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CO-ORDINATED GOOSE COUNTING ROUTES ON THE  
ISLAND OF ISLAY, ARGYLL:  
SECOND EDITION



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Comments: This revised report describes in detail the counting routes and methods developed for assessing the populations of barnacle geese and Greenland white-fronted geese wintering on Islay, which supports over 60% of the Greenland population of the former species and over 25% of the total population of the latter one. Because of interactions with farming interests, regular assessments of the populations are required, and this report should enable a standard and researched method to be used for these. The results of the method to date will be reported separately. This report revises and updates CSD Report 734, which previously presented goose count routes on Islay.

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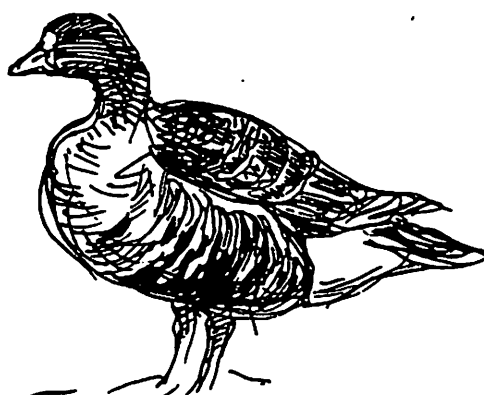
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## 1. INTRODUCTION

The effective conservation of goose populations requires accurate information concerning numbers and distribution. Islay, the most southerly of the Inner Hebrides, is the most important area in Britain for wintering geese. In winter the island holds over 25% of the world population of Greenland White-fronted Geese Anser albifrons flavirostris (GWGS 1990) and over 60% of the Greenland race of Barnacle Geese Branta leucopsis (Fox, Ogilvie, Easterbee & Bignal 1990). Conservation of geese on Islay is thus crucial for the continued well being of these populations.

Numbers of geese on Islay have been monitored in a long series of autumn and spring counts by the Wildfowl Trust, now Wildfowl and Wetlands Trust (Ogilvie 1983). However, these two winter counts provided only a very limited assessment of changes in numbers through the winter, and no information on the specific use of farmland on a field by field basis, and were not strictly comparable between years.

With the passing of the Wildlife and Countryside Act 1981, both Greenland White-fronted and Barnacle Geese gained protection from shooting although DAFS licences have been issued to shoot geese to prevent alleged "serious agricultural damage". This protection brought conservation problems on Islay to a head, with numerous claims for shooting licences or compensation following cases of alleged serious agricultural damage. There was thus an urgent need for much more detailed information on the size and distribution of the Islay goose populations which would enable the Nature Conservancy Council to respond to this changed situation.

The Greenland White-fronted Goose Study (which had been carrying out studies on this race of geese for some years), and the Nature Conservancy Council thus developed a goose monitoring programme for Islay. The aim of this programme was fourfold:

1. to assess accurately the size of the Islay goose population each month through the winter;
2. to estimate the accuracy of these counts, and to investigate factors affecting this, by undertaking paired counts on consecutive days each month;

3. to investigate the distribution of geese on the island in greater detail than had previously been attempted; and
4. to establish a detailed data-base with which to plan conservation strategies for these important populations.

When planning the counts, the most important consideration was that all potential goose feeding areas should be counted in the course of a single day. Furthermore, these areas should be counted in such a way as to minimise the possibility of under- or over-recording. On this basis observed changes in numbers and distribution of geese could be regarded, with greater confidence, as reflecting 'real' changes in numbers present. Under- or over-recording can be a major problem, especially for Barnacle Geese which can move in large flocks in response to short-term disturbance.

A period of intensive exploratory work was undertaken in spring 1983 aimed at identifying all potential goose feeding areas. The basic route undertaken by the Wildfowl and Wetlands Trust was modified to include additional areas. Island counts were made in February, March and April 1983 during which time the route and method were further developed. From 1983/4 until 1985/6 the route and counting procedure has remained largely unchanged, although some additional areas have recently been included reflecting increased knowledge of the geese or changed patterns of distribution. The improvement in knowledge of potential goose areas continues, as is indicated in the revision of this report. In 1986/7 counts were undertaken under contract by Dr M A Ogilvie. Since 1987/8 counts have been again undertaken by NCC, either twice or three times each winter.

This report presents the routes used in sufficient detail to allow them to be repeated in the future. The results collected, and their implications for goose conservation on Islay are presented elsewhere. This report updates CSD Report 734 (Signal *et al.* 1987) with recent changes to the census route and slight improvements in count methodology. These are essentially minor, and usually involve checking additional areas which are only rarely used by geese. The most significant change has been to count the Gruinart and Gorm areas using two teams. This gives extra time to resolve problems in the Gruinart area should there be major goose disturbance during the count. It also enables the problem area of Blackrock/Esknish/Uisgeantsuidhe to be counted simultaneously by two teams, which resolves possible problems with flock identification on these farms.



## 2. GOOSE AREAS ON ISLAY

Despite the potential problems of interpretation, a sub-division of Islay into areas is necessary in order to arrange the logistics of counting all the potential goose areas on the whole island in a single day (Figure 1). Whilst it is impossible to draw discrete boundaries around "sub-populations" on the island, boundaries were drawn to minimise the effects of movements between areas. This was possible using data obtained by following individually marked geese (Greenland White-fronted Goose Study unpublished). There may be greater short-term movement between areas for Barnacle Geese than for Greenland White-fronted Geese and this has been investigated by S Percival. However, the species also seems to use defined core areas, with several more or less discrete flocks using different parts of the island (Percival 1988). Figure 2 shows the areas used by different core groups of Barnacle Geese in Percival's study. Most count area boundaries relate well to the different ranges of core groups with the exception of the Gruinart area which is used by four different groups of geese (Figure 2). However, this is a known problem area. The Laggan, Glen and Oa areas (Figure 1) are used by two separate groups of Barnacle Geese (Figure 2). However, the greater separation of potential feeding areas leads to a lower risk of confusion or double-counting than on the South Gruinart area.

Maps showing the precise boundaries used in counts are shown after the description of the route for each area.

