it.

On several occasions a juvenile has become motionless for many minutes while stretching the neck upwards. An uncomfortable posture which I assume is due to waiting for food to go down.

A typical scene with several juveniles present on the church – on the pinnacles or stone work is as follows. The birds are tucking into prey (with a few squabbles). After a while they become rather full and have increasing periods of recovery while they digest some of it before they can carry on eating. When they can eat no more

they close their eyes and often begin apparently whining for more – sometimes looking up at their parents. I believe the sight of the adults stimulates this response even if they are full up. It may also be to discourage the adult from flying down and eating the remaining prey. The adult may deliver prey to a juvenile which then looks up at the adult and whines for ten minutes before eventually starting eating. When prey is left, even with the juvenile present, the adult may swoop down and eat the remains so maybe the juvenile's action is a sensible precaution.

During September the adult male will increasingly fly in with prey (see photo above by Terry Clarke) and then fly away with it and the juveniles will be in hot pursuit and attempt to take the prey from the male's talons. Presumably, all part of teaching the young to learn to catch food for themselves. A juvenile Green Woodpecker was brought in (see photo) but the adult flew off with it followed by a youngster. Two people have commented to me separately, that they have watched a Peregrine over the County Cricket ground dropping prey for the juvenile to catch and this was more entertaining than the cricket match. However, it must be many months before they become adept at stooping successfully onto flying birds.

Dispersal of Young

The young are usually present around the church throughout July and August but increasingly one or two become absent. One year, a youngster was given food by the adults regularly until December 26th. Although the adults often ignore the begging juveniles, I never saw either of the adults try and drive a juvenile away from the church.





In October after the young had gone there was an interesting interaction between the adults. The female was eating prey on top of the cabin in which I stand. She had been eating for 20 minutes or so then stopped and looked around. The male came in and ate a few bits and pieces. Note the difference in size between the male and female in the video. He then grabs the prey from the female and a bit of a tussle ensues and he flies away with it. Fortunately the female did not seem particularly bothered.

<https://youtu.be/55am8-BiPyo>

When the adults, especially the male, are not at the church I have often wondered where they are. I have looked at many tall buildings but have not been able to find the Peregrines except occasionally on the Eagle Star building or on St. Gregory's Church near the centre of town. Sometimes when I am in town I hear one or more calling to each other or an adult bringing in food.

Identified Prey Items



For the first five years, after the juveniles had departed, Ed Drewitt inspected the prey remains on the tower. Ed is an expert at recognising feather and skeleton remains and in 2008 wrote an important paper in British Birds in which he summarised the diet of urban Peregrines and reviewed their night time hunting behaviour. Even then, well over 115 species had been reported from several urban sites. At Christ Church, Ed could only inspect the prey remains from the last few weeks as most of it had been present for up to 6 months and compacted. He also identifies species from photos I took of remains found at other times (I am certainly not very competent at recognising the species from a chewed skeleton).



Amongst the pigeon remains have been several Woodcock, waders and water birds which suggests that the Peregrines were sometimes feeding at night, or at least at dusk, on the birds migrating overhead. The most unexpected find was a juvenile Great Grey Shrike, probably migrating southwards above Cheltenham at night in the first week in October 2010. Other interesting species was a Kingfisher in 2015 and 2016 and a Sandwich Tern in the Spring of 2016.



Table 2 contains a list of species which have been identified at Christ Church - the total number of species so far being 33 (including many pigeons). As well as those already referred to,

these include Little Grebe, Teal, Snipe, Knot, Lapwing, Woodcock and Whimbrel. Also brought to the tower each year have been several Great Spotted and Green Woodpeckers and many Starlings and on one occasion a Swift.

Subsequent Sighting of the Young

From 2010 to 2010 thirty four young Peregrines have been fledged successfully from Christ Church. One might think that there would be many sightings of these orange colour ringed juveniles. In fact this is not the case as only a few young are likely to survive the first winter. Early in 2013 an orange coloured ringed individual with a letter J and therefore a Christ Church juvenile from 2012 was seen on Worcester Cathedral and an orange ringed juvenile in nearby Kidderminster on top of a tall factory chimney.



At Tewkesbury Abbey a male CR from Christ Church (2010 brood) interacted periodically with a female (DX from Avon Gorge) during 2014. In early 2015 year DX disappeared and was replaced by a female without a ring but it was too late for them to lay eggs. The following year I was lucky enough to witness a superb display by the pair on February 4th. They were flying around the Abbey, high up then down to ground level, then up again many times and calling excitedly all the time. They continued flying over the adjacent Severn Ham with the female flying very slowly with quivering wings like a courting Kestrel. It made me realise I had never seen any displays by the Christ Church pair. Perhaps this is because it is a really urban site while the Tewkesbury site is surrounded by open spaces.

