

# BROWNSSEA ISLAND BIRD AND MAMMAL BOX PROJECT

## Thirteenth Annual Report: 2009



## **Introduction**

The 13<sup>th</sup> year of the project now has us in a firmly established routine. During the winter season we focus upon box repair and replacement, which includes a significant turnover of boxes which have either become too dilapidated to continue, or supplanting box designs that we consider not to have been successful. We have also started to experiment with black perspex hole plates to discourage woodpeckers and squirrels from damaging the entrance to tit boxes. During May and September we check all the boxes for occupancy as a priority, but also do such repairs as is practical, though this is necessarily a lesser focus of attention.

Currently we have over 350 boxes, 116 tern shelters, one artificial bank, one bat hibernaculum and one raft, though the actual number of boxes in situ is slightly variable due to inevitable wear-and-tear.

## **The 2009 Season**

The winter of 2008/9 proved to be the coldest for more than a decade, which following on two successive years of cool and very wet summers presented very challenging conditions for wildlife. National conservation organisations, such as the British Trust for Ornithology (BTO), have reported that the wet summers of 2007 and 2008 have led to a sharp drop in the small bird breeding populations. Fortunately the spring of 2009 was relatively warm and dry, which lasted through until late June. Thereafter a very wet July was again a difficult period for late or second broods.

Brownsea is to some extent shielded from the temperature extremes of the mainland by its own maritime micro-climate. However our winter work party weekend was notable for the snowfall of Friday February 6th! Also the Island is not immune to the periods of high rainfall as through the summers of 2007, 2008 and late 2009.

## **Summary of 2009 Season** (See data Table 1 page 12)

### **Tit nests**

Tit records for 2009 were markedly down on previous years. This was entirely due to a sharp drop in Blue Tit nests (26 compared to 43 in 2008). Great Tit, Coal Tit and unidentified tit nests were directly comparable year-on-year. It is very likely that the drop in Blue Tit numbers is a consequence of the weather conditions previously described. However why the same was not the case for the other tit species is less obvious, though it is important to remember that we are not recording the *total* breeding bird status, only those using nest boxes. Hence there may be other factors involved, not least the relative abundance of food source used by the different species.

### **Woodpeckers**

There were no records of Green Woodpecker occupancy. However we had 5 Great Spotted Woodpecker (GSW) records, the same as 2008. GSW records have become somewhat perplexing. All of them were identified on the basis of relatively large quantities of residual feathers, usually both primaries and secondaries, on the top of former squirrel nests. Also all were September observations, not being there in May. GSW usually only have a single brood, the eggs being laid mid-late May, so we might well miss them during our May inspections. However there is also the possibility that late summer molting adults find the boxes as good refuges and that they become roost monastic during this period when they are relatively vulnerable. Hence repeated use of the same roost site leads to accumulation of feathers. We are unlikely to resolve this question unless we undertake June inspections.

### **Stock Doves**

Two boxes were recorded as being used by Stock Doves (SD), though in one case active nests were present in both May and September. As SD have multiple broods we are most probably under-recording their activity! Interestingly all our SD records throughout the project have always been in the same two boxes – one being the ‘duck box’ to the west of the West Lake, the other the Venetia Park owl box.

### **Tawny Owls**

As noted above, the Venetia Park owl box was occupied by TO in May 2009, there being 2 chicks present. This was the only unequivocal TO record for the season. However 3 other boxes contained nest material in September which we concluded to be TO. Undoubtedly TO box usage has declined in recent years from the peak of 7 in 2005. This has also been the national picture as recorded by the BTO and the Hawk and Owl Trust; indeed the latter have recently reported some owls as delaying their breeding until late summer – consistent with our own findings. TO breeding is adversely affected by wet weather and they are also vulnerable to wet winters. Another factor is the 3 year cycle of prey numbers (particularly voles), which reached a trough in the spring of 2009. It will be interesting to see whether the decline in TO box usage reverses hereon.

