

1997 RAPTOR ROUND UP

Produced by the
Scottish Ornithologists' Club
on behalf of all
Scottish Raptor Study Groups
with grant aid from
Scottish Natural Heritage



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Introduction

Welcome to the 1997 Raptor Round Up, now in its third year as a separate publication . It is produced by the Scottish Ornithologists' Club on behalf of the Scottish Raptor Study Groups with grant aid from Scottish Natural Heritage.

It is difficult to say anything significantly different about what happened to Scotland's Raptors for 1997 that has not been said for other recent years. The trend of poor spring and early summer weather continued and took its toll, as did the chronic levels of persecution directed at several species with Red Kite poisoning reaching a level that has started alarm bells ringing. Despite this it is still possible to be optimistic about many species. There is every indication that - if it can withstand the poisoning problem - the Red Kite will become a familiar sight in almost every part of Scotland. It is likely to follow in the footsteps of the Buzzard whose spectacular natural recolonisation of the eastern lowlands is one of the great success stories of recent years.

The publication of the results of the Joint Raptor Study - better known to just about everybody as "The Langholm Report" - has provided impetus for much public comment on raptors. not all of it well informed despite the valuable insights that the study provided. The Scottish Raptor Study Groups have made a significant and useful contribution to this debate with the publication of their own report in *Scottish Birds* - The Illegal Persecution of Raptors in Scotland. This has been widely praised well outside the immediate circle of the Groups themselves. The fact that the Groups were able to produce this document - at relatively short notice - is a tribute to the hours of fieldwork by the many individual group members.

This report describes some of that work for the 1997 field season.

Keith Morton

This report was written and edited by Sylvia Laing and Keith Morton with assistance from Joan Wilcox and based on material provided by Scottish Raptor Study Group members. The Scottish Raptor Study Group logo was designed and drawn by Keith Brockie.

Osprey

	Known prs	Prs eggs	Prs hatched	Broods successful	Young fledged	Production young/prs
Scotland	111	102	93	77	159	1.43

Tayside - A productive year with 61 young reared (49 in 1996). Two pylon sites were again used and a further 10 pairs used artificial platforms. Unfortunately 2 nests were robbed and the male at one site became entangled in fishing line and died. A colour ringed chick from Loch of the Lowes was seen during its southward migration in Nottinghamshire and another was found dead under wires in Portugal.

Argyll - Three sites were occupied by breeding pairs with evidence at one to indicate that one of the birds was new. One of the sites had broken eggs in late June or early July and 3 dead chicks were found at a second site on 2 July. These losses were difficult to explain and they did not appear to be weather related at the time of failure. Observations at the third site also indicated that the clutch was abandoned before hatching. Additional birds were regularly attracted to one of these sites in May and 1-2 birds were present in a fourth area from June-August but there was no breeding attempt.

Central Scotland - A productive year for this small population with 5 of the recorded pairs producing 14 young. Additional birds were present in at least 2 other areas.

North East - A minimum of 7 pairs reared 7 young from 4 sites, and a further 4 pairs are suspected. Prolonged heavy rainfall is the most likely cause of the poor success rate but the long-term future for Ospreys in the North East is still considered to be promising.

Lothian & Borders - Ospreys continue to tantalise the local raptor workers with several promising sightings but no breeding records.

Orkney - Single birds were reported from Orphir and North Ronaldsay in May and June.



Osprey

Brent Hurley

Highland - Prolonged heavy rain in late June/early July caused many losses. A total 59 pairs were found, one more than in 1996. A further 3 sites held single birds. Fifty five pairs laid eggs. One nest in Strathspey was robbed.

Fifty two pairs hatched young but 14 of these failed. Failure was worst in west Moray where only 3 young were reared from 11 pairs. A nest in east Moray was swept away by flooding. An artificial nest was built for the only surviving chick which then fledged successfully.

Forty one pairs reared a total of 77 young. Eight of these were transferred under licence to the English release project and fledged successfully. Overall productivity of 1.31 young per pair with an eyrie and 1.40 per pair laying eggs is surprisingly good considering the losses in Moray.

White-tailed Eagle

A further 10 chicks were brought in from Norway during 1997 bringing the total for the second phase of the release programme to 47.

There were 13-15 pairs or trios of territory holding birds in 1997, compared with 12 in 1996. There were no other adult birds occupying any of the known areas and the number of breeding birds (or birds potentially capable of breeding) on territory increased to 31. There were an estimated 11-13 clutches laid, 6 were known to have hatched and 5 pairs went on to fledge 9 young. A new Scottish-

bred pair was found, which sadly lost their single chick prior to fledging. The number of known successful pairs in Scotland is now 9. A pair which usually fledges young apparently failed to lay this year. Several failures were attributed to cold, wet weather in the spring but an unprecedented 3 young fledged from one site. In addition there are now 2 territorial pairs established from the second phase release which have yet to breed and are not included in the figures below.

There were several reports of dispersed birds away from core breeding areas including an immature bird on Orkney in April and May.



