

**POPULATION and DISTRIBUTION  
of  
BEAN GEESE  
in the  
SLAMANNAN AREA  
1996/97**

**THE BEAN GOOSE WORKING GROUP**

**REPORT BY**

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## 1. Summary

This report details the results of a study undertaken between September 1996 to April 1997, to investigate the population and distribution of the Central Scotland flock of Bean Geese (*Anser fabalis fabalis*) which use the Slamannan Plateau area of Central Scotland. This a continuation of research started in January 1990, presented elsewhere, (Simpson 1990, 1991, 1992 Smith et al 1994 and 1995, Simpson and Maciver 1996.)

This winter again provided more information to compare with results from previous winters. Two noticeable thing this year were the flocks late arrival and no records whatsoever from the Carron Valley.

The first record was on 4<sup>th</sup> October of four Bean Geese at Loch Ellrig on field 180. The number of fields seen to be used this year was 25, which is an increase of six over the previous winter but still a reduced figure from the 36 in 1993/94 and 31 in 1994/95. The flock was seen to use four main clusters of fields for feeding this year:

1. Grangeneuk (fields 287 and 290)
2. Hillend (fields 251, 255, 276 and 259)
3. Beam (fields 170 and 173)
4. Jawcraig (fields 92, 99, 100 and 279).

There was a noticeable decrease this year on the use of field 170 at Beam Farm.

This winter the geese tended to act in two separate groups in direct contrast to last year when they generally acted together. The larger group consisted of circa 70 birds and the smaller group of circa 35 birds. It is also interesting to note that the geese were recorded most of the time in the western part of the study area with only a short foray into the eastern sector at Balmulzier field 242 in early January.

Roosting was mainly on the Fannyside Lochs with the smaller loch again being the favoured site. The purchase of this loch and nearby fields by the RSPB should secure this important roost site. During periods of heavy rain this winter when flooding took place on field 251 at Hillend Farm part of the flock was seen to flight on to this at dusk and birds were again present here at dawn which perhaps indicates that the geese spent the night on this field. Night feeding could of course take place but this was not recorded.

There was only one occasion in the autumn when it was suspected that the flock had roosted on the Carron Valley Reservoir. The flock was seen to arrive at Beam Farm just after dawn flighting in from the Northwest.

Some data was collected this year on the correlation between feeding and roosting sites and the trend which had previously been observed of the flock flighting between feeding sites in the western side of the study area to one of the Fannyside Lochs was again observed.

Night feeding this winter was again not looked for but in conversations with some farmers it would appear that birds were seen on fields after dusk.

As in previous years, the flock preferred to feed in fields with open horizons and with no stock present, although occasionally fields with sheep and cattle were used. The also used areas previously in opencast: although the grazing looked fairly meagre these fields 173, 99, and 279 were disturbance free.

Only one stubble field was seen to be used this year field 276 but it was suspected that the birds were feeding on young grass shoots rather than on grain. All other feeding was on rough or improved grassland.

The cold and snowy weather in December which lasted through until early January did not cause any feeding problems for the Bean Goose flock. During these conditions it is suspected that the geese did not always flight to roost but merely stayed out in their feeding areas. This behaviour was noted by Smith et al 1993/94. At these times East Fannyside Loch and most of West Fannyside Loch freeze over which may mean they offer less protection from predators.

The whole flock was last seen on 2<sup>nd</sup> March at Jawcraig in fields 92 and 99 but thereafter there was a gradual reduction with 50 recorded at field 279 on 4<sup>th</sup> March. On 6<sup>th</sup> March 40 birds were seen leaving the roost at 0600 but only 15 were seen later that morning at Jawcraig field 99. This, the last recorded sighting for the 96/97 season, was later than last years when the bulk of the flock was recorded on 28th February.

## 2. Introduction

This study is the continuation of research into the use of the Slamannan Plateau by Bean Geese (*Anser fabalis fabalis*). It follows on from the work done by Simpson (1989-95), Maciver (93-95) Smith et al. (1993-95), Simpson and Maciver (1995/96) for the RSPB, S.N.H. and the Bean Goose Working Group. The study was again funded by S.N.H., RSPB and Falkirk Council.

The 1996/97 monitoring programme “Population and Distribution of Bean Geese in the Slamannan Area” identified two main areas of study.

### 2.1 Population and Distribution

- a. Employing a “Monthly Route” method similar to the “Weekly Route” used by Smith et al.
- b. Regular check of Carron Valley Reservoir in the early part of the season.
- c. Routine observations.

### 2.2 Roost Sites

Visiting known roosting lochs within the study area both morning and evening.

### 3. Methods

#### 3.1 Field numbering

The numbering system as used by Smith et al. (1994,95) was again adopted for continuity plus additional field numbers created last winter.

#### 3.2 Distribution

##### 3.2.1 Diurnal distribution of Bean Geese

###### a. The Monthly Route

The technique employed was similar to previous years with a single observation of every field in the study area, recording a number of features.

1. Number of Bean Geese.
2. Number of other geese.
3. Disturbance Factors.

There was no counting of stock (sheep, cattle, horses).

Whenever possible the birds were monitored leaving the roost and located prior to the count commencing at 0900. The route was completed within a three hour period on that day. Normally four teams each visited a quarter of the study area at the same time. See Appendix 1.

