

believed, to shooting pressure in the 1950s. In 1969 35-40 occurred but less than 20 in 1971 despite the area becoming a wildfowl reserve. Only occasional birds now occur.

**15. Doo Lough/Tullaha Sanctuary (W08) Co. Kerry c. 70.
Derrycunihy/Galavally Sanctuary (V98) Co. Kerry 50-60.**

The two sites taken together hold between then 120 to 130 birds; 157 have been counted. Total numbers have been arrived at by simultaneous counts at the two haunts.

Shooting has been prohibited since 1976. The Doo Lough/Tullaha haunt consists of an extensive area of bogland lying around and to the north of Doo Lough. Some land in the area has been greatly improved by the owner and geese have been drawn to the area. Presumably they are birds of the scattered population that existed on the surrounding moors and possibly from the former traditional haunt of c. 50 birds near Killorglin (V79) deserted since about 1976; counts since 1976 show an average population of 64 birds in the Doo Lough/Tullaha sanctuary with a maximum of 74 on several occasions and once of 75 birds. The geese roost on lakes in the nearby mountains and also on the Upper Lake (V98).

The other reserve is much smaller but contains some useful bogland with pasture in the nearby Black Valley (V88) and the valley near Molls Gap (V87) to both of which the birds go quite frequently. This reserve has drawn birds from the surrounding moors, perhaps those from near Killorglin and a small population that were to be found in the valley of the River Inny (V88). The geese roost on the Upper Lake and other smaller lakes in the vicinity.

16. Aughinish Island (R25), Greenish Island (R35). Co. Limerick c. 50.

In 1929 a flock of 150 was noted near Mellon Point (R45) on the River Shannon estuary to the east of the haunt now described. By 1957 20-30 birds still occurred there (Stapleton 1975). Apparently the geese then vacated that area and moved to Aughinish Island, where flocks of 30-90 have been counted between 1969 and 1976, the last noted being 41 in 1976.

Industrial development on Aughinish Island has driven the birds from there and they now frequent a grassy promontory into the River Shannon midway between Aughinish Island and Greenish Island, the latter being used at times. There were 37 on the promontory in February 1979, and 58 on Greenish Island on 21st March 1979.

17. County Clare 250-300.

The haunts in this county are treated on a county basis because of the widely scattered, highly mobile population frequenting a number of relatively small haunts.

Up to 1951 the overall population may have been as high as 800 birds, though in the early 1930s and before it is considered to have been larger.

Among the sites used were extraordinarily enclosed fields between Port House and Dromore House (R38) — now deserted — and similar rather enclosed areas at Ballyteige Lake (R38), Ballycullinan Lake (R38) and around Drumcullaun Lake (R18). Other haunts were the callows at Corofin (R28) (now deserted), Lough Atedaun nearby, land near Ennistymon (R18), grassy flats around Kilfenora and Lisdoonvarna (R19), moorlands around Mount Callan (R17), Lough Carran and nearby moors (R29), marshes beside Poulmasherry Bay (Q95). Marshes at Doonbeg (Q96) were formerly used but were deserted before drainage took place.

Numbers in all these places have fallen drastically since about 1950 and some are now only used by wandering flocks.

There was always a scattered population in the area from Loop Head to Tubber

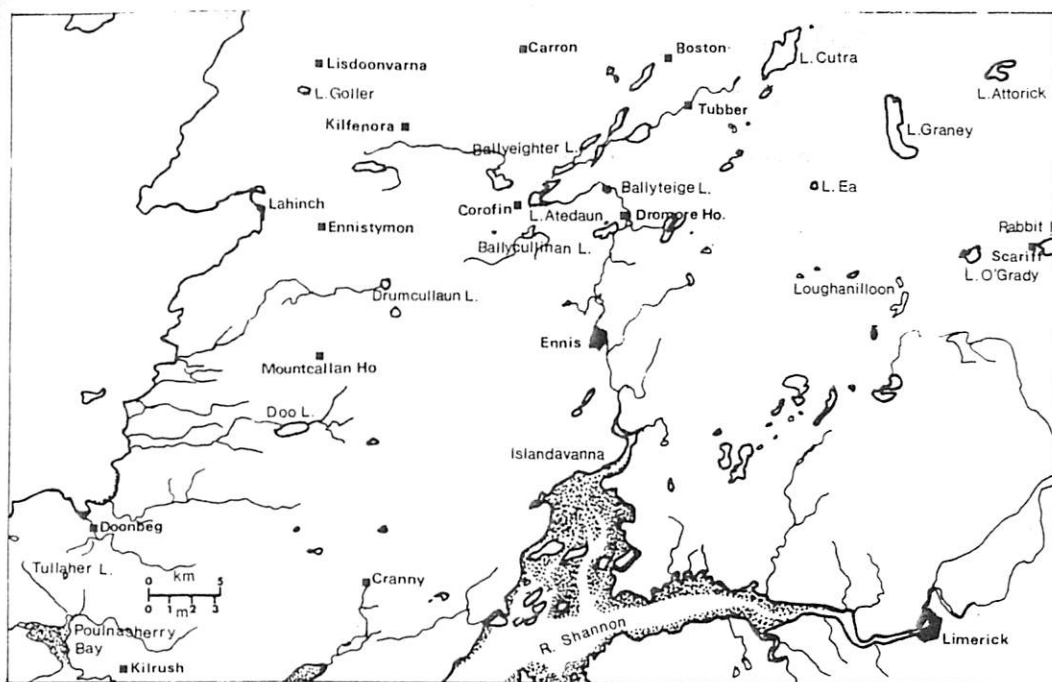


Fig. 7. Co. Clare.

(R49), bounded on the west by the sea and by a N-S line through Ennis. But in the Corofin 'complex' area alone there were up to about 1,000 birds in the early 1930s. Then came a marked decrease so that by the early 1950s numbers had fallen to 400-600. This decrease was attributed to massive shooting of them, and by 1956 there were less than 150 in the area.

By 1974 a progressive decrease had brought numbers down to at most *c.* 100; since then there has been a further decrease.

These decreases coincided with the huge increase in shooting 'tourists' and the increased mobility of native sportsmen with increased leisure. Even when goose shooting was not the primary objective, the constant disturbance all over the county for the whole season is said to be the main cause for decline in numbers. This has been the cause of haunts becoming irregularly used and of the geese wandering greatly. Co. Clare is one of the areas where the use of the .22 rifle to shoot geese had a disastrous effect and drove the birds away.

On the 'back-lands' at Corofin final desertion followed with wire fencing in the mid-1950s, though shooting was the main cause of decline.

The following are the haunts presently occupied:

Lough O'Grady (R68) and complex *c.* 100.

Between 1944-50 there were 400-500 in this complex. The present flock moves about between the west shore of Lough Derg (Rabbit Island off Scarriff is used nowadays by only *c.* 30), Lough O'Grady, Coolray Bog (R58), Loughanilloon (R58), Lough Graney (R58), Lough Attorick (R69) (occasionally), Lough Ea (R58) The last is a favourite roost, though lakes in the complex are used.

Carran Lough (R29), Boston (R39), Ballyvaughan and nearby loughs (R39). At most 60 (only *c.* 20 in 1977-78).

The birds in this complex wander greatly. They frequent a valley in the hills a little SE of Carran, visit Atedaun area (R28), Lough Goller (R19) and travel as far as the large grassy flats (R18) near Lahinch. Geese have been seen flying from Boston towards Co. Galway and it seems likely that on such excursions they may visit Lough Cutra (M49). Roosting takes place on various lakes in the area.

Fergu

The geese Islandavanna (R16). They j

Kilrusl

Birds use the marsh just we

The popula region of 1,0 nowadays.

There is m

The only co prohibited.

It is notewo and that the c

18. Rahasane



Plate 27: Rah

Rahasane tu 1960s would h. population ther The peak coun

1
1
1
1
1
1
1
1
1

Fergus Estuary 50-100.

The geese frequent grassy areas along the estuary and extensive callows at Islandavanna and Islandmagrath (R36/R37) and visit grasslands in the Cranny area (R16). They probably roost on the Fergus estuary.

Kilrush area 40-50

Birds use the shores of Poulnasherry Bay (Q95), Tullaheer Lake (Q96), a small marsh just west of Kilrush (Q95) and several other small sites.

The population in Co. Clare seems to have decreased from something in the region of 1,000 geese in the early 1930s to about 400 in 1965 and 250-300 nowadays.

There is much disturbance from shooting parties.

The only conservation measures are at Islandavanna where shooting is prohibited.

It is noteworthy that nearly all the former haunts in Co. Clare remain unchanged and that the decrease in the population cannot be attributed to loss of habitat.

18. Rahasane turlough (M41) and Creganna marsh (M32) Co. Galway 80-115.



Plate 27: Rahasane turlough, Galway.

Photo: O. J. Merne

Rahasane turlough. This renowned turlough has a population which until the late 1960s would have been of international importance. RFR commenced study of the population there in 1943 and from winter 1952-53 counts were made consistently. The peak counts were as follows:

1945-46	200	1964-65	271
1952-53	346	1965-66	210
1953-54	400	1966-67	171
1954-55	150	1968-69	144
1955-56	200	1969-70	129
1957-58	332	1970-71	90
1958-59	300	1971-72	150
1961-62	200	1972-73	100

1973-74 160
 1974-75 240
 1975-76 24

1976-77 80
 1978-79. 78

Further evidence of the decline is given by comparing a series of counts in 1957-58 giving an average of 234 over six widely spaced visits with that in 1971-72 giving an average of 71 over ten counts.

The turlough consists of 250 hectares of very short grass which becomes flooded each winter. The geese feed on the areas of grass left exposed. Although there has always been much variation in the water-level throughout the winter, in recent years as a result of extensive drainage of the country to the east of Craughwell, floods form due to the exit channel being unable to carry away the surplus water. In very wet winters little or no exposed ground is left on which the geese can graze until about March when floods subside.

As well as being affected by flooding the numbers of geese have fluctuated due to excessive disturbance from duck-shooting. The geese suffer negligible casualties.

In past years the birds dispersed in small flocks to suitable feeding and resting places (some now lost to them) at distances up to 20 km from Rahasane, and Coole Lough is still frequented irregularly. Nowadays, when birds are present there is a regular flight evening and morning to and from the NW: the geese roost on the south end of Lough Corrib (M23). Possibly Lough Graney (R59) and Lough Atorick (R69) are alternative roosts as White-fronted Geese are known to frequent these lakes. Up to about 1974 there was frequently a regular evening flight from Rahasane, the birds taking a course as if for Lough Graney. No such movement is noticed nowadays.

There is a threat of drainage but the authorities are being approached in an effort to avert the destruction of the habitat.

Creganna marsh. As Rahasane became more unsuitable to the geese they began using this marsh in larger numbers and more frequently. It is said locally to have been a haunt for many years (always no doubt by birds moving to and from Rahasane). Numbers increased about 1970.

The area consists of marshy grassland with rather wet pasture land adjacent. Some fields were improved and fertilised in 1971 and this has made the haunt more attractive to the geese.

Geese are found here more frequently than at Rahasane when the latter is overflooded. There is ample evidence that the same population uses both haunts.

Birds from Creganna flight to roost at the south end of Lough Corrib, but on

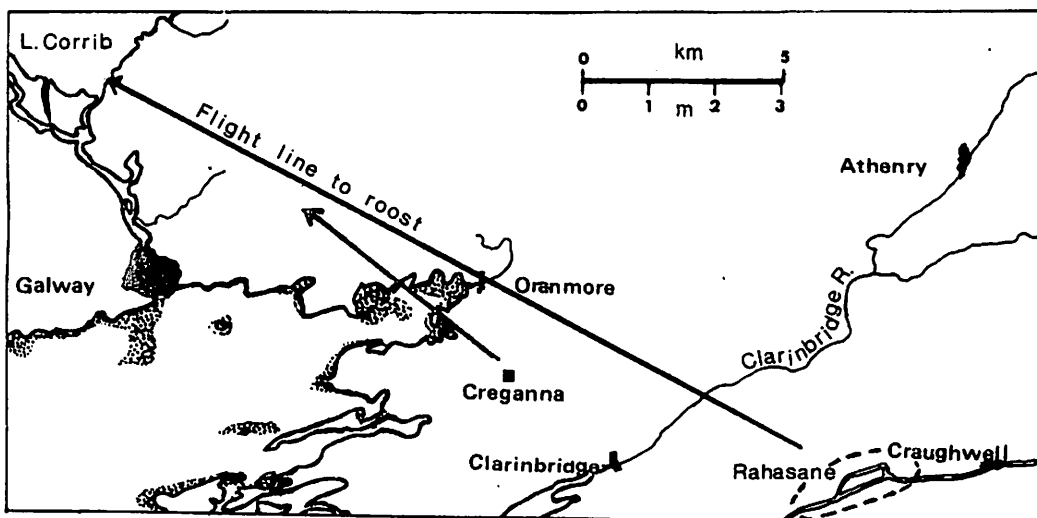


Fig. 8. Rahasane turlough and Creganna marsh, Co. Galway.

occasions fly :
 Counts have
 present up to 1
 There is m
 threatened.