White-tailed Eagle

John Love

Eight year summary

	1990	1991	1992	1993	1994	1995	1996	1997
No of pairs or trios	9	9	8	8	10	10	12	13-15
No of unpaired birds on territory	3	1	2	4	1	4	0	0
No of birds on territory	21	20	19	21	22	26	26	31
No of areas occupied	12	10	10	10	11	14	14	14
No of clutches laid	9	8	9	6	8	9	12	11-13
No of clutches hatched	2	4	4	4	4	6	8	6
No of broods fledged	2	4	4	4	4	5	7	5
No of young fledged	2	7	7	5	5	7	9	9
Cumulative no of territories producing young	4	4	5	5	5	6	8	9

Red Kite

Northern core area - In the northern core area 23 pairs are known to have laid eggs. A further 4 pairs held territories and 2 of these even built nests. An unmated male was reported at a site where he had previously bred. Several unconfirmed sightings of single birds at scattered localities probably refer to summering or non breeding birds.

Seventeen of the 46 breeding birds were first time breeders and 7 pairs involved partners who had never bred before. A further 3 first time breeders paired with mates who had previous breeding experience.

Prolonged periods of heavy rain in late May and early July resulting in localised flooding contributed to lower than expected breeding success. Complete failure was recorded at 4 nests during incubation or hatching and fledging success at the remaining sites was lower than expected. One pair which failed early in incubation relaid at a new site but were unsuccessful.

In total 19 pairs were successful in fledging a total of 39 young. An average of 1.7 young was produced per pair laying eggs. The high breeding success enjoyed in 1996 may have been exceptional.

Central core area - A further 18 Red Kites were released in 1997. Two immature pairs were holding territory and the first breeding success in this core area is expected in 1998.

The year was marred by the finding of an unprecedented 4 dead birds poisoned at widely separate locations - a worrying trend.



Red Kite

Mike Ashley

Breeding success of Red Kites in north Scotland 1992-1997

	Pairs located	Pairs laid	Pairs hatched	Broods fledged	Young fledged	Productivity young/pair
1992	1	1	1	1	1	1.0
1993	5	5	3	3	7	1.40
1994	11	8	6	6	13	1.63
1995	17	15	14	11	26	1.73
1996	20	17	16	16	39	2.29
1997	27	23	20	19	39	1.70
Total	81	69	60	56	125	1.81

Hen Harrier

	Territories occupied	Territories known to have fledged young	Minimum no of young fledged	Number of young per successful territory
Perthshire	-	18	55	3.0
Angus	1	-	-	-
Argyll & Bute	37	25	79+	3.16
North East	14	5	13	2.6
Lothian & Borders	5	3	4/5	1.66
Central	3	1	3	3.0
(E Sutherland) *	4	4	9	2.25
(Moray) **	8	5	17	3.4
Dumfries & Galloway	37	19	66+	3.47
South Strathclyde	32	14	48+	3.42

* Predominantly un-keepered ** Predominantly grouse moor



Hen Harrier

Steven Brown

Tayside - In Perthshire a general decline in numbers over the last 4 years and a shortage of females resulted in 3 sites holding only males. Despite this 18 pairs fledged 55 young, the best for 3 years. There were a number of failures during the bad weather of early June.

In Angus the only recorded breeding pair failed when the young were about 3 days old. An unhatched egg was also found in the nest. A male and female seen in another area could suggest a second pair. Given the amount of seemingly suitable breeding habitat in Angus the situation is extremely poor.

Argyll - A total of 37 occupied territories was recorded in spring but breeding attempts were not proved in all of these. In at least one regular breeding area the birds are thought to have made no nesting attempt and moved on. Twenty five successful sites fledged a minimum of 79 young. At the RSPB Loch Gruinart Reserve 11 territories were occupied but only 4 nests were successful rearing 16 young. A sample of 10 successful sites monitored elsewhere on Islay reared many more female than male chicks (24 females to 10 males).

North East - In Aberdeenshire only 2 out of 6 pairs fledged any (5) young. Eight pairs fledged 8 young in Morayshire. A further 7 areas had birds present. It would appear that the North East is acting as a sink for Scottish birds.

Lothian & Borders - Persecution appears to be a major problem in the Moorfoots although one nest successfully hatched 4 young. Only the largest of these fledged and the fate of the other 3 remains unknown. Human interference is suspected. South of Tweed 3 nests were recorded; a nest with 5 eggs although it hatched 4 young, produced only one chick which was ringed; a nest with small young was not followed through to fledging; a nest known to have fledged 3 or 4 young. No harriers were seen in the Lammermuirs during the whole breeding season although a few ring-tails had been seen earlier in the year at 2 sites. A pair were seen displaying in the Pentlands but the outcome at this site is unknown.

Central - From 2 nests only 500m apart only one was successful (3 young) with the other failing at egg stage. Persecution was recorded at a third nest in the west of the region.