### Wrens

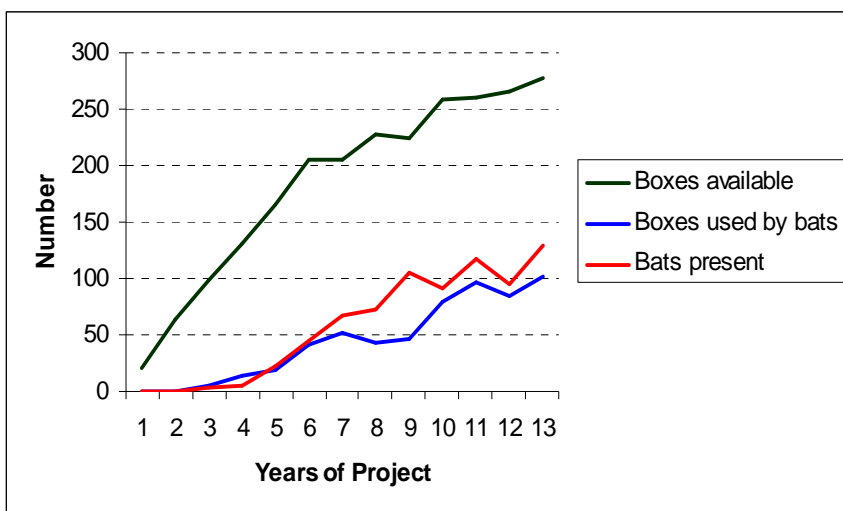
Three Wren nests were found, one in an open-fronted box near the Vineries, the others being in each of the 'wagtail' boxes beneath the bridges along the Nature Reserve access track. The wagtail boxes have proved particularly popular with Wrens over the years and it is interesting to note that they are afforded complete protection from the rain by the bridges, which may have some bearing on their popularity.

### Bats

The total number of bats found reached a new high for the project, there being at least 130 individual animals in 46 boxes, plus 55 other boxes with bat droppings and small numbers in the hibernaculum. These are conservative estimates, as a heaving cluster of Pipistrelles can be difficult to count!

The most interesting find were 2 Nathusius Pipistrelles in a Schwegler box in the Nature Reserve in May. Nathusius Pipistrelles are relatively rare bats in Great Britain, though they are almost certainly under-recorded. There was a degree of doubt about the confirmation of our record by external experts, but we are pretty confident of its validity.

The vast majority of bats found were Soprano Pipistrelles, most probably linked to the maternity roost in the Visitor Centre. These have been increasing in box occupancy year-on-year, 2009 being a new peak as shown in Figure 1.

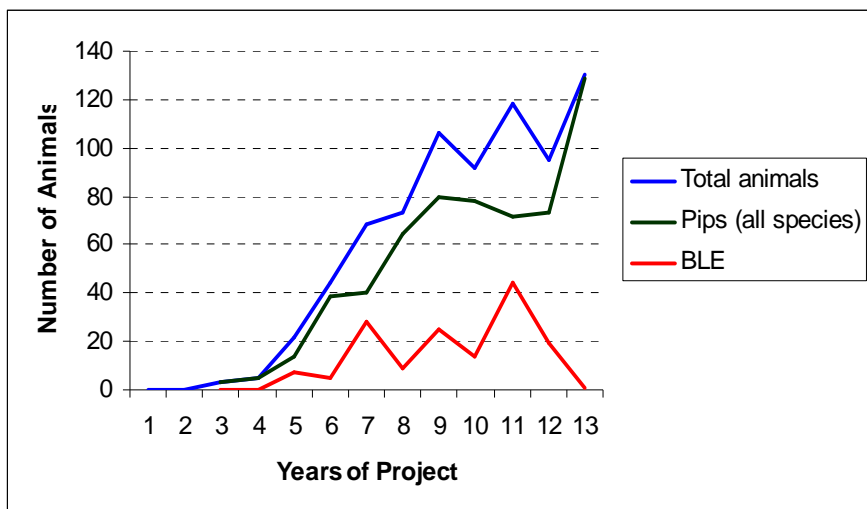


**Figure 1: Bat Occupancy Year-on-Year**

*Illustrates the total available boxes of types likely to be used, boxes actually occupied and the total number of animals counted.*

*After a lag phase bats have become progressively more frequent users of the various box designs.*

However we had a very low recording rate of Brown Long Eared (BLE) bats this year. This may be a cause for concern if this continues in future years. Despite this the hibernaculum continues to be a popular location for them. A single hibernating BLE was present in February and whilst 2 BLEs in September were the only other animals found in the building during the two seasonal visits, yet the quantity of bat droppings present made it clear that many bats had been in residence at some point.



**Figure 2: Bat Species Records**

Pipistrelles (all 3 species summated) are the predominant records, followed by BLE, with small numbers of Myotis (Natterers', Daubenton's and Bechstein's).

No Myotis species bats were found this year. Myotis bats have only been encountered in low numbers over the years, which is disappointing.

