

**POPULATION and DISTRIBUTION  
of  
BEAN GEESE  
in the  
SLAMANNAN AREA  
1997/98**

**THE BEAN GOOSE WORKING GROUP**

**REPORT BY**

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## 1. Summary

This report details the results of a study undertaken between September 1997 to April 1998, 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 is a continuation of research started in January 1990, presented elsewhere, (Simpson 1990, 1991, 1992, Smith et al 1994 and 1995, Simpson and Maciver 1996, 1997.)

The first reported sighting was of 6 Bean Geese at Loch Ellrig field 180 on 21st September.

The number of fields seen to be used this year was 25 exactly the same as last year. This is still a reduced figure from the 36 fields used in 1993/94 and 31 in 1994/95.

The cluster of fields used for feeding this winter was remarkably similar to last winter with the exception of fields at Grangeneuk Farm. A change of stock management made these fields unsuitable for geese. Sheep had replaced cattle thereby making the sward of grasses unattractive.

1. Hillend (fields 251, 255, 260, 261)
2. Beam (field 170)
3. Jawcraig (fields 92, 99, 100, 120)
4. Fannyside (fields 37, 38, 39, 40)
5. Balmulzier (fields 134.1, 229, 230, 240, 242, 247)

This winter again saw the birds feeding in either two or three flocks on many occasions. Most feeding again took place in the western sector of the study area. Early January saw snow on the plateau and the geese, like last year, moved to Balmulzier to feed.

Roosting behaviour was similar to previous years with East Fannyside Loch being the favourite site. Field 251 at Hillend was again probably used for roosting purposes when the area was flooded: the flock was seen here at dusk and dawn on consecutive days. On at least one occasion a group of 60 birds roosted on the Carron Valley Reservoir.

Night feeding this winter was not looked for but, again, almost certainly took place.

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. Previous open cast areas at Wester Jawcraig were again used stressing the importance of open horizons as against quality of grass. The centre of this site is the main feeding area where the birds exploit poor quality grass, despite being surrounded by good quality improved pasture, highlighting the overwhelming importance of disturbance free grazing.

With only a short period of snow on the plateau and the generally mild weather this winter, plenty of grazing was available. Many farmers commented on the continued growth of grass during this period.

Worthy of note this year was of 2 birds of the rossicus race amongst the flock. These birds were seen at a distance of 100m within the flock at East Fannyside Farm field 38. This record was suppressed for reasons of confidentiality as at this time a neck banding programme was

underway and additional attention from birdwatchers might have proved detrimental to the project.

The last record was on 1st March when 71 Bean Geese were recorded at Beam Farm field 170.

An unsuccessful attempt was made this winter to neck band some Bean Geese and a further attempt will be made next winter.

## **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 (1993-95), Smith et al. (1993-95), Simpson and Maciver (1995/96, 1996/97) 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 1997/98 monitoring programme "Population and Distribution of Bean Geese in the Slamannan Area" identified three 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. There were no additional fields added to the study area. There was a further reduction of available grazing with six fields at Todsbughts and two at Newcraig Cottages being turned over to forestry.

#### **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 each count 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 100 occasions between mid September and early March. 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 Appendices 3 and 4.

###### **e) Carron Valley Reservoir**

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

##### **3.2.2 Roost Sites**

During the winter 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 153 birds (compared with 127 in 1996/97, 123 in 1995/96, 132 in 1994/95 and 135 in 1993/94).

As in previous winters there were no marked fluctuations in flock size which would suggest any immigration or emigration during the winter. This winter like the previous one saw the flock split into two or three groups for much of the time. There were 8 juveniles identified within the flock. An important sighting this year was of 2 birds of the race "rossicus" amongst the flock. This is a smaller, tundra-breeding race.

#### **September 97**

The first record of this new season was on the 21st of the month when a small group of 6 Bean Geese was located at Broom Farm, Loch Ellrig on field 180. There were no early records from the Carron Valley Reservoir.