The Tewkesbury birds were not often together but eventually in 2018 three eggs were laid at a late date and one young was fledged (male PDN). It appears that the eggs of a new pair or at a new nest site may be laid at later date than is normal. This was also true for a pair at Chipping Camden and in Taunton (where our design of the nest box was used) and the first year in the nest box at Christ Church.

In 2015, a male (JP) from Christ Church (2012 brood) was present with a female on a chimney at Weavers Wharf Kidderminster but this was believed to be a failed breeding attempt. The male (JP) was not specifically identified in 2016 although Peregrines were occasionally present.

In 2015, a female (JN) from Christ Church (2012 brood) was present with a male on Walsall Town Hall and fledged young in the following four years, including four in 2019..

A female (CZ) from Christ Church (2010 brood) was present with a male at Stafford and fledged young from 2014 and in subsequent years including five in 2018. In 2019, five hatched and two fledged.

I am often asked whether the adult male and female at Christ Church are the same individuals each year. The female appears to have the same favourite perches and habits each year. If so, she has now raised eleven broods (plus the initial failure before the nest box was put up) and hopefully will raise a few more. Otherwise, a new female may take a year to get established so there could be a year of no chicks on Christ Church.

The following table summarises known attempted breeding of birds which were fledged at Christ Church.

Bird	Sex	Year	Town	Comment
CR	Male	2010	Tewkesbury Abbey	With DX (from Avon Gorge) in September 2014. DX roosted at night near Cheltenham but was with CR at Tewkesbury Abbey in March 2015. In April, CR was with a new female - no ring. CR and the new female interacted in 2016 and 2017 but no eggs. In 2018 3 eggs were laid & 1 chick fledged. In 2019 1 fledged. In 2020 there was only a single infertile egg. See http://www.abbeyperegrines.blogspot.co.uk
JP	Male	2012	Kidderminster, at Weavers Wharf	Failed breeding attempt on tall chimney in 2015; possibly even before the egg stage.
JN	Female	2012	Walsall Town Hall	After 5 unsuccessful years the female died in 2014 & JN moved in & 4 chicks fledged in 2015. In 2016 three young, in 2017 four, in 2018 one, 2019 four, in 2020 four fledged.
CZ	Female	2010	Stafford	Four chicks in 2014. In 2015 fledged 3 chicks (probably CZ was the female in 2014). In 2016 four young were raised but 2 killed flying into window of new building. In 2018, five chicks hatched in 2019 & two fledged. In 2020 three fledged.
75	Female	2015	Wigan	Seen mating on Trencherfield Mill in 2017

Further mention should be made of the exploits of CR at Tewkesbury Abbey. One of the Abbey parishioners was walking across the churchyard when a Buzzard dropped suddenly from a height, dead at his feet. Probably it had flown too close above the nest and was killed in mid-air by CR. The female was sitting on the eggs at the time but did fly off in a hurry (without any calling), but was back in less than a minute. After a brief glance at the sky, she settled down to incubate again with no apparent distress. A buzzard is much larger than a male peregrine, but killing overflying Buzzards by male and female Peregrines is well known at some sites.

After 9 years of 100% success, 2019 was a disappointing year

The 3 eggs hatched and the chicks looked fine for a few days but then they began looking weak. One died. Then another chick could only lie on its back. The photo shows the chick after a week or more. It was desperate to watch as the mother was confused and most food was spilled out of the bill. Then this chick died and the mother surprisingly ate it and gave some of it to the surviving chick! I thought the surviving chick would also die however a few days later it was looking stronger and feeding well.

Plenty of food seemed to be available so maybe a genetic problem. I have tried to establish from photos whether the male (or female) has changed but this is inconclusive. Or perhaps the adults (they are both more than 10 years old - which is old!) have become even clumsier than they usually are. Every year I see them treading all over the young chicks even on their necks or kicking them when they walk out to receive food from their partner.

We had a concern that maybe the male had brought in poisoned prey. The second chick died and the female ate some of it and also fed some of it to the remaining chick, surprisingly. However, the latter seem to do well after this! So poisoning seems unlikely. Perhaps more likely is that it was a bacterial infection or something similar.



