



**National
Trust**



Plym Peregrine Report 2010

**Cann Quarry
Plymbridge Woods
Plympton
Devon**



Steve Waterhouse



Steve Waterhouse

Steph Rodgers – Community Engagement Officer
Beth Hamblin – Peregrine Warden

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1. Introduction

The peregrine falcon *Falco peregrinus* is found on all continents of the world, except the Arctic and Antarctica. Named the fastest animal in the world, the peregrine is a superb hunter feeding on a variety of avian prey but famed for its fondness for feral pigeons. In the UK the peregrine has a history chequered with persecution. From 1900 to 1939 the main cause of mortality of peregrine falcons was through killing by gamekeepers managing grouse moors, although this persecution is not thought to have affected the stability of the peregrine population as a whole. It is during the Second World War that the population suffered its first dramatic decline and was virtually eradicated in Cornwall, Devon, Dorset and Somerset in order to protect carrier pigeons. The peregrine's resilience, however, was displayed when the war ended and numbers began to recover. The years 1956-63 hindered this recovery and saw the near collapse of the entire population due to organochlorine pesticide use. In 1963 the national peregrine population was 44% of that during 1930-39. It was only during 1967, five years after the first restrictions on organochlorine use, that the peregrine population began to show an upward trend.

Population Status

The peregrine falcon has, throughout its recent history, displayed its resilience and adaptability. By 1991 the population was 145% of the pre-war 1930-39 level and numbered 1170 pairs in Great Britain. New previously unoccupied territories are now being used, including quarries and man-made structures. The IUCN Red List currently lists the peregrine falcon as, internationally, a species of Least Concern as it has a large range, stable population trend and an extremely large population. In Britain there are now approximately 2000 breeding pairs.

2. History of the Project

Anecdotal evidence suggests that peregrines have been using Cann Quarry for 50 years or more. There are records of breeding success in the quarry for at least the past 15 years. The Plym Peregrine Project began following the deliberate poisoning of the female peregrine and two chicks during the year 2000. Local bird watchers began a 24 hour watch of the nest site in 2001 to protect the peregrines during the breeding season. Initially both the National Trust and the RSPB were involved in the project. Now after 9 years the project consists of a 24 hour watch by a team of volunteer watchers supported by the National Trust (through the provision of equipment and a Peregrine Warden), a public viewing platform with telescopes, and an education programme to involve the local and wider community. Over the 9 years of the project, unauthorised disturbance of the nest site has been prevented and the peregrines have successfully bred in all years except one (2008 when the eggs failed). In total, 24 chicks have hatched at Cann Quarry.

3. 2010 Peregrine Project

The Peregrine Season in 2010 began on Tuesday 16th March with the pre-season meeting. The watch then began the following week on Monday 22nd March and ran until Sunday 11th July. The post season meeting was held on 14th July. The barbeque was held on Saturday 24th July to celebrate the watch and say thank you to the volunteers. A breakdown of the key dates over the season has been produced in the form of a timeline (see appendix).

3.1 Objectives

The objectives of the Plym Peregrine Project are to:

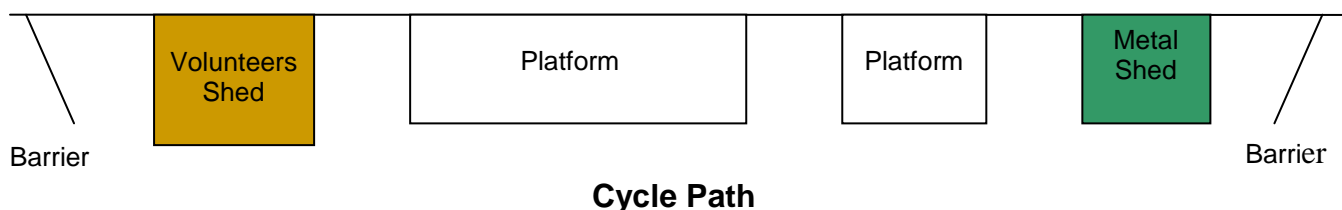
- Protect the peregrines from persecution and disturbance, thereby allowing them to breed at Cann Quarry
- Raise awareness of the plight of the peregrine falcon
- Engage and educate the local community
- Encourage and enable community involvement in the project

The project can be divided into five main areas:

- The Peregrine Watch
 - 24-hour watch (whenever possible) undertaken by volunteers
 - Day watches based on the Cann Viaduct
 - Night watches based from the caravan
 - Equipment consists of: volunteers' shed, viewing platform, storage shed, telescopes
- Webcam & website
 - Webcam – Not operational this year
 - Website – regularly updated with news of the peregrines; source of information and educational resources
- Education & engagement
 - School visits to the site
 - Peregrine talks in schools
 - Peregrine talks to other groups
 - Enhance visitor experience through engagement and education on site
- Generating income
 - Provision of souvenirs in exchange for donations
 - Selling raffle tickets
 - Sponsorship
- Media & marketing – to raise awareness of the project and encourage visitors and volunteers.
 - Production of leaflets
 - Updating peregrine website
 - Marketing through local media

3.2 Viaduct

The Plym peregrines breed in Cann Quarry which is overlooked by the Cann Viaduct. This makes the viaduct the ideal location as a base for the project. It is from here that the majority of watches take place and where the public viewing platform is set up.