###### b. Routine Observations

Apart from the Monthly Routes, the Bean Geese were looked for on over 200 occasions. On most of these occasions the whole study area was also visited so as to record all geese present. See Appendix 2.

###### c. Negative Records

On monthly Route days all fields not having geese present were recorded.

###### d. Other Goose Species

Records were kept of all other geese in the study area during the period of this study.

See Appendix 3 and 4.

###### e. Carron Valley Reservoir

Visits were made to this area from early September to early October to record any Bean Geese present.

##### 3.2.2 Roost Sites

During the winter 23 visits were made to roosting lochs. The method employed was to arrive at a particular roost before dawn or sunset and monitor the birds departure/arrival at the roost site.

## 4. Results and analysis

### 4.1 Population and distribution

The maximum number of Bean Geese recorded during the winter was 127 birds (compared with 123 in 1995/96, 132 birds 1994/95 and 135 birds 1993/94.) As in previous winters there were no marked fluctuations in flock size which would suggest any immigration or emigration during the winter. A noted change from the 1995/96 winter was that the flock was split into two groups for much of the time during daytime feeding. Approximately 6 Juveniles were identified within the flock in early autumn.

#### September 96

There were no records of any goose species either at the Carron Valley Reservoir or on the Slamannan Plateau during the latter part of the month.

#### October 96

The first record was on the 4<sup>th</sup> when 4 Bean Geese were seen on field 180 at Broom Farm. By the 10<sup>th</sup> they had moved to West Fannyside Farm field 13. The first large group was not recorded until the 19<sup>th</sup> when c72 were recorded at East Fannyside Farm field 38. By the 25<sup>th</sup> numbers had increased to 80 with daytime feeding noted at field 170 Beam Farm. On the 30<sup>th</sup> numbers there had increased to 108.

#### November 96

On the 5<sup>th</sup> the total had reached 110 but the flock was split in two feeding areas, with 43 at Beam and 67 on field 287 Grangeneuk. A visit on the 8<sup>th</sup> found 118 Bean Geese feeding on field 251 at Hillend Farm. About 40% of this field was under water which made it a sizeable lagoon on which the Bean Geese possibly roosted. Interestingly, at dawn that day no geese were present at either West or East Fannyside Lochs. On the 12<sup>th</sup> 118 Bean Geese were located at Grangeneuk on field 287. At 1530hr that day the flock was seen to use the rough mire area in field 290 to drink but returned to field 287 after an absence of 20 minutes. The following day 120 birds were at Beam. They were recorded here on the 15<sup>th</sup>, 16<sup>th</sup>, 17<sup>th</sup>, 20<sup>th</sup>, and 25<sup>th</sup>. The count on the 20<sup>th</sup> of 123 birds was a peak for the winter to date. On 27<sup>th</sup>, the flock was disturbed near Garbethill House field 51 and re-located to Hillend field 255. On the last day of November the flock was at Blackhill field 26.

#### December 96

The fields around Hillend Farm were now coming into use. On the 1<sup>st</sup> a proportion of the flock was found here feeding in the company of a group of Greylag with the remainder at Fannyside Mill: combining both totals gave the highest count of the winter, 127. The latter group subsequently arrived at Hillend Farm where the flock remained, in the company of up to 46 Greylag and a small group of 5 Pinkfeet, until the 9<sup>th</sup>. On the 12<sup>th</sup> 58 Bean Geese were back again at Beam, and another group of c49 at West Fannyside on field 13. On the 17<sup>th</sup> c100 Bean Geese left the roost at East Fannyside Loch but were not re-located. A smaller group of 33 flew later and went to Beam. An early morning visit to Hillend Farm on the 19<sup>th</sup> found 55 Bean Geese on field 255 and nearby 68 Bean Geese in field 276 amongst stubble. Xmas day saw the birds leaving East Fannyside roost at 0810hrs and flying the short

distance to field 25 to feed. They were joined later by 45 Greylag. A further pre-dawn roost visit on the 27<sup>th</sup> found only Greylag on East Fannyside Loch. After dawn a group of 32 Bean Geese arrived at field 24 Fannyside Mill from an easterly direction. They were disturbed shortly after and flew east, they were re-located at Hillend. Later that day 23 Bean Geese were seen at East Fannyside and the remainder of the flock at Beam. On the last two days of the year the flock split into at least two groups with Fannyside Mill field 24, and Hillend fields 255/276 being used for feeding.

### **January 97**

The first visit to the plateau of the new year was on the 4<sup>th</sup> when 66 Bean Geese and 1 Pinkfoot were seen at Balmulzier on field 242. Another group of c24 was at Fannyside Mill. On the next visit, at dawn on the 8<sup>th</sup> the flock flighted above the River Avon at Balmulzier before landing on field 242. A pre-dawn roost visit on the 17<sup>th</sup> found the whole flock at East Fannyside Loch. Birds left the roost in two separate groups but only c35 were found later at East Fannyside Farm. On a route count on the 19<sup>th</sup> the whole flock was at East Fannyside Loch but again it split up on leaving the roost and only a small group of 31 birds could be found later.