#### **October 97**

It was the 15th of the month before the next group of Bean Geese was seen and this was at East Fannyside field 38. Two days later, the 17th saw the flock numbers rise dramatically when a flock of approx. 100 birds were seen at Beam Farm field 170. By the 24th, the number had risen to 147 and still present at Beam Farm. On the 28th, one flock of 86 birds was present at Beam Farm field 170 and on the same day a visit to the Carron Valley Reservoir located 61 birds.

#### **November 97**

The route count on the 2nd of the month recorded 87 geese at Beam Farm field 170, with the rest of the flock still at Carron Valley. A further visit on the 4th to Beam Farm field 170 found that most of the flock had joined up again although only 140 birds were actually counted. The next visit on the 7th, found 120 birds using fields 38 and 40 at East Fannyside Farm. A visit on the 12th located a flock of 147 birds at Hillend Farm feeding on field 255. They were still present here on the 16th and the 19th of the month although by this time the flock size had increased to 153 birds - our largest flock size on the plateau to date. The last visit of the month on the 25th again found a large flock of 95 birds had returned to feed at Beam Farm field 170.

#### **December 97**

The first visit on the 2nd found the flock still at Beam Farm field 170 and a count of 130 was made. Several days later the December route count on the 7th located 138 birds at Beam Farm field 170. The next visit on the 12th saw a flock of 148 feeding again at Hillend Farm field 255 but a Helicopter disturbed them and they re-located to Beam Farm field 170. Two days later, the 14th, the flock were again using Hillend Farm with a total of 142 birds using two fields, 255 and 251. By the 20th of the month feeding had resumed at East Fannyside with a group of 64 birds grazing on field 38 and on the 22nd 90 birds in the same field. A visit on the 31st, discovered that a new feeding area was now being utilised with a flock of 112 birds at Wester Jaw Farm on field 261. This field is adjacent to fields 255 and 251, which are part of Hillend Farm.

### **January 98**

A visit on New Year's day could only locate a group of 30 geese accompanied with 12 Greylags at Wester Jaw field 261. The following day the 2nd, saw a larger group of 94 in the same area. The first route visit on the 4th of the month gave a count of 113 geese in two fields at Wester Jaw 260 and 261. Two days later on the 6th three different groups were seen, 79 at Balmulzier field 242, 30 at Wester Loanrig field 229 and 23 in field 230. The Bean Goose flock stayed in this general area for the next few days before moving on the 10th to Wester Jawcraig field 100. On the 11th to the 13th the geese were seen in field 92 which although bordering the road into the Opencast Works at Wester Jawcraig was deemed by the birds to be safe enough for feeding. They did however stay in the area furthest from the road. Next day the 14th, a group of c70 geese had returned to Wester Loanrig field 230. A visit on the 19th to the plateau found that the main part of the flock, c100 birds had moved west to Wester Fannyside field 13 for feeding. This was the first record of the birds using this field this winter. A visit the following day gave a count of 146 geese at Easter Fannyside field 38. The next visit on the 25th, found three groups, 49 at Wester Jawcraig field 99, 76 at east Fannyside field 38 and 29 in the adjacent field number 40. A morning visit on the 26th, saw the geese again in different groups with some at Wester Jawcraig in fields 99 and 120. Later the same morning after some movement 91 geese were located at Wester Loanrig on field 229 and 62 geese at Wester Jawcraig field 99. Fields 229 and 230 at Wester Loanrig were used for the next few days but on the last visit for the month on the 29th the flock had returned to Easter Fannyside field 38 where a count of 142 was made.

### **February 98**

A visit on the 1st located c150 geese at Easter Fannyside field 24. Two days later the same number were seen on Garbethill field 48. The next visit did not take place until the 9th when 12 geese were present at Easter Fannyside field 38, 1 goose in field 37 and a count of c140 made at Wester Jawcraig field 99. A roost visit on the morning of the 19th gave a count of c150 geese present on East Fannyside Loch.

