

Bat boxes at Priory Country Park

August 2011

In 2009 the Rangers set up a bat box project within Priory Country Park to compare different designs of box. During that year we installed 16 Kent boxes and 10 Gwent boxes. Where possible they were installed in pairs to allow direct comparison between the box types. The boxes were installed carefully to ensure there would be no favouritism for a box due to the direction it was facing.

Bat box types at Priory

The range of different box designs has now increased within the park and we currently have:

- 24 Kent – Two channel slot box.
- 10 Gwent – Wedge shaped box.
- 2 CJM – Multi channel slot box.
- 2 Super Kent – Three channel slot box.
- 4 MOT – Tube shaped with a rectangular (cuboid) roosting area.



MOT, Kent & Gwent boxes

Priory modifications to box design

The **Super-Kent** was created with a dual purpose, to reduce woodpecker damage and to see if there was a preference for the back or centre channel. Currently most bats have been seen in the centre slots of this box type. I do not plan to make any more of this design as they are no better than the original Kent box.

The **CJM** boxes were modified initially to reduce the amount of wood used in construction and one had the top void removed (all channels are isolated in one box). This removal of the void has helped with the woodpecker situation as some channels are still intact if others have a hole in the front. This design appears to work well, however manufacture is far more tricky than the Kent design.

The **Kent** box was tried with different width channels, at present this has made no difference at all.

Woodpeckers were damaging quite a few of the boxes at Priory so many boxes have had metal plate put on the front to prevent woodpecker damage – this appears to be working.



CJM box with woodpecker hole.



Super Kent & CJM boxes

Monitoring

Initially the boxes at Priory Country Park were monitored on a monthly or fortnightly cycle, however after the initial learning about the Kent boxes the monitoring has settled down into a regular four week cycle.

Do the boxes get used?

Well the short answer is yes. Overall 55% of the boxes installed in the park have been occupied by bats, others by birds and all by insects of some variety.

Box Type	2009		2010		2011		All
	Boxes Installed	% Boxes Used	Boxes Installed	% Boxes Used	Boxes Installed	% Boxes Used	Total % used
CJM			2	100	2	100	100
Gwent	10	10	10	30	10	30	50
Kent	16	63	19	53	24	38	54
MOT					4	25	25
Super-Kent					2	100	100

Table 1: Percentage of bat boxes used, by box type.

How many bats use each box type?

Type	Year	Average Bats per check
CJM	2010	0.7
	2011*	1.6
Super-Kent	2011*	0.6
MOT	2011*	0.1
Gwent	2009	0.1
	2010	0.1
	2011*	0.4
Kent	2009	4.8
	2010	3.5
	2011*	6.6

Table 2: Average number of bats per check by year
Note: 2010 had an above average number of checks.
 * 2011 data is only up to August 16th



CJM box with 7 Pipistrelles in residence.

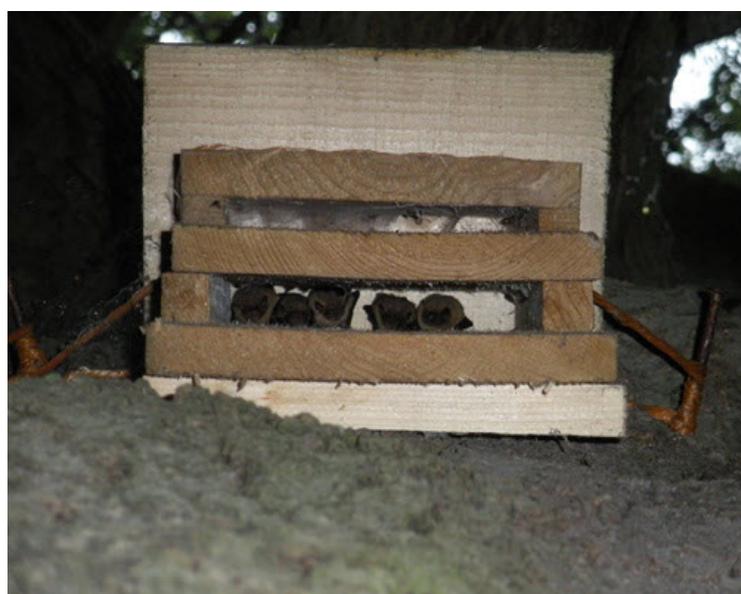
How many bats have been seen in a single box?