The mystery was solved on the 23<sup>rd</sup> when the flock was watched leaving the roost from near Shortrig Farm. Birds were seen to flight to field 279 and 99 and feed on a previously opencast area. Once on the ground behind spoil heaps, the geese were almost invisible and only by a close inspection with a telescope could the birds be seen. On a dusk roost visit to East Fannyside Loch on the 28<sup>th</sup> the whole flock flighted in from the NE which would indicate that the birds had been feeding either on Garbethill or Beam Farm.

### **February 97**

On the first visit of the month the 4<sup>th</sup> the Bean Geese were found on Garbethill using field 173. An examination of field 170 at Beam Farm for droppings that day confirmed that the geese had been feeding there recently. On the following day this was confirmed with 67 Beans present on this field. Several days later on the 8<sup>th</sup> and 9<sup>th</sup> the flock were split again with one group at Garbethill field 173 and the other at Jawcraig field 99. By the 11<sup>th</sup> feeding had been resumed at Threiprig on field 279.

On an afternoon visit on the 11<sup>th</sup> the flock was recorded at Jawcraig field 279 and when disturbed the birds split up and re-located on two separate fields 173 and 48 Garbethill. On a route count on the 16<sup>th</sup> 107 Bean Geese were recorded at Jawcraig field 100. In late February the flock was still using the field system at Jawcraig and a count of 125 geese was made on the 24<sup>th</sup> on field 279. Two days later 70 were at Jawcraig field 99 and at 32 East Fannyside field 38. The following day the 27<sup>th</sup> the Bean Geese flock was again split in two feeding areas, with 31 at East Fannyside and 84 at Jawcraig.

### **March 97**

On a visit to the Plateau on the 1<sup>st</sup> only 21 Bean Geese could be found at Jawcraig field 279. Next day, on the last route count, recorded the total flock c120 at Jawcraig fields 92 and 99. On the 4<sup>th</sup> 50 Beans were still present at Jawcraig field 279 and the last record was two days later when 40 birds were seen leaving the roost at East Fannyside Loch. On a search of feeding areas later that morning only 15 birds, at Jawcraig on field 99 could be found. Further visits on several consecutive days produced no sightings of Bean Geese.

#### 4.1.1 Diurnal distribution (see map - showing location of sites)

##### a. Monthly route distribution

The use of fields by Bean Geese seen during the six route surveys is summarised in Appendix 1.

##### b. Cumulative Records

The goose distribution based on all available records, route and routine throughout the winter, which were precisely located to a numbered field in the study area are summarised in Appendix 2.

##### c. Other Geese Species

There was a marked increase in the numbers of Greylag and Pinkfeet using the Slamannan plateau this winter. The records of these wintering flocks are summarised in Appendix 3 and 4. As in previous winters a group of Greenland White-fronted Geese appeared in late February at Fannyside Mill field 24. There were 12 this year compared with 8 last year.

##### d. Carron Valley Reservoir

Visits were made to this important site during late September at various times of the day but no Bean Geese were seen.

#### 4.1.2 Roost Sites

Roost sites were recorded on 23 visits: as in previous years East Fannyside Loch appeared much the favoured location with roosting recorded here on 18 occasions. West Fannyside Loch was seen to be used on 3 occasions and Loch Ellrig used only once by 4 Bean Geese in early October. During a period of heavy rain field 251 at Hillend Farm flooded and it was suspected as being used on at least one occasion for roosting purposes.

The correlation previously mentioned (Simpson and Maciver 1995/96) between a feeding site and subsequent roost site was looked at this winter on 9 occasions. The results are as follows :

04 Oct - Field 180 Broom Farm > Loch Ellrig  
19 Oct - Field 38 East Fannyside > East Fannyside Loch  
26 Oct - Field 170 Beam Farm > East Fannyside Loch  
30 Oct - Field 170 Beam Farm > East Fannyside Loch  
05 Nov - Field 287 Grangeneuk > East Fannyside Loch  
08 Nov - Field 287 Grangeneuk > East Fannyside Loch  
14 Nov - Field 287 Grangeneuk > East Fannyside Loch  
20 Dec - Field 256 Hillend Farm > East Fannyside Loch (66 Geese)  
20 Dec - Field 256 Hillend Farm > Field 251 Hillend Farm (38 Geese)  
28 Jan - Field 170 Beam Farm > East Fannyside Loch

These results would appear to confirm that the geese when feeding in the west side of the study area use East Fannyside Loch and when feeding in the east side use Loch Ellrig. Further studies of geese feeding within the east sector would have to be made before any useful correlation could be made.

## 5. Disturbance

As observations were not continuous, many occurrences of disturbance were undoubtedly missed. Where Bean Geese were clearly seen to be disturbed and the cause identified, these were recorded.

The types of disturbance were categorised as follows, and were used in combination if appropriate:

Farming	Birds of Prey
Shooting	Helicopter
Sheep	Low flying aircraft
Vehicles	Unknown
Foxes	

The Bean Goose flock was seen to be disturbed on occasions throughout the study period. The following details are from observations during route days and routine visits totalling over 200 records.

Vehicles	12
Farming	5
Total	17

## 6. Ringed Geese

The Bean Goose flock was searched on all occasions for ringed individuals but none was seen. The individual recorded between 1991-96 with a metal ring on its right leg was absent this year.

