

An interim report on pine marten work by John Martin (JM) and Johnny Birks (JB), with assistance from Shirley Martin (SM), Gareth Ventress (GV) and others, in Galloway Forest, May 2017

INTRODUCTION

We spent two weeks in Galloway Forest during May 2017, with our time spent checking the 50 'Galloway Lite' pine marten den boxes in the Fleet Basin and the regular monitoring of wooden den boxes, scat transects and vole transects. In order to cover all tasks within the time available, as in May 2016 we operated some of the time as two independent teams, involving volunteer assistants to provide safety cover. Our main objectives were as follows:

- To visit the 40 wooden VWT den boxes (installed in early 2013) and remaining old wooden den boxes in Glen Trool to assess levels of use by martens, to record breeding and to gather information on gender and weight of kits and collect scats and hair samples;
- To visit all 50 Galloway Lite den boxes in the Fleet Basin to monitor usage patterns as above;
- To complete annual pine marten scat survey transects and field vole abundance transects in the four main den boxes zones in the forest;
- To meet with Emma from Tern TV to assist with filming for a BBC1 Scotland programme;
- To deliver a den box training course for The Mammal Society;
- To meet with our FES collaborators and other pine marten ecologists to exchange information.

Full details of marten use of all boxes checked and transects completed are provided in the Excel files supplied separately.

2017 WORK LOG:

6th May

JM, SM, JB, Lizzie Croose (LC) and the dogs Dooley and Zella travelled from England to Glentool Village in two separate vehicles with two sets of ladders etc. JM delivers new consignment of 10 GL and 12 VWT den boxes to Glencaird depot to form a working stock of replacement boxes.

7th May

Checked 13 wooden den boxes in the Glen Trool 'zone' JM and SM did the southern boxes; JB and LC did the northern ones). A mother and kits were present in the box at Brigton; two recently dead young kits (approx. 2 weeks old) were present in the relocated Tarfessock box; and an adult female with no kits apparent was present in the Butterburn box.

8th May

All met GV at the FES office in Newton Stewart. Then all to Fleet Basin to start checking both the wooden and GL boxes (3 and 5 checked respectively in the north-western sector of the Fleet Basin). Some signs of recent use by martens but no martens present.

9th May

Completed checks of all wooden and GL boxes to the north and east of the River Fleet. No martens present but several boxes with signs of use. Then north via Dalry to check the 'Gulley box' at Castlemaddy in the Polmaddy forest area.

10th May

JB and LC collected three Swift Ecology staff from Newton Stewart and took them to meet GV at Penninghame, where three pine marten kits were present in AP08 (GV had been monitoring this box with camera traps in connection with proposed forestry works nearby – he had confirmed activity at the box by an adult pine marten since 01/04/2017). This is the third year in succession that kits have been present in this box, although on this occasion there were no scats at all on the lid. In light of its status as a natal den again in 2017, GV will maintain a 100m exclusion zone. All kits were weighed, sexed and hair samples taken. Only one other box in Penninghame had signs of use (AP07 – relocated in August 2016). Vole transect and two scat transects completed (vole numbers seem to be up again this year after their low point in 2016).

JM and SM checked all 10 boxes in the Carrick zone – no kits present this year but 8 out of 10 boxes showing some signs of use. Interestingly, the Butterburn box (GT01) had an adult female and two kits present (kits were not apparent when visited on 7th May). Both kits processed when female left box.

11th May

We checked five GL boxes in the NW corner of the Fleet Basin (no martens present) and then walked up Cairnsmore of Fleet. JM & SM continued checking boxes in the Fleet Basin.

All gathered in Newton Stewart for an evening meal with the Swift Ecology Team.

12th May

Took LC to Newton Stewart for her lift home with the first Swift team, and collected the new team. Further checks of GL boxes at the southern end of the Fleet Basin (no martens present), followed by another walk up Cairnsmore of Fleet. Rain started! JM & SM joined the Swift team and continued checking boxes in the Fleet Basin.