The chick, perhaps because it is on its own, liked to stand in a corner up against the nest box wall. The adult female did not appear to agree with this and often dragged it to the middle of the box. Very undignified! (see photo)

In 2018 we nearly lost a chick when it walked out of the box early and could not get back. The female stayed with the three chicks in the box and ignored the cold and hungry chick for a couple of days and nights.

This years' remaining chick also walked out of the box at an early date and the female was unable to drag it back into the box. However, she did not have to divide her attention with other chicks and so remained with the single chick protecting it when it rained.



2020 was a Success

The four hatched youngsters had the habit of often sleeping together in a pile, presumably to keep warm. This was more so than in previous years and is shown in the photo in this photo outside the nest box. Even when they chose to sleep in the nest box it was often in this way. Here they have heard that prey has arrived and they are keeping an eye on progress of the preparation. When the prey is nearly ready they become more excited and eventually it is brought into the box by the female and they are very excited indeed.



Two minutes of this sequence can be seen on YouTube at

<https://youtu.be/6TNIYd1z44k>

Ctrl + click (may have to do twice) or paste.



Compared with earlier years the four chicks always got on well, with little squabbling when food was delivered. The three females took turns and the smaller male stood aside. Then he would go in front of the females who stood back and the adults fed him until he had enough. Very civilised!

On June 22, there was bad news that a youngster was found in the road and had been taken to Vale Wildlife. The vet said it would take a week or two for a small wing bone to mend and for some damage to her skin to recover. In order to strengthen her wings, she spent some time in a small aviary.

I collected her after 15 days and introduced her back to the top of the tower and she immediately flew up over the parapet. Later at home, I was very pleased to see her on the CCTV looking fine and crying for food.

I was a bit worried whether she would be accepted back by her siblings. The two other young females clearly recognised she had been missing. There were many occasions when they nibbled her bill as shown in the photo. The returned bird is the one with slightly less developed plumage (she was the last one to hatch).

She was last seen well into November as she continued to be present in order to be fed by the adults.

Although this may seem late in the year, the young male was still being fed to the end of December. Maybe the young smaller males have more difficulty at killing prey (in 2017 a male was still being fed on December 26th). Here he is feeding in December and challenging the adult female for more.



Occupation of the Church in the Winter Period

During the winter period one or both of the adults may be present. They may not always be on the pinnacles but are often below the level of the tower floor on the ornamental stonework. The north-west face which is out of the sun and wind is most often used, but one has to look carefully at the other faces to be sure a bird has not been missed. The female has been noted on these lower perches from July onwards especially when no juveniles are present. The female is more likely than the male to be present as she "owns" the site.

Acknowledgments

Many thanks are due to Martin Chapman at the church who made the nest box and other members of the church who assisted in several ways. Thanks also to Rob Husbands and Anna Field who carried out the ringing each year of the young birds and to Ed Drewitt for his very considerable expertise in the identification of the prey remains.

Table 1 Dates of Egg Laying, Hatching and Fledging

Activity		2010	2011	2012	2013	2014	2015	2016
Egg Date	1	April 27	April 4	April 6 19.32	April 7 6.33	April 4 5.50	Mar 31 16.22	April 1 14.34
	2	unsure	April 5	April 9 ~1.30	April 9 11.14	April 6 14.45	April 3 overnight	April 3 to 4
	3	May 4	April 7	April 11 ~7.05	April 11 16.20	May 8/9 night	Apr 5 7.27	April 7 night
	4	—	April 11	April 13 16.18	April 13 ~21.00	April 11 16.55	April 7 17.39	April 8 18.00
Hatch Date	1	June 7		May 15 in morning	May 14 evening	May 11 7.14	May 9 morning	May 9 morning
	2		May 11	May 16 in morning	May 15 4.00	May 11 evening	May 9 evening	May 10
	3	June 14	~May 17	May 16 ~9.00	May 16 morning	May 13 10.21	May 10 morning	May 13 evening
	4			May 18 morning	May 17 ~9.00	May 15 12.41	May 11 morning	
Orange ring on left leg	1	CZ female	CN male*	JN female	NJ female	Y9 female	73 female	2.S female
	2	CR male	CV male	JS female	NN female	ZD female	74 female	3.S female
	3	CX female	--- Male	JP male	NA female	ZB male*	75 female*	4.S male
	4			JL male	J6 male	ZA male	76 female	
In flight		July 15	June 22	June 29	~June 30	June 22	June 22	June 23