Lough

It is probab
 Co. Clare (Bo
 20 on Castle

White-front
 that they roo

Flocks, usu
 northerly direc
 movement from
 occasion 70 b
 until lost near
 in daytime fo
 elsewhere. It n
 them here. Of
 grit, thus givi

19. Lough C

The geese fi
 several at a ti
 flew inland to
 from the lake,
 from seven fli

There is no
 said to have t

The islands
 Rabbit Island,

Before it w
 Killower turl

Occasionall
 They could be
 site).

Lough na K
 Lough Corrib
 no longer cam

In the 1930

callows alongs

By the 1950s t

shooting distu

pasture liable t

was a resting
 complex. The
 then and only
 counted; perha

Nowadays t
 to conditions a

20. Moorlands

The terrain

occasions fly southwards both by day and in the evening.

Counts have been made rather irregularly since 1969 and indicate that 60-70 were present up to 1971-72. From 1972-73 regular counts of up to 126 have been made.

There is much disturbance from Snipe shooting. Drainage of the marsh is threatened.

Lough Cutra (R49) Co. Galway

It is probable that geese using this lake are birds of the Rahasane-Creganna and the Co. Clare (Boston turlough) complex but there is a semi-resident population of 15 to 20 on Castle Island in the lake.

White-fronted Geese come and go at all times of the day but there is no evidence that they roost at the lake.

Flocks, usually of 60 to 80, sometimes of c. 100, birds come to the lake from a northerly direction, supposedly from Rahasane or Creganna. There is also infrequent movement from and towards the SW usually of parties totalling 20-25 birds. On one occasion 70 birds that left Rahasane were followed by car as they flew south-west until lost near the Co. Clare border. A flock of 130 was counted resting on the lake in daytime for one day only in winter 1975-76, possibly birds disturbed from elsewhere. It may be that the lake forms a useful refuge since there is no hunting of them here. Often up to 80 are seen at sand-banks in the lake, no doubt in search of grit, thus giving the place added attraction.

19. Lough Corrib, Cos. Galway/Mayo 50 possibly up to 100.

The geese frequent a number of islands, wandering from one to another or using several at a time, making an assessment of total numbers difficult. Formerly they flew inland to callows, turloughs and bogs, some of them at a considerable distance from the lake, but now mostly drained. Aerial surveys provided an average of 41 from seven flights between 1969 and 1976.

There is no sound information for former years beyond the fact that numbers are said to have been greater.

The islands used are covered with short grass. The most favoured are Inchiquin, Rabbit Island, Inishbiana in Ballycurrin Bay and Inishannagh.

Before it was drained in 1970-73 geese, undoubtedly of this complex, used Killower turlough (M35).

Occasionally up to 20 are still found on wide pasture land near Beagh More (35). They could be birds of the Lough Corrib complex or birds from Altore Lake (see that site).

Lough na Kill near Shrule (M25) was formerly the haunt of geese no doubt of the Lough Corrib population. It is a turlough with good short grass flats. In 1973 they no longer came regularly, the turlough having been partially drained.

In the 1930s and 1940s there was a population of c. 200 on Carrowbrowne callows alongside the River Clare near its entry into Lough Corrib (M33) (R & HW). By the 1950s the population there had dropped to under 50, due chiefly to intensive shooting disturbance. The callows consisted of extensive marshy ground, rough pasture liable to flooding and always there were shallow pools. An adjacent high bog was a resting place. This population was possibly belonging to the Lough Corrib complex. The callows were drained between 1957 and 1960 and the geese deserted then and only a few birds now drop in temporarily. On 3rd April 1977 72 were counted; perhaps migrating birds.

Nowadays birds using Lough Corrib roost in various places in the lake according to conditions and also some at Lough Seecon (M03) in the hills south of Oughterard.

20. Moorlands (L84) SE of Recess, Co. Galway c. 80.

The terrain comprises low and fairly level extensive bogland with many small

lakes and one fairly large one (Lough Curreel).

Previous to 1950 the population of 150-160 was split up in flocks over the area but favoured the area around Lough Curreel. Flocks from this population used to spread into the moors SW of Maam Cross (L94) in the 1950s where now at most 25 are to be found very irregularly. Up to 40, obviously part of this population, wander to the moors near Lettercraffroe Lake (M03) and Muckanaghkillew Lake (L93) and roost periodically on a lake near Glantrasna (L94).

Soon after 1950 a decline in numbers set in, and continued progressively so that by c. 1960 the population was less than 100 and had by 1977 dropped to c. 80. During the years of maximum numbers there was a good deal of shooting disturbance but relatively few were killed. Shooting is now negligible. In common with other haunts the severe winter of 1962-63 seems to have had a disastrous effect from which the birds never recovered.

Roosts are Lough Curreel and alternatively other shallow lakes according to conditions. Another roost is off the north shore of Derryclare Lake (L84) to which they flight fairly regularly from this moorland haunt.

There are no conservation measures.

800 hectares of the bogland around Lough Curreel are ear-marked for afforestation. Representation has been made to the Forest and Wildlife Service and hopefully the destruction of this haunt will be averted.

21. Moorlands (L64 and L74) east of Ballyconneely (L64) Co. Galway 50-100.

The terrain consists of low and fairly level extensive bogland with numerous small lakes over which the population is scattered.

Numbers have decreased over the years from about 175 to the current level. The decrease set in about 1967 or a year or two earlier. Few have been shot. The reason for decrease is not evident. The flocks which comprise the population are individually much smaller than formerly.

Early in the winter the geese roost at Loughs Nahillian (L75) and Auna (L65). In severe weather they resort to the river near Emlaghmore (L64), or a lake near Ballyconneely or to tidal inlets.

No conservation measures are in force. The moors are always open to the danger of afforestation.

22. Maam Valley (L95) Co. Galway c. 25.

In the early 1950s, 20-30 birds frequented boggy and marshy flats near Maam Bridge. The main centre nowadays seems to be the riverside flats near the junction of the Bealanabrack and Maam Rivers a little NW of Maam Bridge. In recent years c. 25 have been found there rather irregularly, but in 1977-78 only 11 were seen. Perhaps this is a separate little population that comes and goes. Said to roost in hill lochans nearby.

23. Altore Lake (M36) Co. Galway 30-40.

Formerly there were sometimes well over 100 using this haunt. The lake was drained about 1969, again in 1972 and further in 1977. As many as 60-65 White-fronted Geese were seen in January 1973, but such a number is now unusual.

A wide area of callow ground remains, with some pools and ponds, where the geese feed and a bog just north of the lake is also frequented. Fields near Beag More (M35) about 10 kms to the SW are occasionally used.

Bellisland Lough (M36), Cloondroon Lake and Castleragh Lough (both M46) were former haunts, perhaps of birds using Altore Lake, but extensive drainage has caused complete desertion.

No roost has been discovered, but evidently it is not in the locality. There is no shooting pressure and there are no conservation measures.

24. Glenmaddy

The terrain fr ground and nee

At the end of several hundred dwellings. Up to 1960 numbers in numbers for Shooting pressu

Numbers fluct than in mild one 100 birds. In th 60 being regula 1978-79 only 3

The bog arou has always bee weather the tenc The most favor turlough which turlough.

No conserva The populati bogland around na Mona. Repr

25. Erriff Vally

Grassy stret 1967 indicated 50 to c. 25; w decrease is kno

In the mount but now appear may have been

Mountain lo Tawnyard (L9)

There are no

26. Derrycraff

The haunt oc of up to 150 in early 1960s th

In the winter 1978 the popul two winters. No commute to the and perhaps fo

No conserva the valley, but chief roost; othe of geese in the

24. Glenmaddy Turlough (M66) and adjacent bog. Co. Galway c. 40.

The terrain frequented is well managed pasture beside the turlough, some marshy ground and nearby bog land.

At the end of last century there clearly were very considerable numbers (probably several hundreds) many of which fed in fields quite close around the turlough-side dwellings. Up to about 1973 a total of 150-200 geese was regular; previous to about 1960 numbers were even larger. Since 1973 there has been a marked annual decline in numbers for reasons unknown. The habitat remains as it has always been. Shooting pressure is not serious.

Numbers fluctuate according to weather conditions, being larger in severe winters than in mild ones. In the winter 1973-74 the total population was put at not less than 100 birds. In the following winter there were less, the maximum count being 65, only 60 being regularly present. By winter 1977-78 the maximum count was only 50. In 1978-79 only 35-40 were seen regularly.

The bog around Lough Lurgeen (M65) and just west of it is much frequented and has always been important to the geese as feeding and resting places. In severe weather the tendency is to frequent the frozen bogland less and resort to the pastures. The most favoured area is the large farm of Clondoyne at the east end of the turlough which has been regularly fertilised over c. 20 years. The geese roost on the turlough.

No conservation measures are in force.

The population is of regional importance, being so isolated from other haunts. The bogland around Lough Lurgeen has been scheduled for peat development by Bord na Mona. Representations for the conservation of this area have been made.

25. Erriff Valley (L96) Co. Mayo At most 25.

Grassy stretches and boglands in the Erriff River valley. Information in early 1967 indicated a decrease in the population from a former total in the area of at least 50 to c. 25; well before 1967 up to 100 birds could be found. No reason for the decrease is known.

In the mountains just south of Leenane (L86) up to 25 could be found irregularly but now appear to have deserted the site. Nothing is known of their history but they may have been of the Erriff valley population.

Mountain lochans are the roosting places and sometimes the SE corner of Lough Tawnyard (L96) is used.

There are no conservation measures and there is a danger of afforestation.

26. Derrycraff River Valley (M07) Co. Mayo 35-40.

The haunt consists of areas of marshy quaking bogland. There was a population of up to 150 in the 1940s and 1950s (R & HW). Numbers have decreased; by the early 1960s there were only 40-50.

In the winter 1973-74 about 50 was considered to be the population. By January 1978 the population had fallen to 32 or 33, this being about the number for the last two winters. No reason is known for the decrease. Birds from the Derrycraff valley commute to the Owenbrin River mouth (M06), where there are short grassy flats, and perhaps for grit on the river banks.

No conservation measures exist. There has been afforestation on a small scale in the valley, but not on the ground used by the geese. Glenawough Lake (L96) is the chief roost; other mountain lochans are also used. There is very occasional shooting of geese in the area.



Plate 28: Bog of Erris. Typical blanket bog habitat with small lakes.

Photo: O. J. Merne

27. 'Bog of Erris' NW Co. Mayo c. 200 (This total includes the populations in sub-areas 1, 2 and 3).

International importance

The Bog of Erris is the vast area of blanket bog, swampy areas and lakelets bounded by Lough Carrowmore (F82), Gweesalia (F72), Ballycroy (F80), Keenagh (G01), Larigon (F80), Dooleeg More (G01), Bellacorick (F91) and the moors north from there up to Sheskin (F92).

There has been a decrease in the population of this area over the past 15-20 years, more marked in the past 5 years. By 1978 the population seems to have become fairly static. However, in the Altnabrocky area 1,000 hectares have been bought for afforestation and much has been drained. Part was prime goose ground.

In the Bog of Erris complex there are three main sites:

- (1) Keenagh-Dooleeg More-Bellacorick blanket bogs c. 100.

In this area about 1940, 150-200 could be found. A large area of bogland around Bellacorick is worked by Bord na Mona; consequently the geese deserted the bogland feeding grounds there. However, on the credit side, on areas that have now been turned into grassland and which are grazed by sheep up to 100 geese feed regularly. One roost is Lough Nambrackeagh (F91).

- (2) Lough Carrowmore-the Glencullen Valley-Slieve Fyagh (F92) and bogs south of Sheskin. Up to 50.

About 1969 the population was 70-100 but numbers declined noticeably about 1971-72. This is a very mobile population, wandering over the entire area. Lough Carrowmore is a roost and a grit collecting area; other roosts are lochans in the area.

- (3) Ballycroy-Aughness area (F71 and F81)Gweesalia. 50.

There were up to 200 here 20 years ago. An area of blanket bog and lochans, but in spring the birds graze regularly on about 350 hectares of grasslands near Gweesalia from mid-February to early April, but numbers are decreasing. They probably roost in the lochans of the Nephin Beg range. Food throughout the boglands is mainly the roots of *Eriophorum angustifolium*. There are no conservation measures other than an order prohibiting the shooting of wildfowl at Lough



Carrowmore. T development.

Previous to Feagh (F90). T

There is no r several hundred quickly.