This year there was a change to the layout of equipment. At the end of the 2009 season it became apparent that trees were beginning to impede the view of the peregrines' nest. This year the peregrines chose the same nest site. As an immediate short term solution the platform was split in two to provide better views. The second smaller platform allowed uninterrupted views of the nest site, while the larger platform initially provided uninterrupted views over its length. Unfortunately as the trees came into leaf and grew over the season, the view from the right side of the larger platform became obscured. The tree which caused the most obstruction will be cut back this winter to ensure better views in the event of the peregrines using the same nest site again next year.

3.3 Caravan

The caravan is situated at the top of the quarry in Cann Woods which is owned by the Forestry Commission. Volunteers carrying out night watches use the caravan as shelter during the night and as a base for patrols around the top of the quarry.

3.4 Webcam and Website

The webcam was not operational this year due the need for new parts to transmit the signal to the server and the peregrines using a nest site which was not covered by the camera. The webcam was missed by the volunteers and the public. Many people asked about the webcam when they visited the viaduct and were disappointed to hear that it was not operational this year.

The project website (www.plym-peregrines.co.uk) consists of a Watchers' diary, details of events on site, photographs, background information on peregrines and the project and educational resources.

The website was updated with additional interactive educational resources this year. The Watchers' Diary was regularly updated by the Peregrine Warden.

3.5 Volunteers

The Peregrine Project relies on commitment from a dedicated team of volunteers. A Watcher's main duties fall into two categories:

- Protecting the peregrines from disturbance – providing a presence to deter deliberate disturbance, being aware of unauthorised access around the nest site and alerting the relevant people if an incident arises.
- Engaging with visitors to provide information, views of the birds and an overall positive visitor experience.

A pre-season meeting was held on 16th March at Leigham school to welcome old and new volunteers to the new season, introduce the peregrine warden, to update the volunteers on any developments since the end of the 2009 season and to address any remaining concerns so that action could be taken early in the season.

Recruiting Volunteers

Posters were put up around the site and in local libraries to advertise the project. We are registered as a provider of voluntary opportunities with the Plymouth Guild, UCP Marjon and Plymouth University. The need for volunteers is also advertised in the project leaflets, on our website, on the Dartmoor National Trust website, on Facebook and Twitter.

During the season advertisement of the project and the need for new volunteers took place at internal events, such as the nightjar walks and other guided walks, and external events and activities, including peregrine talks to schools, Plymouth Unlocked and the Plym Valley Railway Open Day. Volunteers on watch at the viaduct also play a major role in the recruitment of new volunteers by talking to members of the public about the project and volunteering.

3.6 Schools and Education

Schools

Local schools were contacted pre-season to encourage them to book in peregrine talks and visits to the site. A peregrine talk in a school consists of talking to the children about the project, the Plym peregrines and why peregrines need protecting with the aid of a PowerPoint presentation and educational props (peregrine bottles, feathers, model of peregrine's egg). A visit to the peregrine project takes a morning or afternoon and is usually tied in with another activity on the site. The visit consists of either a brief peregrine talk on the viaduct if the children have not had a talk in school or a reminder session to help them remember what they learnt from their peregrine talk. In small groups, the children are then given the opportunity to look through the telescopes and see the birds. A peregrine quiz and puzzles are distributed to the children for them to complete while they wait for their turn at the telescopes. If there is time, the remainder of the visit is spent doing a bird walk on the circular track by the feeders with a spotter sheet to help them identify different birds.

Education

Visitors to the Peregrine Project are educated about the peregrines, other birds and wildlife and the National Trust through talking to the volunteers on the viaduct, reading the interpretation boards and the project leaflet. The guided walks to see the nightjars go via the peregrine project and here the participants are given an explanation of the project and a chance to ask questions. Education also occurs during peregrine talks to local groups and through information displays and engagement with the public at National Trust events. The project website also offers information and educational resources, which is valuable to those who cannot access the site.

3.7 Media and Marketing

Media

A press release was produced to promote the start of the season. BBC Spotlight came to the site to do a piece on the project at the start of the season. This was arranged through an employee from Spotlight taking an interest in the project while walking his dog. Stuart Geddes from BBC Radio Devon also came out to interview the peregrine warden and volunteers.