Highland - The end of the fulltime RSPB study resulted in fewer nests monitored in Highland. Twelve nests were checked in 2 areas - the least in 10 years - but the high success rate from this small sample is encouraging. All nests were found at the incubation stage. In Moray 8 nests were found but 2 were not revisited. The other 6 sites all hatched and 5 of them fledged 14 young. At the sixth site - located on a grouse moor - the young disappeared for an unknown reason. In Sutherland, all 4 nests found were successful and fledged at least 9 young.

Dumfries & Galloway - An excellent breeding season at Langholm - which accounted for over half the area's birds - tended to mask a worrying decline elsewhere where persecution is strongly implicated in poor performance. The almost complete disappearance of the Stewartry population, however, is not considered to be persecution related and remains something of a mystery.

South Strathclyde - Vole numbers were high all over the region. This followed a mild winter with more birds overwintering locally than usual (on one occasion 10 harriers were recorded hunting over a 2km square of young forestry plantation in east Ayrshire in February). It was not surprising therefore that site occupancy was early and that some pairs had settled by mid to late March. This was most obvious at sites which fledged young successfully in 1996.

Clutches were earlier and bigger but hatching and survival rates were low which could be attributed both to the cold wet weather in late May and early June and to disturbance. Mortality peaked at the small chick stage.

Of 32 occupied territories, 27 pairs laid eggs, and at least 14 pairs successfully fledged 48+ young. The outcome at two sites is unknown.

Human interference was confirmed or strongly suspected in all of the 16 complete failures. At one nest where the female and oldest chick were shot, however, the male successfully fledged the remaining 2 young. If sites are not closely monitored, brood reduction (as opposed to complete destruction) by human interference is hard to establish; one nest looked to have held a lot more than the flying young recorded.

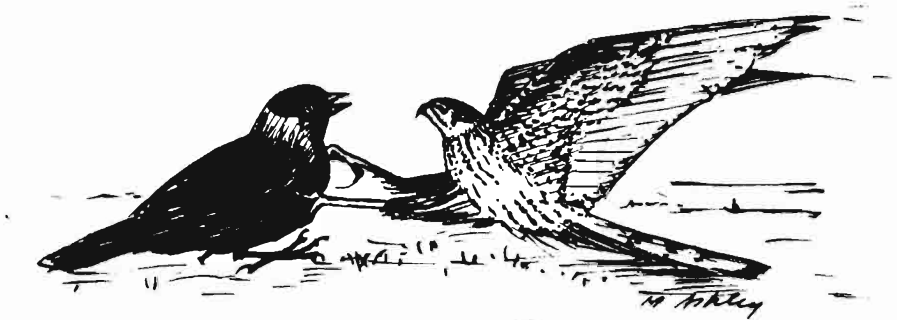
Young lagamorphs, especially Mountain

Hare, were frequent prey items brought to nests, no doubt reflecting local abundance. Although grouse were numerous this year, they featured less as prey items than usual, and were particularly conspicuous by their absence at the large chick stage. The high vole density carried on into spring and summer and it would be hard to imagine harriers not taking a large share of the voles. At one nest with 2 chicks, a vole lay uneaten. Pipits and Skylarks were the most frequent items.

The only tagged bird found this year was a female in South Lanark who fledged 3

young - her second successful year at the site. Tagged in 1993, she had moved 7 kilometres from her natal site.

Orkney - Another poor season with 31 females attempting to breed (26 in the West Mainland; 1 on Rousay; 4 on Hoy). Numbers of non breeding females were much reduced with only 6 (19 in 1996). Male numbers were estimated at 19 (14 - including 1 first year - in the West Mainland; 1 on Rousay; 4 on Hoy). Of the 31 nests: 10 probably failed before laying; 13 during incubation; 1 at chick stage; 7 succeeded, fledging 17 young.



Sparrowhawk

Mike Ashley

Sparrowhawk

Argyll - Six territories were checked in the Cowal study. Four are known to have fledged a minimum of 18 young. At one of the failed sites the female was killed by a Tawny Owl.

South Strathclyde - In Ayrshire 40 sites were checked. Thirty two - 80% (67% in 1995) - were occupied. Twenty nine nests were located, 27 of which contained complete clutches totalling 120 eggs. A total of 76 young fledged from 23 successful nests. Two females were found incubating 8 eggs side by side. The

situation persisted until just before hatching when it appeared that only one female remained. Six of the eggs hatched but only 3 young survived to fledge. Less than 1% of Sparrowhawk nests contain double clutches (Newton 1986) and very few records exist of success in this situation.

Orkney - Breeding was attempted at 4 sites: 2 on Hoy; 1 on the Mainland; 1 on Rousay. Another Mainland site was occupied but no nest was found. Only the Mainland nest appeared to be successful, the others failing either before or during incubation.

Goshawk

	Territories checked	Territories occupied	Territories known to have fledged young	Minimum no of young fledged	Number of young per successful territory
Lothian & Borders	19	18	11	34	3.09
Tayside	-	2	1	2	2
Central	-	1	1	4	4

Lothian & Borders - The Forestry Commission Research Division Goshawk research programme in the Borders ended in 1996. This work not only improved knowledge of the population but showed the high levels of persecution. Monitoring nest sites in itself gives some additional protection and allows persecution to be identified and reported to the appropriate authorities. During the 1997 breeding season monitoring was carried out as before but excluded Forest Enterprise ground. Despite the poor weather at nesting time, breeding success of Goshawks this year was comparable with last year.