### **March 98**

A morning visit to the plateau on the 1st located 71 Bean geese at Beam Farm field 170. Further visits on 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

As reported last year, there was again a considerable number of Greylag and Pinkfeet using the Slamannan plateau this winter. Maximum numbers were c1000 Pinkfeet and c300 Greylag. The records of these wintering flocks are summarised in Appendices 3 and 4. Four Greenland White-fronted Geese appeared on the plateau in late December and mixed with the Bean Goose flock for the rest of the winter. Their numbers increased to 11 by late February with the influx of the usual visitors to the plateau.

d) Carron Valley Reservoir

Some sporadic visits were made to this site during the winter and Bean Geese were recorded here during a short period in October.

**4.1.2 Roost Sites**

A small number of visits were made this winter to roosting lochs and the general pattern of previous years was again observed. East Fannyside Loch was again the preferred site. No other lochs other than the Carron Valley were seen to be used. During periods of flooding at Hillend Farm field 251 is sometimes used as a roost site.

**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 139 records.

Farming	2
Helicopter	8
Total	10

In addition to the above there was some controlled disturbance this winter. This was part of the neck-banding scheme and its purpose was to see where the flock would re-locate itself when moved from particular feeding areas. This took place on four occasions and was a useful exercise which gave the ringing team additional information. It was found that towards late afternoon the birds would fly west towards the roost site and continue grazing at East Fannyside Farm.

## 6. Ringed Geese

The Bean Goose flock was searched on all occasions for ringed individuals but none was seen.

A ringing and neck banding scheme was approved this winter and an attempt was made to catch some Bean Geese at two different locations. Both of these were unsuccessful. Further attempts are scheduled for the season 98/99.

## 7. Discussion

This report concludes what must be the most interesting and diverse season of any so far. The flock hitting a high of 153 birds which incorporated 8 juveniles is very encouraging. Maintaining this peak right through to the end of February is probably due to a combination of a very mild winter and disturbance free grazing. Having the choice of suitable feeding sites also reinforces the requirements for alternatives.

1. The birds have a wide choice of fields to use.
2. This allows them to select fields to use in any particular day which are suitable in terms of a variety of factors e.g. suitable grass, lack of snow cover, lack of (or only a little) competing cattle/sheep.

A review of past reports would appear to confirm the flock settling into a pattern reliant on approx. 15 fields. The additional fact is that to maximise the benefit of these sites the flock will split into two maybe three groups to exploit the available grass resource.

It should be stressed that caution in interpreting some sites is necessary. The Jawcraig nucleus, in respect to reinstated swards, should be put into context. The eastern section favoured by the geese is agriculturally poorer, being *Juncus*-infested and poorly-drained. Its selection appears to owe more to its island like disturbance free nature than to any sward selection or management strategy.

It has been suspected for a long time that birds of the tundra breeding “rossicus” occasionally turn up in the flock. This year two birds of this race were positively identified within the flock at Easter Fannyside Farm on 30th January 98, a very interesting addition.

These birds were picked out at the comparatively short distance of 100 metres and highlighted a problem that has been faced for many years. Normally observations of the flock are made at from 300 metres to in excess of 1 kilometre on occasions. Clearly, we are not dealing with a Vane Farm or Caerlaverock situation which allows close views combined with comfort. Prolonged goose watching on the Slamannan plateau is a very frustrating business. As with all amateur ornithologists, you go when you can and not necessarily when you should. A promising situation can be wiped out by any number of factors from hill fog, farming activity, driving rain or topographical difficulties. The end result is one entire day of observation wasted.

To this end a more observer friendly approach is required. The Bean Goose watch-points devised this winter will go some way to provide the members of the study group with a greater chance to monitor a variety of interactions, locating juveniles and any other area of study our present difficulties would rule out. There are many benefits to this scheme. We know that many birdwatchers are often frustrated in their efforts to see the birds during the winter and with

organised watch-points this should help safeguard the birds from disturbance whilst at the same time giving people the opportunity to view them.