### Squirrels

Sixty nine squirrel nests were found this year, marginally more than in 2008 (66). We continue to find difficulty in conclusively differentiating between residential and breeding nests – but whatever the case the boxes are clearly very popular with the Island squirrels and almost certainly are a positive contribution to their ecology.

We were pleased to encounter significantly less dead squirrels (5) this year than last (14). This is back to our normal level of finds and corroborates our conclusion of last year that the high level of mortalities in 2008 was due to the adverse weather and the associated environmental impact.

## **Insects**

The wild honey bee nest in a squirrel box (number 304) within the Nature Reserve had a second successive year of activity. The bees were present in both May and September. It will be interesting to see for how long they continue!



## **Redundant Wasp or Hornet Nest**

*Attached to the underside of the lid, this is a typical example of the type. We have learnt to open boxes with caution lest the occupants are still active!*

## **Box Designs and Repairs**

We found it necessary to replace a significant number of boxes due to dilapidation. Usually we replace like-for-like in respect of box type. However we have continued to replace the open-fronted boxes with hole or slot ones as the open-fronts have not been popular.

Early findings with respect to the use of black perspex hole plates seem encouraging. This was an idea put forward by Brian (who also made them). Whilst some of the plates showed a degree of gnawing, none were significantly damaged. We did have some concern that the plates themselves would discourage bird usage, but this does not seem to have happened.

## The Nature Reserve

Most of our activities in the Nature Reserve mirror that of the Island as a whole, therefore only the key findings are highlighted here.

The owl box in Venetia Park continued its' success record with Tawny Owl in May (2 chicks) and Stock Dove in September (2 eggs). It continues to be a mystery how the 2 species come to this arrangement!

### **The Tern shelters and boxes**

We have 100 shelters and 16 'bungalow' boxes distributed on the islands and grassy areas of the lagoon. These are intended to attract nesting terns, in particular to shelter young hatchlings which are vulnerable to predation and also trampling by larger co-habitants. As in previous years they have overall been moderately successful in this role, with Sandwich, Common Tern and also Black-Headed Gull chicks being seen to make use of them. However we had one **spectacular** success – a pair of Roseate Terns! These made use of a bungalow box on the far side of the lagoon.



### **Summer Distribution Map: Roseate Terns 2008**

[Source: RSPB]

A summer visitor, mid-May to late August. Areas marked are the sites most likely to be frequented. Small numbers of passage migrants are seen along the south coast.

Conservation status: Red listed [highest state of concern]; less than 2000 breeding pairs in Europe. UK records: 94 pairs in 2008; none in the south of England!

Credit for this success must go almost entirely to Ray and Richard. Ray had the idea to make the bungalow boxes specifically for Roseates – even scaling up a picture he found of a similar box design to fit the dimensions of the bird as quoted in the literature. Both Ray and Richard made the boxes, after which Chris Thain had them located.



**Lagoon: July 2009**

*Pair of Roseate Terns with chick. The bungalow nest box which they used can be seen behind the chick. One adult is standing in front of the entrance.*

*Photo courtesy of The Dorset Bird Club*

**Artificial bank**

No recorded activity. The front of the bank has become partially obscured by vegetation which we need to clear. Also the bank itself requires some repair.

**Raft**

A pair of Great Black-Backed Gulls nested on the raft this year, which necessarily discouraged anything else from taking up residence!



**Raft: May 2009**

*Great Black-Backed Gull sitting on nest*

### **Bats in the Nature Reserve (NR)**

Proportionally a much higher level of bat occupancy now occurs in our boxes within the NR than is the case for the Island as a whole. Hence 26 of the Pipistrelle records out of the total of 46 [with the notable inclusion of the Nathusius] and a further 31 out of the 55 having bat droppings. Whilst this is partially a reflection of there being a higher number of bat boxes in the NR than the Island overall; it also undoubtedly a reflection of the popularity of the Schwegler boxes of which all but 2 are located in the NR.