It was hoped to commence a ringing programme this year which would have included putting neck collars on a number of geese. Due to unforeseen circumstances this did not take place but will hopefully do so in the autumn of 1997.

## 7. Discussion

Firstly it should be stressed that, given the topography of many of the sites selected by the flock, some counting problems may occur. Certainly this season was no exception.

The numbers shown as daily maxima can give the impression that some birds were missing from the study area when in fact they could not be seen for a variety of reasons i.e. dense juncus, poor visibility or at distance, identification problems with other goose species.

For example, the peak count of 127 at Hillend Farm on 1/12/96 was only achieved after the birds had split into two groups and counted immediately after each other. Once again, de selecting the greylags and pinkfeet to arrive at an accurate total.

This season the bird's ability to separate into two groups and act independently of each other was witnessed again. The reasons for this are not clear as the reformed flock would reappear at the same site on later occasions.

This behaviour certainly merits further study and an aid to this monitoring may well be the proposed neck banding scheme for season 1997/98. It was unfortunate that the programme could not be put in place in season 1996/97, but with more concrete proposals this year, the birds should be neck banded by mid winter.

A very encouraging occurrence this season was the use of re-seeded open cast areas fields 279 & 99 by the flock. Originally when the idea of a bean goose friendly sward was devised in 1991 there was some scepticism about the likelihood of success. Clearly in the right sites it will probably work.

Although sward type is only a part of the picture and the ability of the flock to remain undisturbed to exploit the available grazing, however poor, is still a primary consideration, this re-instatement process should be given vigorous encouragement and promotion.

Given that observations of the birds has gone on in earnest since 1990 it is felt that a more detailed analysis of the sites is required to establish why the flock selects one field and not another.

We now have a general understanding of what makes a Bean Goose site. Perhaps now is the time to collate all the available information, both anecdotal and scientific, to assist in enhancing established sites and areas that with a little management would become more suited to the birds needs i.e. Blackbriggs at Loch Ellrig and West Fannyside Farm. Changes of ownership and management practices at these locations in particular could have serious repercussions for Bean goose use. If they became unsuitable, the flock could be restricted to Beam Farm, Easter Fannyside and the Upper Avon. One of the most important features of Bean Goose use of the Slamannan Plateau is the use of many sites and mobility of the flock.

Some work has been done on night feeding by Smith 1994/95 in which he identified additional feeding areas not normally selected in daytime. Observations of birds riding out heavy snow conditions is also very interesting as is the possibility of birds utilising extensive flooding in feeding areas for roosting. Perhaps there are areas for future study? We consider that it would be worthwhile making another approach for the use of night vision equipment to establish whether the birds do remain out in the snow or simply leave later to roost and whether the flock does utilise flooded areas for roosting.

Many aspects of Bean Goose distribution and behaviour on the Slamannan Plateau are now becoming clearer. Patterns of population and distribution coupled with flock movements and land use are becoming easier to predict.

With the acquisition of sites like Fannyside Loch East (402) and informal arrangements with existing landowners on some key sites, many of the requirements of the flock seem to be more secure.

## 8. Acknowledgements

The landowners of the study area who gave permission for access to their lands for fieldwork.

The members of the Bean Goose Study Group who participated in the monthly route counts: J. Anderson, F. Fleming, I. Fulton, A Howatson, D. Shanks.

To Lyndsey Kinnes S.N.H., and Peter Gordon R.S.P.B., for comments on the draft of this report

## 9. References

- Simpson, J. 1990, 1991, 1992, 1993. Bean Geese. Winter Reports. Unpublished.  
Simpson, J. and Maciver, A. Population and Distribution of Bean Geese in the Slamannan Area 1995, 1996.  
Smith, Bainbridge, and O'Brien, Distribution and Habitat Use by Bean Geese in the Slamannan Area, 1994, 1995  
Smith, Bainbridge, and O'Brien, Distribution and Habitat Use by Bean Geese in Slamannan Area, 1995, 1996