13th May

Steady rain. Met GV at Clatteringshaws then checked further GL boxes (good signs of marten use) and completed new Fleet Basin scat transect near Loch Skerrow (8 marten scats!) and vole transect and scat transect near the FB reservoir. Then to the Brigton box (GT10) where two kits handled after mother flushed from box. JM & SM checked 12 GL boxes in the Fleet Basin and replaced one stolen GL box.

14th May

Office day, entering data and partial day off. Drafted text for Mammal Society article 'Introducing the Galloway Lite Pine Marten Den Box'.

15th May

JB met GV and Andrew Jarrott at the FES office in Newton Stewart. Then to Carrick to complete vole and scat transects in wet and windy weather. JM took SM to Dumfries Hospital to check a suspected broken rib sustained during a nocturnal stair skiing event and on their return deployed 3 prototype hair tubes with covering trail cameras near the occupied Bargrennan box.

16th May

We spent the day filming a piece on pine martens in Galloway Forest with Emma from Tern TV for a future BBC1 Scotland programme. A brief visit to Glencaird Depot for supplies.

17th May

All to Arrecleoch wind farm to check four boxes, install a replacement, relocate one box and complete scat transect. No signs of marten use at any of the boxes, but scat transect was positive (2 marten scats).

Recovered camera trap from Brighton box, which confirmed that mother flushed from box on 13th May had continued to visit and had not moved the kits.

18th May

Office day – preparing for Mammal Society training course. A working dinner with GV at the Masonic Arms, Gatehouse of Fleet.

19th May

JM and JB ran a Mammal Society pine marten den box course based at Clatteringshaws VC, with welcome assistance from GV and SM (thank you both). Eight delegates seemed to enjoy it.

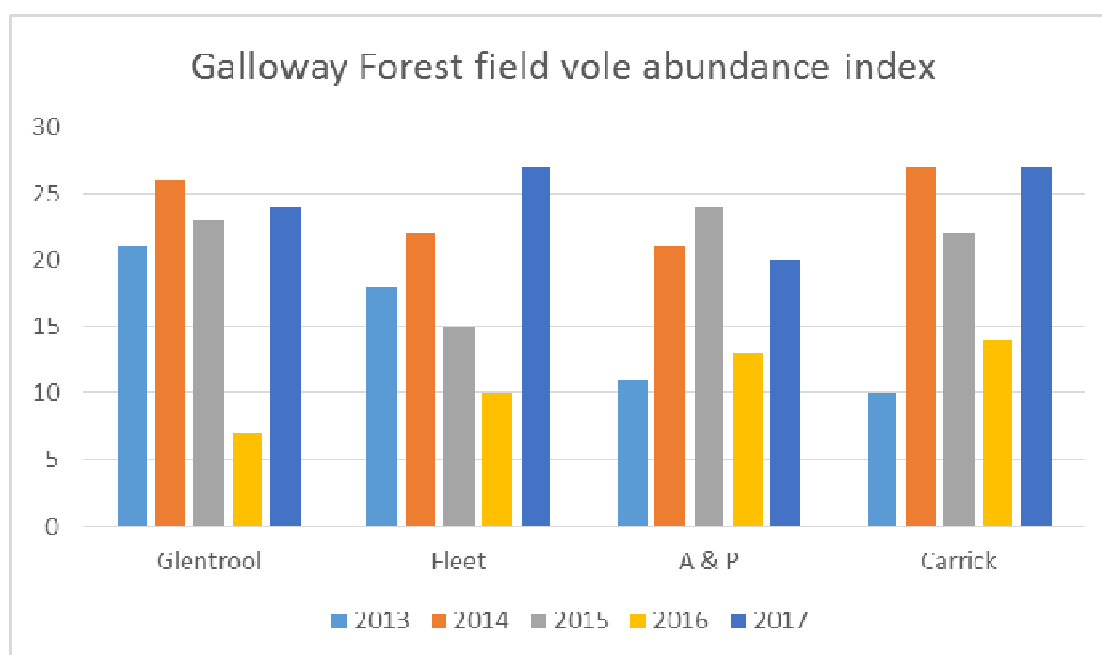
20th May

All drove home.