- CJM – 7
- Kent – 5
- Gwent – 1
- MOT – 1
- Super-Kent – 1

Lies, Dammed Lies and Statistics

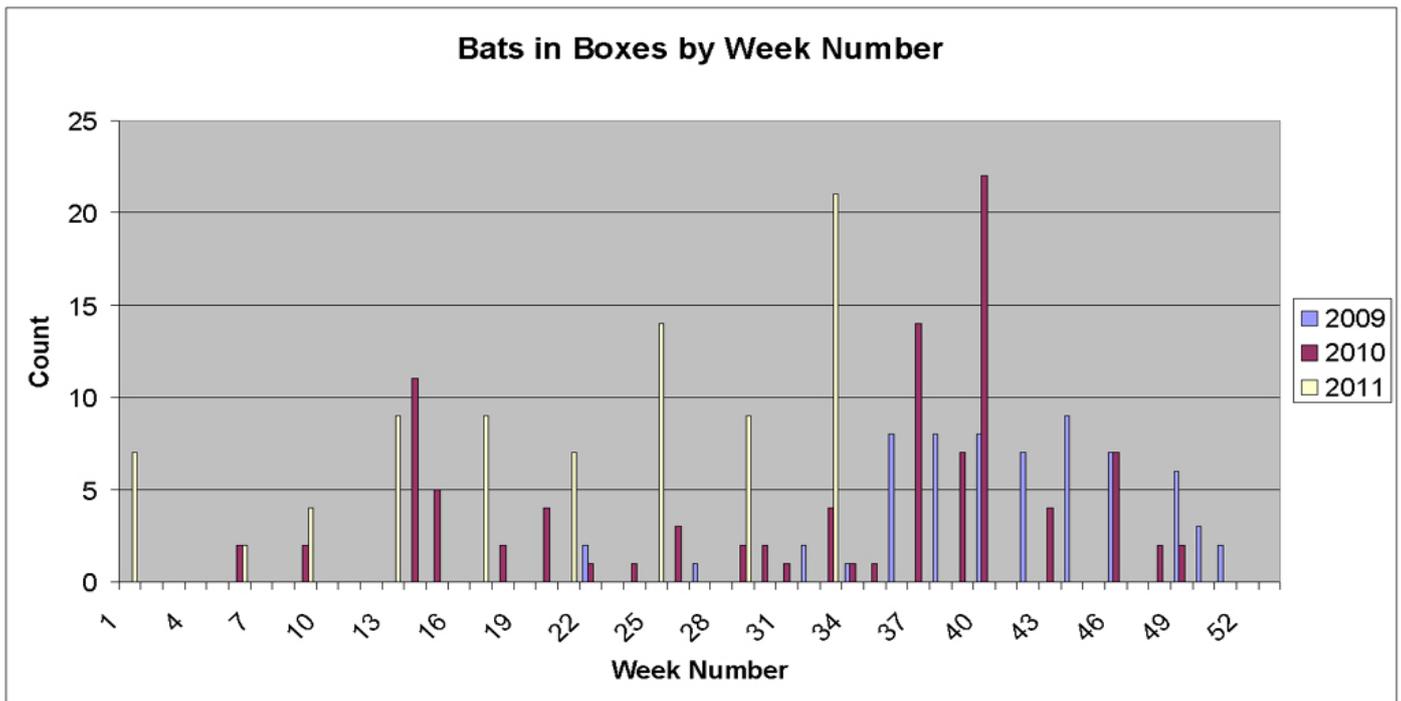
The information in *Table 2* could lead us to draw some conclusions, but it would be wrong to try and read too much into a small amount of information. The apparent increase in average bats in Kent boxes may be due to population increases, or may just be that the boxes have been in place longer so more bats have had a chance to find them.

Once we get a clear monitoring pattern over a longer period of time this may show if there is a trend of increased usage of the bat boxes or whether the bats just took some time to find them.



5 Pipistrelles in a Kent box

When are the boxes being used and by how many bats?