Marketing

Several forms of marketing were ongoing throughout the season, these included:

- The Plym Peregrine website
- Posters around the site
- Interpretation board
- Leaflets
- Badges
- Uniform worn by volunteers on and off-site

Badges and leaflets were also distributed to other National Trust properties and the Plymouth Tourist Board.

4. Outcomes

4.1 Volunteers

Five volunteers responded to pre-season advertising. Three came to the pre-season meeting and registered as volunteers. Unfortunately, despite initially being keen, the other two did not show up for the meeting and did not respond to further contact.

A further seven volunteers joined the watch during the season. One of these joined after being involved in the project in previous years but never having signed up as an official volunteer, two joined after talking to the volunteers on the viaduct, two through talking to a member of National Trust staff at the Plymouth Unlocked event and the remaining two through hearing about the project from other sources, including the website. An additional volunteer signed up to be a watcher in the penultimate week of the watch so he will be contacted at the start of the season next year. A volunteer raffle ticket seller also joined the team in May after responding to an advert at the viaduct. This brings the total number of new volunteers for the season to 12 and the total number of volunteers for the season to 51.

At least three other members of the public expressed considerable interest in becoming volunteers while visiting the project but were reluctant to sign up this year because of other commitments.

4.2 Schools and the community

Schools

Eleven school groups comprising a total of 455 students visited the peregrine project this year. Four schools organised visits in advance with the National Trust which allowed the volunteers on duty to be pre-warned. Five schools arrived at the viaduct unannounced and were handled by the volunteers on duty at the time. Special attention will be given to these schools next year to encourage them to pre-book a visit to the project which will enable them to get the most out of the experience.

Seven peregrine talks were carried out in four different schools to year 5s to 7s over the course of the project.

All local schools and those who we have worked with in the past (on other activities as well as the peregrine project) will be contacted at the start of the new school year in September to encourage them to book visits to site and peregrine talks in advance.

Community

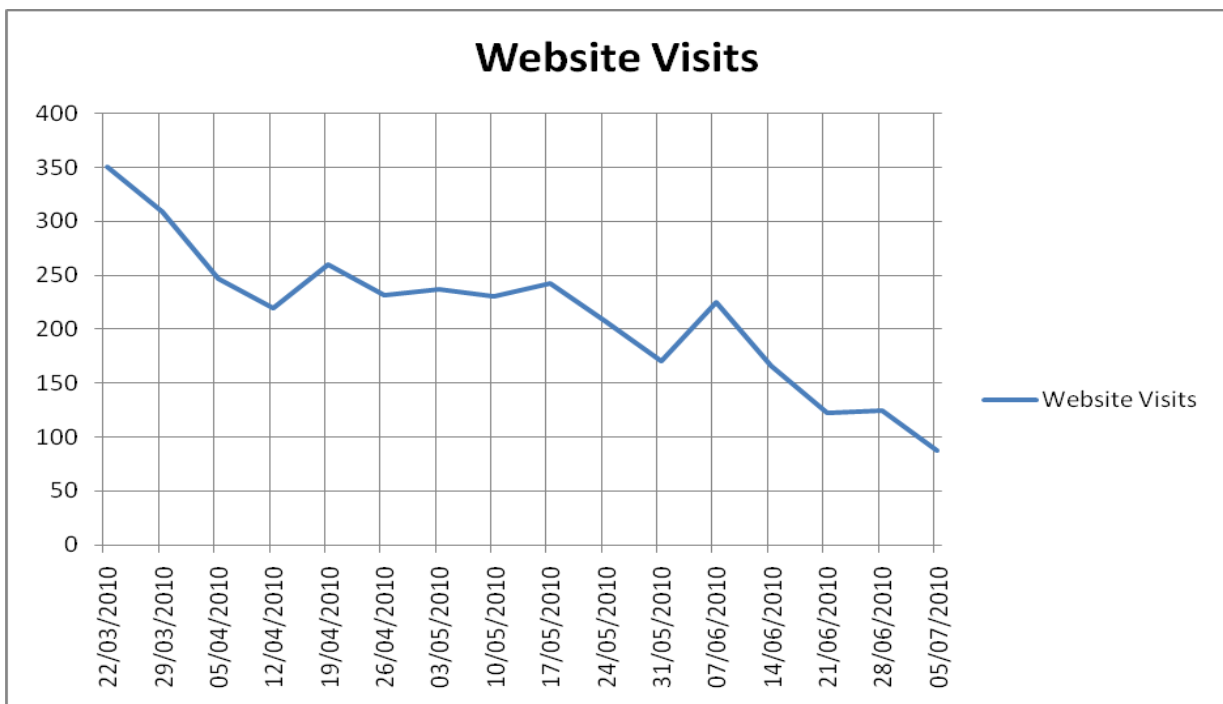
One peregrine talk was carried out to a local church group. There were several visits from other community groups to the project. Four groups gave prior warning of their visit; other groups which visited, including several rambling groups, did not give prior warning.