As ever the limiting factors preventing expansion of the population are persecution and disturbance. Both were evident at a number of sites during 1997. On an unexpected visit to one site it was noted that both birds were flying around the nest site in a distressed state. The reason proved to be the gamekeeper's son beneath the nest with a shotgun. No nest robberies were identified but at a site on Forest Enterprise ground the tree was found to have been climbed and the eggs destroyed.

Tayside - Only 2 sites in Angus are known one of which - on ground where persecution is regular - unexpectedly fledged 2 young. Birds have been reported from 3 locations in Perthshire.



Goshawk

Doug Weir

Central - The only known site seems to have been used for the fourth consecutive year. Most of the identified prey was either corvid or Wood Pigeon.

Dumfries & Galloway - Continuing evidence of an increase in numbers. One noted aspect of this was a report of interaction between Goshawks and Hen Harriers at a communal harrier roost.

Buzzard

	Territories checked	Territories occupied	Territories known to have fledged young	Minimum no of young fledged	Number of young per successful territory
Argyll & Bute	-	111	86	142+	1.65
Lothian	60	45	43	123	2.86
Borders	26	26	15	18	1.2
Highland	94	90	67	146	2.17

Argyll - The figures above comprise 20 occupied territories monitored on Bute (the island is thought to hold a good few more pairs than this); 29 in the Glen Branter study area of the Cowal; 21 in the rest of the Cowal; 21 on Colonsay and Oronsay (out of 47 known territories checked); 20 on south west Mull. Of these areas Bute was the most productive with 2.20 young per successful territory, the Cowal (other than Glen Branter) the least productive with 1.00 chick per successful nest.

Lothian & Borders - In Lothian 60 territories were checked with breeding proved in 45. Productivity continues to be very high with very few failures detected. In Borders numbers continue to increase with the most notable spread being recorded in the Cheviot edge and lower ground east of the Leader/Tweed. The breeding population for the Borders is now estimated to be 500 pairs - a truly impressive recovery.

Highland - The bulk of data came from the main Easter Ross study area to the east of Tain but a substantial number of records also came from north and west Sutherland. In the main East Ross study area 56 pairs were carefully followed. Four pairs did not lay and 16 failed at the egg/small chick stage. Two nests found in this

study were only 100 metres apart. One of these raised 4 young and the other produced 2. Bigamy was suspected but not proven. Breeding success was unusually high in north and west Sutherland with only 2 of the 19 pairs monitored failing to produce young. The west had a drier, warmer summer than normal which may have assisted in the above average success. Chewed quills found on one cliff nest site suggest that one of the failures was due to Pine Marten predation. Breeding success in Strathspey is normally very high and the poor performance there in 1997 (0.8 chicks per pair laying) may be partly attributable to human interference with 4 out of the 5 areas monitored seeing an increase in Buzzard persecution.

Central - Fifteen pairs were recorded in one area with an approximate density of 1 pair per sq.km. An average of 2 young per nest was noted.

Orkney - Three pairs bred on Hoy; 2 of these failed during incubation but the third reared 2 young. At least one bird was present in the West Mainland in the early part of the year being resident in the Orphir/Stenness Hills between late April and mid May. It or another was on Rousay on 19 May.

Golden Eagle

	Territories checked	Territories occupied	Territories known to have fledged young	Minimum no of young fledged	Number of young per successful territory
Central Scotland	9	8	5	6	1.2
Tayside W of A9	-	19	1?	1?	-
Tayside E of A9	12	11	5	8	1.6
Argyll	58	53	25(26)	31(32)	1.24(1.23)
North East	18	18	12	14	1.16
Highland	94	43	43	48	1.12
Dumfries & Galloway	-	2	0	0	0



Golden Eagle

Bob Lambie

Central - In the 9 home ranges checked, 8 pairs and a single bird were recorded. Five successful pairs reared 6 young with a pair in a new home range producing 2. The survival of one chick was in doubt as the bird had all its tail and some of its wing feathers missing. A subsequent sighting of the still tail-less chick flying strongly in September, however, suggests that it may yet survive.

Tayside - Bad weather was the main problem with only one chick produced out of 19 possible nesting attempts west of the A9; a very depressing picture. A further 2 sites may have been robbed. Press reports of "too many eagles" do not reflect how badly they are doing in Tayside. East of the A9 they seemed to fare slightly better. Eight young are known to have fledged from 5 territories including

a chick from a site on Atholl Estate, the first time this site has been successful in a number of years.

Argyll - Overall productivity of successful pairs in 1997 was a little better than 1996 masking a rather patchy performance. Breeding success was generally good on the Cowal whose small population contributed 2 out of the 5 sets of twins recorded in 1997. In the north east part of the mainland study area, where eagles can usually perform better than the Argyll average, no successful pairs were recorded.