28. The Mullet (F63, F62)

There is little Erris' complex.

drastic decrease

These frequente

1975 the popul

At the period used to flight ac

flocks of consid

fed especially ar

Even to this Termoncarragh

No conservat

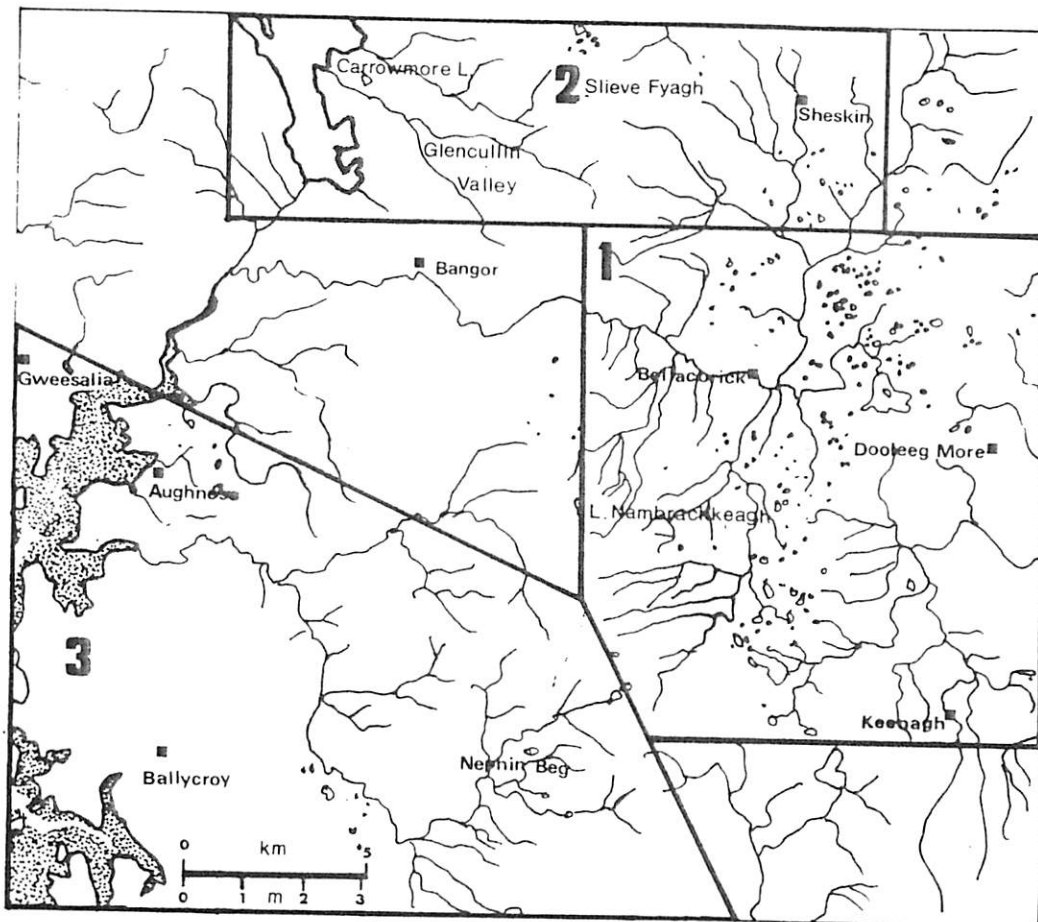


Fig. 9. 'Bog of Erris', NW Co. Mayo.

Carrowmore. There is always the threat of afforestation or further Bord na Mona development.

Previous to 1969 there was a flock of c. 30 on the flats at the north end of Lough Feagh (F90). These have now been afforested.

There is no resident population on the islands in Clew Bay, but in spring passage several hundred settle overnight, graze and roost on Moynish (L89) moving on quickly.

28. The Mullet, Co. Mayo (Glenlara Moors, Termoncarragh Lake and the Mullet) (F63, F62) c 40-50.

There is little doubt that up to the late 1950s the Mullet was part of the 'Bog of Erris' complex. In the 1930s up to 300 geese occurred, but early in the 1960s a drastic decrease set in until from 1965 to the early 1970s the total was about 50. These frequented the Glenlara moors and the vicinity of Termoncarragh Lake. From 1975 the population has stood at c. 40 birds.

At the period when the population to be found on the Mullet was so high, birds used to flight across from the 'Bog of Erris' across Blacksod Bay to the Mullet in flocks of considerable size' (H. Cronin *pers com.* F. J. Egginston *in litt.*). The geese fed especially around Ardmore Lake (F62).

Even to this day small parties flight across irregularly. The roost is at Termoncarragh Lake where grit is obtained.

No conservation measures exist.

29. NW Co. Sligo and Lough Conn, Co. Mayo 4050.

The Co. Sligo area comprises the region of blanket bogland lying between Bunnyconnellan (G31) and south of Dromore West (G43).

This is a haunt of long standing where there were 'considerable' numbers in the nineteenth century.

Nowadays (since when is unknown) numbers have decreased and since c. 1975 there has been a further decline to present numbers. The area is normally only frequented in the early part of the winter. At this time the roosts are in the Ox Mountain lakes. The bog land has been scheduled for Bord na Mona working.

No conservation measures exist.

This population later moves away to Lough Conn where the areas frequented are mainly the grassy islands of Annagh, Rinaveega, Roe and the shores at Cloonamine, Enniscoe and Abbey Point. The geese roost on Lough Conn.

Since 1972 when Lough Conn was declared a non-shooting area, the geese move to the lake earlier than formerly and remain for most of the winter (L. Mitchell *in litt.*). Annagh Islands have been fertilised making an added attraction.

One day in winter 1976-77 the exceptional number of 150 were grazing on the Cloonmine shore, but a proportion of these were probably birds that occasionally come to Lough Conn from moorlands well to the west ('Bog of Erris' complex).

30. Temple House Lake (G61) Co. Sligo. Moorlands and mountains to the west c. 20.

Little is known about these haunts and nothing of their past history.

In Temple House Lake there is a seven hectare grassy island used by about 20 geese. Geese also feed in large pasture fields on elevated ground just west of the lake. Up to 40 have occasionally been seen on these fields. When not present local farmers have no idea where the birds would be. However, birds do commute to and from the mountains and moors to the west of the lake and probably roost on the lochans there. The island in the lake is protected by the owner.

The turlough at Doocastle (G50) is a fairly regular roost of c. 20 which most probably are birds of this complex.

31. Lough Gara (M79) Co. Sligo 175-220.

International importance

Local information confirms that the area around Lough Gara has long been the haunt of a sizeable population, though R & HW were unable to obtain precise information.

The geese feed on the grassy islands in the lake, on a fertilized promontary and also in surrounding bogs and marshes.

Local informants state c. 500 geese were present in the years about 1949. Since then numbers have steadily declined to a normal population of c. 200 though at times a maximum of 300 can be present.

Formerly the surrounding bogs were much used. Disturbance through development for peat cutting greatly affected the geese though certain undisturbed areas of bogland are still popular with the birds: such are the high bog alongside the Lung River (M69) (a favourite resting place), high bog around Cloonfad (M69), swamps and bog around Lough Bally (M79) and the lake itself, high bog SE of Kingsland (M79). Only small groups now use Gowlaun bog (G60) and bogs near Clooncurry (G60). Local people state that formerly these areas were notable haunts. Hereabouts mechanized peat-cutting has been the significant cause of displacement of the birds.

Lough Gara itself has become the headquarters of the geese of the whole district.

Large fields fertilized and areas. The 16 again subsequent Two other grassy An irregular regular population been on the non-shooting Part of Lough non-shooting The threat building chalc development

32. Inishbeg (

From about and fewer have In the later of departure. I reason for decrease surrounding

33. Bunduff (

This relative Bunduff held shooting of geese the death of t markedly. Since been the indiscriminate Quite numerous

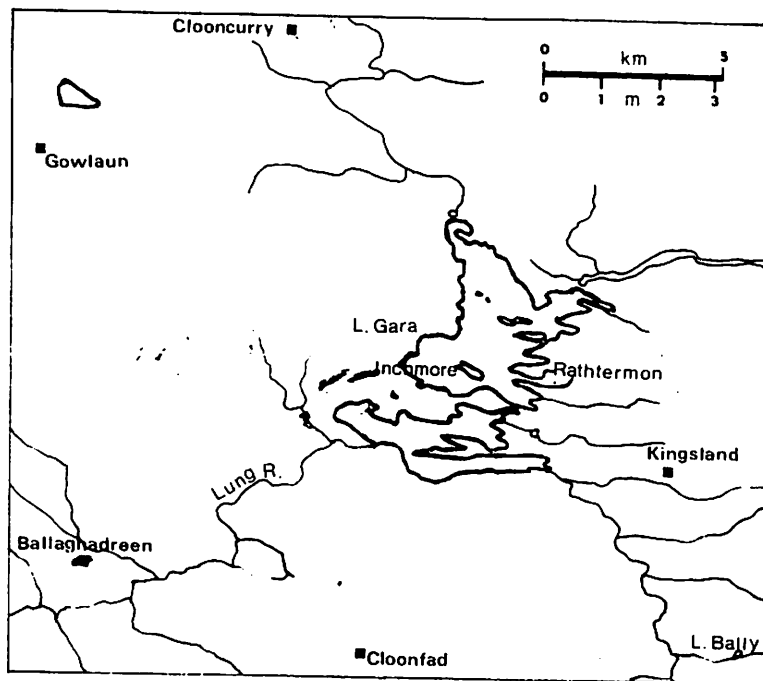


Fig. 10. Lough Gara, Co. Sligo.

Large fields on Rathtermon Point beside Lough Gara have for some years been fertilized and improved and have drawn most of the population from surrounding areas. The 16 hectare island of Inchmore which was specially fertilized in 1976 and again subsequently thanks to the Forest and Wildlife Service is much favoured. Two other grassy islands in the lake are subsidiary feeding places.

An irregular series of counts has been made at the lake in recent years indicating a regular population of 100 to 120 birds. In addition to these, other geese may have been on the nearby bogs. The geese roost on the lake.

Part of Lough Gara, including Inchmore (but not Rathtermon Point) has been a non-shooting area since 1971.

The threat of development of the large pasture fields on Rathtermon Point for building chalets has been averted. There is always the danger of further turf development and/or afforestation in the boglands.

32. Inishbeg (G71) Lough Arrow. Co. Sligo Present number unknown.

From about 1963, up to which year there was a winter population of c. 100, fewer and fewer have come to this grassy island.

In the later 1960s, 60 rarely 100, came to the island every February until the time of departure. Nowadays very few come exceptionally at any time in the winter. No reason for decrease has been suggested. Birds are no longer seen flying over surrounding moors or over and around Lough Arrow as they used to do.

33. Bunduff (G75) Co. Sligo c. 20.

This relatively small area of low lying rough pasture, partly marshy, just west of Blunduff held about 100 birds in the 1940s and 1950s (R & HW) at which time shooting of geese was prohibited there and the place was well kept. Following the death of the keeper and more liberal shooting permission numbers declined markedly. Since a syndicate shoot was established in the late 1960s there has not been the indiscriminate shooting by continental visitors that took place for a while.

Quite numerous counts were made irregularly and unsystematically between 1953

and 1974 indicating an average population of about 60 birds over those years, the maximum count being of 86 in 1970. However, since 1974 numbers have decreased from 62 in 1976 to a present day figure of about 20 and not 80 as stated by Hutchinson (1979). There is considerable disturbance in one form or another in the vicinity of the feeding grounds. For as long as is known the geese have roosted in the lochans of the Dartry Mountains to which they retreat if disturbed from Bunduff. It is feared that this haunt will become deserted.

34. Drumharlow Lake (G90) Co. Roscommon c. 50.

Feeding grounds are the callows around and north of the lake.

In 1974 up to 100 were present in winter and a further flock of c. 50 in a bog c. 15 kms from there. This was considered exceptional. No information is available on the history of the site. Callows near the southern end of Lough Allen (G91) are in this complex, and are used by less than 25 birds of the total. There is a regular roost of 20-25 at Stoney Island at the south end of Lough Allen. No protection is afforded. Hunting activity is very slight. No threat is envisaged.

35. Moors West and NW of Lough Derg (H07), Brownhall (G96) Co. Donegal c. 130.

The population, although wandering about within the complex is inclined to be divided into two separate groups. The northern area is the bogland around Clogher Hill and Lough Slug (H08), the latter being used as a roost of 50-70 birds. The other section of the population frequents the bogs that extend over a wide area west of Lough Derg, especially those around Lough Golagh (H07) which, with other lakes in the bogland, is a roost. This population is put at 60-70 birds.