The total number of visitors to the viaduct this season was 15 217. The graph below shows the trend for visitor numbers over the course of the season.



Distinct peaks in the number of visitors can be seen during week beginnings 5th April, 3rd May and 31st May. These peaks coincide with the start of Easter holidays and the May Bank Holidays, respectively. The number of visitors decreased towards the end of the season probably due to the fact that once the chicks had fledged they became more difficult to see and would spend periods of time away from the quarry.

Website visits were down considerably this year, with a total of 3431, compared to a total of 6591 visits last year. During the first week of the season the site received 351 visits, 90 more than the first week of last season. From then on, however, the number of visits decreased, as shown by the graph below.



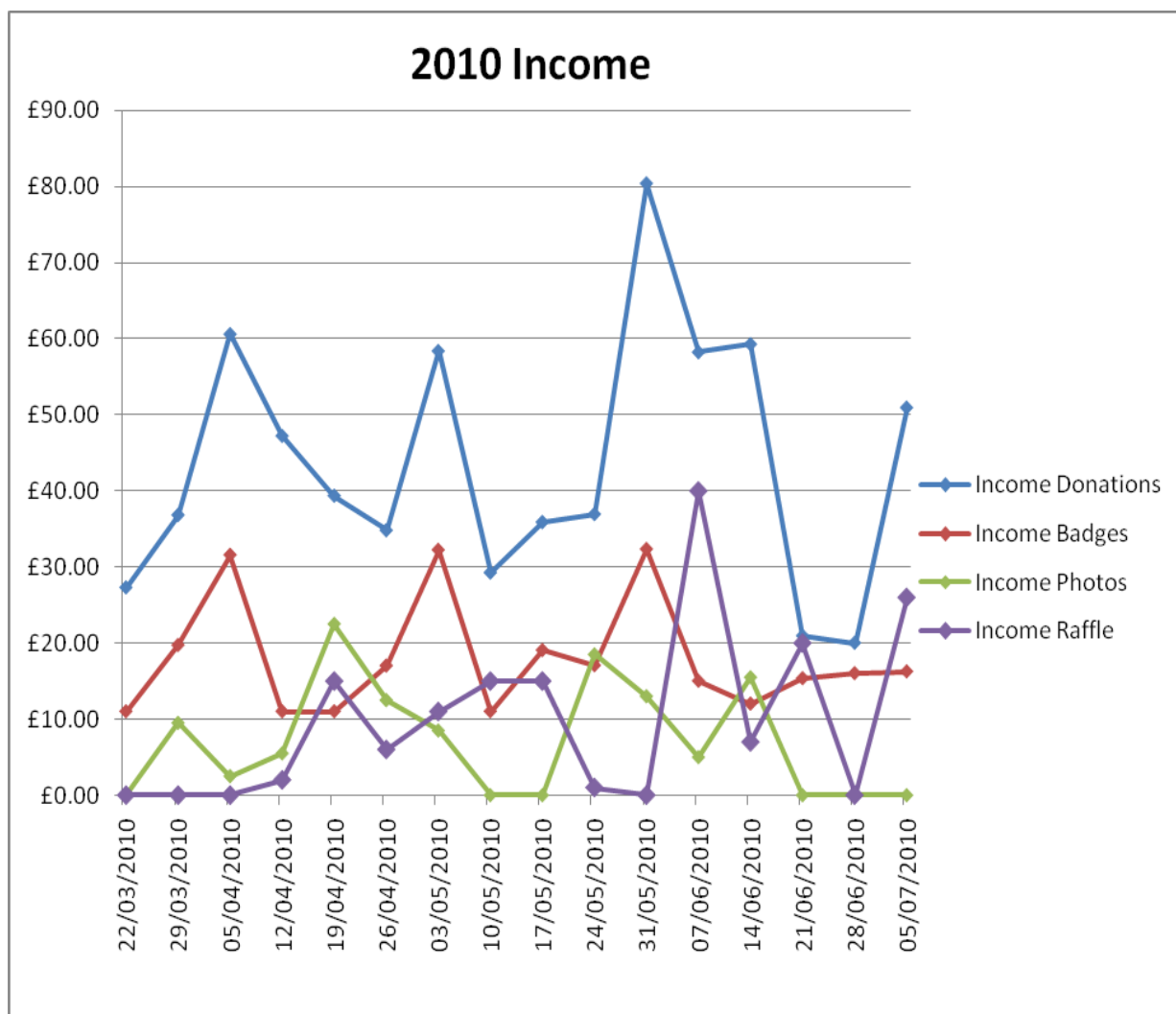
The predominant reason for the lack of visits to the website this year is probably the lack of an operational webcam. The webcam has been a very popular method of keeping up to date with the peregrines in previous years and generates a lot of interest and publicity for the project. Work towards an operational camera for next year will be a priority for the winter months.