North East - Breeding success was very slightly improved in 1997 with 18 pairs fledging 14 young. A new pair was confirmed breeding for the first time and an additional chick may have fledged, although some sites which used to be productive have not been successful for a number of years.

Highland - A total of 94 pairs were checked throughout the Highland area.

Peregrine

Central - The trend of a slow decline in territorial occupation established over the last six or seven years continued, this being more marked in territories with limited access to the better prey prospects on low ground. This is in contrast to the continued expansion of the peregrine populations of south Scotland.

Tayside - Site occupancy West of the A9 was lower than normal but those that bred did quite well, raising a total of 30 young. East of A9 the situation was reasonably good with at least 27 young

Records were well distributed across the area although relatively more pairs were monitored in the west and south-west than in the north and east. Generally, information was somewhat incomplete for the middle part of the breeding season, so as in previous years the results show only ultimate breeding success figures. Overall breeding success at 0.51 chicks per pair is close to the long term average. As in 1996 the small number of pairs monitored in the Small Isles revealed unusually high breeding success with 4 chicks being reared from 4 nesting attempts. Better breeding performance in the north and east of the area is consistent with greater food availability during the summer than in the south and west. Breeding success on Skye was the poorest for a number of years, while in south Lochaber it was better than in previous years. One suspected instance of bigamy was noted in south Lochaber.

Dumfries & Galloway - Only 2 pairs attempted to breed, one of which failed at hatching and the other was either robbed or failed to lay at all.

fledging from 12 successful nests. A pair disturbed early on, when one bird was shot, had another bird move in but this replacement pair also failed. Another pair failed for third year in succession. In Angus at least 3 clutches fell victim to wet conditions in May. A further 2 sites in Angus had cold eggs when visited on 3 and 7 May respectively when the observer had to locate the sites using a compass, the mist being so dense. It was suspected that the females had deserted and been forced to find food. Three Clova sites, which usually produce young, were



Peregrine with chicks

Jim Young

	Territories checked	Territories occupied	Territories known to have fledged young	Minimum no of young fledged	Number of young per successful territory
Central					
Ochils	14	4	2	4	2.0
Stirlingshire	15	11	3	5	1.66
Dunbartonshire	6	5	3	6	2.0
Tayside					
Perthshire W of A9	32	27	12	30	2.5
Perthshire E of A9	17	16	12	27+	2.25+
Angus	37	29	20	20	1.0
Argyll	27	18	10	18+	1.80
Lothian & Borders		47	22	51+	2.31
Highland	32	28	16	28	1.75
S Strathclyde					
coastal	9	6	3	6/7	c2.0
inland	32	19	5	9+	1.8+
Dumfries & Galloway					
coastal	31	23	16	33/34	c2.06
inland	70	57	35	74+	2.11
North East					
inland grouse moor	50	29	4	10	2.5
inland other	39	22	10	18	1.8
coastal	20	14	20	36	1.8
Orkney	17	9	4+	?	?

not checked. An average year compared with the 2 previous breeding seasons.

Argyll - Twenty out of the 27 territories monitored were again in the Cowal.

Lothian & Borders - A very bad year with 25 out of 47 pairs failing - 10 failures due to natural causes. A minimum of 51 chicks fledged. Productivity was about half that of 1996.

Highland - Overall a below average year. The total number of sites monitored has decreased and the small sample sizes from some areas make comparisons difficult. A number of sites only received a single visit; others were not followed up to fledging. Thus the total of 28 young fledged from 16 nests may be an under estimate. A new site in Easter Ross was found in an old Golden Eagle eyrie. Unfortunately the outcome of this site is unknown. There is evidence to suggest that 2 nests in Easter Ross were robbed. One of these contained small young.

South Strathclyde - Peregrines in south west Scotland produced more young than ever before recorded, the previous best being 1994. This was despite human interference - accounting for between 13% and 17% of all failures - though this was mainly in south Strathclyde. Dumfries and Galloway sustained its reputation as one of Scotland's most productive areas for peregrines. Over 100 young are known to have fledged.

North East - This was not a good year. On all grouse moor sites there was minimal fledging success and at least 2 birds were picked up dead. Occupancy

on Grouse moors has declined by 58%, although poor spring weather may be partly to blame for the poor productivity the main reason is believed to be increased persecution. Only 22% of occupied sites (4 sites) produced young. These are situated on only 3 estates out of the 18 which Peregrines occupy for breeding. A simple comparison with pairs breeding at sites with other land uses shows a clear difference. Ten occupied sites on montane deer forest reared 0.6 young/occupied sites, with 4 pairs being successful despite the habitat being less productive and the climate more extreme. Other inland pairs were more successful with 12 sites occupied and 6 pairs successfully rearing 12 young. Only 4 sites checked were unoccupied. Birds at coastal sites had a poor year with low fledging success. Only 4 out of 14 occupied sites were successful. This probably reflects higher environmental pesticide levels and poor weather. No decline in occupancy was noted unlike the inland breeding sites. No new sites were found in lowland areas. There has been a long run of years with general increase in numbers with good breeding success, especially on grouse moors, and a plateau in the population would have been expected eventually in the absence of persecution. However there has been a recent peak and subsequent decline.