Sixty to 70 have been coming to graze in fields in Brownhall estate since 1964, though not before then, following the improvement of pasture fields. Shooting is prohibited and there is little disturbance. The geese flight out to the bogland lakes at night. An island in Lough Derg was formerly frequented by the geese until it became

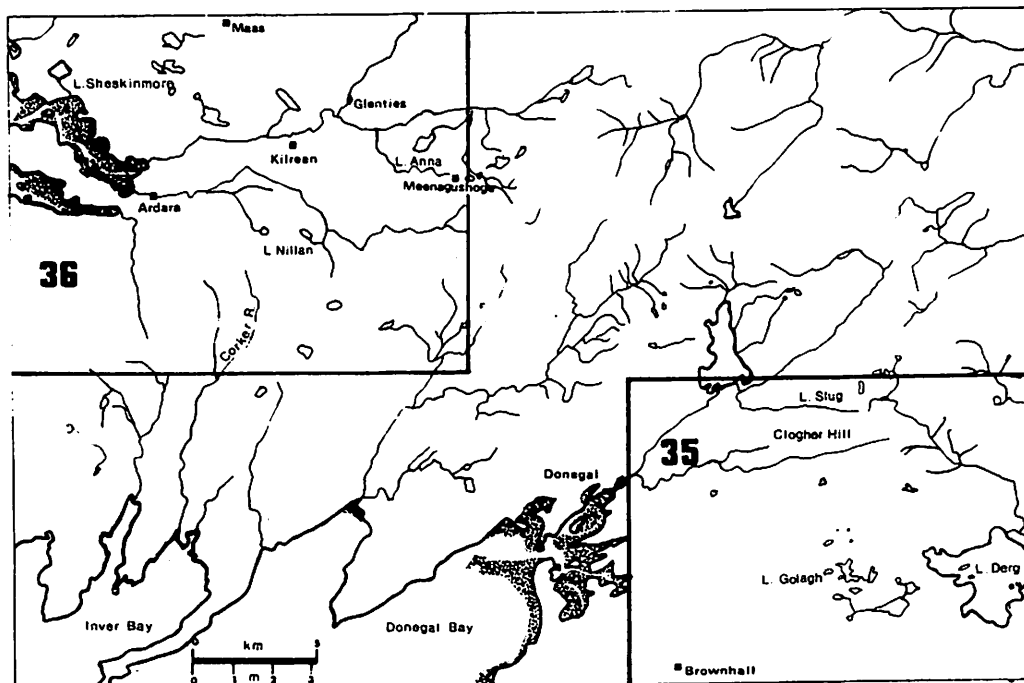


Fig. 11. Sites 35 and 36. Moors west and NW of Lough Derg and Brownhall, Co. Donegal; Sheskinmore Lough, Co. Donegal and possible complex.

overgrown
Patrick's P
the Forest
the island
gathering o
represented
Conserv
where, hun

36. Sheski

This is a
the lough.

Number
various tim
total up to
sometimes
Kilrean to

It seems
with the St
include sor
There is

36a. SE o

Undulati
Lough N
reaches of 1
to 200 of tl
seen in the
1952, few
50 birds. I

The muc
forsaken si
There is

36b. SE of

Undulati
some 25-30
The roo:
Glenties (G

37. Lough

Moorlan
the two lak
about 50 fc
few moorla
of afforesta

38. Moors

This is
scattered p
1950s the

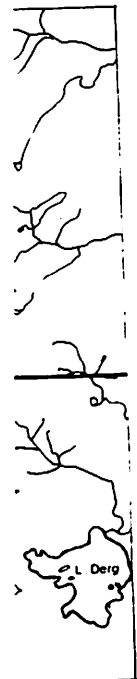
rs, the
reased
ed by
in the
l in the
uff. It

g c. 15
on the
in this
oost of
forded.

negal c.

ed to be
Clogher
he other
west of
lakes in

ce 1964,
ooting is
lakes at
t became



nhall, Co.
ex.

overgrown with scrub. However, through the good offices of the Prior of St. Patrick's Purgatory who owns the island, arrangements have been made recently by the Forest and Wildlife service to clear the scrub and the geese are beginning to use the island again. The population in this complex has remained very constant. A gathering of 130 all in one area in winter 1977-78 during a period of frost probably represented the total population.

Conservation measures are limited to Brownhall and the Lough Derg island. Elsewhere, hunting pressure is negligible.

36. Sheskinmore Lough (G79) Co. Donegal 60-70; at times c. 120.

This is a haunt of long standing, where the geese feed on the grassy flats adjacent to the lough.

Numbers are reported to have decreased markedly over the past 20 years. At various times the number present is augmented by smaller flocks which can bring the total up to about 120. Though the flock is based mainly at Sheskinmore Lough it sometimes disperses or wanders into bogs south of Glenties (G89), notably near Kilrean to Lough Anna and around Meenagushoge.

It seems very probable that the populations in the following two sites interchange with the Sheskinmore haunt so that the largest number reported at this lough may include some from the next two haunts.

There is little or no hunting and no protection.

36a. SE of Ardara (G78) Co. Donegal 50-60.

Undulating moorland with small lakes.

Lough Nillan and a small lake just west of it and the boglands around the upper reaches of the River Corker (all in G 78) had long been a haunt. Previous to 1952 up to 200 of these geese were in the area. Sometimes several flocks of 50 birds could be seen in the boggy valley of the River Corker. Marked decrease set in shortly after 1952, fewer each winter until by 1968 the area was considered to hold no more than 50 birds. In January 1967 the maximum counted was 62.

The much favoured ground in the River Corker valley has now been entirely forsaken since the valley was afforested. Roosting places are the lakes mentioned.

There is no protection. The whole might be threatened by further afforestation.

36b. SE of Maas (G79) Co. Donegal 25-30.

Undulating moorland with small lakes. In 1967 and 1968 the population was of some 25-30 in the area and has shown no noticeable sign of decrease.

The roost is on one or other of the larger lakes and/or the hill lochans near Glenties (G89).

37. Lough Sallagh and Barnesmore Lakes (H09; H08) Co. Donegal c. 50.

Moorland with bog lakes. Little is known of this haunt. The birds range between the two lakes using the moors for feeding. Numbers are said to have been static at about 50 for many years. The site is of small importance except that it is one of the few moorland haunts left in Co. Donegal. There is no protection and no suggestion of afforestation at present.

38. Moors NE of Fontown (B90) Co. Donegal c. 30 in November and December.

This is a vast area of moorland and lochans. No exact figures for the small scattered population, which was very mobile, were ever available but about the 1950s the total probably did not exceed 25-30 birds. In winter 1977-78 it was

reliably learnt that about 30 birds still come there in November but all have left again by the end of December. Thought to roost on Lough Muck (B90).

The Forest and Wildlife Service own most of the moorland, but at the moment there seems to be no afforestation threat.

39. New Lake, Dunfanaghy (C03) Co. Donegal c. 30.

About 1940 up to 100 were present all winter in the marshland and swamp at the north side of the lake. By 1955 the number had decreased to about 50. There had been much shooting between 1945 and 1955 and numbers frequenting the haunt decreased as a result. Although shooting has decreased the geese have never regained their pre-1940 strength and few are now found. Numbers may be as low as 20, very rarely over 40; there is one record in recent years of 57. The birds roost on the lake.

No conservation measures exist. There is the threat of a caravan site on the haunt.

40. Grange (C30) Co. Tyrone c. 160.

International importance

This is the headquarters of a complex comprising Blanket Nook, Inch, Longfield, Myroe, Blackbraes.

Grange has long been a favoured haunt. Numbers there increased after the rapid drainage of Inch levels in the late 1960s. At that time Grange held about 250 but Inch and possibly Blanket Nook had separate populations, so that the complex total would have been at least 350.

Grange probably became increasingly attractive due to improved pasturage management and subsequent to about 1965 the maximum population there varied

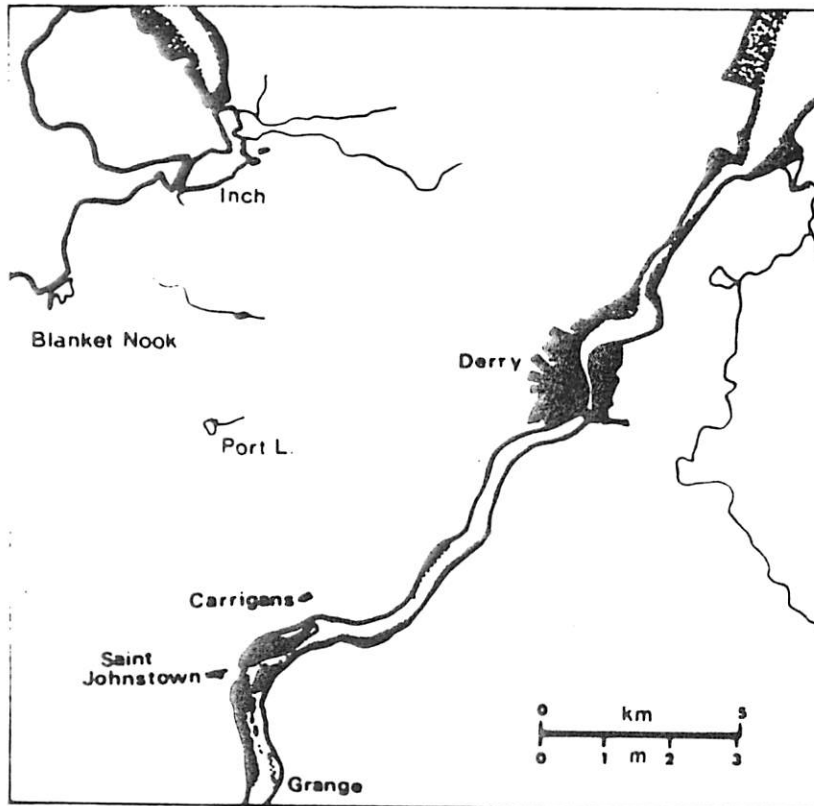


Fig. 12. Grange, Co. Tyrone and complex.

between c. 24 up to 450 ha

The number winter 1977- apparent dec

No alterna about 160 di

There are seeding and fields perhaps area, the rus disturbance c

Roosting i (C31), usual birds were us they came ha

No conser

Opposite secluded gras it.

Blanket N

A rather s pasture though capable of ho been there te birds has fall

Blanket N conservation

There is a roost.

Inch (C32

Since the s Nowadays 8 sloblands are alternate betv

The haunt no conservat

When Incl valley (C42),

Longfield

Well drain

Monroe (C

Habitat as

Blackbrae

Badly drain

These last hold less than birds roost, it small sites w

between c. 240 and c. 350. Highest numbers are present from February to April and up to 450 have been counted at the time of spring migration.

The numbers using Grange appear to have been declining since about 1974. In winter 1977-78 the population at Grange was far below average. The reason for this apparent decline is unknown.

No alternative site has been located. The population in the complex now stands at about 160 during winter months, but higher in spring and in November.

There are some semi-permanent pools, good rotational grazing with much re-seeding and some tillage. The birds still show preference for the remaining rushy fields perhaps because there has been increased disturbance around the edges of the area, the rushy fields being away from the main tracks on the area. Temporary disturbance causes the Grange birds to use other areas in the complex.

Roosting is on the River Foyle (C31) between St. Johnstown and Carrigans (C31), usually of 150-200 birds. In December 1977 and January 1978 about 130 birds were using the roost, but came from the SW rather than from Grange; whence they came has yet to be discovered.

No conservation measures are in existence.

Opposite St. Johnstown (C30) on the Co. Tyrone side of the river there is good, secluded grassland feeding ground but in 1977-78 the birds were evidently not using it.

Blanket Nook (C31)

A rather small area of marshy grassland has been almost entirely turned into pasture though damp in places. It is useful as an adjunct to Grange. It was never capable of holding more than 60 to 80 birds though at times of migration 150 have been there temporarily. Now that there has been drainage the average number of birds has fallen to about 40, but in winter 1977-78 no geese were present.

Blanket Nook was made a non-shooting area in 1970. There is also some conservation of surrounding fields under the auspices of a local gun club.

There is a small feeding area on arable land near Port Lough (C31). This lake is a roost.

Inch (C32)

Since the sloblands were drained in the late 1960s numbers have declined greatly. Nowadays 80-90 are rarely seen, 20 being the most usual number. The arable sloblands are however used by important numbers during November, and these alternate between there and freshwater marsh. The birds roost on the River Foyle.

The haunt is subject to human disturbance and agricultural activities. There are no conservation measures.

When Inch was extremely used the birds also frequented bogs in the Owenkillev valley (C42), particularly an area now afforested.

Longfield (C52)

Well drained slobland, grass and grain fields, with temporary pools.

Monroe (C62)

Habitat as Longfield.

Blackbraes (C42)

Badly drained slobland with a permanent pool.

These last three are rather insignificant subsidiary haunts which between them hold less than 50 birds. Almost certainly they are part of the Grange complex. The birds roost, it is thought, in the Roe estuary (C62). In addition there are a number of small sites which are used at times by birds of the Grange complex.