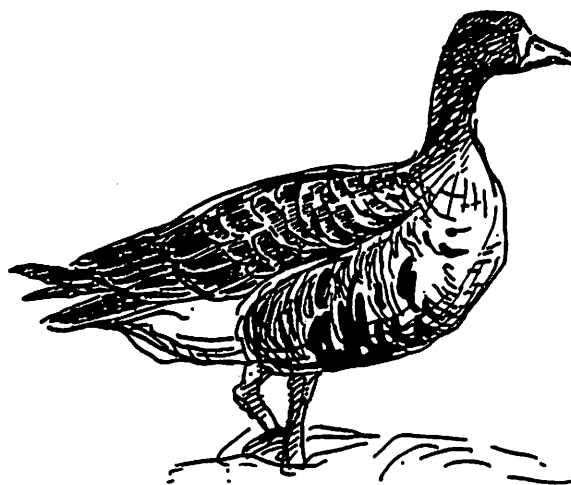


Figure 1 Goose count areas on Islay

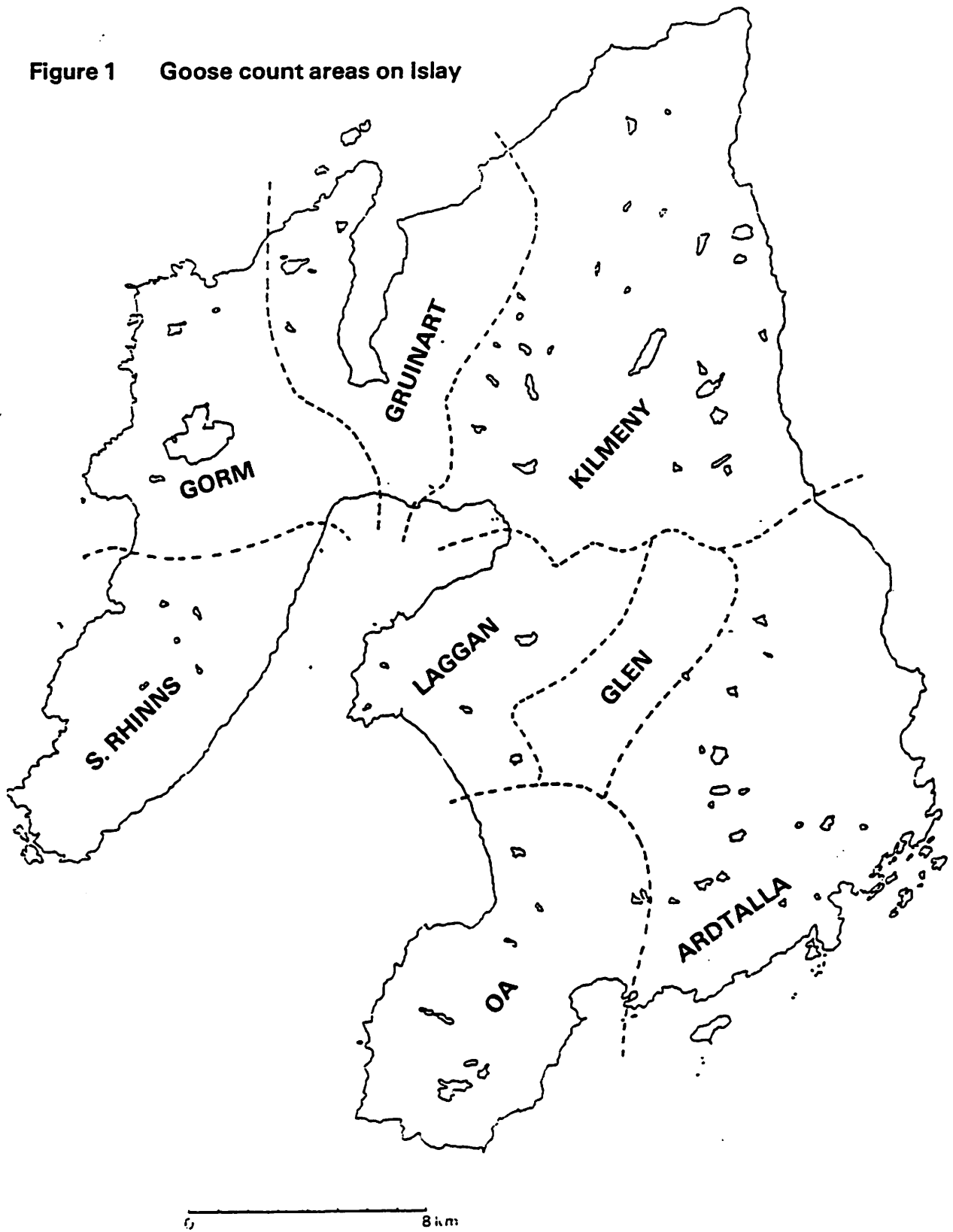
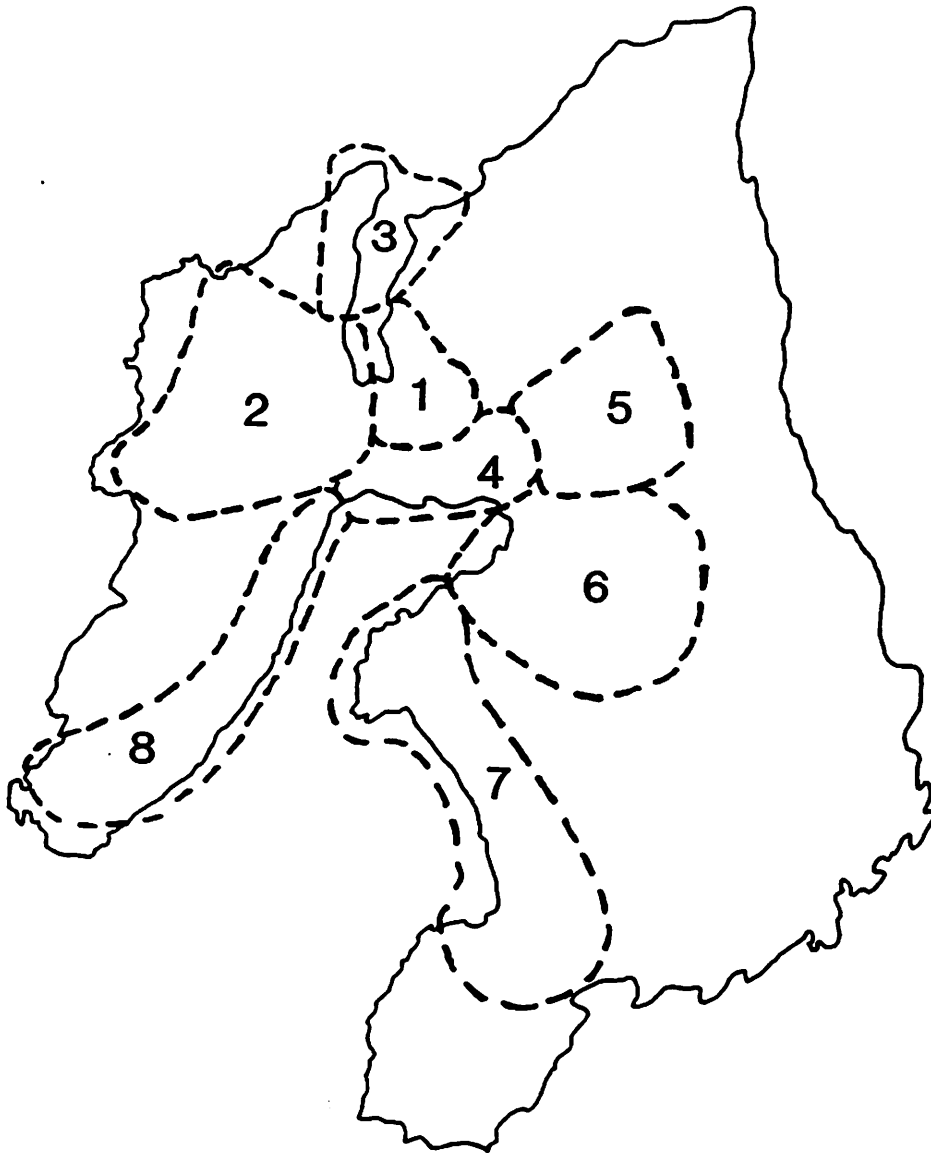


Figure 2.

CORE GROUPS OF BARNACLE GEESE ON ISLAY





### 3. ORGANISATION OF THE COUNTS

Counts are undertaken by ten people counting in five teams using five vehicles. The areas are divided between teams as follows:

- TEAM A Rhinns, Oa and Ardtalla
- TEAM B Laggan, Glen and part of Kilmeny
- TEAM C Gruinart
- TEAM D Kilmeny
- TEAM E Gorm

Before each count all teams generally meet at Carnain (NR 318630) to receive instructions and distribute record sheets.

The precise timing of the count varied and depended on the timing of the departure of Barnacle Geese from their mud-flat roost at the head of Loch Indaal. This in turn was determined by the lunar cycle. During the period of the full moon and especially when there has been both full moon and clear skies, the geese feed at night. This means that Barnacle Geese are slow to leave the roost in the mornings and the start of the count can be seriously delayed. In contrast, during new moon periods there is no nocturnal feeding and the geese leave the roost promptly at first light. These are the ideal conditions for an island census since an early start can be made and a full day spent counting. This eliminates the risk of errors due to birds moving from the roost in small numbers over several hours, and maximises available daylight for counting in the 'short days' of mid-winter. Wherever possible counts were made in the period of the new moon each month. When this is not possible, it is generally better to work the Kilmeny route in the reverse direction ie starting at Keills and working towards the Bridgend roost. This minimises problems of birds leaving the roost mid-morning to settle in areas already counted.



#### 4. GRUINART

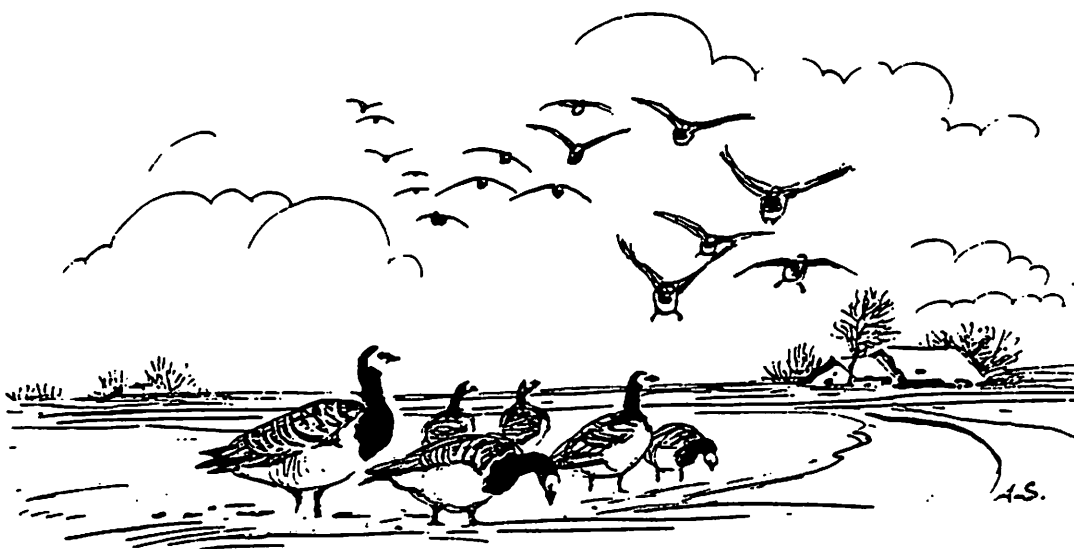
Starting from Carnain (NR 318630) at the head of Loch Indaal (Figure 3) drive towards Gruinart area counting to the north of the road. First stop at Borichill Mor, leave vehicle and walk to hilltop (Lamh-bheinn), then scan in distance towards Craigens for distant flocks of Barnacle and White-fronted geese north of the road. It is often easier to get flock estimates for some fields from here rather than closer. [Scanning the Lyrabus and Eresaid areas to the west of the hill is done by the Gorm team.] On the way to the Corsapol farm track, scan fields north of Tighnacachla, some of which cannot be seen from elsewhere. Drive up Corsapol farm track, stop on this track and scan south Gruinart flats, Craigens flats, and Craigens upper, recording geese on a field by field basis. Scan across to Grainel, noting the position of flocks to check again on return journey. Scan towards Tighnacachla as there are often White-fronts in rushy fields at the back of the house. Drive on to Corsapol, stop here and walk to the fields behind Craigens and Corsapol. Drive from Corsapol to Craigens on farmtrack, checking fields to the east of Craigens (NR 3067). Some of this area may have been checked earlier by distant scanning.

Collect the key to the Killinallan gate from farm and then drive to Aoradh noting position of any flocks counted on west side of Loch and on south flats. It is especially important to monitor movements of flocks already counted. From Aoradh count the west flats and fields below Bushmill all the time checking whether any of the geese noted earlier have moved.

Having counted the flats, return quickly to Bun-an-uillt stopping en route to check fields east of the road for Barnacle Geese (walk) and scanning across Loch Gruinart to Gruinart Farm and Cottage. Check fields south of Bun-an-uillt for Barnacle Geese. At the Killinallan gate it is useful to leave one observer to check goose movements around the north end of the loch, whilst the vehicle checks the north-east side of Loch Gruinart. Drive on to Killinallan, stopping to scan across Loch Gruinart towards the sloping fields below Leckgruinart, Garra-eallabus and Kilnave at the points indicated in Figure 3. Drive towards Gortantaoid, back checking all the time for Barnacle Geese and Whitefronts. Observer at Killinallan gate meanwhile checks for flock movements between Ardnave and Killinallan. Having checked the whole area east of the loch, drive rapidly for Ardnave, collecting observer en route.