4.3 Income

Unfortunately, this year the project did not receive funding from Natural England as it has in previous years. The National Trust was able to provide funding to allow a Peregrine Warden to be employed.

Sustainable income to support the running of the project is important. To enhance this, badges, photos and raffle tickets were available at the viaduct to encourage support from the public. A donations pot was also present at the viaduct.

The graph below shows the income generated by the Peregrine Project during the 2010 season.



The total income generated by the peregrine project this season was £1,254.83. This consists of £696.41 raised in donations, £287.42 from badges, £158.00 from raffle tickets and £113.00 from photos. Peaks in the amount of income generated are in line with the peaks in visitor numbers to the project. Additional donations to fund the provision of bird seed to stock the feeders below the viaduct were also received. These included two generous cash donations and donations of seed and peanuts from Pawmark Pet Supplies.

5. Peregrines of 2010

5.1 Breeding

The first reported sighting of the peregrines mating this season was on 10th March. Through noting changes in behaviour, it is believed that laying began on 24th March and incubation began on 31st March. It is thought, again due to changes in behaviour, that hatching took place during the weekend of the 1st and 2nd May, with the first sighting of the chicks taking place on the 2nd May. The chicks were in the nest for six weeks, with the male chick fledging on 12th June and the female chick on 14th June.

5.2 Ringing the chicks

With the agreement of the majority of volunteer watchers, the peregrine chicks were ringed this year; a first for the project. The ringing was carried out on 15th May by Dale Jackson, a BTO ringer who rings large numbers of peregrine chicks throughout Devon and Cornwall every year. Dale abseiled down to the nest and ringed the chicks in situ to minimise disturbance. He was able to inform us of the sex and the condition of the chicks. The ring numbers for the chicks are as follows:

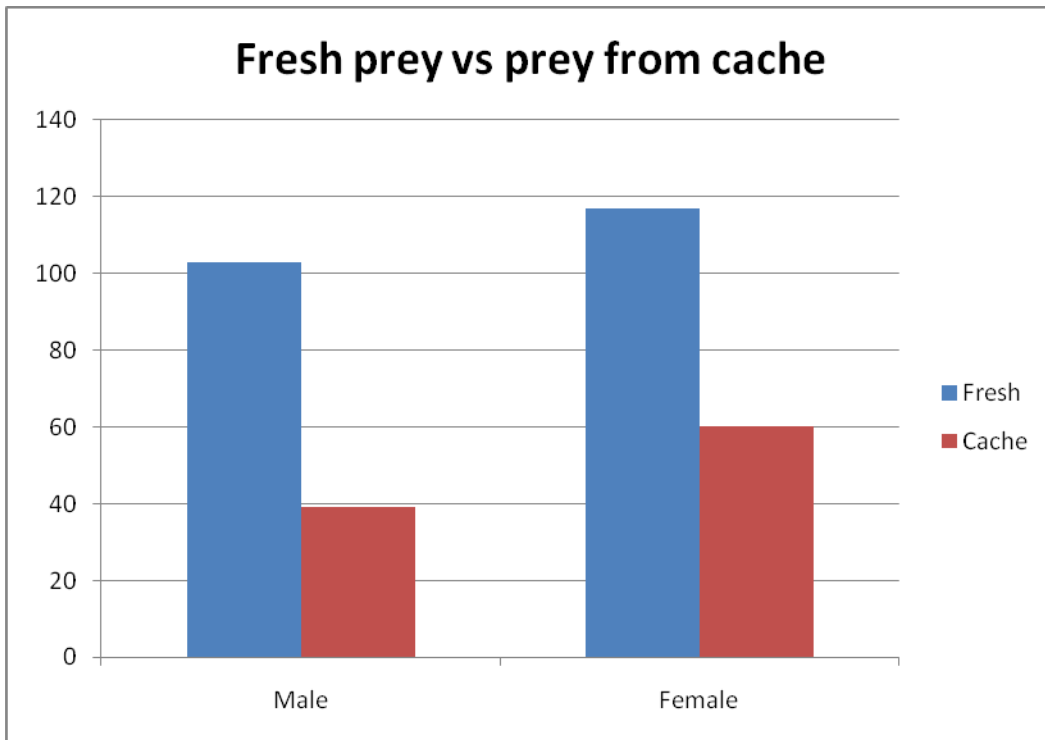
Tiercel	Right leg:	yellow Darvic ring W7
	Left leg:	metal BTO ring GC58224
Falcon	Right leg:	yellow Darvic ring W6
	Left leg:	metal BTO ring GC58225

Dale will be informed of any sightings of the birds which are reported to BTO and he will pass this information on to the National Trust. He is keen to continue being involved with the project by ringing next year's chicks.