### **Conclusions Year Thirteen**

1. Blue Tit breeding bird numbers showed a marked decline in 2009. This finding is consistent with national observations and is almost certainly a consequence of the poor summers of 2007 and 2008. It will be interesting to see how this develops in future years.
2. Red Squirrels numbers were good and seem not to have suffered in the same manner as breeding birds. It was reassuring to return to the baseline figure of squirrel cadavers, signifying that the 2008 spike did not have a sinister implication.
3. Bat numbers continue to climb, though the fall in Brown Long Eared numbers may be a concern. The problem with recording bats is that they can move roosts on a daily basis – therefore there is a lottery element to whether they are in a box that we open on any particular day. This may be particularly relevant to BLE, as they often gather in significant numbers in a single box. Whilst less numbers of BLE were found in the hibernaculum than in 2008 it is clearly being used year-round and we are pleased with its success. The 2 Nathusius Pipistrelles in the NR were an exciting addition to our species list. To date we have now recorded 7 species out of a total UK list of 16.
4. Whilst Great Black-Backed Gull was not our target species for the raft it is still nice to have had some breeding occupancy!
5. The tern shelters as a whole seem to be achieving their objective in providing a hideaway for young birds. The Roseate Terns were an outstanding success. It is immensely satisfying to design, build and locate artificial nest boxes for a very rare 'target' species, which has only been seen infrequently as a passage migrant – and then to actually have a pair stay, breed and successfully raise a chick (which we believe fledged). This may prove to be a one-off, but we very much hope that this is not the case and that Roseates return to breed again.
6. The artificial bank is disappointing and requires site clearance and refurbishment.
7. Initial findings in using perspex hole plates seems to have had some benefit in discouraging box damage whilst still being used by nesting birds.

**Winter projects for 2009/10:**

- Modify or replace boxes that have been identified as performing poorly.
- Continue box repairs; installing hole plates and replacing open-fronted boxes.
- If time and circumstances permit we will start work upon converting the brick shelter in the Rose Cottage Dog Kennels quadrangle into a second bat hibernaculum. This will probably take two winters to complete.

**The Team**

During the course of the year the following have participated:

Carol	Greig
Barbara	Meddick
Ray	Meddick
Andrew	Parkyn
Robert	Riggs
Brian	Whitlock
Lorraine	Smith
Richard	Yeoman
Sandra	Yeoman

**Table 1: Total Occupancy Records 2009** [2008 figures in brackets]

Bird Species	Confirmed Nests	Mammals	Occupancy	Others	Number
Tawny Owl	4 (3)	Squirrel [breeding]	26 (17)	Nest start/abandoned	6 (0)
Blue Tit	26 (43)	Squirrel [probable breeding]	9 (23)	Roosting	24 (29)
Coal Tit	3 (4)	Squirrel [residential use]	34 (26)	Nests started in bat boxes but cleared before use	0 (1)
Great Tit	17 (16)	Pipistrellus species bats	44 (27)	<i>Bumble bee</i>	2 (0)
Unidentified tit	13 (13)	Brown Long-eared bats	2 (5) Including hibernaculum	<i>Hornet</i>	2 (1)
Unidentified nest	4 (4)	Nathusius Pipistrelle	1 (0)	<i>Honey bee</i>	1 (1)
Green Woodpecker	0 (0)	Natterer bat	0 (0)	<i>Insect records included for interest only but not included in stats</i>	
Great Spotted Woodpecker	5 (2)	Daubenton bat	0 (0)		
Wren	3 (2)	Boxes with bat droppings	55 (52)		
Stock Dove	3 (1)				
Nuthatch	0 (1)				
Robin	0 (2)				
<b>Total</b>	<b>78 (91)</b>	<b>Total</b>	<b>171 (151)</b>	<b>Total</b>	<b>30 (30)</b>

<b>Total (All Records)</b>	<b>279 (272)</b>
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Excludes raft records.

**Raft: Great Black-backed Gull**

**Table 2: Nature Reserve Figures 2009** [2008 figures in brackets]

Bird Species	Confirmed Nests
Tawny Owl	3 (2)
Blue Tit	6 (10)
Coal Tit	0 (0)
Great Tit	3 (3)
Unidentified tit	5 (5)
Great Spotted Woodpecker	0 (1)
Wren	2 (1)
Stock Dove	3 (1)
Robin	0 (1)
Nuthatch	0 (1)
<b>Total</b>	<b>22 (25)</b>

Mammals	Occupancy
Squirrel [breeding]	4 (7)
Squirrel [probable breeding]	2 (5)
Squirrel [residential use]	10 (5)
Pipistrelle bats [excluding Nathusius]	25 (11)
Brown Long-eared bats	0 (0)
Nathusius pipistrelles bats	1 (0)
Natterer bat	0 (0)
Daubenton bat	0 (0)
Boxes with bat droppings	31 (28)
<b>Total</b>	<b>73 (57)</b>

Others	Number
Nest start/abandoned	1 (0)
Roosting	15 (19)
<b>Total</b>	<b>16 (19)</b>

<b>Total (All Records)</b>	<b>111 (101)</b>
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Excludes raft records

**Raft:** Great Black-Backed Gull nest