Drive to Grainel, checking geese in fields north of Aoradh and in fields north of entrance to Grainel drive. At Grainel, check fields beyond house which are not visible from elsewhere, and scan particularly to the west from Grainel.

Driving north to Ardnave, count the geese above and below road en route as a check on earlier counts. Park at Ardnave and walk to the ruined chapel in the middle of Ardnave Point, scan and listen for geese on Nave Island, particularly in late spring (March and April). Watch out for flock movements between Ardnave and Killinallan and also from Ardnave down the coast to Sanaighmor. Having walked up the spine of the point, separate and each observer walk independently back to the car along east and west sides checking small areas of dead ground for Barnacle Geese. One observer at least should walk to end of point where there is an area of dead ground not visible from the chapel. Whilst a high proportion of the point can be checked from the 'spine', it is important to check dead ground at east and west coasts of the point as geese often 'hide' here if they have been disturbed frequently. Drive back to Aoradh.



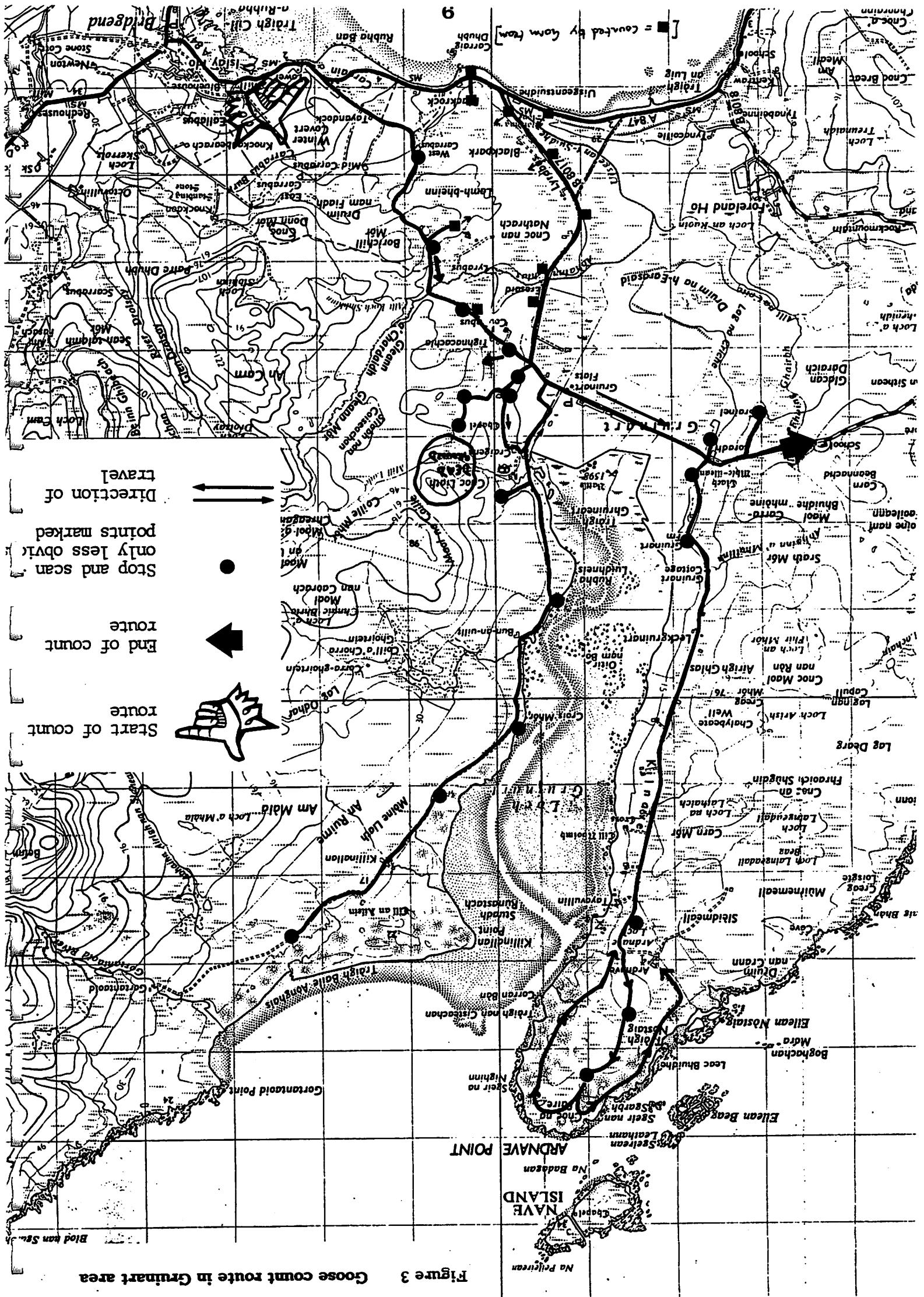


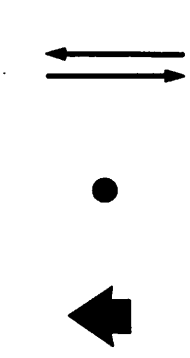
Figure 3 Goose count route in Grunart area

Start of count route

End of count route

Direction of travel

Stop and scan points marked only less obvious



ARDNAVE POINT

ARDNAVE ISLAND

Figure 3



## 5. GORM

Start from Carnain (NR 318630) at the head of Loch Indaal (Figure 3). Before counting Gorm area proper, this team checks southern parts of the Gruinart count area at the same time as the start of the Gruinart count.

Drive north along the minor road past West Carrabus. Count all geese to the south and west of this road. First stop at Borichill Mor, leave vehicle and walk to hilltop (Lamh-Bheinn), and then scan rough ground to west and north for Whitefronts and behind the Eresaid Wood. Continue along the minor road past Coullabus counting all geese to the south and west of the road. This should be done simultaneously with the Gruinart team counting north and east of the road. At the junction with the Gruinart road turn left towards Lyrabus, counting geese on both sides of this road. Stop below Blackpark and walk uphill to check rough ground and pools for Whitefronts. There is considerable 'dead ground' here. Continue on this minor road to the A847, turn left, stop at first gate on left, walk up field and check dead ground for both Whitefronts and Barnacle Geese. Count coastal grassland below road as far east as Blackrock. Return along main road until about 200 yds west of Uisgeantsuidhe and walk (or drive if dry) up to fence at top of ridge. Scan north-east to see into tops of fields east of Lyrabus road. Turn back along A847.

At the road junction turn right and drive to Sanaig to start in Gorm area (Figure 4). Past Coille, stop and scan fields at Kindrochid for Greenland Whitefronts. Scan the arable or intensified fields south and west of Sanaigmhor. From the old cottage before Sanaigmhor carefully check the marshy fields south of farm and also the rushy hill slopes east of Loch Ruime where disturbed Whitefronts sometimes shelter. Drive through farmyard and check fields to the north and east of the farm where large numbers of Barnacle Geese sometimes occur. Then drive back to the junction with the telephone box and check across to the fields below Kindrochid, Leek and Ballinaby from a distance. Fields closer to Ballinaby and Leek become dead ground further along the road and thorough scans to the west here are always advantageous. Then turn right along north side of Loch Gorm, check Loch Gorm for Whitefronts and count Ballinaby fields both sides of road. Stop at Saligo, walk to Smaull and check both the intensified and machair fields. Alternatively, walk towards Smaull from Ballinaby, which is a quicker route and visibility is aided by elevation. Drive to Kilchoman via Coul Farm, walking out to back of Coul as far as the coastguard lookout. There is dead ground here although some of it can also be seen by scanning across from Kilchoman Church (on clear days).

Drive up to Kilchoman and stop in front of the cottages and scan back to Rockside fields and Coul in the distance. Drive on the minor road on south side of Loch Gorm to Sunderland checking all fields and Loch Gorm. Drive to junction by Rockmountain and turn left checking ground between Sunderland and Grulinmore. Drive to Rockmountain scanning distant fields, then drive back to A847 via Foreland only counting to east of minor road. About 0.5 km after Rockmountain, stop and check to north scanning across to fields below Grainel, and into the valley bottom where there are pockets of intensified grassland occasionally holding small numbers of Whitefronts.

### Note

Whilst this route was originally counted from the north to south, as presented here, there is some merit in working it in the reverse direction, ie clockwise around Loch Gorm to finish at Sanaig. This places the sun behind the counter, rather than in eyes, when coming round by Ballinaby and Coul. It also means that the times of counting Sanaig (by Gorm team) and Ardnave (by Gruinart team) are more closely related. Since Barnacle Geese movements frequently occur between these two areas there is potential risk of error if they are counted at different ends of the day.

However, if Gorm and Rhinns areas are being counted by the same team, it is probably better to work progressively south, starting at Sanaig.