41. Killeter (H27) Co. Tyrone Uncertain whether now tenanted.

A large moorland area. Little is known about the former goose population, but it is thought to have declined. It was put at about 100 in winter 1976-77. Although an area had been afforested, plots totalling 15 hectares had been left unplanted to give feeding areas for the geese. These were used despite the proximity of trees. For reasons unknown no geese came to the haunt in winter 1977-78, this being the first winter of their absence, nor in winter 1978-79. No further forestry operations had taken place.

Outside the forest area other moors in surrounding country were also used, but doubt exists as to whether this was so in 1978-79. However some birds were reported in flight in the River Derg valley near Castlederg (H28). The area calls for further investigation.

Deserted Irish Haunts

All have been deserted by the Greenland White-fronted Goose since about 1950 with the exception of haunts S and T deserted about 1930 and previous to 1950 respectively.

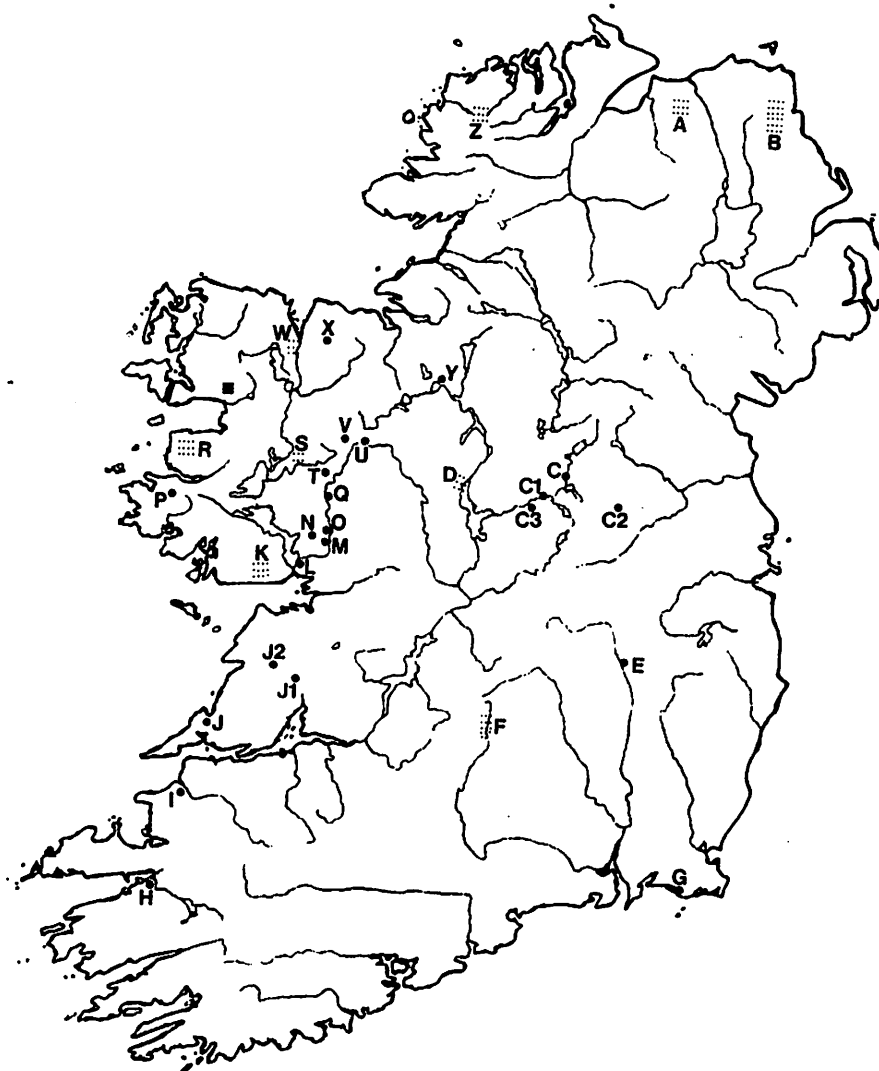


Fig. 13. Location of deserted Greenland White-fronted Goose sites in Ireland.

- A. Moors t
- B. Moors c
- C. Coolaml
- C1. Cromlyr
- C2. Castlewi
- C3. Bracklin
- D. Marshes Roscom
- E. Callows
- F. River St
- G. Irish-Cu
- H. Marshes
- I. River Fe
- J. Doonbey
- J1. Fields b
- J2. Corofin
- K. Moors n
- L. Carrowt
- M. Cloonke
- N. Killower
- O. Berming
- P. Gleninag
- Q. Carrago
- R. Moors S
- S. Lough I
- T. Bogs ne
- U. Bogs sou
- V. Cumber
- W. River M
- X. Ox Mou
- Y. Lough K
- Z. Lough V
- North of
- ▶ Cuan, V

(A) Moors be
The traditic
and purposes
numbers are n
has resulted i

(B) Moors of
As for prev

(C) Coolambe
at Bracklin, C

All these w
resort. All we
haunts has no

- A. Moors between Coleraine and Limavady, Co. Derry.
- B. Moors of north Antrim, Co. Antrim.
- C. Coolamber, Co. Westmeath.
- C1. Cromlyn, Co. Westmeath.
- C2. Castlewilder, Co. Westmeath.
- C3. Bracklin, Co. Westmeath.
- D. Marshes bordering Lough Ree and near the mouth of the Hind River, Co. Roscommon.
- E. Callows beside the River Barrow near Athy, Co. Kildare.
- F. River Suir from Camus to Templemore, Co. Tipperary.
- G. Irish-Cull, Co. Wexford.
- H. Marshes and fields near Killorglin, Co. Kerry.
- I. River Feale estuary, Co. Kerry.
- J. Doonbeg marshes, Co. Clare.
- J1. Fields between Port House and Dromore House, Co. Clare.
- J2. Corofin Callows, Co. Clare.
- K. Moors north of Spiddal, Co. Galway.
- L. Carrowbrowne callows, Co. Galway.
- M. Cloonkeen turlough, Co. Galway.
- N. Killower (Turlough), Co. Galway.
- O. Bermingham turlough, Co. Galway.
- P. Gleninagh, Co. Galway.
- Q. Carragoon Lough and Brackloon turlough, Co. Galway.
- R. Moors SE of Louisburgh, Co. Mayo.
- S. Lough Deen, Bloomfield bog and Lough Carra, Co. Mayo.
- T. Bogs near Brickeens, Co. Mayo.
- U. Bogs south of Loughglinn, Co. Roscommon.
- V. Cummer bog, Co. Mayo.
- W. River Moy, Co. Mayo.
- X. Ox Mountains, Co. Sligo.
- Y. Lough Key, Co. Roscommon.
- Z. Lough Veagh area, Co. Donegal.
- North of Lough Feeagh, Co. Mayo. (see under 'Bog of Erris').
- ▶ Cuan, Ventry Harbour, Co. Kerry. See text.

(A) Moors between Coleraine and Limavady (C72) Co. Derry.

The traditional feeding and resting grounds in the upland areas had to all intents and purposes been deserted by the late 1960s or even shortly before. Former numbers are not known. Almost certainly man's encroachment in these remote areas has resulted in the geese deserting them.

(B) Moors of north Antrim (D73/D12) Co. Antrim.

As for previous site — Coleraine-Limavady.

(C) Coolamber (N37); C1, Cromiun (N36); C2, Castlewilder (N26); C3, River Deel at Bracklin, Co. Westmeath.

All these were in the complex of which Lough Iron (see site 5) was the major resort. All were drained in the 1960s and lost to the geese. The desertion of these haunts has not increased the population elsewhere in the complex.

(D) Marshes and bogland bordering Lough Ree east of Roscommon and near the mouth of the Hind River (M96) Co. Roscommon.

Formerly this was an important haunt. About 1945 300-500 geese are said to have wintered in the area and along the lake shore to Lanesborough. This figure may well be an exaggeration, but undoubtedly the geese were plentiful and the informant stated that once he had shot 42 in one day and often nearly as many.

In the late 1960s numbers had dropped to barely 100; since 1970 there were virtually none, or temporarily 20 at most. By winter 1973-74 the area had become entirely deserted.

Heavy shooting pressure, the opening up of drains and consequent heavy stocking of cattle are given as reasons for the disappearance of the geese.

(E) Callows beside River Barrow (N70) Co. Kildare.

These callows are not extensive; they lie just south of Cloney. They were the haunt of 25 geese on average (R & HW).

At times 50 or even 70 would be present, but they seldom appeared before the end of December.

Though of regular occurrence up to 1955, for reasons unknown the birds then came only spasmodically until by 1959 none were coming at all.

(F) River Suir valley (S16) between Camus and Templemore, Co. Tipperary.

Callows alongside the river held up to 200 birds in the 1940s and early 1950s (R & HW). All but a few small areas were deserted following arterial drainage in the early 1960s. The few geese that held on were hunted by shooters using rifles and consequently were driven out.

(G) Inish-Cull (S90) near Kilmore Quay, Co. Wexford.

This habitat consisted of callows, much flooded at times, some pasture, and held up to 200 birds, sometimes rather more, up to the time that it was drained about 1958. The geese then forsook the haunt.

(H) Marshes and fields NW of Killorglin (U79) Co. Kerry.

This was a traditional haunt of about 50 birds. Due to the widening and deepening of the drains running through the area it became unsuitable for the geese and was deserted in 1976. It seems possible that the birds moved to the recently established Doo Lough/Tullaha Sanctuary (W08) near Killarney.

(I) River Feale Estuary (Q83) Co. Kerry.

The habitat was a huge unfenced area of pasture and adjacent bogland. In the 1950s 80-100 occurred (R & HW). This haunt became entirely deserted about 1968 without any known reason. Occasional small parties come to the place but do not remain.

(J) Doonbeg marshes (Q96): J1, Fields between Post House and Dromore House (R38); J2, Corofin callows (R28).

These three sites are referred to under Co. Clare in the accounts of current Irish sites.

(K) Moors (M12/M13) north of Spiddal, Co. Galway.

Formerly the geese were found dispersed in small flocks over the moors. They were 'plentiful' (no numbers available) up to about 1918 after which there were the first signs of decrease for reasons unknown. Their main food, the cotton grass, was plentiful and remained so until the time the geese were driven from the area.

Numbers remained fairly static at c. 200 for some years up to 1957, or even for some years later. Then came a drastic decline about 1967; in 1967 only 20 were counted for a short period. After that no geese were seen or heard.

This account is based on information from a gamekeeper who had been in the area

for over 50
Both were c
the turf ban
had been to
Large ar
Fermoyle (I

(L) Carrow

These ex
rough pastu
1940s held

After the
1950s the j

The river
to the geese

(M) Cloonk

The large
178 have b
undoubtedly
considered

The turlc
that winter
appears at

(N) Killow

Until dra
alongside th
Cloonkeen
increased n
come there

(O) Bermin

The mar:
totally drain
1948.

These bi

(P) Glenina

An exte
previous to
the bog in
been sugge:

**(Q) Carnag
Galway.**

Formerly
about 1959

(R) Moors

Formerly
frequented
especially f
has been dr:
the 1960s d
district, with
area becam

for over 50 years and a shooting man who had lived beside the moors for 25 years. Both were of the opinion that widespread digging of turf and the making of roads to the turf banks disturbed the geese and drove them from the bogs where formerly they had been totally undisturbed. Shooting was not a contributory cause.

Large areas have now been afforested including boglands and marshes near Fermoy (M02) which were also frequented by the population under review.

(L) Carrowbrowne Callows (M33) Co. Galway

These extensive callows alongside the River Clare consisted of marshy ground, rough pasture liable to flooding and with permanent shallow pools and in the 1930s-1940s held 200 to 300 geese. An adjacent high bog was a resting place.

After the Second World War there was excessive shooting pressure and by the early 1950s the population had dropped to under 100, later to about 50 (R & HW).

The rivers Clare and Cregg were drained about 1958-59 and the habitat was lost to the geese. Nowadays a very few birds drop in rarely, but do not remain.

(M) Cloonkeen Turlough (M44) SW of Tuam, Co. Galway.

The large area of marshy pasture beside this turlough held c. 150, more at times: 178 have been counted there. Fluctuations here and at Bermingham turlough were undoubtedly due to movement between the two places. The combined total was considered to be c. 300 (R & HW).

The turlough was completely drained in 1957-58. Although about 30 birds came that winter none have done so regularly since. An occasional party sometimes appears at times of migration, but remains only for a day or two.

(N) Killower (Turlough) M35) Co. Galway.

Until drained in 1972-73 variable numbers used to come to feed on the marshes alongside the turlough. In all probability they were birds from either Bermingham or Cloonkeen turloughs, or both. Following the drainage of these two haunts an increased number came to Killower, but when it had been drained all geese ceased to come there.

(O) Bermingham Turlough (M45) Co. Galway.

The marshes surrounding this turlough were the haunt of at least 150 birds until totally drained in 1957-58 and deserted since then. Up to 200 were using the place in 1948.

These birds probably interchanged with Cloonkeen Turlough to some extent.

(P) Gleninagh (L85) Co. Galway.