It is necessary to work in co-operation with landowners which strengthens the conservation's position of the main feeding sites. The relatively small size of our Bean Geese flock means that its conservation is not straightforward. If it was a rare breeding species in Scotland then statutory conservation measures would be in place. If the numbers of Bean Geese were of national or international importance its conservation would also be ensured. With it being a small localised flock the conservation position, regarded by some as a statistically insignificant population, becomes somewhat undermined. The habitat that the geese presently use during the winter could also be regarded as awkward where payments to farmers are concerned. Management agreements would be expensive and at this stage unlikely to be put in place so it is therefore necessary to strengthen the security of the main feeding sites in some informal way.

The watch-points have been placed at each of the main sites which attract around 70% of all grazing activity and a visit to them will increase the likelihood of the flock being seen. Birdwatchers are going to be asked to make a donation of £1 per car to the local farmers. Without the active assistance of a few landowners we would not enjoy the sight of Bean Geese in Scotland.

To increase the efficiency of this scheme the birds locations will be reported to Scottish Birdline. Information on the flock will be available from October to March. Whenever possible a member of the Bean Goose study group will be on hand to supply additional information. It may be necessary on occasions to withhold information about the flock so as to avoid disturbance.

This scheme has been developed by birdwatchers for birdwatchers and draws to a close many years work. As with any new venture there may be a few teething problems but with help and understanding it should be an interesting development in Scottish Ornithology.

The ability to monitor groups within the flock and individuals within those groups is vital in understanding its composition. The attempt to neck band the birds this season produced an opportunity to employ the bill coding and facial pattern codes. To establish preferences for grain bait or grass. the flock was monitored and on one occasion for the entire day. On completion it was established that only 8% of the flock were attracted to the grain (12 Birds) and only in a strict pecking order of groups consisting 4, 3, 3 and 2 birds. By documenting bill and facial codes of these birds individual recognition was possible.

It was particularly interesting to watch the interactions of each group and this gave an excellent indication of how many birds we could expect to catch at any one time using the baiting technique.

The same birds were noted behaving the same way on subsequent occasions but on the planned catching day the flock did not perform as we hoped. Although this attempt was unsuccessful many lessons were learned for the future. The main one being that baiting with grain only attracted a small number of geese.

Overall, this was an excellent season and a great deal of interesting observations were made. However the following areas must be addressed :

- a) Observations of night feeding should be made in addition to route counts and routine observations.

- b) Management agreements with landowners of key sites should be entered into by SNH.
- c) Neck banding scheme. Liaison at an early stage in each season both here and abroad is needed to ensure success.

Input into these schemes will go some way to ensuring that exciting winters like 1997/98 are repeated and not only build on our knowledge of this flock but actually put conservation measures in place for its continued progress in the seasons to come.

## **8. Acknowledgements**

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## **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 1996, 1997.

Smith, Bainbridge, and O'Brien, Distribution and Habitat use by Bean Geese in the Slamannan Area, 1994, 1995

## 10. Appendices

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Appendix 1: Bean Geese Route Survey 1997/98. Number of birds recorded.

<b>Field No</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Total bird days</b>	<b>Average</b>
170	0	0	87	138	0	0	71	296	42
24	0	0	0	0	0	150	0	150	21
260	0	0	0	0	113	0	0	113	16
403	0	0	60	0	0	0	0	60	9

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Appendix 2: Bean Geese Survey Data 1997/98. bird-days per field.