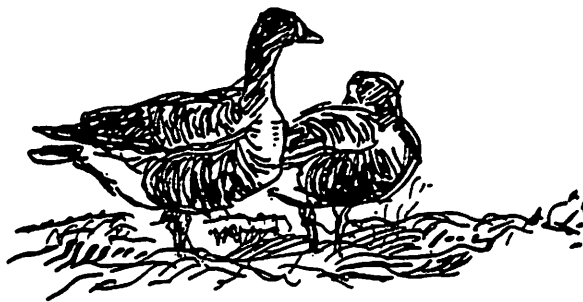
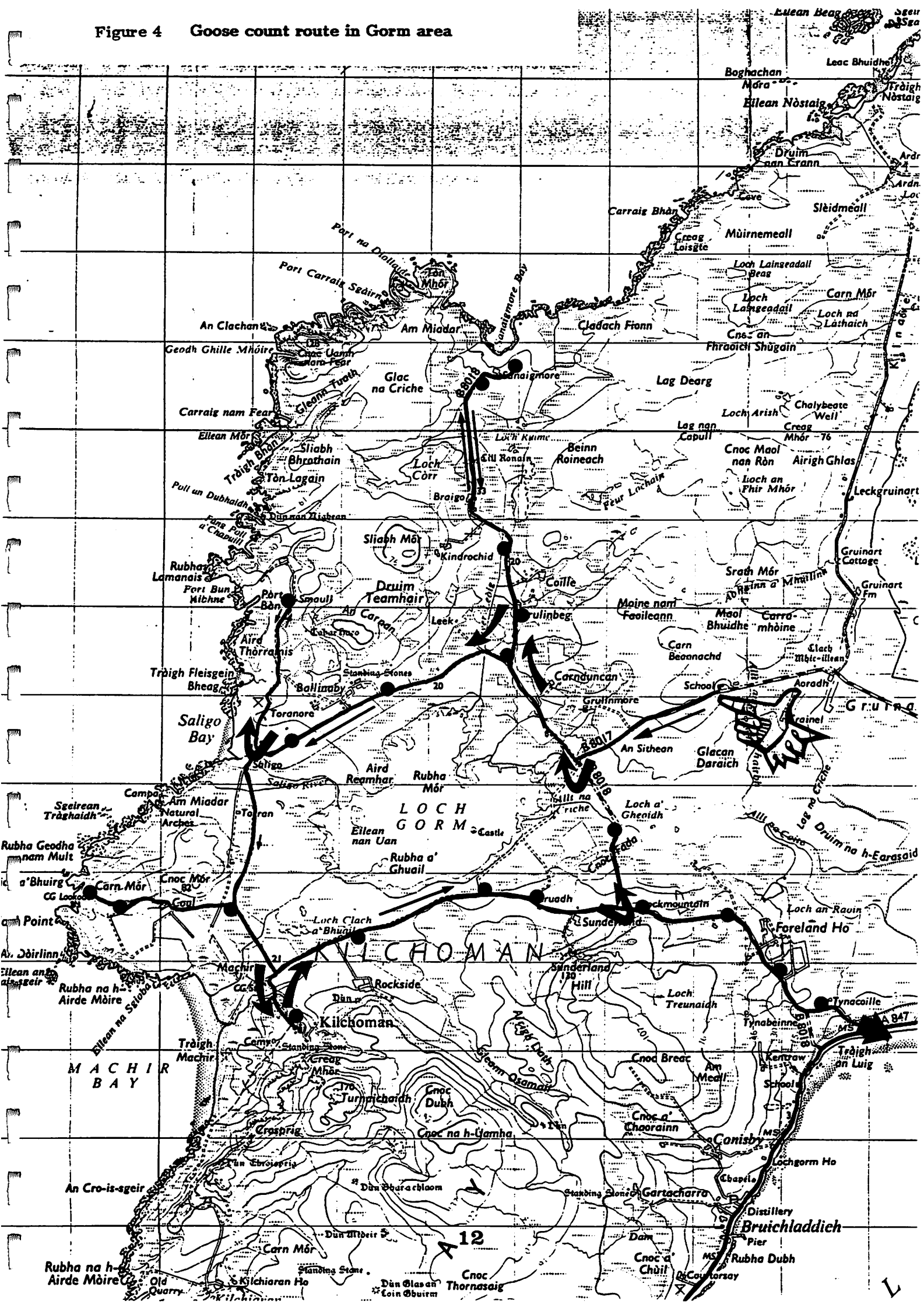


Figure 4 Goose count route in Gorm area



## 6. RHINNS, OA AND ARDTALLA

Start at Carnain. Drive west along A847 and start counting (Figure 5), where the minor (now closed) Lyrabus road joins the main road. Scanning Kentraw fields from here is necessary as some of these fall out of sight closer to the farm. Drive up to Tynacoille and check fields here. Stop at end of track and scan across to rough ground at Tynabeinne before returning to A847. Drive up to Kentraw and check fields behind if necessary. Then drive south to Conisby checking low ground by scanning back from track above Conisby. Scan towards Gartacharra, drive south to Coultorsay, then drive up to farm and check fields to north. Drive south to Port Charlotte via Octomore checking fields to west of road along the route.

From Port Charlotte drive to Bolsay. Whilst the observer walks from the track to scan back to fields above Craigfad, drive on to Bolsay and check intensified fields close to farm. Drive to Gearach after recovering observer and on to Kilchiaran. Drive up the track to the cliff top radio station and scan fields otherwise out of sight from the road. Drive south towards Lossit via Tormisdale and Cultoon checking distant fields along route. Continue to Cladville, Balmeneach and Claddich. Drive down to Cnoc Uing greek-in and scan back into fields to the west of the Cladville track. Return to road via Cladville then drive to Port Wemyss and check fields south of A847.

Drive north along A847 past Wester Ellister to Craigfad. Care should be taken to avoid confusion with small numbers of domestic and captive geese around the vicinity of the Easter Ellister Wildfowl Collection. At the sharp bend in road at Gleannagaoidh, scan flanks of south-easterly orientated gully/valley. Often significant numbers of Whitefronts feed on these slopes. Before reaching Octofad, stop in old quarry to east of road and walk towards coast across fields. There is considerable dead ground on the dip slopes here which sometimes hold large numbers of Barnacle Geese. The two counters should separate to maximise ground covered when returning to car. Stop at top of hill before Octofad and scan in the distant fields above Carn. These cannot be seen from elsewhere. Drive short distance up Ballinaby road to check in-bye fields holding Whitefronts. Then return to Octofad. Stop between Craigfad and Carn, walk uphill and check those fields out of sight of road. Likewise fields immediately south of Port Charlotte require checking. (Track going up between fields just north of Carn is only passable with 4 x 4.)



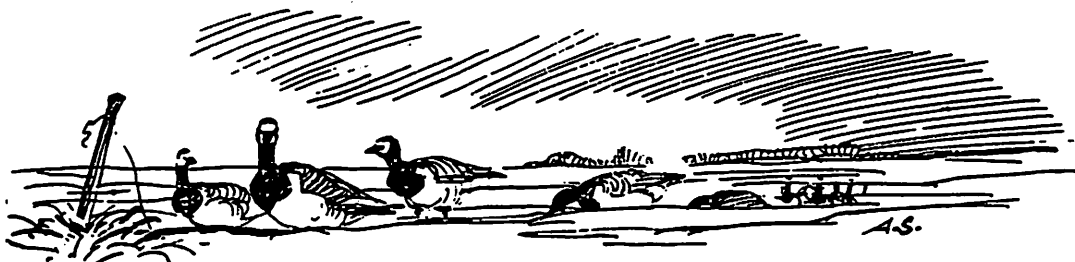
Drive from the Rhinns to the Oa on the high road and start counting at the fields south of Torra (Figure 6). Drive south to Leorin checking fields on both sides of the road. At Leorin, stop to scan grassy east facing slopes of Cnocan Bhrannabus and Batachain Bana. These are best seen from here with a little elevation and are not so clearly seen when closer to them on the low road. At the junction with main road (A846) turn right and drive back to Machrie Hotel, Glenmachrie and aerodrome. Scan back across to the fields from the low road to the fields below Leorin. Most of the lower fields can only be seen from this side and frequently hold large numbers of Whitefronts. Drive down to Machrie Hotel and if the golf course is not in use, walk out from Hotel to check for Barnacle Geese. Return to vehicle and drive to Glenmachrie Farm, where significant numbers of Whitefronts use the rushy fields. Take the minor road from Glenegedale back to the high road. Drive to Ballivicar via Imeraval. Stop to count Whitefronts in fields at Cornabus. Drive down to Kintra checking marshy fields around Grianan for Whitefronts and scanning back across to Machrie. Walk up into fields to scan across areas out of sight from the road behind Kintra farm. Return along minor road and at the cemetery junction turn right to Oa.

Look for Whitefronts in marshy fields all the way along route, stop at Cragabus and scan intensified fields. Stop as necessary to scan for Whitefronts. Drive up track before the main Risabus track, past the Old Manse in order to check intensified fields between farm buildings (at X on map) and Coillabus. Drive up to Risabus and scan west through Luig an Tairbh. Walk south down short track to back of old Chapel. Get out and walk to ridge to check dead ground to south and west in Luig an Tairbh: there are often Whitefronts in these fields. Drive back to the road and turn left and drive to Kinnabus, check Loch Kinnabus from hill above loch near farm. Walk up to field behind Kinnabus farmhouse and check intensified fields on north side of valley where it says Tobar Chairistine Chaimbeul on 1:50,000 map (NR 293422). Whitefronts can also be on bogs on other side of valley and in a north facing, rushy field at the south end of the loch (the hillside). From Kinnabus to Lower Killeyan check carefully for Whitefronts. When driving down to Lower Killeyan from junction with Upper Killeyan, check to south of track where there are rushy fields out of sight. This requires short walk best undertaken by one observer whilst vehicle is turning at Lower Killeyan. At Lower Killeyan walk downslope and check across to fields north of Giol in the distance and then back to Fang-Dhu. Time spent carefully scanning the north of the valley is usually repaid as there are often widely scattered Whitefront flocks here, especially to the north of Giol and on the valleyside between Giol and Fang-Dhu.

Drive towards Upper Killeyan and check all the fields round-about. Park at farm gate in Monument carpark and walk up slope south-east. From brow of hill check entire valley seaward of farm (there are usually Whitefronts here) as well as scanning east to the end of fields at Tobar Chairistine Chaimbeul. If the Turners are about, ask if they have seen coastal Whitefronts during the day, however it is not necessary to go as far as the farm. On the return journey double check the rushy Fang-Dhu fields for Whitefronts, stopping north of Kinnabus road-end. Having completed the Oa, drive back to Port Ellen.