5.3 Feeding habits

The peregrines were not seen hunting in the immediate vicinity of the quarry, but would fly out of the quarry and return sometime later with prey. The peregrines were seen regularly using several cache sites around the quarry. The most notable and well used cache sites were the old boulder nest and the plucking perch below the camera. The peregrines may have other cache sites which we are unaware of, for example, on a few occasions they were seen dropping down between the trees on the other side of the viaduct and returning with what appeared to be cached prey.

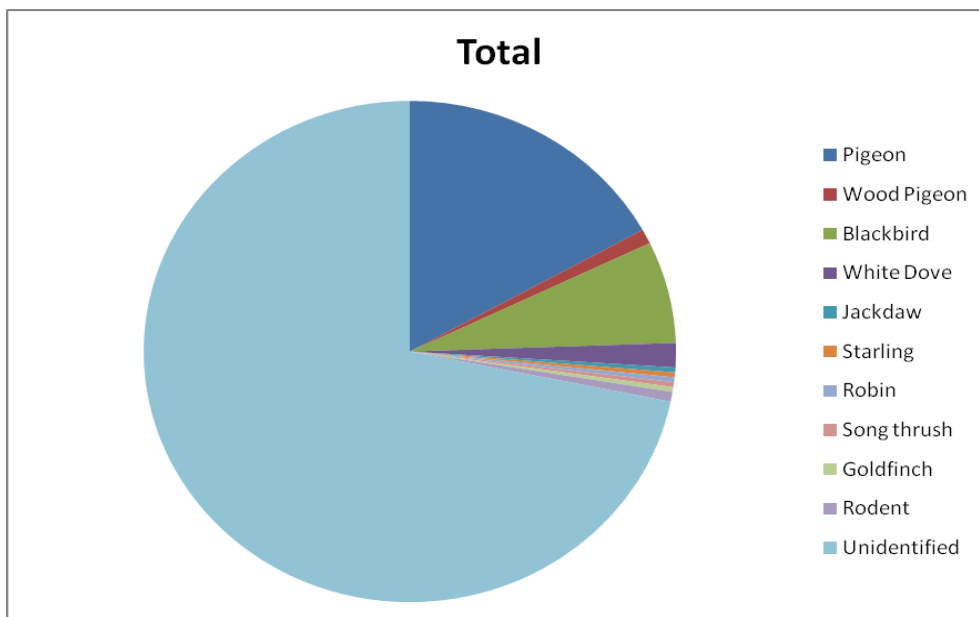
The peregrines were observed feeding on 320 occasions this season. In total, 220 fresh kills were recorded, 103 of which were brought in by the male peregrine and 117 by the female. The remaining records were of feeding from cached prey. The graph below shows the number of feeds from fresh prey and cached prey by the male and female.