<b>Field No</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Total</b>	<b>Average monthly bird days</b>	<b>No of Positive Visits</b>
170	0	510	453	627	0	144	71	1805	258	19
99	0	0	0	0	411	997	0	1408	201	17
38	0	174	251	154	713	24	0	1316	188	18
255	0	0	302	190	0	0	0	492	70	7
240	0	0	0	0	350	0	0	350	50	3
92	0	0	0	0	309	0	0	309	44	3
48	0	0	0	0	0	280	0	280	40	4
261	0	0	0	112	165	0	0	277	40	9
229	0	0	0	0	201	0	0	201	29	3
230	0	0	0	0	193	0	0	193	28	3
247	0	0	0	0	185	0	0	185	26	3
242	0	0	0	0	168	0	0	168	24	3
100	0	0	0	0	47	112	0	159	23	3
24	0	0	0	0	0	150	0	150	21	2
39	0	0	0	0	0	150	0	150	21	1
40	0	0	120	0	29	0	0	149	21	2
403	0	61	60	0	0	0	0	121	17	2
260	0	0	0	0	113	0	0	113	16	2
13	0	0	0	0	100	2	0	102	15	2
251	0	0	0	100	0	0	0	100	14	2
134.1	0	0	0	0	69	0	0	69	10	1
120	0	0	0	0	62	0	0	62	9	4
23	0	0	0	0	0	51	0	51	7	1
93	0	32	0	0	0	0	0	32	5	1
180	6	0	0	0	0	0	0	6	0	3
37	0	0	0	0	0	1	0	1	0	1

## Appendix 3: Greylag Geese Survey Data 1997/98 Bird - Days per Month

<b>Field No</b>	<b>Sep</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>
261	0	0	0	12	659	0	0	671	96
101	0	0	0	0	368	60	0	428	61
329	0	0	0	0	0	16	255	271	39
255	0	0	7	240	12	0	0	259	37
260	0	0	0	0	192	0	0	192	27
332	0	0	0	0	0	153	0	153	22
153	0	0	0	0	117	0	0	117	17
180	0	100	0	0	0	0	0	100	14
99	0	0	0	0	0	80	0	80	11
330	0	0	0	0	0	78	0	78	11
119	0	0	0	0	0	52	0	52	7
170	0	0	0	20	0	22	0	42	6
251	0	0	0	37	0	0	0	37	5
278	0	0	0	0	0	0	34	34	5
38	0	0	0	0	18	0	0	18	3
226	0	0	0	0	17	0	0	17	2
80	0	0	0	3	0	0	0	3	0

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Appendix 4: Pinkfeet Geese Survey Data 1997/98 Bird Days per Month

<b>Field No</b>	<b>Sep</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>
120	0	0	0	0	0	2165	0	2165	309
329	0	0	0	0	0	216	716	932	133
101	0	0	0	0	370	300	0	670	96
99	0	0	0	0	165	500	0	665	95
330	0	0	0	0	0	327	0	327	47
153	0	0	0	0	190	0	0	190	27
119	0	0	0	0	0	110	0	110	16
261	0	0	0	0	95	0	0	95	14
100	0	0	0	0	0	94	0	94	13
255	0	0	1	79	0	0	0	80	11
180	0	30	0	0	0	0	0	30	4
251	0	0	20	0	0	0	0	20	3
332	0	0	0	0	0	20	0	20	3
170	0	0	0	6	0	0	0	6	0
38	0	0	0	0	2	0	0	2	0
240	0	0	0	0	2	0	0	2	0
260	0	0	0	0	2	0	0	2	0

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Appendix 5: Bean Geese Survey Records 1998