Drive to Kilbride (Figure 7), stopping at Brahunisary to check those fields above the farmhouse. From Kilbride take the rough track back to main road. Scan fields behind the Laphroaig plantation along this road. This is the main area for Whitefronts in this census area and time should be spent scanning fields and other grassland to the east of the track from obvious vantage points. Drive on to Laphroaig and check fields around, on left, and north of the plantation. Stop east of Lagavulin just as the road begins to climb and scan around. Drive towards Ardtalla, checking rough ground and green fields at Callumkill (drive to here). Stop at Kintour, check these fields, then drive to school, go to hillock in field on right scanning all intensified fields for Barnacle Geese. Drive to Ardtalla, and be prepared for geese in fields by farm. Check fields beyond farm.

If Ardtalla is checked first, before the start of the route, Barnacle Geese may be seen before being disturbed by farm operations.



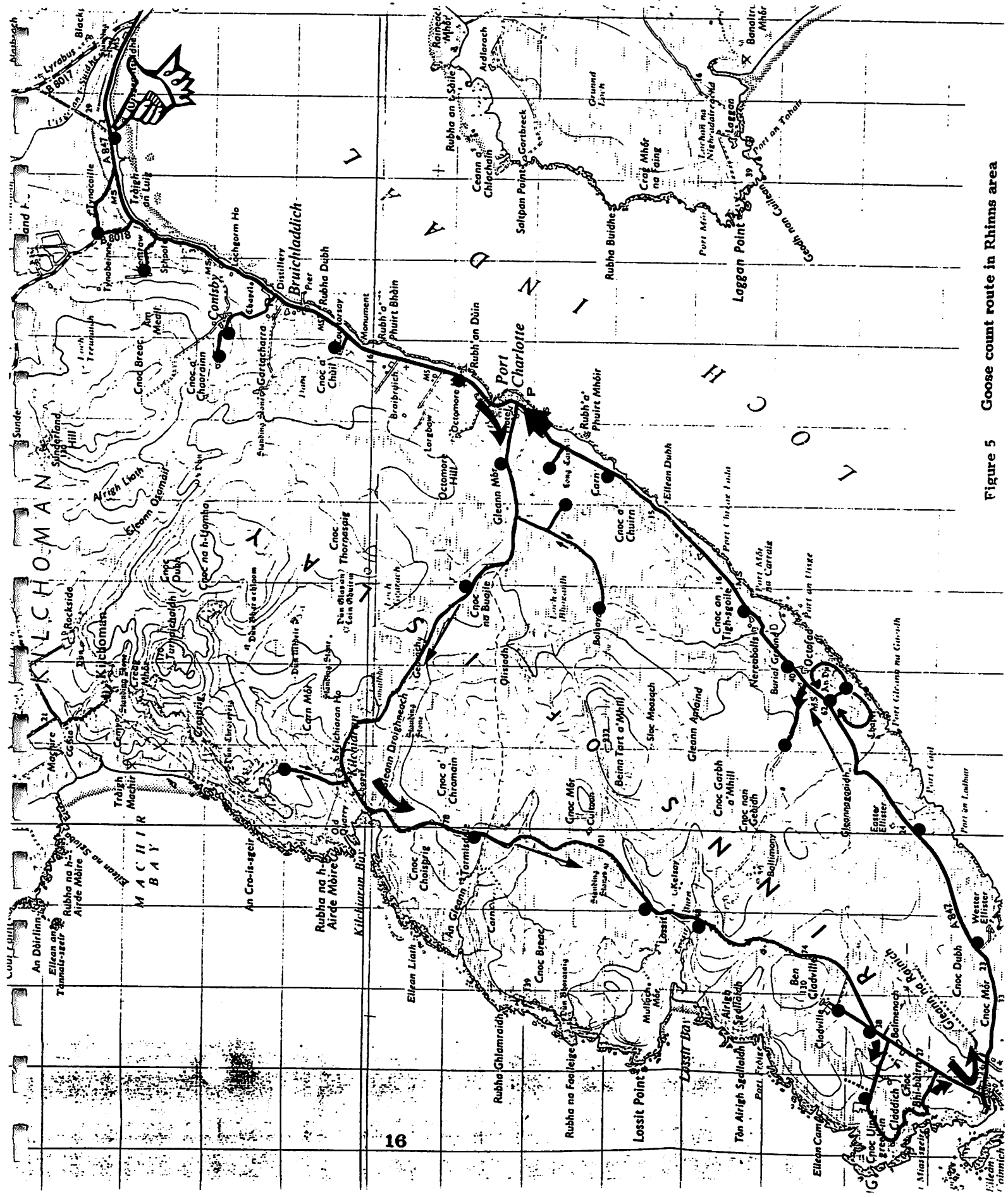
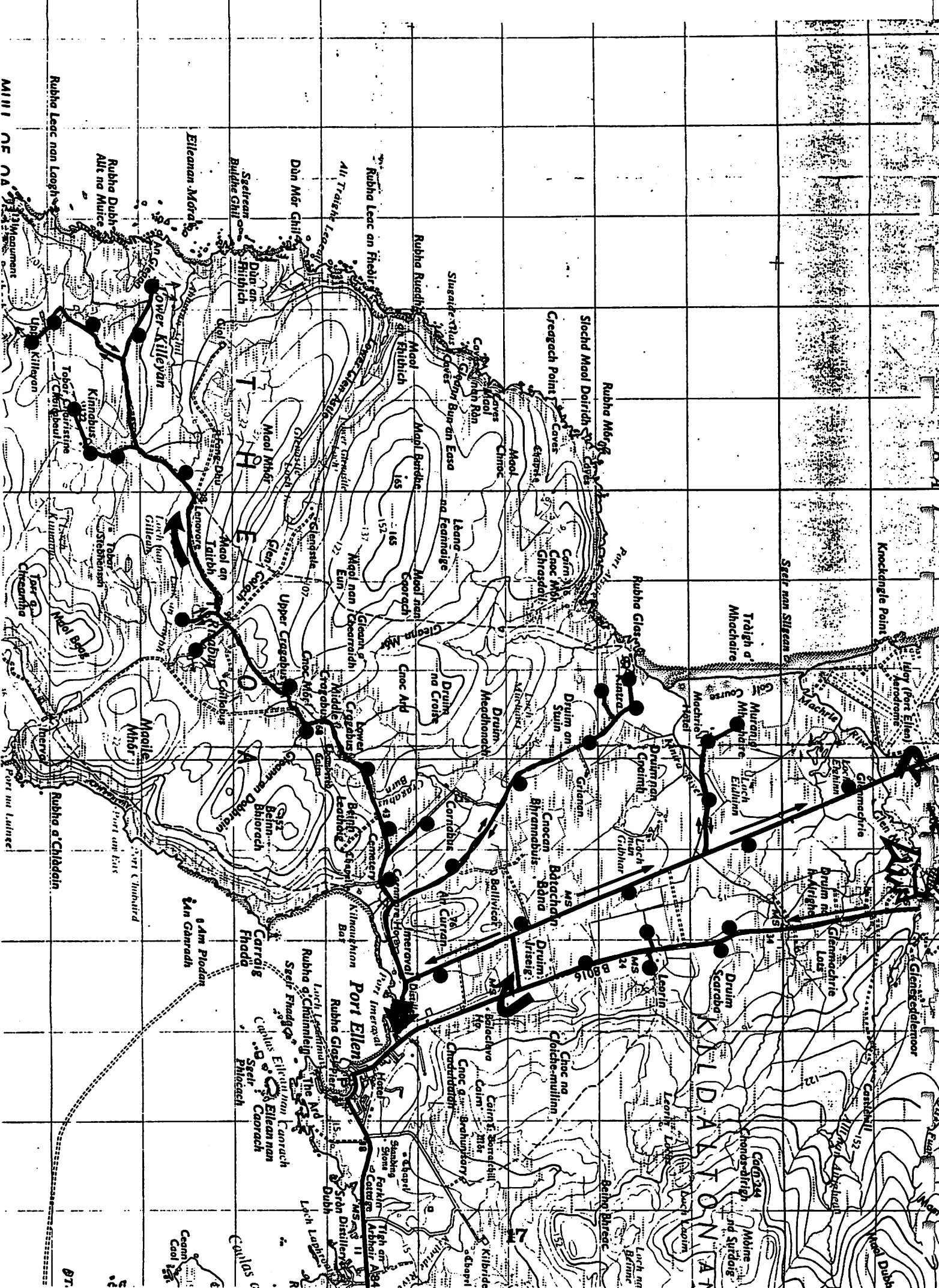