Shetland - Although there are potentially as many as 12 territories the only pair located did not appear to nest.

Orkney - Signs of occupation were noted at 17 sites but breeding was proved only at 9. Of these young were known to have fledged from 2 mainland sites, one Hoy site and possibly one South Ronaldsay site.

Merlin

	Territories checked	Territories occupied	Territories known to have fledged young	Minimum no of young fledged	Number of young per successful territory
Perthshire	45	28*	13(+3?)	34(+9?)	2.61
Angus	20	15**	8(+2?)	26	3.25
Argyll	8	8	6	17	2.83
North-East	43	43	29	>90	>3.10
Lothian & Borders	56	27	21	67	3.19
Highland	43	41	18	56	3.1
S Strathclyde	34	27	15	39+	2.6
Dumfries & Galloway	19	18	8	19+	2.37
Central	4	1	0	-	-
Orkney	58	19	15	54	3.6

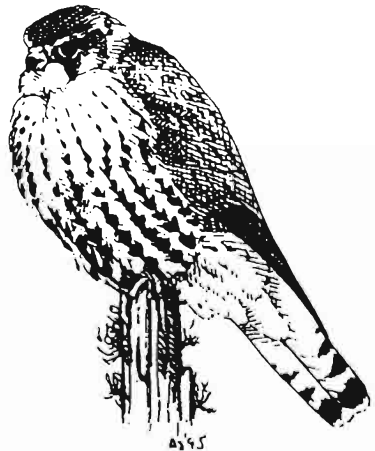
* Includes 5 tree nests

** Includes 1 tree nest

Tayside - In Perthshire a slight decline in the number of breeding pairs was evident again particularly in the west. The cold, wet and snowy weather may have prevented pairs breeding. This appeared more evident in the Rannoch area. Only 5 tree nests were found in 1997 (10 in 1996). Late heather burning over large areas is the suspected cause of 2 territories either failing to breed or moving. The planting of Scots Pine into late May under the Native Pinewood Scheme is suspected of causing the failure at another site.

In Angus, although the breeding season was generally one of the wettest on record, the earliest part had been dry and warm. The outcome was that pairs which established early were generally successful, though there was higher than usual brood depletion. Those starting late generally failed. Overall, the outcome was better than might have been expected, given such adverse weather conditions. Three of a ringed brood of 5 were found dead in the nest, the other 2 having

fledged. One brood disappeared from the nest. An adult male nest trapped at another site proved to have been ringed as a pullus in Deeside. Seven broods were colour ringed.



Merlin

Andrew Stevenson

Argyll - Occupied territories were recorded on Islay, Mull, north Argyll, mid Argyll, Knapdale, Kintyre and Cowal. On Mull there were more breeding season records reported than usual with records from 3 areas that have no known breeding history.

North East - Lower Deeside had full coverage and a good success rate matched that of recent seasons. Some brood reductions were noted and one brood was lost due to the heavy rain in late June. Only partial coverage on mid and upper Deeside was possible with some areas such as Balmoral and parts of Glen Gairn and Braemar not being checked at all. In Donside and Moray full coverage of all areas visited in recent years was possible and the number of sites occupied showed a further increase with some new and alternate sites being found. Two broods, however, were lost to the bad weather.

Lothian & Borders - Fifty six territories were checked over the Lothian and Borders region and a minimum of 67 young were known to have fledged. Some sites in the Moorfoots were not monitored as well as previous years and only 2 sites are known to have fledged young. A minimum of 12 young fledged from 5 sites south of the Tweed.

Highland - Although information was received from 41 nesting territories only 28 pairs were followed through to fledging. Only those known to have been successful, therefore, were used to measure the breeding success. Overall in Highland area Merlins had a fairly successful year but on a more localised basis areas like Moray and Nairn had a virtual disaster due to the prolonged heavy rainfall at fledging. Three whole

broods were lost at this stage due to starvation. Other signs that food was in short supply include very low pre fledging weights, abnormal behaviour such as young birds treating the observer as if they were a parent bird approaching with food and the lack of prey remains at plucking posts and in the nesting areas. A Mole was the only prey item discernable at one nest when the young were three quarter grown. In Sutherland and Easter Ross, where the weather was less severe, things were slightly better, with only 3 pairs in Sutherland known to have failed. A pair of Ravens were thought to have been responsible for one failure. Two pairs located in Wester Ross also appeared to fail, however the overall productivity for the whole of Highland region was in the upper range with 4.2 being the mean clutch size of the 25 pairs found on eggs. Of the 28 pairs followed right through, the average was 2.0 young per pair laying eggs.

Dumfries & Galloway - The thinly distributed population continues to enjoy reasonable success, with productivity of ground nests on keepered moors on a par with tree nests elsewhere.