DATE	PLACE	FIELD NO	GRID	NUMBER OF BEAN GEESE	DISTURBANCE	OBSERVATION TYPE
21/09/97	BROOM FARM	180	887747	6	NONE	ROUTINE
12/10/97	BROOM FARM	180	887747	0	NONE	ROUTINE
13/10/97	BROOM FARM	180	887748	0	NONE	ROUTINE
15/10/97	BEAM FARM	170	836764	30	NONE	ROUTINE
15/10/97	EAST FANNYSIDE FARM	38	815743	27	NONE	ROUTINE
17/10/97	BEAM FARM	170	836764	100	NONE	ROUTINE
19/10/97	BEAM FARM	170	836765	147	NONE	ROUTINE
19/10/97	EAST FANNYSIDE	38	815744	147	NONE	ROUTINE
24/10/97	BEAM FARM	170	83776	147	NONE	ROUTINE
25/10/97	GARBETHILL MUIR	93	828760	32	NONE	ROUTINE
28/10/97	BEAM FARM	170	835764	86	NONE	ROUTINE
28/10/97	CARRON RESERVOIR	403	695830	61	NONE	ROUTINE
02/11/97	BEAM FARM	170	835764	87	NONE	ROUTE
02/11/97	CARRON VALLEY	403	0	60	NONE	ROUTE
04/11/97	BEAM FARM	170	835765	140	FARMING	ROUTINE
07/11/97	EAST FANNYSIDE	38	816744	120	FARMING	ROUTINE
07/11/97	EAST FANNYSIDE	40	817745	120	NONE	ROUTINE
09/11/97	EAST FANNYSIDE LOCH	401	807736	100	NONE	ROOST
12/11/97	HILLEND FARM	255	847736	147	NONE	ROUTINE
16/11/97	HILLEND	251	852736	0	NONE	ROUTINE
19/11/97	HILLEND	255	848736	155	NONE	ROUTINE
23/11/97	BEAM FARM	170	835766	131	NONE	ROUTINE
23/11/97	EAST FANNYSIDE	38	805745	131	NONE	ROUTINE
25/11/97	BEAM FARM	170	835765	95	NONE	ROUTINE
02/12/97	BEAM FARM	170	835766	130	NONE	ROUTINE
07/12/97	BEAM FARM	170	835765	138	NONE	ROUTE
07/12/97	GARBETHILL	80	823765	0	NONE	ROUTE
12/12/97	BEAM FARM	170	835764	152	NONE	ROUTINE
12/12/97	HILLEND	255	848737	148	HELICOPTER	ROUTINE
14/12/97	BEAM	170	835764	100	NONE	ROUTINE
14/12/97	HILLEND	251	852735	100	NONE	ROUTINE
14/12/97	HILLEND	255	848737	42	NONE	ROUTINE
20/12/97	EAST FANNYSIDE FARM	38	816744	64	NONE	ROUTINE
20/12/97	HILLEND	255	844873	0	NONE	ROUTINE
22/12/97	EAST FANNYSIDE FARM	38	816744	90	NONE	ROUTINE
30/12/97	BEAM FARM	170	835765	107	NONE	ROUTINE
30/12/97	BEAM FARM	170	835764	0	NONE	ROUTINE
30/12/97	EAST FANNYSIDE LOCH	401	807737	45	NONE	ROOST
31/12/97	HILLEND	255	848737	0	NONE	ROUTINE
31/12/97	WESTER JAW FARM	261	850737	112	NONE	ROUTINE
01/01/98	WESTER JAW	261	850737	30	NONE	ROUTINE
02/01/98	HILLEND	255	848736	0	NONE	ROUTINE
02/01/98	WESTER JAW	261	848738	94	NONE	ROUTINE
04/01/98	EASTER LOANRIG	226	875741	0	NONE	ROUTE
04/01/98	EASTER LOANRIG	153	874743	0	NONE	ROUTE
04/01/98	WESTER JAW FARM	260	852737	113	NONE	ROUTE
05/01/98	EAST FANNYSIDE	38	815744	0	NONE	ROUTINE
05/01/98	EAST FANNYSIDE	38	815744	114	NONE	ROUTINE
05/01/98	WESTER JAW	99	845748	0	NONE	ROUTINE
05/01/98	WESTER JAW	99	844748	124	NONE	ROUTINE
06/01/98	BALMULZIER	242	864736	79	NONE	ROUTINE
06/01/98	WESTER JAW	261	850738	41	NONE	ROUTINE
06/01/98	WESTER LOANRIG	229	865736	30	NONE	ROUTINE
06/01/98	WESTER LOANRIG	230	865734	23	NONE	ROUTINE
07/01/98	BALMULZIER	247	859736	120	HELICOPTER	ROUTINE
07/01/98	BALMULZIER	247	859736	44	NONE	ROUTINE
07/01/98	DYKE FARM	134.1	863739	69	NONE	ROUTINE
07/01/98	HILLHEAD	240	864732	144	NONE	ROUTINE
07/01/98	WESTER JAW	261	849737	0	NONE	
08/01/98	BALMULZIER	247	859736	21	HELICOPTER	ROUTINE
08/01/98	BALMULZIER	242	861736	59	HELICOPTER	ROUTINE
08/01/98	HILLHEAD	240	864732	53	HELICOPTER	ROUTINE
08/01/98	HILLHEAD	240	864732	153	NONE	ROUTINE
08/01/98	REDBRAE	153	873743	0	NONE	ROUTINE
10/01/98	WESTER JAW	261	851736	0	NONE	ROUTINE
10/01/98	WESTER JAW	260	851736	0	NONE	ROUTINE
10/01/98	WESTER JAWCRAIG	100	847749	47	NONE	ROUTINE