Figure 5 Goose count route in Rhinns area

Figure 6 Goose count route in Oa area





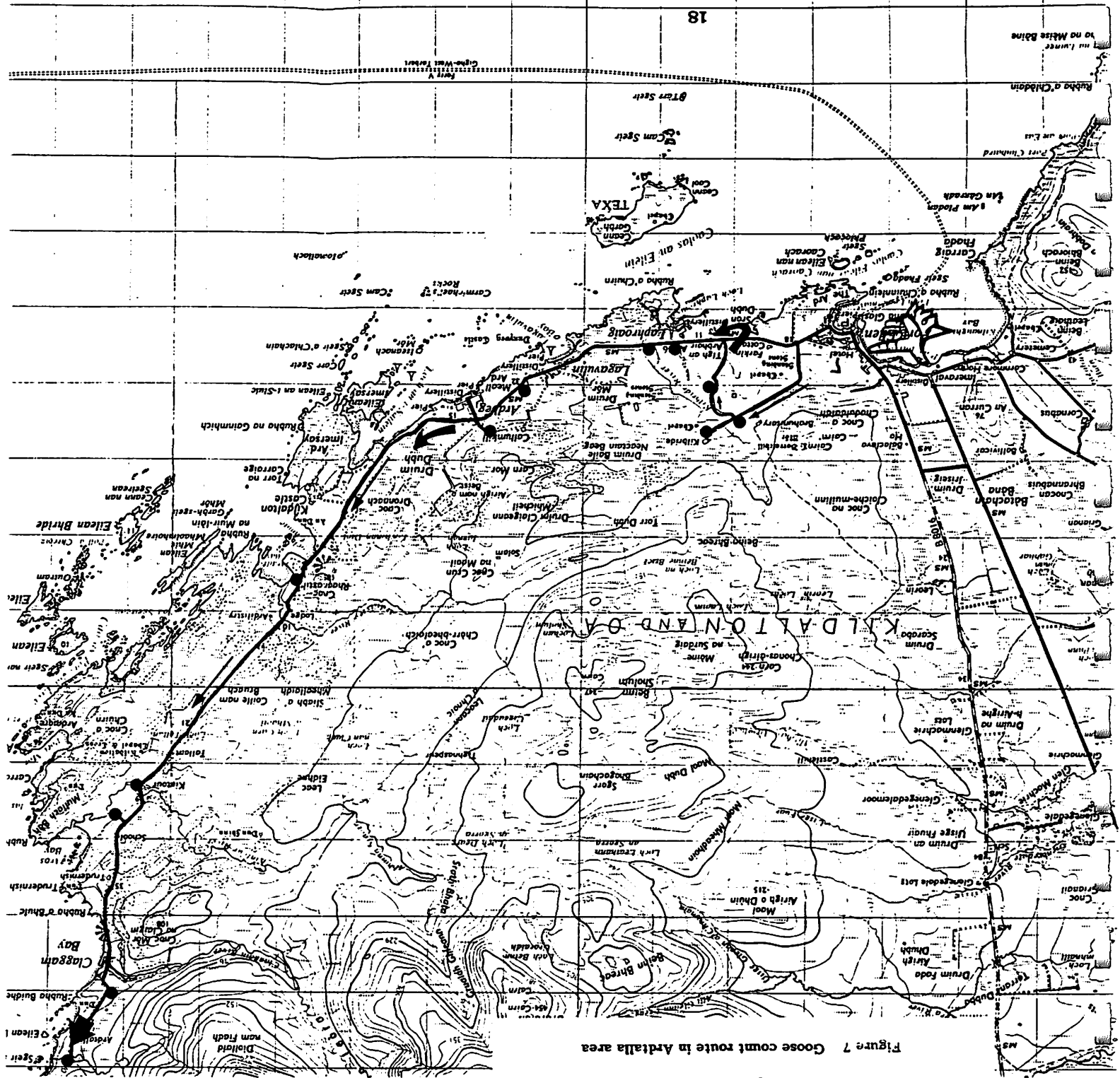


Figure 7 Goose count route in Ardara area

## 7. LAGGAN AND GLEN

Start at Carnain. Drive south to Duich Farm (Figure 8), via Bridgend and Bowmore noting position of any flocks on the south flats of Loch Indaal (south of River Sorn). At Duich Farm park the vehicle on rise opposite farm and scan fields towards Cruach Mhor. Drive back north towards Island House stopping en route to scan Drochaid Bheag from the main road. Pull in at silage pit opposite Island Farm, walk to the rise at back of silage pit and from there scan the south side of Corrary Hill and River Laggan. Then drive down the Big Strand track checking the fields by Island House and fields at Drochaid Bheag and Banaltrum Mhor. Turn where the track runs into dunes and return to main road.

Drive towards Bowmore, but turn right after the Laggan bridge to Corrary, leave the vehicle at farm and walk towards Beinn Churlaich to scan Lon Ban and Cruach from the south. Stand on wall of old silage pit at Corrary to scan west towards Laggan Point noting position of any flocks (which will be counted later). Drive back to the main road and take the track to Laggan farm counting all geese in the Laggan valley stopping as necessary. Large flocks close to the river may need to be counted by walking across fields and flushing birds. This is best done after counting Laggan Point. Leave car at cattle grid before reaching Laggan farm and walk out to Laggan Point, taking special care to close all Mr Abbot's gates most securely.

Check fields beyond Laggan Point and then scan north towards Gartbreck. If in a 4 x 4, one can go through farm and drive out nearly as far as Laggan Point. Check for Whooper Swans on Lochan na Nigheadaireachd. Then drive back to main road, turn left and stop just before Clachantachree and check fields on both sides of the road and Corrary Hill. Continue on main road and take Loanbaan turning on right, count geese in fields on both sides of this track as there is much dead ground above the level of the main road here. Return to main road and turn right, take first track to right and count any geese on both sides of this track too. Turn at top and return to main road.

Drive towards Bowmore checking rushy fields on both sides of the main road and then turn left immediately before reaching the distillery warehouse at the edge of the village and left again towards Ronnachmore. Count all the geese in fields on both sides of this road, driving past Ronnachmore, Ardlarach to Gartbreck stopping as necessary. Leave vehicle at Gartbreck and walk out to the drystone wall south of here. There are two large fields occasionally used by Barnacle

Geese here. Then drive back to the main road. (If there are geese in fields north of Ronnachmore drive to High School in Bowmore and scan to the south from there). Drive into Bowmore and to the Cottage hospital along High Street. From here fields within the dead ground (when viewed from Cruach road) can be checked. Return through Bowmore.

Take the minor road to Cruach, stopping at radio mast and passing places to check to the south of the road, particularly for Whitefronts. Stop just before the Tallant turnoff, stop and scan north of road. Drive to Tallant and leave vehicle at farm, walk to hilltop northwest of farm and count any geese to north and east which cannot be seen from elsewhere. Drive back to minor road, turn left to Laggan bridge, stop at left hand bend where the distillery lade crosses the road and walk out to the old cottage on the hill from where scan west along the Lon Ban valley for Whitefronts.

At Laggan bridge, turn left but stop after approximately 200 m to check fields to east (Greylags are often here). Then take track right down to Avinlussa and count any geese on adjacent bogland (Whitefronts) and in fields close to buildings. Return to minor road and turn right. Drive to the passing place opposite Mulindry track and stop. This is an excellent vantage point from which to see Neriby's upper fields (on a clear day!). Scan all the visible fields from here, and then continue to main road stopping at passing places to count geese on both sides. Then turn left towards Bowmore and count any geese on flats and saltings, turning around at the generating station to drive back towards Bridgend counting any geese south of the River Sorn on the way.

Take the minor road to Mulindry, check fields at Claggan and Springbank and then turn left to Gortanilivorrie. Stop here and walk up slope, across fields to south east, to check fields at back of Neriby. Drive back to the minor road stopping to scan the hillside of Ballitarsin. Turn left at minor road and drive to Neriby, stopping in passing places to check both sides of road. Leave vehicle at Neriby and walk up slope to check fields not visible earlier (from Gortanilivorrie). From Neriby drive down farm track to Mulindry checking all Mulindry fields and Ceannacroich.

Continue past Mulindry along the rough track and scan all fields to north and south, if necessary walk to the riverbank to count geese towards Avinlussa. Drive to Cluanach (Figure 9) and turn right. Excellent views of fields around Mulindry are obtained from the road before reaching Avenvogie Barn. Count any geese at

Avenvogie Barn, Avenvogie Farm (drive up to farm to check for Whitefronts) and Avenvogie Cottage. Turn left at the High Road and count any geese in fields at Torra. (In subsequent analysis care must be taken not to double-count geese here which may also have been counted by the Rhinns team on their way to Oa and Ardtalla areas along the high road). Return back along high road, turn right at Avenvogie Cottage and drive up to Kynagarry, leave vehicle at house and walk across fields to check dead ground to south and south east.

Drive back to the Glen road and turn right to Cattadale, Barr and Storakaig counting on both sides of road. Scan Loch Bharradail in the distance from the Glen road. At Barr, stop near the farm and if visibility permits, scan fields on far side of valley to north near Storakaig. These fields on the south facing hillside, become less visible as one proceeds down the road. Continue towards Knocklearach but turn right down rough track towards standing stone at NR 403641. Check dead ground to east. Continue north and check all fields around Knocklearach and at the back of Kilmeny. Stop on road below water tank, walk up slope and look into field behind tank. (From Knocklearach to the end of the route is within the Kilmeny count area although for convenience it is best counted by the Laggan and Glen team. Care must be taken to transfer the appropriate goose totals to the Kilmeny area total at the end of the day.)

There is a potential risk of error in this area since the Barnacle Geese that feed around Knocklearoch will, if disturbed fly down to Kilmeny, and vice versa. Unless there is perfect coincidence of timing between the Laggan/Glen team and Kilmeny team, there is considerable scope for missing or double counting these birds. Whilst Knocklearoch is primarily counted by the Laggan/Glen team, the Kilmeny team also double check the area to ensure that no movements have occurred. This will usually occur later in the afternoon than the count by the Laggan/Glen team.

Drive to Lossit Farm, call at house to announce presence and then continue along farm track to count the fields above Loch Lossit and beyond Dun Bhoraraic. There are occasional Whitefronts here. It may be necessary to leave the vehicle and walk to check fields above Loch Lossit, also scan back towards Knocklearach to check fields not in view earlier.