* known to have died

Activity		2017	2018	2019	2020
Egg Date	1	March 28/29	April 1 22.08	April 1 21.17	April 1 5.14
	2	March 31 15.39	April 4 2.56	April 5 8.01	April 3 13.07
	3	April 3 6.20	April 6 10.24	April 8 1.18	April 5 23.10
	4	April 6 4.50	April 9 0.55	—	April 8 8.13
Hatch Date	1	May 6 morning	May 9 midday	May 10 2.00	May 9 8.27
	2	May 6 evening	May 10 night	May 10 5.00	May 9 11.42
	3	May 8 midday	May 10 evening	May 11 21.00	May 10 9.07
	4	May 9 evening	May 12 morning		May 12 10.36
Orange ring on left leg	1	9.T female	PHB female	PFB female	PZN female
	2	0.T female	PDB female	d. ~May 22	PVN female
	3	8.T male	PBB female	d. ~May 17	PLN female
	4	PAC male	PBC male*		PNN male
In flight		June 18	June 26	June 24	June 22

* known to have died

Table 2 Identified Prey Species

Year	Specific Prey Items (one item unless stated otherwise)
2010	Teal (female) Lapwing Snipe Woodcock (2) Black-headed Gull Feral Pigeon (48+) Wood Pigeon Great Spotted Woodpecker (5 (3 juvs)) Skylark Dunnock Song Thrush Redwing (3) Jackdaw Starling(3) House Sparrow Chaffinch Greenfinch (male) Goldfinch (juv) Great Grey Shrike
2011	Knot Wood Pigeon (juv) Green Woodpecker (2 juvs) Great Spotted Woodpecker (5) Blackbird (2 (1 juv)) Magpie Starling (6) House Sparrow
2012	Little Grebe possible Golden Plover Woodcock (brought into the tower at dusk at 16.37 GMT) Swift (photo of prey in talons) Green Woodpecker Great Spotted Woodpecker (3) Meadow Pipit Dunnock Song Thrush Redwing (2) Magpie Starling (4+) House Sparrow (2) Linnet
2013	Green Woodpecker Blackbird Song Thrush Song Thrush or Redwing Starling (8)
2014	Whimbrel Collared Dove Green Woodpecker Great Spotted Woodpecker Blackbird Song Thrush Starling (2 juvs)
2015	Teal (male) Kingfisher Great Spotted Woodpecker Redwing Starling
2016	Golden Plover (taken on autumn migration) Woodcock (feathers) Goldfinch Sandwich Tern (taken on spring migration) Kingfisher Green Woodpecker (juv) Great Spotted Woodpecker Song Thrush Jay Starlings (4+) House Sparrow
2017	Woodcock Great Spotted Woodpecker (2) Redwings (2) Song Thrush Starlings (2) Goldfinch
2018	Great Spotted Woodpecker (2) Green Woodpecker (juv) Jackdaw Starling (juv) Goldfinch
2019	Teal (female) Redwing (2) Swift Great Spotted Woodpecker (2 juvs) probable Kingfisher, Woodcock (2) probable Blackbird probable Song Thrush.
2020	Arctic Tern ⁺ Ringed Plover Greenfinch (2) Blackbird (3) Redwing Starling (5 juv, 2 adult) Pipit (probably Meadow) Chaffinch (2) Song Thrush (2) Swift (2) Teal Great Spotted Woodpecker (2) Black-headed Gull Wood Pigeon

⁺ Size and pattern of feather suggests Arctic rather than Common

Number	List of species identified other than numerous Feral Pigeons Total species = 34
38	Starling
24	Great Spotted Woodpecker
11	Redwing
9	Song Thrush
7	Green Woodpecker Woodcock Blackbird
5	House Sparrow
4	Goldfinch Swift Teal
3	Chaffinch Wood Pigeon
2	Golden Plover Kingfisher Dunnock Magpie Jackdaw Greenfinch Meadow Pipit Black-headed Gull
1	Arctic Tern Ringed Plover Little Grebe Lapwing Knot Whimbrel Snipe Sandwich Tern Collared Dove Skylark Great Grey Shrike Jay Linnet

Photographs

There is a selection of photos on Flickr taken from the top of Christ Church for each of the years 2010 to 2020. To view them, open the link to Flickr:

<https://www.flickr.com/photos/55200709@N07/sets>

Click on first photo of the album you wish to look at, Peregrine2010 (or Peregrine2011 etc), then you can look through the collection by clicking on > which appears on the right side.

CCTV

The North Cotswold Ornithological Society (and now the Gloucestershire Naturalists' Society) funded the CCTV. This enabled me to observe the birds at will and to make photos and clips available to everyone.

Dave Pearce