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DATE	PLACE	FIELD NO	GRID	NUMBER OF BEAN GEESE	DISTURBANCE	OBSERVATION TYPE
10/01/98	WESTER LOANRIG	242	862735	30	NONE	ROUTINE
11/01/98	WESTER JAWCRAIG	92	840749	62	NONE	ROUTINE
12/01/98	WESTER JAWCRAIG	92	840749	100	NONE	ROUTINE
12/01/98	WESTER JAWCRAIG	101	848750	0	NONE	ROUTINE
13/01/98	WESTER JAWCRAIG	92	840749	147	NONE	ROUTINE
14/01/98	EAST FANNYSIDE	38	816744	70	NONE	ROUTINE
14/01/98	WESTER JAWCRAIG	99	842747	70	NONE	ROUTINE
14/01/98	WESTER LOANRIG	230	866735	70	NONE	ROUTINE
19/01/98	WESTER FANNYSIDE	13	806727	100	NONE	ROUTINE
19/01/98	WESTER JAW	261	850738	0	NONE	ROUTINE
20/01/98	EASTER FANNYSIDE	38	815743	146	NONE	ROUTINE
20/01/98	WESTER JAW	261	850738	0	NONE	ROUTINE
22/01/98	EASTER FANNYSIDE	38	816744	6	NONE	ROUTINE
22/01/98	WESTER JAW	261	849738	0	NONE	ROUTINE
22/01/98	WESTER JAWCRAIG	101	848750	0	NONE	ROUTINE
22/01/98	WESTER JAWCRAIG	99	839747	73	NONE	ROUTINE
25/01/98	EAST FANNYSIDE	38	815744	76	NONE	ROUTINE
25/01/98	EAST FANNYSIDE	40	817744	29	NONE	ROUTINE
25/01/98	WESTER JAWCRAIG	99	839747	49	NONE	ROUTINE
26/01/98	EASTER FANNYSIDE	38	815744	7	HELICOPTER	ROUTINE
26/01/98	WESTER JAWCRAIG	99	841748	33	NONE	ROUTINE
26/01/98	WESTER JAWCRAIG	120	847747	62	NONE	ROUTINE
26/01/98	WESTER JAWCRAIG	99	841748	62	NONE	ROUTINE
26/01/98	WESTER LOANRIG	229	867736	91	NONE	ROUTINE
27/01/98	WESTER LOANRIG	229	868736	80	NONE	ROUTINE
28/01/98	WESTER LOANRIG	230	866735	100	NONE	ROUTINE
29/01/98	EAST FANNYSIDE	38	816743	142	NONE	ROUTINE
30/01/98	EAST FANNYSIDE	38	815744	0	NONE	ROUTINE
30/01/98	EAST FANNYSIDE	38	815744	152	NONE	ROUTINE
01/02/98	EAST FANNYSIDE	24	810736	150	NONE	ROUTE
03/02/98	GARBETHILL MUIR	48	825753	150	NONE	ROUTINE
05/02/98	WESTER JAWCRAIG	99	845748	152	NONE	ROUTINE
06/02/98	WESTER JAWCRAIG	99	845748	150	NONE	ROUTINE
08/02/98	EASTER FANNYSIDE	38	815744	12	NONE	ROUTINE
09/02/98	BALMITCHELL	332	884728	0	NONE	ROUTINE