Figure 8 Goose count route in Laggan area

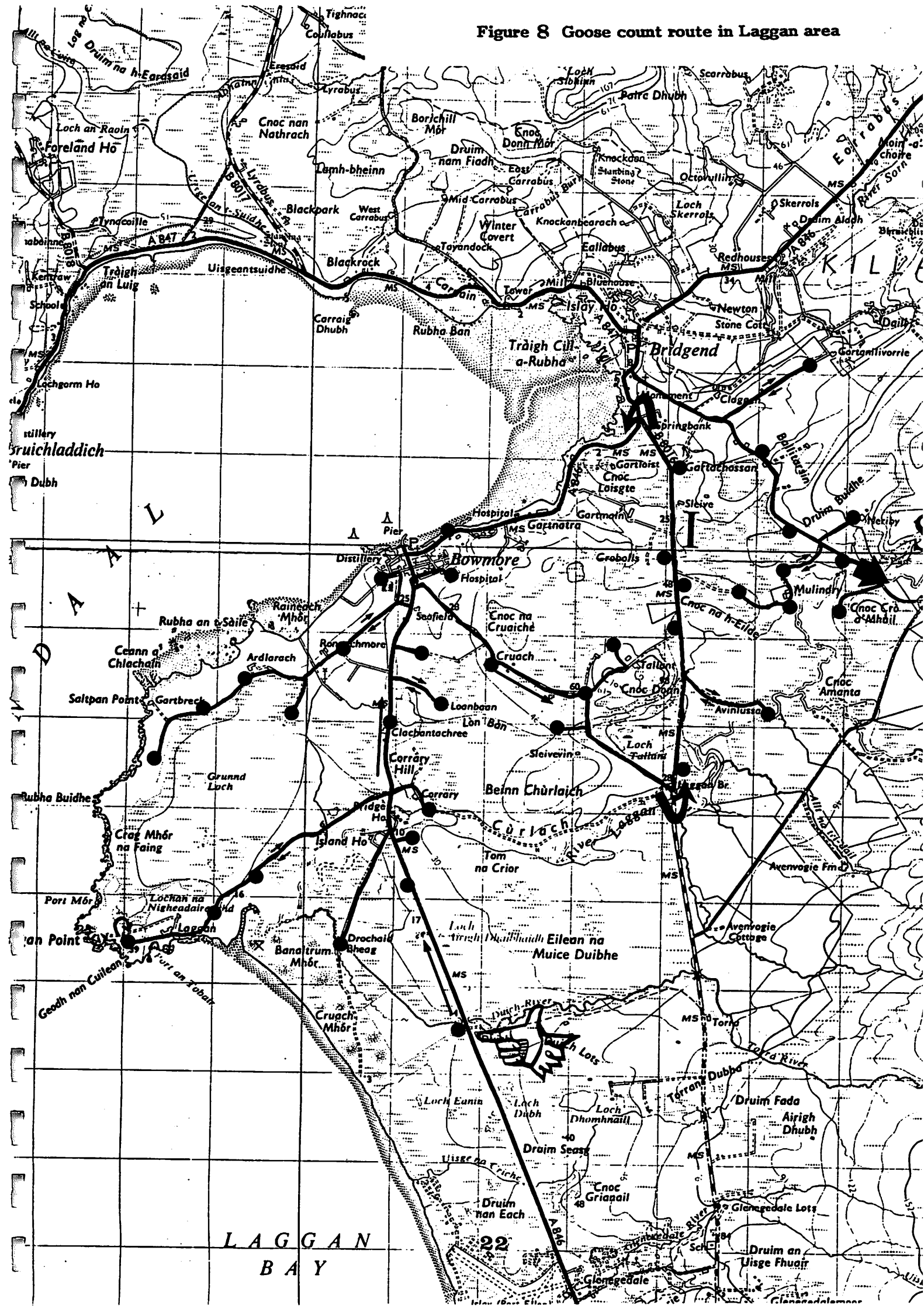
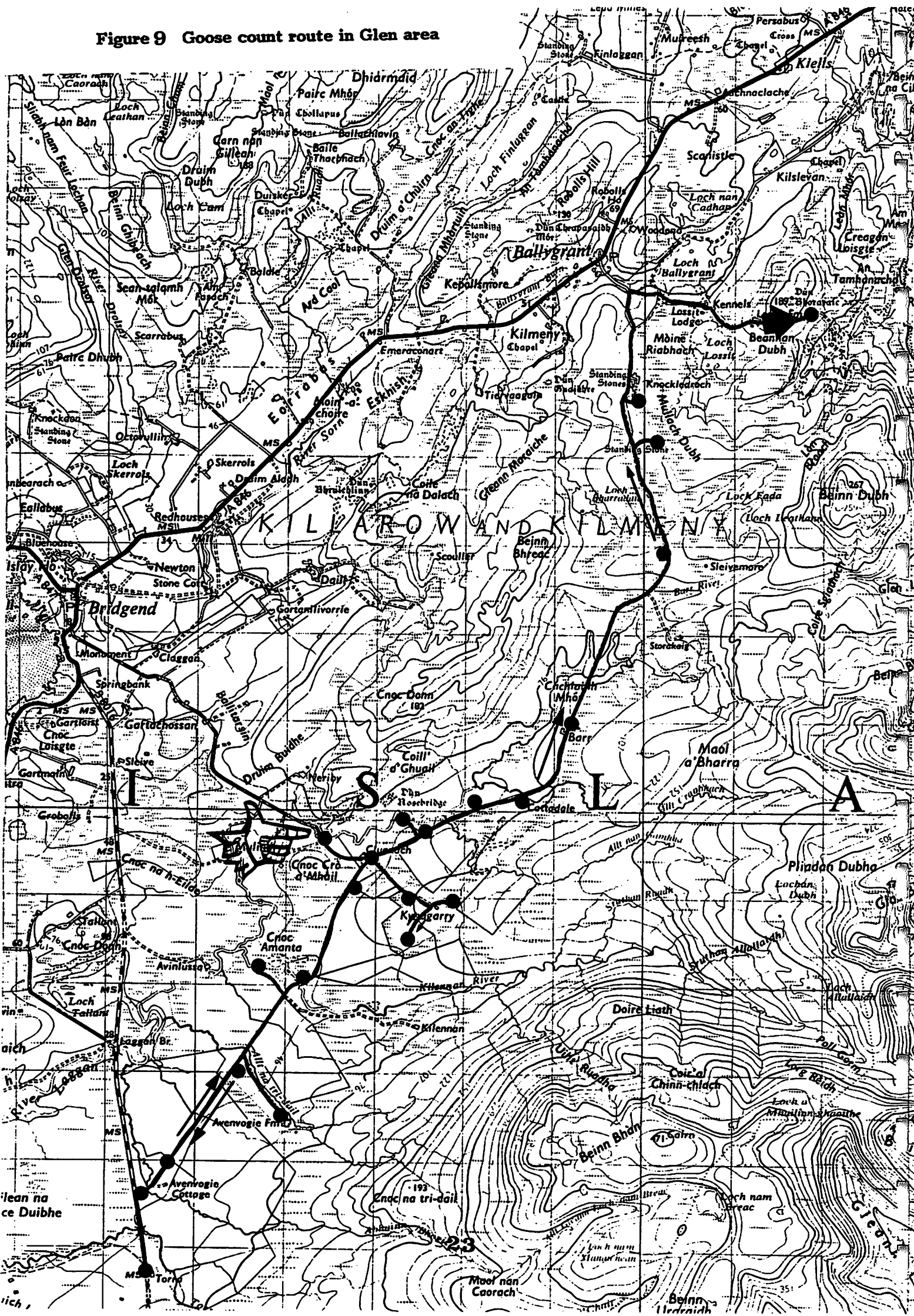


Figure 9 Goose count route in Glen area





## 8. KILMENY

Start at Carnain (Figure 10). Drive to gateway below Borichill Mor and scan fields east across to Knockdon, East Carrabus and Mid Carrabus. Drive back towards West Carrabus, checking fields on both sides of road. Stop at West Carrabus checking fields at Mid Carrabus, Blackrock (east) and Carnain area with the benefit of height. Stop below West Carrabus and count fields as appropriate. Then drive on to the silage feeder above Carnain, checking towards the sea and fields at Winter Covert. Drive to Tower, check any remaining Barnacle Geese on Bridgend Flats, then go up to fields behind Tower and walk east to check dead ground.

Drive slowly round to cattle market, stop by cottages and check flats once more. Drive to the cattle market, check, turn and drive back to Islay Estate (entrance by Woollen Mill). Drive in to the cattle feeder to west of the estate road and check those fields which are out of sight from elsewhere, then return to the main estate road, checking fields on left. Drive to Home Farm, check fields to north at the back of farmyard and scan towards Newton. Return to A846, cross it and take track towards Stone Cottage. Check fields south of the footbridge. These can also all be seen from track to Gortanilivorrie. Then drive along track opposite footbridge to check fields in dead ground behind Newton (which cannot be seen from Gortanilivorrie track). Drive to Stone Cottage and check fields behind Newton. Drive out of estate to A846.

Turn left on main road, take first left to Knockdon checking fields behind Bluehouses. Drive down to Eallabus, get out of car, check fields to north-west behind Knockanbearach. Go back to track and turn left towards Knockdon. Drive on, stopping at cattle shed, scan fields on left. Drive on scanning fields on right, then turn at Knockdon road end scanning fields on hillside around farm. Turn and head back towards main road.

Drive to Loch Skerrols past the rubbish dump, check fields at Octovullin and the lochside where there can be flocks of disturbed geese taking refuge. Return to main road, drive down to Newton checking fields. When driving into Newton, scan fields in the distance above Neriby. Check fields at Redhouses, turn left up road to Scarrabus and stop by Harrison's wood-yard and walk back to A846 to check fields to south of main road. Drive up road checking fields at Octovullin and Skerrols. Drive into Skerrols and check fields below the farm. Drive on to Scarrabus, checking fields on both sides of the road.

At junction of farm tracks, leave the passenger to count fields at Eorrabus and check for flock movements. Some of Scarrabus fields below farm are difficult to check from farm track or farm itself but can be well seen from Octovullin drive entrance. Always worth a look from here en route. Drive rapidly to Scarrabus, checking fields behind farm. Continue on to Balole checking fields all round farm. Leave car at Balole, walk to hill at approximately NR 360665. Scan fields behind Eorrabus and check northwards to Ballimartin and Esknish. Run back to car, pick up passenger (who has been recording any flock movements), drive to main road checking fields to left and right.