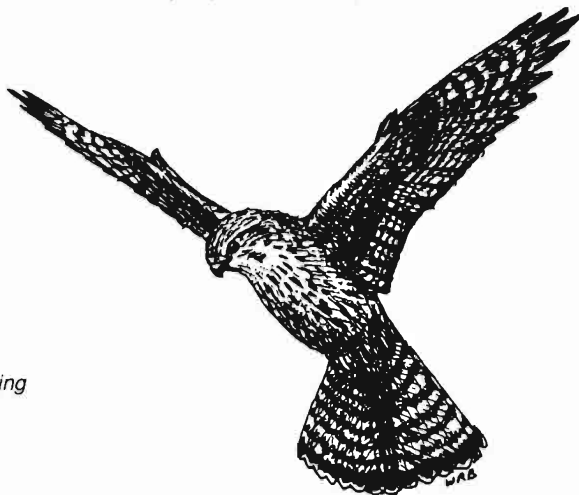
Central - Of the 4 territories checked confirmed breeding was found in only one and this failed at the egg stage. The other 3 territories were apparently unoccupied. Occasional records from the southern area of the group are reported and one record from the west of the area, but no breeding was confirmed.

Orkney - Out of 58 former sites checked only 19 showed signs of occupation, 11 of which were in the west Mainland, 7 on Hoy and one on Rousay. Fifteen pairs are known to have raised a total of 54 young, the best year since 1981 when the study

began. Two of the nests which failed had been predated during incubation. One pair having had its first clutch stolen relaid and fledged young. A total of 347 prey items were collected at nest sites of which 91% were birds, (46% Meadow Pipits; 22% Skylarks; 12% House Sparrows). Thirty one invertebrate prey items

consisted of Emperor and Northern Eggar Moths and a single unidentified dragonfly.

Shetland - Coverage in Shetland is not as intense as it has been and only 16 nests were located. Fourteen pairs successfully raised at least 44 young.



Kestrel hovering

Bill Brackenridge

Kestrel

	Territories checked	Territories occupied	Territories known to have fledged young	Minimum no of young fledged	Number of young per successful territory
Ayrshire study area	47	37	26	71+	4.6
Argyll	-	27	24	99	4.1
Highland	26	24	20	92	4.6
Orkney	24	24	16	?	-

Ayrshire Study Area - February was a really bad month and with gale force winds, bitter cold and ample rainfall there was little sign of Kestrels coming onto territories. By contrast March and April, though still cold, were reasonably dry and early indications were of high vole numbers. Occupancy of nesting territories

was marginally down on last year's 80% to 77%. Most birds hung around for 3 to 4 weeks before laying, due to the weather, but it was soon obvious by the record clutch sizes that this could be a very good year and the presence of 6 breeding pairs of Long-eared Owls was confirmation of this.

Despite a wet early May and some mixed weather into the second week in June, there were really no consistently bad spells and this - combined with the peak vole numbers - resulted in the birds being very productive.

Only 2 of the first egg dates were in May, both in lowland nesting territories. All the upland dates bar one were in April. For the first time since the work began in 1972 a pair laid in March, one egg being found on the 29th in the very territory which invariably has the first egg every season. Trapping hens in this territory on a regular basis has shown that the different hens were not related nor were they hatched at this site. Unexpectedly only 4 eggs were laid compared to the usual 5 or 6.

Clutch sizes were the highest ever recorded in the area (average 5.8) and included 18 clutches of 6 and one of 7. This continues the recent trend of high clutch sizes during the 1990s. One pair at Culzean laid one egg in a nest box then moved to the second box in the wood where the hen laid a further clutch of 5.

Fourteen adults were trapped under licence, the average weight of 11 hens was 294gms (281 in 1996) ranging from 282 - 306 indicating that the birds were in good condition. Voles were the main prey found at nest sites and food was obviously abundant. At one cliff site 38 prey items were counted lying uneaten at the entrance to the hole and the 5 young had bulging crops. Three hens were retrapped for the second year in the same nest sites. Three of the 4 failures occurred at the clutch stage. Eggs were stolen (by humans) on 2 occasions and the close proximity to a breeding pair of Peregrines put paid to another Kestrel

attempt. One brood of 5 young disappeared from a nest box at the ideal age for removal for falconry. Signs on the tree indicated human predation.

Productivity was extremely high with 4.6 young being raised per successful pair and an astonishing 3.9 for all breeding attempts. In total 71 young were ringed. An adult female found dead in a territory in March had been ringed in the same territory as an adult in 1991, a good age for a Kestrel.

Argyll - Of 12 occupied territories monitored in the Cowal, 11 sites were successful fledging 51 young. Vole numbers were high in the Glen Branter study area. Thirteen sites monitored on south west Mull produced a total of at least 40 young and 2 sites on Bute produced 8 young.

Highland - Twenty five pairs attempting out of 26 sites checked was 3 less than 1996. The mean clutch size at 4.9 was 0.2 lower than last year, although the mean brood size remained the same as 1996 at 4.6. Once again most records came from Sutherland and Easter Ross and over half of these were from nest boxes.