An extensive bog just north of Lough Inagh held a population of c. 100 birds previous to 1970. Since then numbers have decreased annually; only 9 wintered in the bog in 1976/77 and none was reported in the following winter. No reason has been suggested for the decrease.

(Q) Carnagoon Lough (M55), Brackloon Turlough (M55) near Carrantryla, Co. Galway.

Formerly over 100 frequented these sites regularly. The turlough was drained about 1959 and no geese come to either site nowadays.

(R) Moors SE of Louisburgh (L87) Co. Mayo.

Formerly the regular haunt of up to 50 birds (R & HW); at times up to 150 frequented these moors and marshes. During the 1960s several places were especially favoured, among them bogland around Lough Namucka (the best ground has been drained and afforested) and a marsh SW of Glenkeen Bridge. By the end of the 1960s decrease had set in and by 1967 geese had virtually disappeared from the district, with perhaps a small flock or two being seen temporarily, and thereafter the area became entirely deserted.

(S) Lough Deen and Bloomfield Lakes and bogs (M27) and Lough Carra (M17) Co. Mayo.

A small area of bog beside Lough Deen (M27) was utilized for feeding and resting. Though roosting at times on Lough Deen the birds more often flighted to one of the Bloomfield bog lakes (M27). Often they would feed on the roots of the cotton grass on the bog between the two lakes at Bloomfield. This flock frequently grazed in daytime on an island in Lough Carra (M17). In 1930 one Bloomfield lake was drained and the adjacent bog and the bog at Lough Deen were utilized for turf-cutting. The geese deserted the area and also ceased to use the island in Lough Carra, Cloon Lough and the mountains NW of Lough Mask.

The strength of this single flock was usually just short of 50 birds.

(T) Bogs near Brickeens (M47), east of Claremorris, Co. Mayo.

Little is known of the history of the geese in this area of extensive bog. The numbers were small and scattered and probably did not exceed a total of 50 birds.

Reclamation for turf-cutting and afforestation drove the geese out before the 1950s.

Neither this nor the previous haunt (Lough Deen and Bloomfield) were tenanted by geese at the time that R & HW wrote.

(U) Bogs south of Lough Glinn (M68) Co. Mayo

Though the numbers that frequented these bogs is rather uncertain, much the same story of desertion holds as for the previous site. In 1974 there was said to have been no geese in the area since 'about 1969'.

(V) Cummer Bog, south of Urlaur Lough (M58) Co. Mayo

Until about 1962 several flocks, each of 30 to 40 birds, wintered regularly on this extensive and in places marshy bog. The total could have been 80-120 birds. Decrease set in until by winter 1967-68 the bog was deserted.

A reason for destruction is given as being the excessive opening up of the bog in the mid-1960s for turf-cutting. Moreover it is felt locally that the birds became scared by the large turf ricks scattered over their habitat and also at the newly cut turf banks. Be that as it may, in the first winter of this state of affairs geese came but did not remain. Shooting was not the cause of desertion, nor was lack of food, for a knowledgeable local man volunteered that the white cotton grass, on the roots of which he rightly stated that the geese fed, had not decreased.

(W) River Moy from Coolcronan to South of Foxford (G20) Co. Mayo.

Until the arterial drainage of the river took place about 1967 the flats and callows in the valley of the Moy from Coolcronan to about 2 km south of Foxford formed a very important area. Up to at least 1947 over 400 White-fronted Geese were regularly found there. By 1966 it had been noticed that numbers were decreasing. A marked decrease was said to have taken place by 1956, and an even greater decrease from the population strength at the turn of the century. The later decrease was put down to excessive disturbance, mostly due to shooting activities.

Following drainage about 1967 the habitat was ruined and the geese deserted the area. No alternative haunt is known.

(X) Ox Mountains (G42/G52) Co. Sligo.

Never the haunt of a great many, probably less than 50; previous to 1974 they had ceased to frequent the area.

(Y) Lough Key (G80) Co. Roscommon.

The haunt was never more than a small one, holding less than 50 birds. It was very restricted, being a grassy hill lying at the east side of the lake near Knockvicar. Afforestation of the hill about the early 'sixties' drove the geese from the site.

(Z) Moors
Whereas
Creeslough
commenced
10 to 12 b
decrease co

■ North of
See under '

▲ Cuan nea
This site
haunt of ov

In 1976
fields used b
However it
(V29)and S:
indicated or
elsewhere al

Current Bi

42. Tankern

A-W (1963):
Peak counts

1962-63
1963-64
1964-65
1965-66
1966-67
1967-68
1968-69
1969-70
1970-71

The sharp
reclamation c
Both have in
decline may l

(Z) Moors and lakes north and east of Lough Veagh (C02) Co. Donegal

Whereas about 1955 there had been a total population of from 200 to 300 around Creeslough Braugh north of Lough Veagh and on moors to the east of it a decrease commenced about 1963, and by the winter of 1969-70 the population had fallen to 10 to 12 birds. By 1973 the area had been entirely deserted. No reason for the decrease could be suggested.

■ North of Lough Feeagh, Co. Mayo

See under 'Bog of Erris' above (site 27).

▲ Cuan near Ventry Harbour (V39) Co. Kerry

This site is in a rather different category from other deserted haunts. It was the haunt of over 50 birds until a recent decrease to 25-30, at times up to 50.

In 1976 shooting was prohibited, but the owner erected wire fences across the fields used by the geese. This is thought to have caused the birds to vacate the haunt. However it is probable that the same birds are still in the vicinity. Beginish Island (V29) and Sybil Head (Q30), both north-west of Cuan are now frequented and are indicated on the map thus ▲. This very mobile flock may also be seen at times elsewhere along that strip of coast.

Current British Sites

42. Tankerness Loch, Orkney (HY5209). Formerly up to 75, but recent decline.

A-W (1963): A few may winter on the Orkneys.

Peak counts 1962-63 to 1978-9

1962-63	80	1971-72	75
1963-64	75	1972-73	61
1964-65	70	1973-74	74
1965-66	60	1974-75	77
1966-67	80	1975-76	16
1967-68	90	1976-77	none seen
1968-69	70	1977-78	none seen
1969-70	no count	1978-79	14
1970-71	70		

The sharp decline since 1974-75 appears to have been due to a combination of reclamation of moorland used by the geese, and an increase in shooting in the area. Both have involved an increase in human activity and consequent disturbance. The decline may be linked with the increase in Caithness.

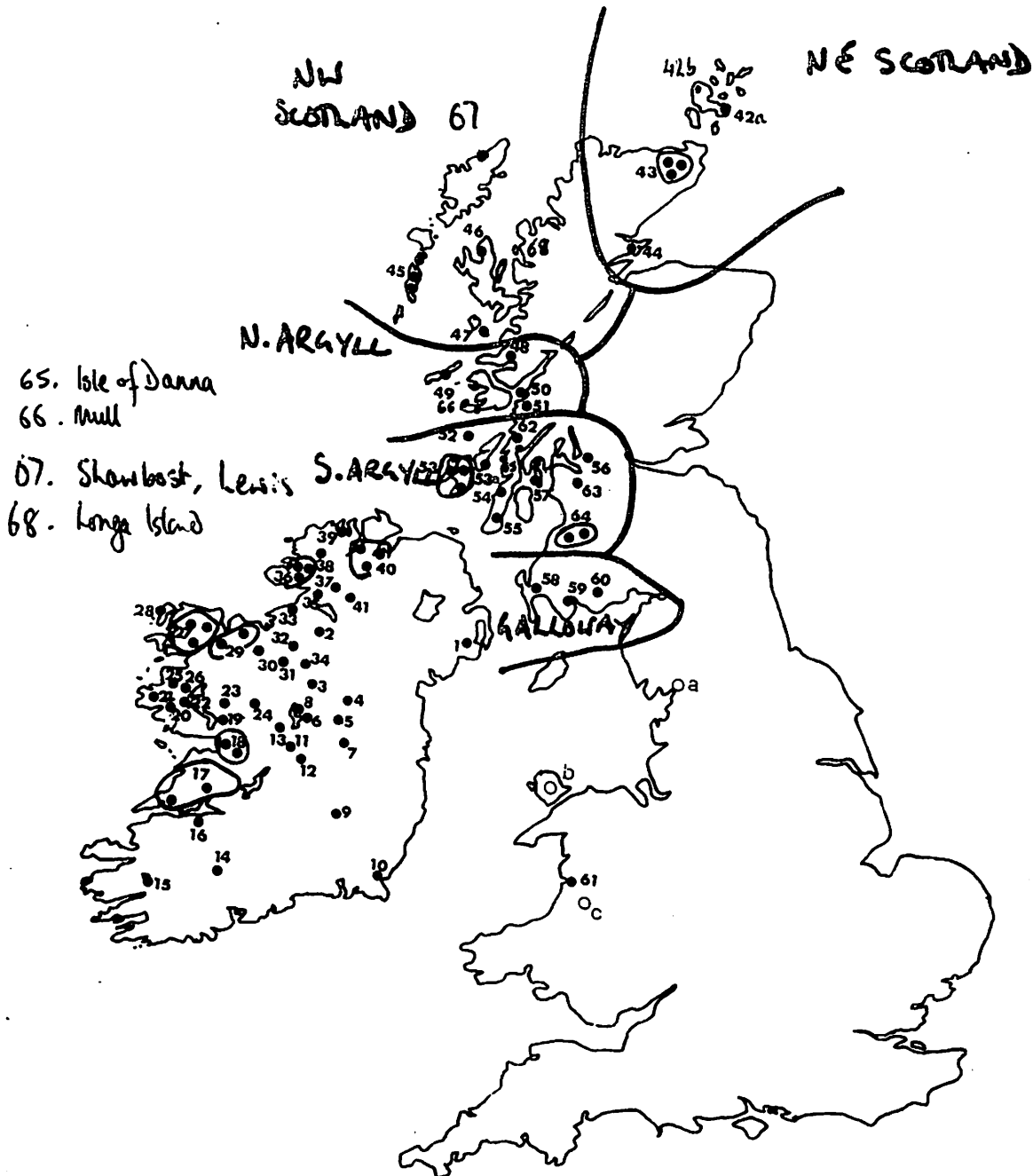


Fig. 14. Location of Greenland White-fronted Goose sites in Britain and Ireland. The key to the Irish sites is given on page 313.

- 42a Tankerness Loch, Orkney. 42b The Loos.
- 43. Various lochs in Caithness.
- 44. Loch Eye, Ross and Cromarty.
- 45. Outer Hebrides, Highland.
- 46. Isle of Skye, Highland.
- 47. The Small Isles, Inverness, Highland.
- 48. Loch Shiel, Inverness, Highland.
- 49. Tiree and Coll, Argyll, Strathclyde.
- 50. Lismore Island, Argyll.
- 51. Benderloch Peninsula, Argyll.
- 52. Colonsay, Argyll.
- 53. Islay, Argyll.

- 53a. Jura, A
- 54. Rhunaha
- 55. Machrih
- 56. Loch Lo
- 57. Isle of B
- 58. Stranrae
- 59. Bladnoch
- 60. Loch Ke
- 61. Dyfi est
- 62. Crinan M
- 63. Barr Lo
- 64. Lochs in

Deserted site:
 a. Morecam
 b. Anglesey,
 c. Tregaron

43. Various

International

A-W (1963):

Peak counts
 total for cou

- 1962-63
- 1963-64
- 1964-65
- 1965-66
- 1966-67
- 1967-68
- 1968-69
- 1969-70
- 1970-71
- 1971-72
- 1972-73
- 1973-74
- 1974-75
- 1975-76
- 1976-77
- 1977-78
- 1978-79

The estimat
 the counts hav
 1978-79 was
 The Greenle
 until the early
 be continuing.
 with scattered

- LAND
- 53a. Jura, Argyll.
 - 54. Rhunahaorine, Argyll.
 - 55. Machrihanish, Argyll.
 - 56. Loch Lomond, Dumbarton.
 - 57. Isle of Bute, Strathclyde.
 - 58. Stranraer, Galloway.
 - 59. Bladnoch valley and Wigtown Bay, Galloway.
 - 60. Loch Ken, Galloway.
 - 61. Dyfi estuary, Dyfed.
 - 62. Crinan Moss, Argyll.
 - 63. Barr Loch, Renfrew.
 - 64. Lochs in Ayrshire.

Deserted sites

- a. Morecambe Bay, Lancs. and Cumbria.
- b. Anglesey, Clwyd.
- c. Tregaron Bog, Dyfed.

43. Various lochs in Caithness (ND 1055). Mean annual peak 500.

International importance

A-W (1963): no mention in text, but the map shows a flock of 10-100.

Peak counts for groups of different lochs, 1962-63 to 1978-79, with estimated total for county.