## 10. Appendices

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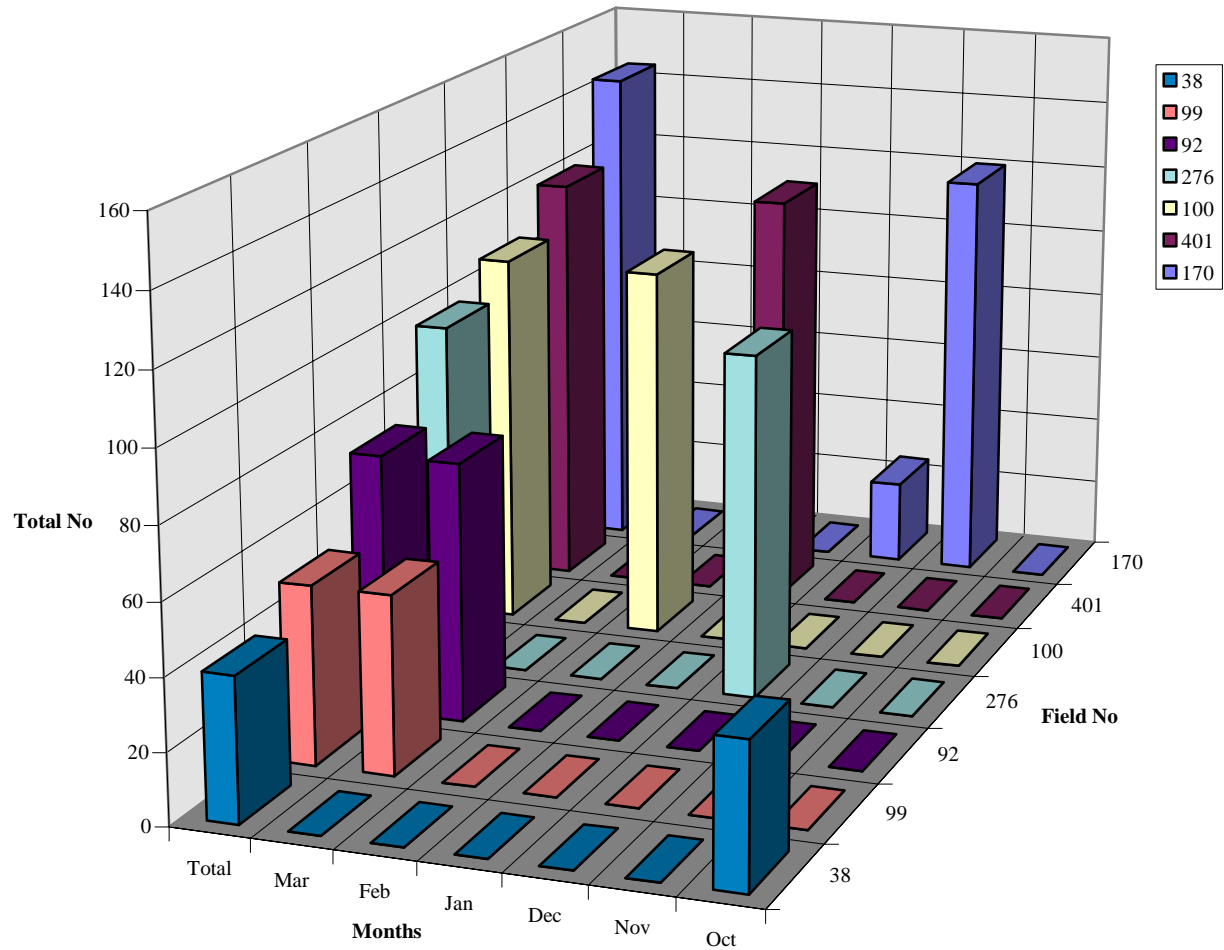
Population & Distribution of Bean Geese  
in the Slamannan Area 1996/97

**Appendix 1 Bean Geese Route Survey 1996/97**

<b>Field No</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Total</b>	<b>Average</b>
170	0	120	24	0	0	0	144	20.57
401	0	0	0	120	0	0	120	17.14
100	0	0	0	0	107	0	107	15.29
276	0	0	98	0	0	0	98	14.00
92	0	0	0	0	0	73	73	10.43
99	0	0	0	0	0	50	50	7.14
38	40	0	0	0	0	0	40	5.71

Population & Distribution of Bean Geese  
in the Slamannan Area 1996/97

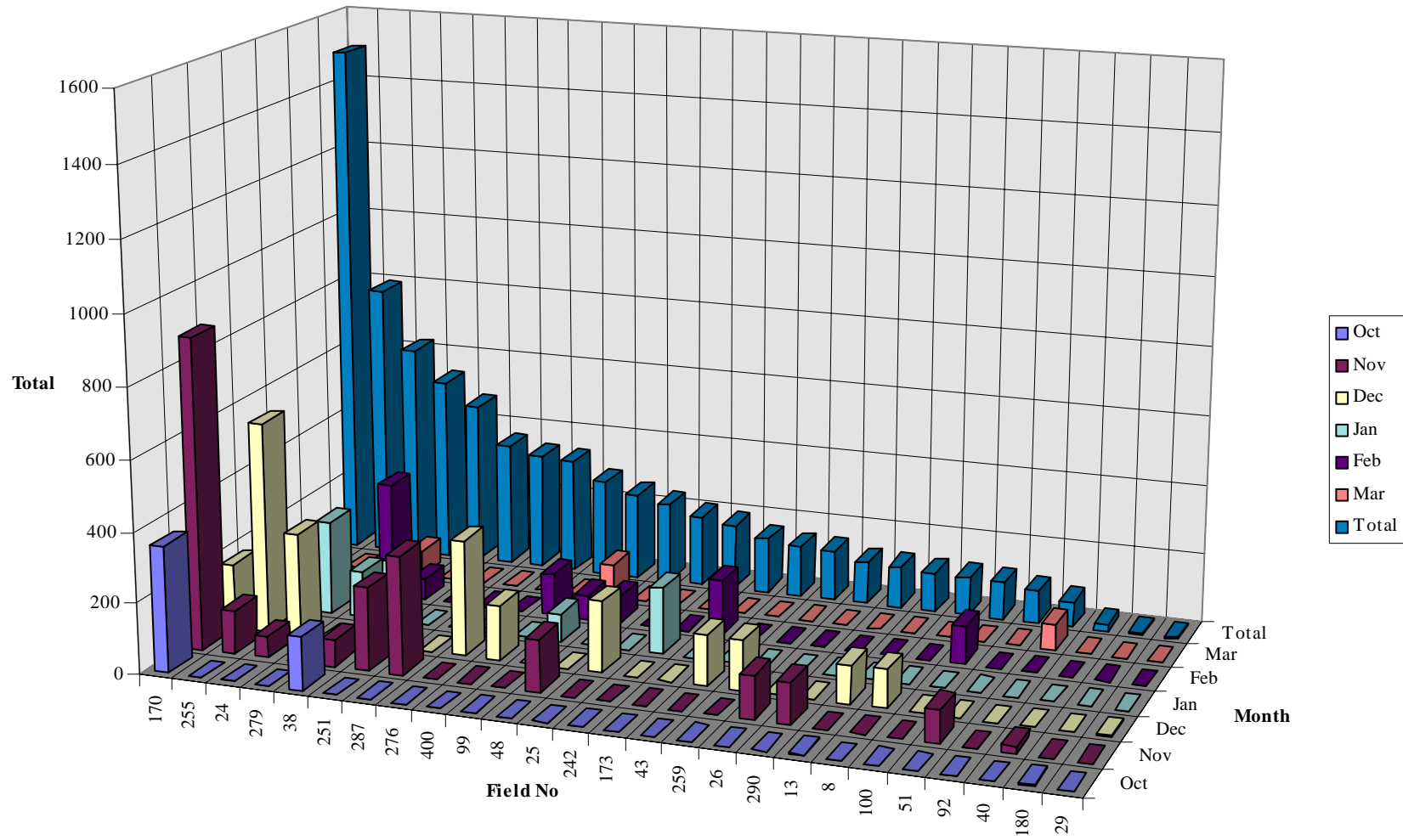
Appendix 2 Graph of Bean Geese Route Survey 1996/97