SUMMARY

Vole and scat transects

We completed our annual four vole transects and eight marten scat transects across the four den box zones; the details are supplied in the Excel files supplied to FCS separately. We present a histogram of the vole transect data below, which shows that in 2017 vole numbers were recovering following the low point in May 2016.



The table below shows that in 2017 our marten scat transects produced slightly more scats (mean 2.25 scats per km) on average than in previous years. However, the distribution of scats was highly uneven: half of the transects (Fleet Basin 2, Penninghame and both Carricks) were negative; and two - Glen Trool 2 and Fleet Basin 1 – produced 6 and 8 scats respectively.

Marten scat transect summary					
	2013	2014	2015	2016	2017
GT 1 Suie	2	2	2	1	2
GT 2	2	3	0	0	6
FB 1	1	0	0	1	8
FB 2	0	1	1	0	0
AP 1 (Arrecleoch)	2	6	0	4	2
AP 2 (Penninghame)	2	1	1	0	0
Carrick 1	2	0	0	0	0
Carrick 2	0	1	16	3	0
Mean	1.375	1.75	2.5	1.125	2.25

The wooden 'VWT' boxes

Incorporating three of the original VWT design boxes in Glen Trool into the new monitoring programme (to give a total of 13) means that we had 42 wooden boxes to check in May 2017.

Forest zone	Glen Trool	Fleet Basin	A & P	Carrick	Total
No. boxes	13	10	9	10	42
No. used	5	2	2	8	17
Breeding	3	0	1	0	4

The overall proportion of boxes used recently by martens was 40% in May 2017, with variations across the zones from 20% in the Fleet Basin to 80% in Carrick. For the second year running no boxes were used for breeding in the Fleet Basin. As previously suggested, the likely explanation for the low level of use of the wooden boxes in the Fleet Basin is the availability now of a high density of Galloway Lite boxes providing alternative resting sites, with 26 out of 49 showing recent signs of use in May 2017. As in previous years we collected accumulations of scats from the lids of natal den boxes for use studies of the diets of breeding female pine martens.

The Galloway Lite boxes

The evidence of recent use of 26 out of 49 GL boxes (53%) across widespread locations in May 2017 encourages us that martens are still present and benefitting from the availability of these new den boxes. Although we have not investigated this in detail, use of the GL boxes appears quite clumped, so we look forward to examining patterns of box use in relation to habitat factors in the future. Cumulative use of the GL boxes now lies at 78%, so we are more convinced than ever that provision of these boxes at an even density across the Fleet Basin is a very effective form of mitigation for the predictable scarcity of elevated, sheltered den sites in commercial forests.

Publicity and publications

1. The paper on the use of wooden den boxes in Galloway Forest, written by Lizzie Croose (with JM and JB as joint authors), has been published in the journal *Conservation Evidence*. The full reference is: E. Croose, J.D.S. Birks & J. Martin (2016). Den boxes as a tool for pine marten *Martes martes* conservation and population monitoring in a commercial forest in Scotland *Conservation Evidence* **13**, 57-61.
2. An article on the Galloway Lite den box was published in The Mammal Society's journal *Mammal News* in the summer 2017 issue.
3. Gareth Ventress, Johnny Birks and John Martin attended the 2nd All-Ireland pine marten symposium in Armagh in October 2016, where Johnny presented a talk 'Boxing Clever' on the use of den boxes by pine martens in Galloway Forest; and John and Johnny led a practical session on den box design, installation and checking.
4. Johnny has offered to present a paper on the Galloway den box work at the CIEEM National Conference in Manchester in November 2017.

CONCLUDING THOUGHTS AND RECOMMENDATIONS

1. The funding uncertainties (since resolved, thankfully) cast a slight shadow over this session of fieldwork in Galloway. But we are grateful for the efforts of our local FES colleagues in achieving approval in good time for the September 2017 field session. Now we can look forward to continuing our collaboration with FES to the end of 2019.
2. Many of the recommendations made in our last report on the May 2016 fieldwork have been acted upon and some will shape our future work around the checking and maintaining of den boxes, and a study of the response of pine martens to variations in forest structure.

Johnny Birks (Swift Ecology) and John Martin (Myotismart)

20 July 2017