	Lochs Calder Brubster	Lochs Scarmclate Watten Winless	Loch Heilen	Others	Est. county total
1962-63	10		19		29
1963-64	6				6
1964-65					no count
1965-66	48				48
1966-67	60		150	12	222
1967-68	100	140	260		360
1968-69	115				115
1969-70	152	150	60		300
1970-71	128		150		278
1971-72	190		250		440
1972-73	200		150		350
1973-74	90		615	30	735
1974-75	100	120	350		450
1975-76	230	90	50		320
1976-77	200		300	50	550
1977-78	315	85	240	90	550
1978-79	370	80	190		640

The estimated total for the county must be treated with great caution, as not all the counts have been made at the same time each year. However the total of 640 in 1978-79 was the result of a simultaneous census.

The Greenland White-front seems not to have been a regular winterer in Caithness until the early 1960s, since when there has been a marked increase, which may still be continuing. However the occurrence of the birds in three separate areas regularly, with scattered reports elsewhere, has made complete counts very difficult to obtain.

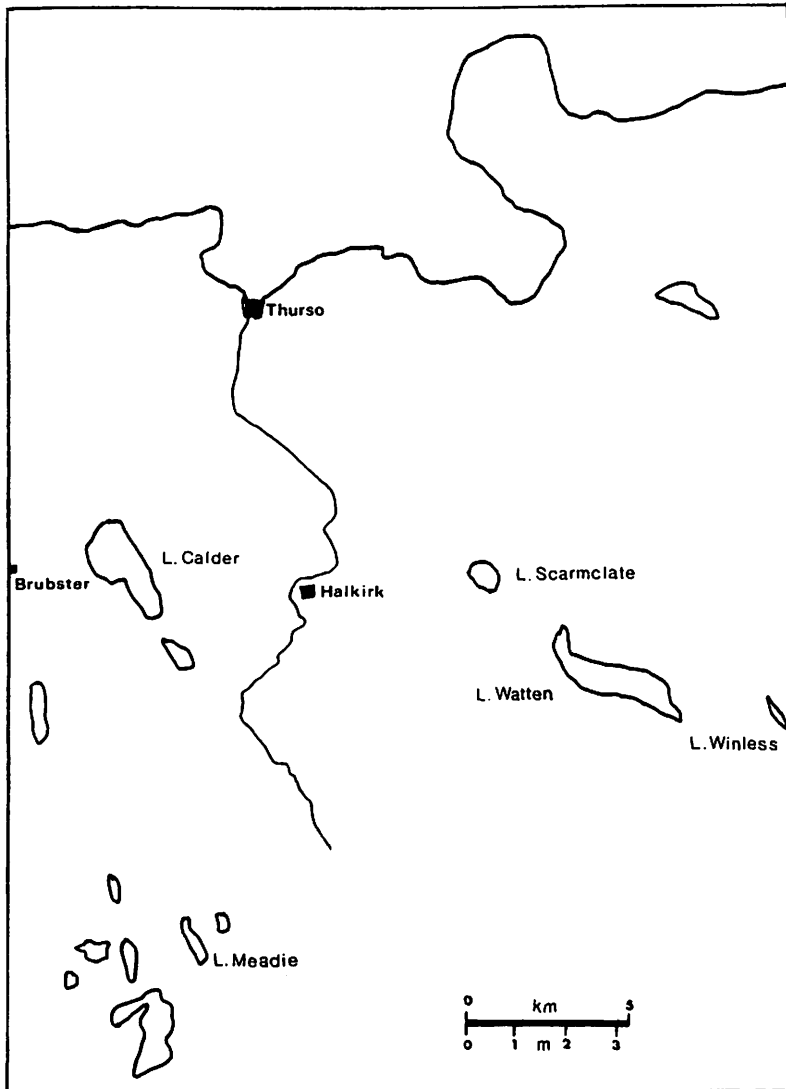


Fig. 15. Various lochs in Caithness.

Nevertheless the estimated county totals are thought to be realistic and perhaps to err on the low side.

The flock based round Lochs Calder and Brubster is thought to remain in the general area throughout the winter, feeding on arable and grass fields, and roosting on the lochs. The birds using Loch Heilen and Lochs Scarmclate, Watten and Winless, may comprise a second sub-population, as fighting has been seen taking place between the two, and also to and from a common roost on Loch Meadie, no less than 26 km south-west of Loch Heilen. What is wrong with the lochs round which the geese feed which makes the birds flight such distances to a roost is not known. These birds, too, feed on farmland, though have lost some wet pastures to drainage in recent years.

Shooting pressure is very slight on the feeding grounds and on the roosts. The recent drainage has led to a change of feeding habits but not apparently to any reduction in numbers.

44. Loch Eye, Ross and Cromarty, Highland (NH 8380), Mean annual count 60.

A-W (1963): 30-40 present most seasons in March also seen November one year. The only resort in east Scotland that is still in regular use.

- Peak count
- 1962-63
- 1963-64
- 1964-65
- 1965-66
- 1966-67
- 1967-68
- 1968-69
- 1969-70
- 1970-71

The count little doubt
The geese to Morrich birds to see
There are and these ar fronts are o

45. Outer I Internationc

A-W (1963 between Benbecu South U found on

Recent in took place c to be any re. areas. On E between 25 Uist, princip counts but s islands have

There is r though aerie
Goose sh average ann fronts.

46. Isle of

A-W (1963) Beag, bc

There are However a habitat.

47. The Sn present statu

Peak counts 1962-63 to 1978-79.

1962-63	No count	1971-72	60
1963-64	40	1972-73	30
1964-65	No count	1973-74	26
1965-66	80	1974-75	45
1966-67	70	1975-76	70
1967-68	38	1976-77	65
1968-69	55	1977-78	62
1969-70	53	1978-79	60
1970-71	42		

The counts in recent years have been well spread through the winter and there is little doubt that the birds spend the entire winter in the area.

The geese feed on farmland around Loch Eye and sometimes roost there or flight to Morrich More, c 8 km north. Recently, increased military activity has caused birds to seek a roost further west up the Dornoch Firth.

There are substantial numbers of Greylags in the area, particularly in the autumn, and these are shot quite heavily in some areas. However, it seems as if the White-fronts are only shot quite lightly.

45. Outer Hebrides, Highland (c. NF 8520-NF 7575). 150-250, formerly 300-400.

International importance

A-W (1963) (summarised): virtually none on Lewis or Harris. North Uist holds between 50 and 150 in favoured years but probably no more than 20 regularly. Benbecula holds between 50 and 120, while the largest numbers are found on South Uist, where, despite a decline during the 1950s, up to 250 could still be found on the machair lands on the west coast.

Recent information suggests that there has been a further decline though when it took place or whether it is still continuing is not known. There are not now thought to be any regular wintering groups on North Uist, which in any case has few suitable areas. On Benbecula only one regular haunt is known, in the Nunton area, where between 25 and 50 birds are regular. The main flock is still to be found on South Uist, principally in the area around Lochs Hallan and Kilpheder. There are few good counts but such as there are indicate a total between 100 and 200. Thus all three islands have fewer geese than formerly.

There is no information from the many smaller uninhabited islands in the group, though aerial surveys in search of Barnacle Geese have not produced any records.

Goose shooting is traditional on the islands but the main quarry is Greylags. The average annual kill on the main estates of South Uist and Benbecula is only 6 White-fronts.

46. Isle of Skye, Highland (NG 4050). Probably deserted.

A-W (1963): regular haunt of about 20 birds, round Dunvegan and Loch Snizort Beag, both in the north-west of the island.

There are old reports, from the 1950s and early 1960s of up to 20 wintering. However a thorough search would be worth undertaking. There is much suitable habitat.

47. The Small Isles, Inverness, Highland (NM 4080). Formerly small numbers, present status obscure.

A-W (1963): no record.

There are old reports, from the 1950s and early 1960s of up to 20 wintering, principally on Muck, and sometimes on Eigg. There are no recent records.

48. Loch Shiel, Inverness, Highland (NM 6670). 150+, perhaps 250+.

Probably of international importance

A-W (1963): 30-100 used to appear on the moss around the lower end of Loch Shiel, but at present their status is obscure.

Apart from a single record of 50-60 in the winter of 1965-65, no further records were received from this area until the beginning of the 1970s. Since then there has apparently been a regular wintering flock of at least 150 which rose to 250 in 1974-75. There was a count of 350 in the winter of 1977-78. To what extent this is a genuine increase, or resulting from more frequent observations, is not clear. Further regular counts would clearly be advantageous.

The birds feed on the sizeable mosses between the west end of the loch and the sea and are thought to return to mosses closer to the loch at night. No farmland feeding has been noted. Shooting pressure is extremely light.

49. Islands of Tiree and Coll Argyll (c. NM1050). Possibly over 200.

International importance

A-W (1963): The White-fronts, whose main resort is on The Reef, a marshy area in the centre of the island, first started to appear regularly at the turn of the century, and by 1913 had increased to 4-500. In recent years the maximum has amounted to not more than half this figure, and the normal level to between 50 and 150. Flocks are also reported from parts of south-west Coll, but numbers have always been small.

The only recent counts to come to light are:

Winter 1966-67	200	on Tiree
March 1970	244	on Tiree
December 1973	63	on Tiree
April 1978	610	on Coll, and none on Tiree.

So far as is known Coll was not searched at the time of the other counts.

Tiree is mainly improved farmland while Coll has extensive areas of rough grazing, on which were most of the geese seen in April 1978.

The shooting pressure on the geese is not known.

50. Lismore Island, Argyll, Strathclyde (NM 8040) Up to 50.

A-W (1963): 30-40 winter on the island.

The only recent count was of 50 in April 1978. These were actually on the small uninhabited island of Bernera on the south-east side of Lismore. Virtually nothing more is known of this flock, though both islands are well farmed, with extensive pastures.

There may be a connection between this flock and the one on the north-west end of the Benderloch Peninsula.

51. Bende status obsc A-W (196.

There ar peninsula, in 1964-65 are still pre winter.

52. Isle of A-W (196.

The abs species maj the 1950s. Barnacle C However n flock has g not very fa

53. Islay, Internation

A-W (1963 1,500-3 place.

Peak count

- 1962-63
- 1963-64
- 1964-65
- 1965-66
- 1966-67
- 1967-68
- 1968-69
- 1969-70

Until abo haunts on t numbers.

Islay is re island. How feeding area not possible judgements that the loss

- (a) The C Feeding on
- (b) Leorin to 800, feedi range quite into smaller

51. Benderloch Peninsula, Argyll, Strathclyde (NM9043) Former haunt, present status obscure.

A-W (1963): no records.

There are records from here, particularly from Eriksa in the north-west corner of the peninsula, of from 25 to 75 in the late 1950s and early 1960s, and a peak count of 135 in 1964-65. Unfortunately there are no records since and it is not known whether birds are still present here. The haunt is not far from Lismore Island, where White-fronts still winter.

52. Isle of Colonsay, Argyll. (NM 3793) Up to 40, though status obscure.

A-W (1963): no mention.

The absence of a mention in Atkinson-Willes (1963) is slightly surprising as the species map shows a flock of 10-100, and there were counts of up to 20 regularly in the 1950s. There have been very few records since, mainly during aerial surveys of Barnacle Geese. Thus 35 were seen in winter 1962-62, and 10 in spring 1965. However none was seen in either April 1973 or April 1978. It could be that the flock has gone, or that it is only present in the first part of the winter. The island is not very far from the major haunt of Islay.

53. Islay, Argyll, Strathclyde (c. NR 3060) Mean annual peak 3,700.

International importance

A-W (1963): the flocks increase from November onwards to a February peak of 1,500-3,000. Over the years it seems that some increase has certainly taken place.

Peak counts, 1962-63 to 1978-9

1962-63	1,300	1970-71	2,000
1963-64	1,000	1971-72	3,400
1964-65	2,400	1972-73	2,580
1965-66	1,200	1973-74	4,180
1966-67	4,700	1974-75	3,430
1967-68	3,320	1975-76	4,150
1968-69	2,250	1976-77	4,210
1969-70	13,050	1977-78	3,300
		1978-79	3,380

Until about 1967-68 few of the counters covered all the now-known White-front haunts on the island, so it is difficult to measure the recent apparent increase in numbers.

Islay is really a complex of haunts, the geese appearing in traditional areas of the island. However, there is certainly some movement between different roosts and feeding areas through the winter, and with at most three counts made per winter it is not possible to do more than identify apparent key areas, without making judgements as to their relative importance. It is not possible to state, for example, that the loss of one haunt on the island would necessarily lead to an overall decrease.

(a) The Oa. A regular flock of up to 400, often increasing through the winter. Feeding on rough pasture and bog, and roosting on L. Kinnabus.

(b) Leorin and the flats near the Airfield. Often the largest flock on the island, up to 800, feeding on both improved grassland as well as rough grazing and bog. May range quite widely in response to shooting and other disturbance, and also break up into smaller units.