Orkney - In the west Mainland birds bred at 13 sites and were present at a further 6. Six of the nests were on the ground, 4 on sea cliffs, and one of each of the others in a tree, a building and a nest box. Seven nests are believed to have fledged, 4 failed and the outcome at a further 2 is unknown. Single pairs also bred successfully in the east Mainland, Eday and Sanday while birds were present at single sites on Hoy and South Ronaldsay.

Raven

	Territories checked	Territories occupied	Territories known to have fledged young	Minimum no of young fledged	Number of young per successful territory
Central Scotland/ SW Perthshire	40	34	23	49+	-
Argyll	-	58	40	121	3.02

Central Scotland & South West Perthshire - Forty territories were checked during 1997. Thirty four of these



Pair of Ravens displaying

Jack Orchel

were occupied by pairs; a single bird only was recorded at one territory; 5 territories were apparently unoccupied. Twenty three pairs nested successfully, with 16 of them rearing 49 young while from the other 7 pairs an unknown number of young were reared. The breeding performance was better than 1996, possibly due to slightly better weather in February and March when Ravens lay and incubate.

Argyll - On the Cowal 21 sites were located, 14 of which successfully fledged 47 young. Two sites failed when the young were large, for no apparent reason as the adults were still present in the area after the breeding attempts failed. Poor breeding success was recorded on Colonsay where only 2 out of 7 sites reared young.

Lothian & Borders - Two pairs were reported in the Pentlands and one in Berwickshire with a further 8 elsewhere in the region.

North East - One pair each were reported from upper Strathdon and upper Deeside but there were no records of confirmed breeding.

Tayside - East of A9 a slight increase was reported.

Winter roosting Red Kites

One of the most helpful facets of Red Kite behaviour which greatly assists population monitoring, is their tendency to gather for the night in communal roosts during the winter. While many of the established pairs roost within their breeding territories, a number of adults, some unmated, immatures and juveniles, gather in this way.

As many birds fly to the same area of wood to roost, it is possible, using binoculars and telescopes, to read their unique wing-tags and, in this way, we can keep track of how many known individuals are still present in the core area. Without these gatherings, collecting this sort of information would be much more difficult.

Three communal roosts were visited during the year and were occupied in both winter periods (1996/97 and 1997/98) by Red Kites. Two were in the core area and held up to 10 birds each, consisting mainly of known breeders and only a few immatures. The third and largest roost was at the edge of a sheep walk and hill ground and held up to 21 birds in the 96/97 winter and 40 birds during the 97/98 winter. In both periods it was largely composed of first and second year non breeders. Of the 19 first time breeders recorded in 1997, 15 were seen at this major roost during January and February 1997.

The total count of birds using these roosts in December 1997, compared with the estimated population, suggests that other undiscovered roosts probably exist in the area.

Counts of birds using the communal winter roosts suggests that many more of the kites now being reared in the

Highlands, are remaining throughout the winter. This has important implications for the population because the survival of young birds that remain within the core breeding area in their first year has proved to be considerably higher than those that disperse to winter elsewhere.

These roost gatherings serve as an important social function. It is probably at these roosts that young birds meet potential future mates and, as with humans, even older paired birds may sometime become distracted.

The central Scotland release programme

A second release site was established in central Scotland in 1996, when 19 young were imported from Germany. Eight birds became resident and used a communal roost in the vicinity of the release site during the 1996/97 winter. The remaining 11 kites dispersed in the autumn and 8 were located in various wintering grounds from south west Scotland to Yorkshire and Devon.

By the summer of 1997, 10 birds were located either near to or at the release area, but others may have summered elsewhere.

A further 18 birds were brought in from the same area in Germany in 1997 and were released in July.

A communal roost again built up during the autumn and peaked at 18 birds during December 1997. It comprised of 6 released birds from 1996 and 10 from 1997. In addition, 2 wild bred birds from north Scotland were present, a wing tagged bird from 1996 and an untagged juvenile from 1997.

Acknowledgements

This report has been compiled from data received from the Scottish Raptor Study Groups. Our main correspondents are listed below, although the data was gathered by a far wider group of fieldworkers than it is possible to acknowledge individually. Doubtless there are those deserving of mention whom we have omitted. For this we apologise.

South Strathclyde - Dick Roxburgh, Gordon Riddle, Ricky Gladwell and Chris Rollie.

North East - Jon Hardy, Robert Rae, Graham Rebecca, Ian Francis and Brian Cosnette.

Tayside - Patrick Stirling-Aird, Keith Brockie, Bruce Anderson, Wendy Mattingley, Ron Downing, Bradley Yule and Ron Lawie.

Dumfries & Galloway - Chris Rollie and Ricky Gladwell.

Lothian & Borders - George Carse, Alan Heavisides, George Smith and Malcolm Henderson.

Central - Patrick Stirling-Aird, Dave Dick and Don MacCaskill.

Argyll - Roger Broad, Mike Gregory and Dave Anderson.

Highland - Roy Dennis, Colin Crooke, Brian Etheridge, Jeff Watson, Bob Swann and Jim Craib.

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