09/02/98	EASTER FANNYSIDE	38	816744	12	NONE	ROUTINE
09/02/98	EASTER FANNYSIDE	37	817742	1	NONE	ROUTINE
09/02/98	WESTER JAWCRAIG	99	844748	140	NONE	ROUTINE
09/02/98	WESTER JAWCRAIG	101	848750	0	NONE	ROUTINE
09/02/98	WESTER JAWCRAIG	100	844750	0	NONE	ROUTINE
14/02/98	WESTER JAW	99	844748	150	NONE	ROUTINE
14/02/98	WESTER JAW	99	845748	0	NONE	ROUTINE
15/02/98	EAST FANNYSIDE	39	813744	150	NONE	ROUTINE
15/02/98	FANNYSIDE MILL	23	809735	51	NONE	ROUTINE
15/02/98	GARBETHILL	48	823756	99	NONE	ROUTINE
17/02/98	BALMITCHELL	329	883730	0	NONE	ROUTINE
17/02/98	BALMITCHELL	330	885731	0	NONE	ROUTINE
17/02/98	WESTER JAWCRAIG	100	843730	112	NONE	ROUTINE
17/02/98	WESTER JAWCRAIG	99	841748	4	NONE	ROUTINE
18/02/98	EASTER FANNYSIDE	24	809735	0	NONE	ROUTINE
19/02/98	BEAM FARM	170	836764	98	HELICOPTER	ROUTINE
19/02/98	EAST FANNYSIDE LOCH	401	806737	150	NONE	ROOST
20/02/98	GARBETHILL	48	823756	20	NONE	ROUTINE
20/02/98	WEST FANNYSIDE	13	805727	2	NONE	ROUTINE
20/02/98	WESTER JAWCRAIG	99	844747	76	NONE	ROUTINE
22/02/98	BALMITCHELL	330	885732	0	NONE	ROUTINE
22/02/98	EAST FANNYSIDE LOCH	401	806737	0	NONE	ROUTINE
22/02/98	WESTER JAW	99	843748	102	NONE	ROUTINE
22/02/98	WESTER JAW	99	844748	137	NONE	ROUTINE
23/02/98	GARBETHILL	48	822756	11	NONE	ROUTINE
25/02/98	BEAM FARM	170	835764	0	NONE	ROUTINE
25/02/98	WESTER JAWCRAIG	120	847747	0	NONE	ROUTINE
25/02/98	WESTER JAWCRAIG	101	848749	0	NONE	ROUTINE
25/02/98	WESTER JAWCRAIG	119	852748	0	NONE	ROUTINE
26/02/98	WESTER JAWCRAIG	120	847747	0	NONE	ROUTINE
28/02/98	BEAM FARM	170	835764	46	NONE	ROUTINE
28/02/98	WESTER JAW	99	844748	86	NONE	ROUTINE
28/02/98	WESTER JAW	120	847747	0	NONE	ROUTINE

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DATE	PLACE	FIELD NO	GRID	NUMBER OF BEAN GEESE	DISTURBANCE	OBSERVATION TYPE
01/03/98	BALMITCHELL	329	883730	0	NONE	ROUTE
01/03/98	BEAM FARM	170	835764	71	NONE	ROUTE
01/03/98	OAKERSDYKE	278	838742	0	NONE	ROUTE

Appendix 6: Map of Survey Area