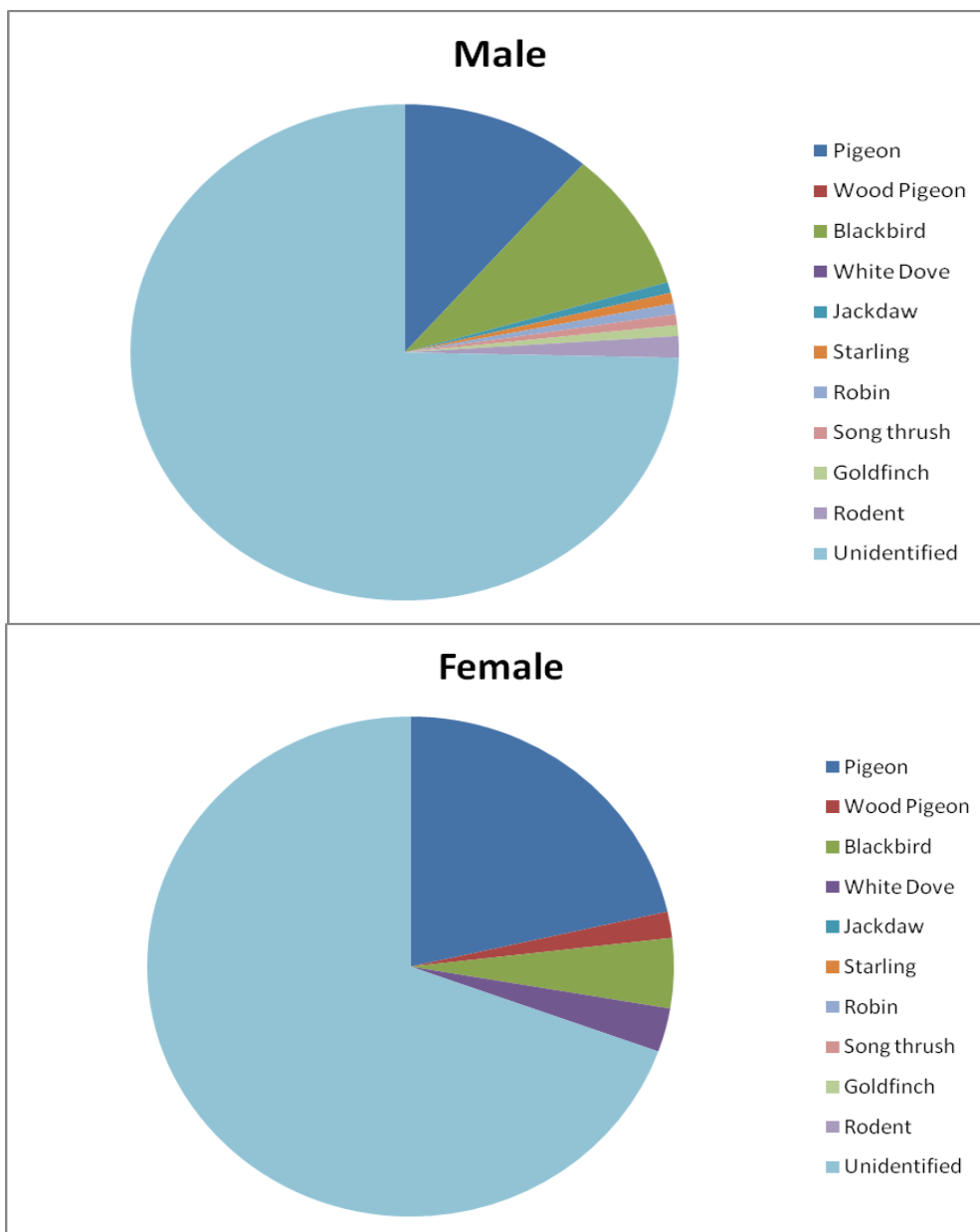


5.3.1 Prey selection

Prey brought in by the adult peregrines was identified when possible, but the majority of prey was not identified. Nine different prey species were identified over the course of the season. The male peregrine brought in a greater variety of prey than the female; seven species compared to just four by the female. The male also brought in smaller prey species than the female.

The graphs below shows the proportion of different prey species which were brought in as a total, by the male and by the female.



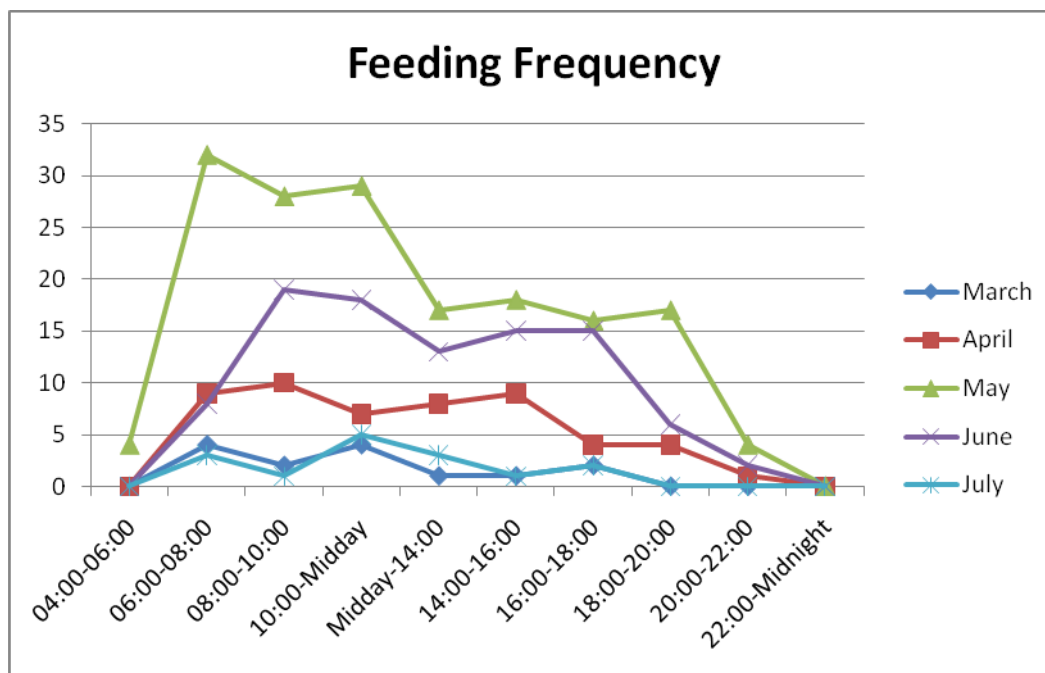


Pigeons made up the greatest proportion of identified prey for both the male (11%) and female (20%). The male however also brought in a large proportion of blackbirds (9%). Unfortunately, as can be seen by the graphs, the majority of prey (72%) was not identified; this may include a number of different species that were not otherwise recorded including many smaller bird species.