## Appendix 3 Bean Geese Survey Data 1996/97 Bird - Days per Month

Field No	Oct	Nov	Dec	Jan	Feb	Mar	Total	Average
170	358	885	183	0	67	0	1493	248.83
255	0	123	601	66	0	0	790	131.67
24	0	60	293	267	0	0	620	103.33
279	0	0	0	131	329	71	531	88.50
38	152	76	0	177	63	0	468	78.00
251	0	236	120	0	0	0	356	59.33
287	0	335	0	0	0	0	335	55.83
276	0	0	329	0	0	0	329	54.83
400	0	0	157	0	120	0	277	46.17
99	0	0	0	80	70	99	249	41.50
48	0	150	0	0	80	0	230	38.33
25	0	0	203	0	0	0	203	33.83
242	0	0	0	189	0	0	189	31.50
173	0	0	0	0	160	0	160	26.67
43	0	0	146	0	0	0	146	24.33
259	0	0	143	0	0	0	143	23.83
26	0	122	0	0	0	0	122	20.33
290	0	118	0	0	0	0	118	19.67
13	4	0	109	0	0	0	113	18.83
8	0	0	110	0	0	0	110	18.33
100	0	0	0	0	107	0	107	17.83
51	0	95	0	0	0	0	95	15.83
92	0	0	0	0	0	73	73	12.17
40	0	20	0	0	0	0	20	3.33
180	6	0	0	0	0	0	6	1.00
29	0	0	5	0	0	0	5	0.83