Turn left on A846, drive to Ayen counting on both sides of road. Turn and drive back to Woollen Mill. Drive to Daill checking fields on left of track especially just through gate, go through farm leaving car near cottage above the farm. Track beyond here only passable with 4 x 4. Walk up onto hill up track, scan to Gortan and to north-west. Check fields behind Neriby. Return to car and drive to Ballimartin checking fields beyond Ayen. Drive up the track past Esknish farm to the house above it and check the fields on the way to and beyond the further house (Druin na Sgeir). Scan other fields in the valley with the benefit of elevation. Continue beyond Ballimartin up towards Ballachlaven.

Leaving the car at the Ballachlaven gate, check across the fields towards Duisker and the ruined cottage to the north-west. Drive towards Ballachlaven checking fields. Ballachlaven gate is normally open and there is no problem driving right to farmhouse if access has been obtained. Meanwhile the passenger can walk onto Druim a'Chuirn checking fields below and around the south west end of Loch Finlaggan and be collected near Ballimartin later. Also check fields behind Ballimartin Farm. Return to car, drive to Keppols. From Kepollsmore Farm scan Kilmeny, Tiervaagain and Aluchga. Drive up to Tiervaagain, leave car and walk out and check fields over hill beyond farm. There is an excellent view of Kilmeny halfway up this track at the silage pit.

Return to the main road, checking fields at Kepollsmore, and continue along the main road checking fields at Kilmeny and Ballygrant.

There is a potential risk of error in the Knocklearoch area since the Barnacle Geese that feed around Knocklearoch will, if disturbed fly down to Kilmeny, and vice versa. Unless there is perfect coincidence of timing between the Laggan/Glen team and Kilmeny team, there is considerable scope for missing or

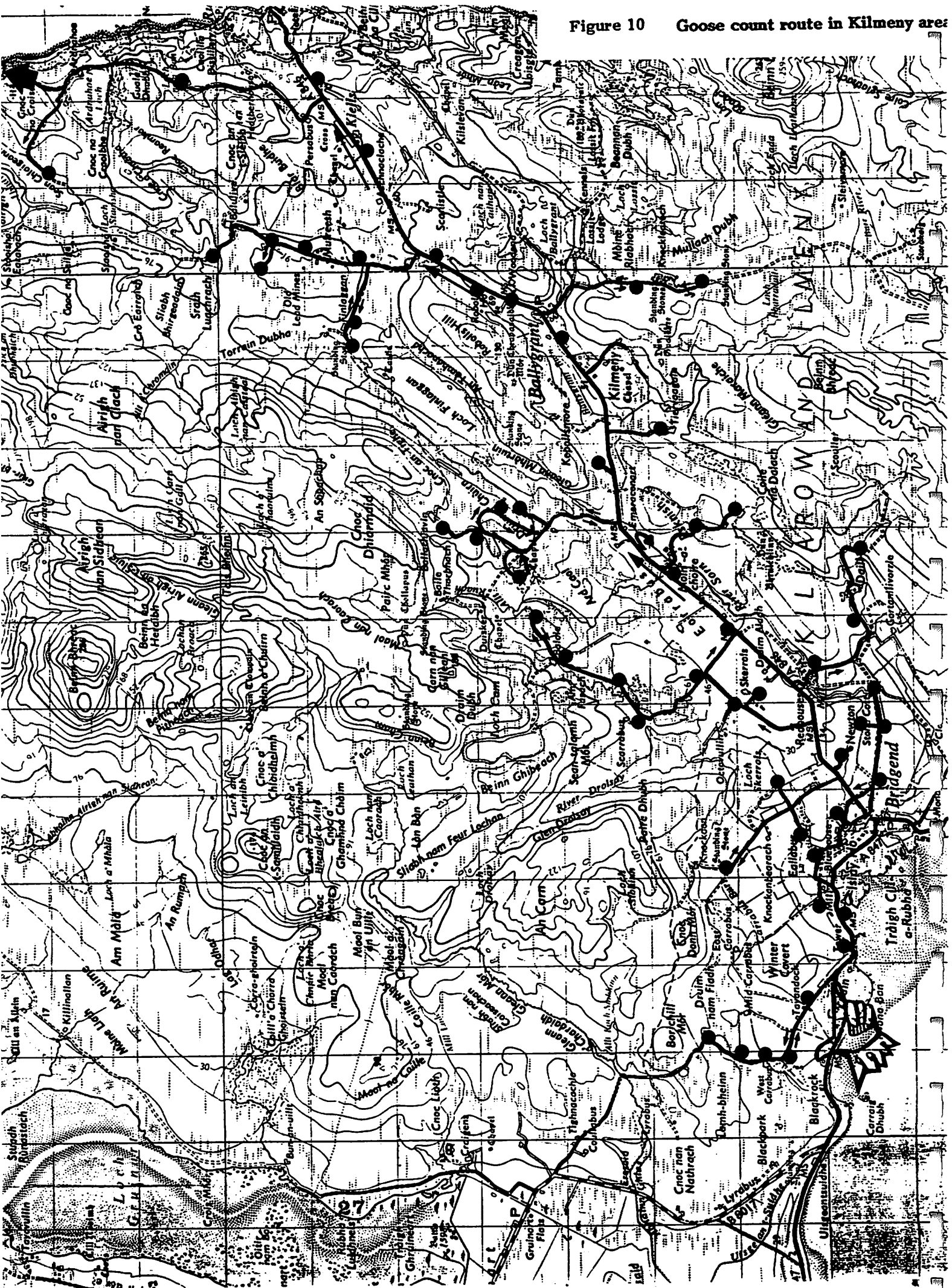
double counting these birds in this area of the Ballygrant valley. Whilst Knocklearoch is primarily counted by the Laggan/Glen team, the Kilmeny team should also rapidly drive up to Knocklearoch to check the fields around the farm. This serves as a double check of the area to ensure that no movements have occurred. After this the Kilmeny team rejoin the main route.

After returning to main road, check the fields at Robolls and Woodend and then scan Loch nan Cadhan. Drive on checking the fields on both sides of the road and turn left to Finlaggan. Drive to Finlaggan checking fields on both sides of track. At the farm check fields behind house. (These can also be well seen at a distance from just before Ballimartin farm if visibility is good.) Halfway back to the road, one person gets out and walks up slope and across the fields at the west of Mulreesh lead mines. Scattered groups of Whitefronts occur here, and sometimes also large numbers of Barnacle Geese. Vehicle returns to the minor road, drives on to Mulreesh and checks the fields to east behind Kiells. Drive to Balulive gate and scan fields to south-east of Balulive. Drive down to farm and then up forestry track up to the deer fence in north to check fields to south-west of farm and scan all the ground north-east down small valley towards Loch Staoisha. Scan all ground towards Staoisha and behind farm. Vehicle meets with walker from Finlaggan at the Balulive gate, having checked the fields and areas behind the old lead mines. **[Care is needed as there are several poorly safeguarded mineshafts of considerable depth in this area.]** Return to main road scanning fields behind Auchnaclache, and Scanistie from road before the turning to Finlaggan.

Drive along main road towards Keills, stop on old road at top of slope on right, and scan fields to south and south-east. Then walk down field to check the depression behind trees. Drive on through Keills checking fields to left and right.

Turn at the Caol Ila road end, drive back to sewage works, leave the car and walk out onto hill beyond stream. Then check fields to south east and scan back towards Scanistie. Drive towards Bunnahabhainn checking fields at Heather House and Caol Ila. Drive up track beyond Ardnahoe past peat cuttings to check fields at end of track. Drive on towards Bunnahabhainn and stop before descending the steep hill into village. From the passing place here, scan the intensified fields around Loch a' Chnuic Bhric on Jura for Whitefronts if the visibility is good (record Jura Whitefronts separately). Drive to Bunnahabhainn to conclude Kilmeny area.

Figure 10 Goose count route in Kilmenny area



## 9. ANALYSIS

At the end of the day the counts from each area are totalled. There are various problem areas where, due to the presence of feeding sites close to the area boundaries, it is possible to erroneously count the same flock twice.

These areas are as follows:

The fields around Foreland sometimes contain Whitefronts which can have moved from Kentraw. The problem here is that the Kentraw fields are counted by the Rhinns team at the very start of the day, whilst the Foreland area (north of B8018) is not counted by the Gorm team until later. Care must be taken over similar sized flocks of the same species in these two areas.

There may be movements between that part of Kilmeny area which is counted by the Laggan and Glen team on their completion of the Glen. The totals for this area (Knocklearach and Lossit Farm) need to be transferred from the Glen records to the Kilmeny total.

Likewise the totals for the Blackrock (Kilmeny) to Uisgeantsuidhe/Esknish (Gruinart) areas need to be transferred to their respective areas (Kilmeny and Gruinart) as these farms are counted by the Gorm team before they start Gorm area proper.

There are always problems in the region of Mulindry Farm where Laggan and Glen areas abut. Here, perhaps, the distinction between the count areas is weakest although as both areas are covered by the same team there is little risk of double-counting. The problem is rather the allocation of flocks to one area or another.

We have not found evidence for movements during the day between Kilmeny area near Daill and Laggan area near Gortanilivorrie/Claggan, but this would be possible for Barnacle Geese and should be borne in mind when the counts for these farms are compared.

Jura Whitefronts should be kept separate from the Kilmeny total if seen on Jura. They possibly sometimes feed at Caol Ila however.

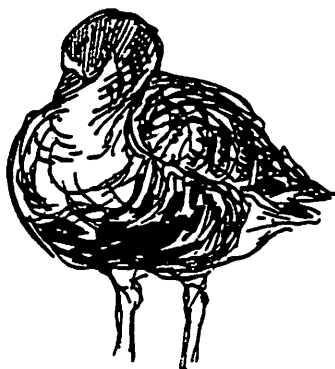
## 10. ACKNOWLEDGEMENTS

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