5.3.2 Time and frequency of kills

Feeding frequency was at its highest during May when the chicks were in the nest, with 165 records of feeding during this month. When the chicks first hatched they were being fed small amounts of prey very frequently. As they began to grow the parents were feeding them more prey but less often. The frequency of feeding remained relatively high in June (96 records) during which time the chicks were still heavily reliant on their parents for food. Due to the end of the watch on the 11th July, the number of feeding records for July is misleadingly low. Similarly, the watch began on 22nd March contributing to a lower number of records for this month as well.

Time	March	April	May	June	July	Totals
04:00-06:00	0	0	4	0	0	4
06:00-08:00	4	9	32	8	3	56
08:00-10:00	2	10	28	19	1	60
10:00-Midday	4	7	29	18	5	63
Midday-14:00	1	8	17	13	3	42
14:00-16:00	1	9	18	15	1	44
16:00-18:00	2	4	16	15	2	39
18:00-20:00	0	4	17	6	0	27
20:00-22:00	0	1	4	2	0	7
22:00-Midnight	0	0	0	0	0	0
Totals	14	52	165	96	15	



The graph above shows that feeding was most frequent in the morning, with a peak from 06:00 to 10:00. The weather was hot during May and June which may explain why this peak is most marked during these months, with the majority of feeding observed during the morning, before it became too hot.

5.4 Aggression towards other bird species

During incubation a juvenile peregrine (or perhaps more than one) was seen in the quarry on a few occasions. The adult peregrines showed aggression towards these other peregrines and chased them from their territory. Throughout the season there was the odd visit from other peregrines, but perhaps the most notable was from another juvenile which came into the quarry and sat on a ledge above the nest while the chicks were in it. This peregrine was ignored by the falcon and the chicks were left alone for some time while this other bird was in the vicinity. There were suggestions that this peregrine may have been one of last year's chicks.

The peregrines' territory was dramatically visited by a buzzard which flew very close to the nest itself. The falcon showed considerable aggression to this intruder and dived at it continuously

until it left the quarry. The watchers believed that the same buzzard may have returned to the quarry on subsequent occasions. Ariel displays of aggression towards buzzards, ravens and kestrels were also seen.

5.5 Data Reliability

The reliability of this data is for the most part dependent on the accuracy to which it is recorded. Although all volunteers are encouraged to record as much of the birds behaviour as possible, there is a lot of variability in what is recorded throughout the season. This is due to several reasons including the number of visitors present at the time, the number of watchers on duty and the knowledge of the watchers on duty.

The viaduct is often a very busy place which makes it difficult to keep track of the birds' movements at all times and to record all the activities in the watchers' log. This may have resulted in some behaviour being missed or recorded incorrectly especially during the busiest times of the season and the busiest times of day. Having more watchers on duty means more sets of eyes and ears and allows more data to be recorded accurately. Watches in the early morning and late evening were not always covered resulting in a lack of data for these times. The knowledge of the different watchers understandably varies considerably resulting in different interpretations of behaviour and different identifications of prey species. It is, therefore, probable that a certain amount of data regarding the birds' behaviour is missing or incorrectly recorded.

6.Changes made in 2010

- Platform split in two
- Volunteer raffle ticket seller employed
- Website updated with more educational resources
- Chicks ringed
- New photo packs produced

7.Recommendations for future years

- Ring the chicks – raise at the pre-season meeting. If there are no major objections ring the chicks again and continue to do so in subsequent years.
- Raffle ticket seller – more raffle tickets were sold than last year. Richard Smith is willing to continue selling raffle tickets until November when the raffle closes and to be the seller for next year.
- Schools – contact schools pre-season to book in peregrine talks pre-season and visits during the season. Special attention to those schools that visited the project unannounced this year.
- Watchers – encourage more watchers to sign up for regular shifts when they can to fill the rota. Do this in the newsletter, at the pre-season meeting and throughout the season with a notice in the shed. Put all the rotas for the season in the shed to encourage planning ahead.
- Sustrans – make contact with Sustrans again and build a good working relationship with their representative (already in progress). Consider more signage to slow cyclist down

e.g. “slow down – pedestrians ahead”, “path narrows ahead”, “Peregrine Project 100m”, etc.

- New badge design as an alternative to the existing one – make sure new badge is a bit bigger than the previous one.
- Leaflets – very few left. Redesign and reprint.
- Webcam – huge demand to have webcam up and running for next year. Consider all possible nest sites for next year and if they can be covered by a camera. Potential to put new gantry to the left of 2009/10 nest site to ensure this is covered. Liaise with watchers early in the year for indication of which nest site the peregrines may use.