Appendix 4 Graph of Bean Geese Survey Data

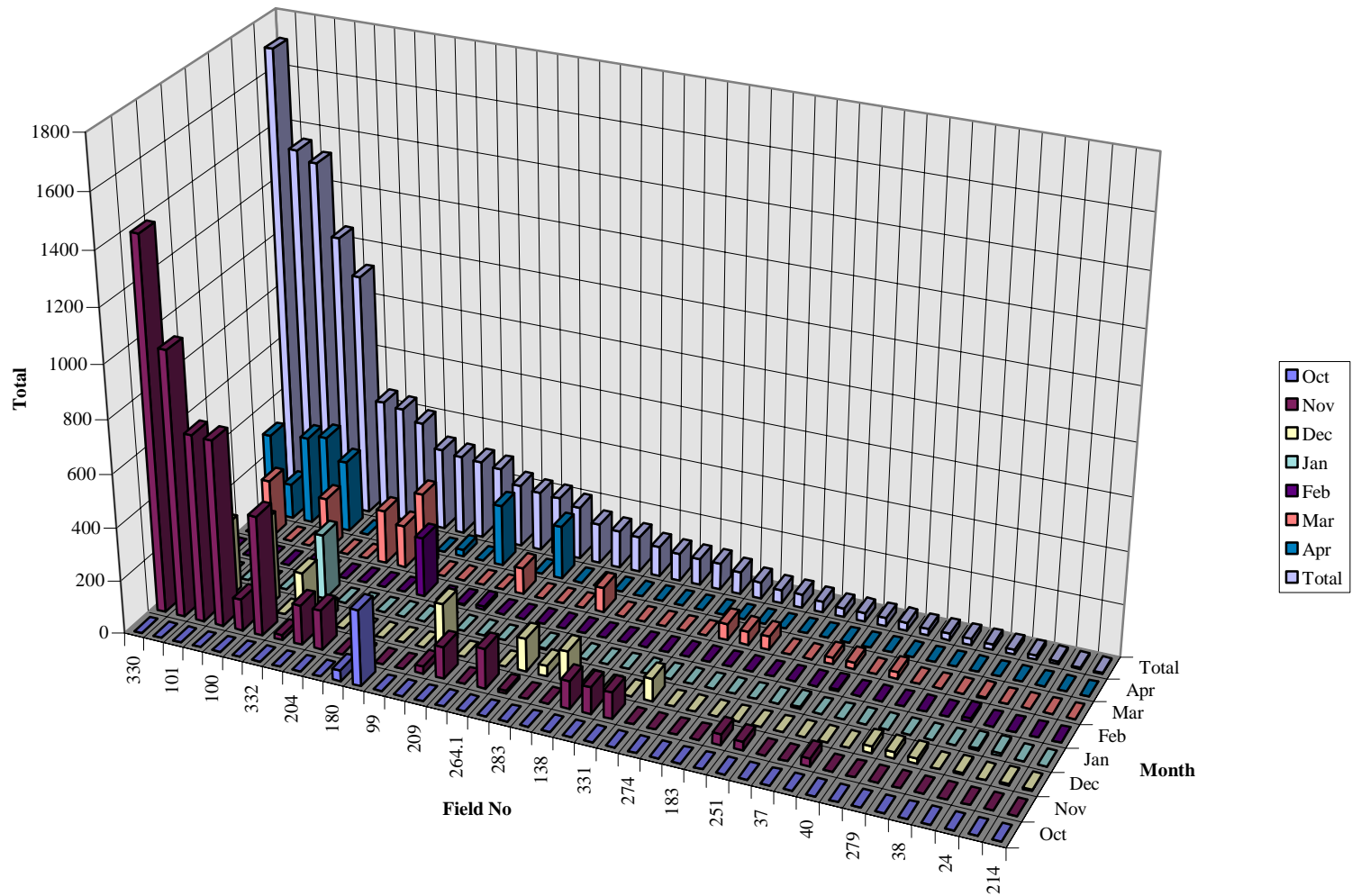


## Appendix 5 Greylag Geese Survey Data 1996/97 Bird - Days per Month

Field No	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total	Average
330	0	1395	0	0	0	0	311	1706	243.71
329	0	997	0	0	0	220	133	1350	192.86
101	0	704	278	0	0	0	333	1315	187.86
328	0	700	0	0	0	0	350	1050	150.00
100	0	120	328	0	0	200	270	918	131.14
206	0	450	0	0	0	0	0	450	64.29
332	0	19	176	244	0	0	0	439	62.71
119	0	150	47	0	0	202	0	399	57.00
204	0	150	0	0	0	161	0	311	44.43
193	0	0	0	0	0	300	0	300	42.86
180	41	5	0	0	224	0	25	295	42.14
402	285	0	0	0	0	0	0	285	40.71
99	0	0	0	0	4	0	232	236	33.71
25	0	28	183	0	13	0	0	224	32.00
209	0	120	0	0	0	100	0	220	31.43
123	0	0	0	0	0	0	200	200	28.57
264.1	0	150	0	0	0	0	0	150	21.43
255	0	11	124	5	0	0	0	140	20.00
283	0	0	40	0	0	94	0	134	19.14
120	0	0	113	0	0	0	0	113	16.14
138	0	104	0	0	0	0	0	104	14.86
205	0	100	0	0	0	0	0	100	14.29
331	0	100	0	0	0	0	0	100	14.29
126	0	0	84	0	0	0	0	84	12.00
274	0	0	0	0	0	62	0	62	8.86
182	0	0	0	0	0	50	0	50	7.14
183	0	0	0	0	0	50	0	50	7.14
208	0	40	0	0	0	0	0	40	5.71
251	0	32	0	0	0	0	0	32	4.57
401	0	0	0	8	0	24	0	32	4.57
37	0	0	0	0	7	24	0	31	4.43
134.1	0	30	0	0	0	0	0	30	4.29
40	0	0	0	0	0	25	0	25	3.57
400	0	0	25	0	0	0	0	25	3.57
279	0	0	23	0	0	0	0	23	3.29
43	0	0	20	0	0	0	0	20	2.86
38	0	0	0	0	13	6	0	19	2.71
29	0	0	7	8	0	0	0	15	2.14
24	0	0	0	10	0	0	0	10	1.43
276	0	0	6	0	0	0	0	6	0.86
214	0	0	5	0	0	0	0	5	0.71