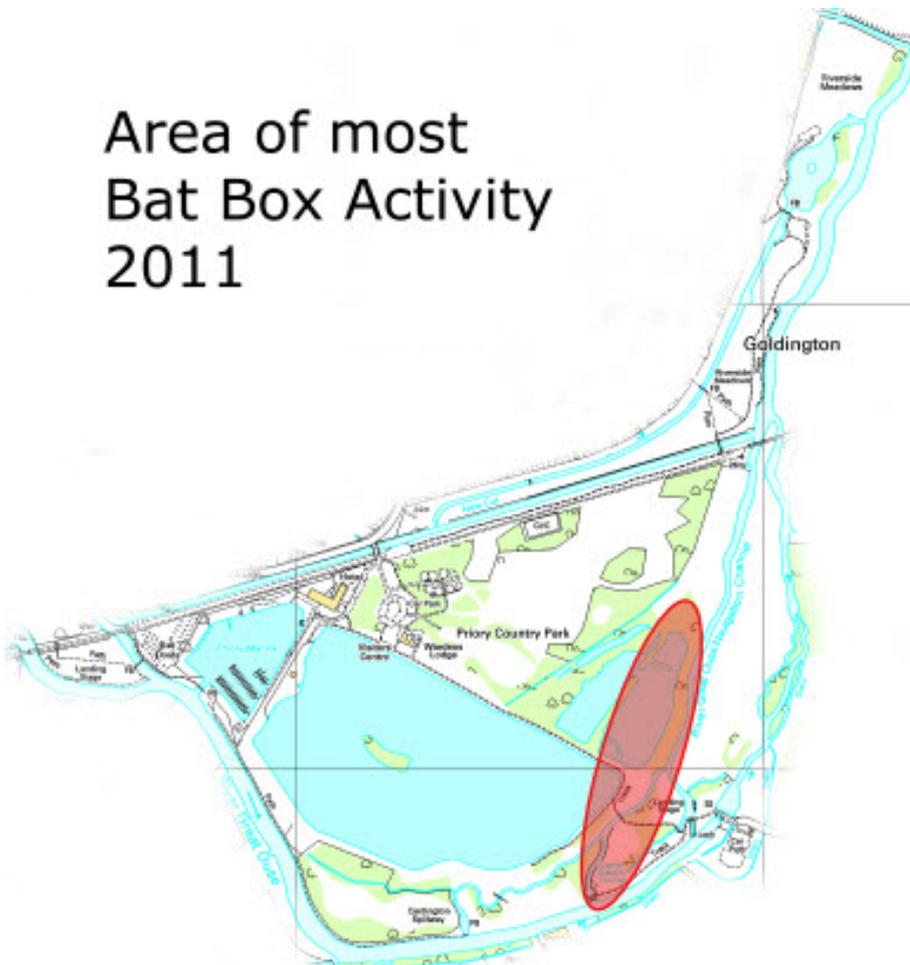


Graph 1: Year on year bat counts within all box types

This graph shows the inconsistency in the checking regime. The current (2011) regime will be followed for the future - I.e. Once every four weeks.

It does however show peak usage in 2009 during September and in 2010 during April and September. 2011 seems more consistent for number of bats found in the boxes, although there is a significant rise in August, but that is where the current information ends.

Area of most Bat Box Activity 2011



If you were to compare this map with the one in 2009 you would notice the area of most activity is a smaller area. The obvious reason is that a few boxes are no longer as heavily used as they were in 2009.

Equally this map area could have been very different, and more focused, if it weren't for the fact that a couple of boxes in a specific location are well used..

There really does appear to be a bat 'hot spot' for bat box activity within the park and this does intersect the most active feeding areas in the park.

Of course bats use other boxes and feed in other areas, but there appears to be a definite concentration around a small area of the park.

What have we learnt so far?

The Kent boxes were monitored closely over winter to determine how well they insulated the bats from the cold. The results showed that the boxes were used down to -2°C but the bats left when there was a two day minimum of $-4/-5^{\circ}\text{C}$. The other box types have not been assessed so closely.

Only Pipistrelle bats have been seen in the bat boxes at Priory, however other counties have had different species in their Kent design bat boxes. We are hoping to find different species in the future.

Pipistrelles appear to have a strong preference for the slot type boxes, Kent & CJM, perhaps because they resemble cavities found in buildings?

The Super-Kent has not performed as well as I expected, perhaps that is because they have been mounted near the CJM boxes?

Where now?

I think I may try a different construction approach to the CJM style box to make it easier for me to make and then install a few more. I also want to install the Pete Maul Wedge box to see if they attract different bats. But I suspect that is where I will stop with experimentation on this project, then we will just have to wait to see what the outcome is.

Words & Photos by Daniel Fellman
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