Population & Distribution of Bean Geese  
in the Slamannan Area 1996/97

Appendix 6 Graph of Greylag Geese Survey Data 1996/97

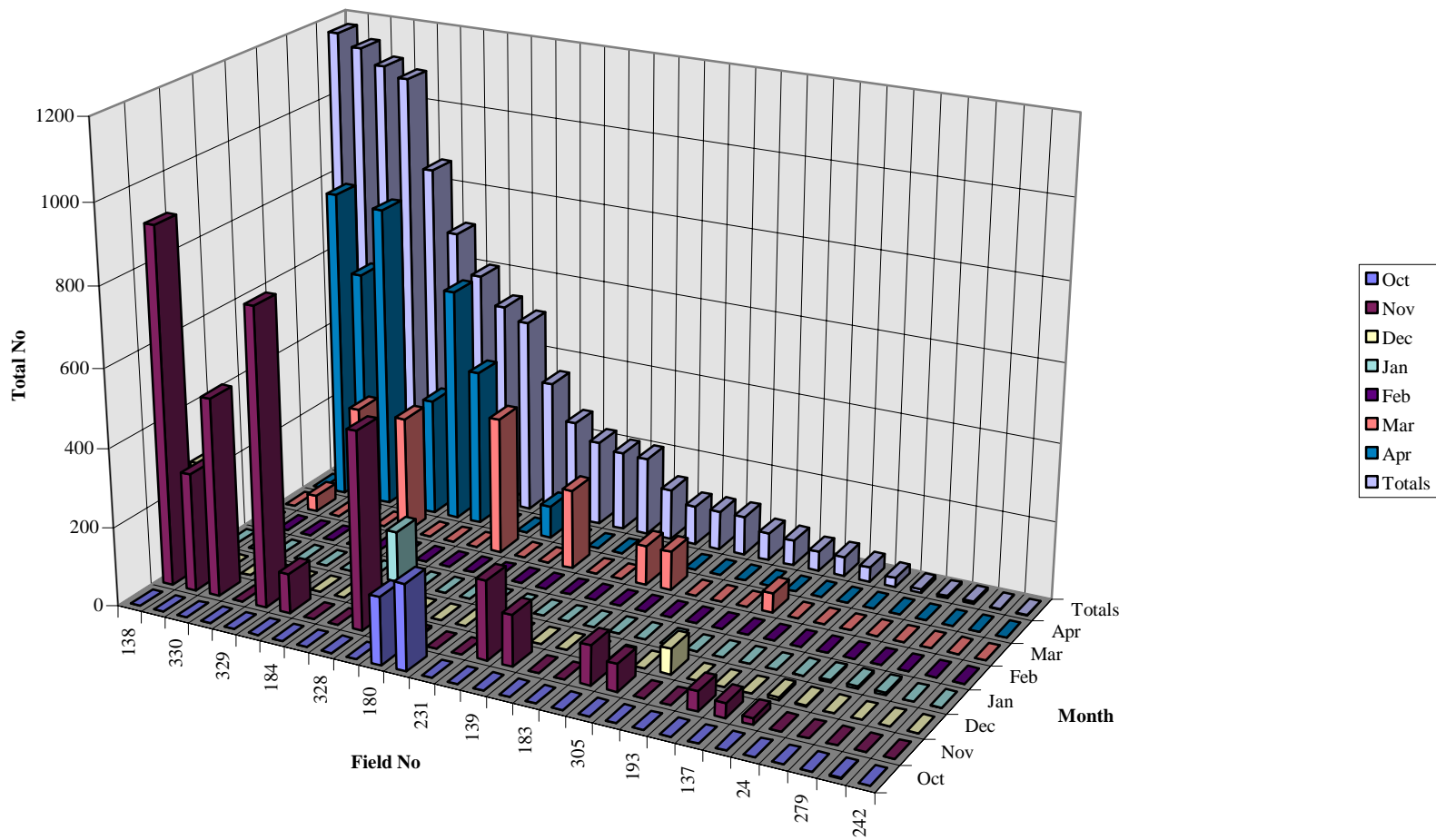


## Appendix 7 Pinkfeet Geese Survey Data 1996/97 Bird - Days per Month

Field No	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Totals	Average
138	0	907	265	0	0	0	0	1172	167.43
206	0	300	0	0	0	41	800	1141	163.00
330	0	504	0	0	0	0	600	1104	157.71
208	0	0	0	0	0	300	780	1080	154.29
329	0	756	0	0	0	0	100	856	122.29
209	0	100	0	0	0	300	300	700	100.00
184	0	0	0	0	0	0	600	600	85.71
332	0	0	0	130	0	0	400	530	75.71
328	0	500	0	0	0	0	0	500	71.43
166	0	0	0	0	0	350	0	350	50.00
180	171	4	0	0	0	0	83	258	36.86
402	218	0	0	0	0	0	0	218	31.14
231	0	0	0	0	0	203	0	203	29.00
134.1	0	200	0	0	0	0	0	200	28.57
139	0	130	0	0	0	0	0	130	18.57
182	0	0	0	0	0	100	0	100	14.29
183	0	0	0	0	0	100	0	100	14.29
248	0	100	0	0	0	0	0	100	14.29
305	0	70	0	0	0	0	0	70	10.00
100	0	0	65	0	0	0	0	65	9.29
193	0	0	0	0	0	50	0	50	7.14
331	0	50	0	0	0	0	0	50	7.14
137	0	37	0	0	0	0	0	37	5.29
255	0	16	7	1	0	0	0	24	3.43
24	0	0	3	6	0	0	0	9	1.29
99	0	0	0	6	0	0	0	6	0.86
279	0	0	0	6	0	0	0	6	0.86
170	2	0	0	0	0	0	0	2	0.29
242	0	0	0	1	0	0	0	1	0.14

Population & Distribution of Bean Geese  
in the Slamannan Area 1996/97

Appendix 8 Graph of Pinkfeet Geese Survey Data 1996/97



**Appendix 9    Map of Survey Area**

**Please see over**