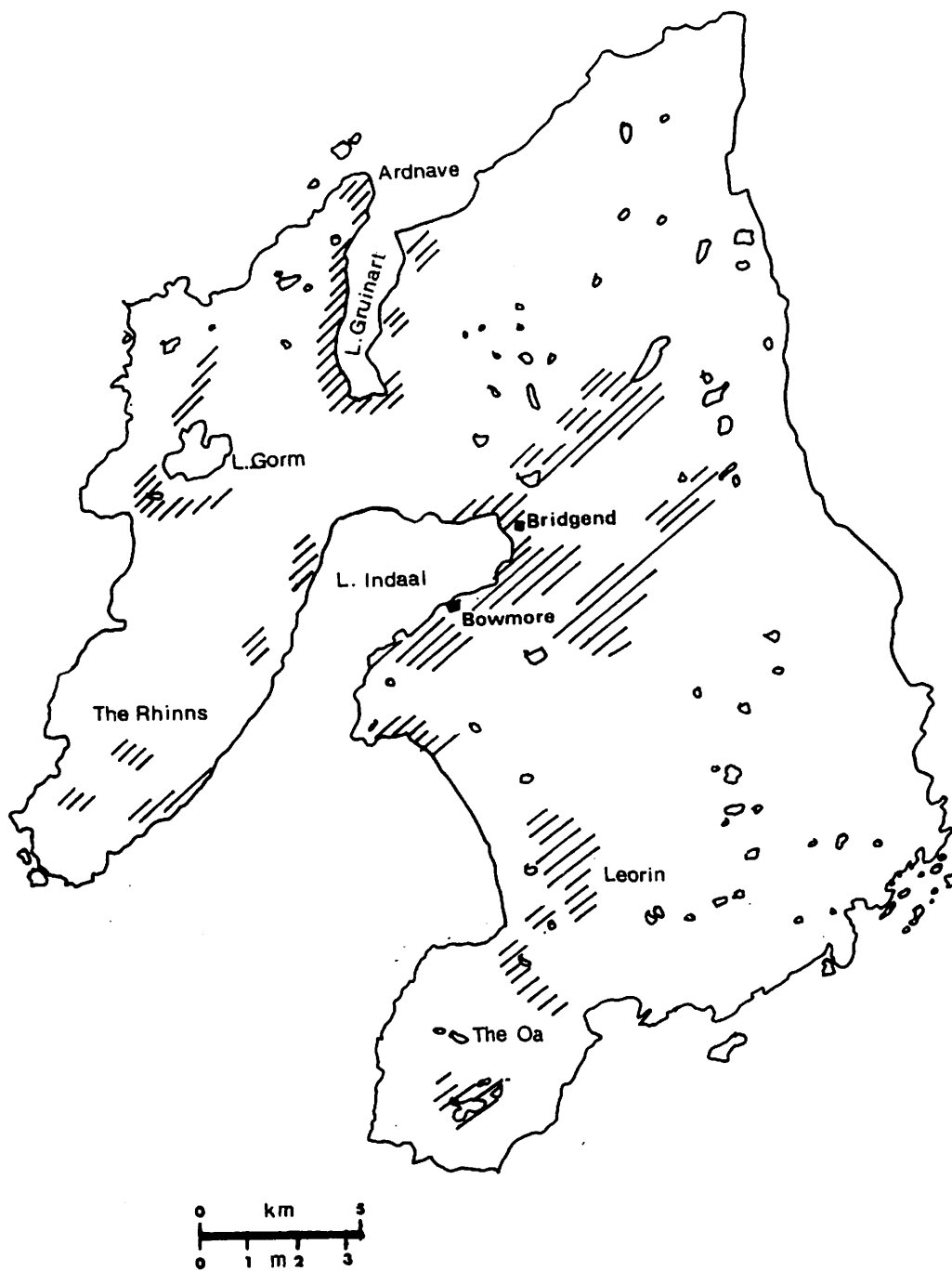


Fig. 16. Islay, Argyll.

(c) Inland from Bowmore and Bridgend. Many small flocks, up to 150-200, sometimes merging to produce larger concentrations for short periods. Includes both farmland and bog feeding birds.

(d) Gruinart and Ardnave. Usually not more than a few hundred birds feeding on grassland.

(e) Loch Gorm. The second most important area, with up to 500 regularly on the south side of the Loch, feeding almost exclusively on farmland.

(f) The Rhinns. Two or three flocks, particularly late in the winter, of up to 200, mainly on farmland.

Shoo
northern
policy in
possible
landown
on The
in a wir
As m
areas or
largest,
farming
action is
There
numbers
scattere
never be
examina
across it
point. T
Islay, or
perhaps

53a. Ju
A-W (19

Up to
sporadic
Islay, cl
not know

54. Rhu
Internati

A-W (19

Peak co
1962-63
1963-64
1964-65
1965-66
1966-67
1967-68
1968-69
1969-70
1970-71

As wil
been a ge
the high
counting
through t
done at t
of 900,

Shooting pressure is variable over the island. The largest estate, covering the northern part of the island, and perhaps half of the geese, has instituted a deliberate policy in the last few years of requesting shooters to choose Barnacle Geese wherever possible in preference to the Greenland White-fronts. However shooters and landowners in other areas have yet to follow suit though other flocks, as for example on The Oa, are unmolested. Probably no more than 300-400 are shot on the island in a winter, and this total may be too high.

As mentioned above, some of the White-fronts still use more traditional feeding areas on bogland and badly drained rough pasture, but several flocks, including the largest, are regularly found on farmland, including reseeded pasture. Conflict with farming interests is very small compared with that involving the Barnacle Geese so action is rarely taken.

There is some evidence that, contrary to the statement in Atkinson-Willes (1963), numbers fall during the winter. Unfortunately however, the species is far more scattered and in much smaller flocks during the spring than in the autumn and it has never been felt that counts made in February and March are complete. One lengthy examination of a large bog area in March revealed small groups scattered very widely across it, feeding beside tiny pools of water, and quite out of sight from any vantage point. There is also some evidence, see later, that the nearest White-front haunts to Islay, on the Mull of Kintyre, show an increase of their numbers through the winter, perhaps indicating a movement from Islay.

53a. Jura, Argyll, Strathclyde (NR 5674) Up to 50.

A-W (1963): 20-30 occur regularly in Lowlandmans Bay.

Up to 50 are reported most years from this island, though counts are always sporadic. These birds should be regarded as an offshoot from the main haunt of Islay, close by. The birds feed on farmland on the east side of the island; their roost is not known.

→ Loch nam Breac NR 5687-77

54. Rhunahaorine, Argyll, Strathclyde (NR 7048) Mean annual peak 580.

International importance

A-W (1963): about 150 occur.

Peak counts 1962-63 to 1978-79

1962-63	300+	1971-72	418
1963-64	350	1972-73	349
1964-65	360	1973-74	600
1965-66	300	1974-75	650
1966-67	430	1975-76	578
1967-68	520	1976-77	550
1968-69	435	1977-78	627
1969-70	355	1978-79	530
1970-71	700		

As with the neighbouring site at Machrihanish it is not clear how much there has been a genuine increase or whether pre-1963 counts were underestimates. Certainly the higher counts since 1973-74 seem to reflect a recent growth. The time of counting may be important as there is some evidence, in some years, for an increase through the winter, perhaps a movement from Islay. The last three peak counts were done at the same time as those at Machrihanish producing totals for the two haunts of 900, 1,036 and 730, respectively.

200,
both

ig on

n the

200,

The feeding grounds consist of an extensive area of farmland, both arable and pasture, together with some dunes, rough grazing and bog. The geese stick mainly to the farmland, often consorting with up to 400 Greylags, but are also found in rough *Juncus*-filled fields.

The White-fronts use at least four roosts, often splitting up at evening flight time and departing in different directions. Up to 100 use Loch Garasdale, in the hills about 6-8 km east, together with neighbouring lochs. A few sometimes fly as far as Tangy Loch, about 25 km south and the principal roost of the Machrihanish flock. It is not known whether birds do this on a regular basis or only when changing their feeding grounds. At times, especially under the moon, the geese will roost on very shallow pools on the moss adjacent to their feeding fields, while in calm weather they may roost on the grass fields or on the relatively sheltered sea close by.

Shooting pressure on these geese is small and well controlled.

55. Machrihanish, Argyll, Strathclyde (NR 6819) Mean annual peak 360.

International importance

A-W (1963): about 400; in recent years disturbance has become a serious threat to this flock due to extension work on the runway of the airfield here, but with the roost on the hill lochs still secure, the numbers have so far remained unchanged.

Peak counts 1962-63 to 1978-79

1962-63	no count	1971-72	370
1963-64	350	1972-73	284
1964-65	450	1973-74	68
1965-66	240	1974-75	344
1966-67	375	1975-76	400
1967-68	345	1976-77	450
1968-69	330	1977-78	409
1969-70	96	1978-79	200
1970-71	185		

There seems to have been little change in the last 17 years, though some fluctuations. Certainly the threats mentioned by Atkinson-Willes (1963) do not appear to have had an adverse effect.

The principal roost for these birds is Tangy Loch, in the hills about 7 km to the north. There is sporadic shooting here but it is not heavy and this disturbance usually shifts the birds temporarily to the neighbouring Loch Lussa. The main feeding area consists of arable and pasture land on the south side of Machrihanish airfield, and to a lesser extent on the airfield itself and occasionally on the dunes at the western end bordering the sea. The birds are frequently close to or mixed with a similar number of Greylags. Any shooting on the feeding fields is quite minor. Feeding also takes place on fields adjacent to the roost and probably in the valley leading to it. This may explain the low counts in some years when these areas were not searched.

A new threat arose a few years ago with the proposal to build an oil tank farm on part of the feeding area which might have caused considerable disturbance, but this threat seems to have retreated for the time being.

56. Loch Lomond National Nature Reserve (Endrick Mouth portion), Dumbarton, Strathclyde. (NS 4389) 100-130, increasing.

A-W (1963): max. count 35. (This record is now thought very unlikely; regular wintering started in 1960-61 with up to 11 birds, increasing to 15 the following winter).

Peak c
1962-6
1963-6
1964-6
1965-6
1966-6
1967-6
1968-6
1969-7
1970-7

This
landov
in the l
breedin
The
the m
flooded
Shc
geese

57. I:
A-W
Peak
1967-
1968-
1969-
1970-
1971-
1972-

Th
of re
winte
roun
on th
Th
not
distu

58.
280.

Inter
A-W

Peal
196.
196.
196

Peak counts 1962-63 to 1978-79

1962-63	6	1971-72	72
1963-64	13	1972-73	79
1964-65	17	1973-74	77
1965-66	21	1974-75	97
1966-67	14	1975-76	110
1967-68	23	1976-77	130
1968-69	25	1977-78	120
1969-70	46	1978-79	110
1970-71	40		

This small flock has responded well to protection, initially from a sympathetic landowner, then since 1962 in a National Nature Reserve. The apparent levelling out in the last few years may become permanent but may just reflect a run of rather poor breeding seasons.

The birds roost on the water of Loch Lomond, or on the adjacent floodwater near the mouth of the River Endrick, and feed on neighbouring farmland or on wet or flooded rough fields within the Reserve.

Shooting pressure on the Reserve itself is minimal, and it is not thought that the geese are shot at much when they are away from it.

57. Isle of Bute, Strathclyde (NS 0306) 20-40, but exact status obscure.

A-W (1963): no mention and not mapped.

Peak counts 1967-68 to 1977-78

1967-68	23	1973-74	50
1968-69	8	1974-75	no count
1969-70	48	1975-76	no count
1970-71	11	1976-77	37
1971-72	16	1977-78	no count
1972-73	30	1978-79	no count

There were no records of this species on the island before 1967-68 and the paucity of recent counts obscures the true position. However there may be a regular wintering flock of Greenland White-fronts on the island and it is probably based round either Loch Quien or Loch Dhu. It has been seen feeding round the former, and on the west side of the island, in both cases on arable farmland.

There are up to 1,500 Greylags on the island which are quite heavily shot, but it is not known whether the White-fronts suffer from shooting, or just associated disturbance.

58. Vicinity of Stranraer, Wigtownshire, Galloway (c. NX 0660) Mean annual peak 280.

International importance

A-W (1963): no mention and not mapped.

Peak counts 1965-66 to 1978-79

1965-66	84	1968-69	122
1966-67	103	1969-70	200
1967-68	119	1970-71	160

1971-72 185
 1972-73 200
 1973-74 180
 1974-75 300

1975-76 240
 1976-77 275
 1977-78 290
 1978-79 290

There are no records for the area prior to 1965-66. The increase over the last few years coincides with a decrease at Loch Ken, though there is no proof of a direct connection.

The geese have a preferred feeding area on farmland and rough grazing, while they may roost there or on the sea nearby, in calm weather, or on an inland loch. Shooting occurs but is considered light, the main quarry being the much larger numbers of Greylags in the area.

59. Bladnoch Valley and Wigtown Bay, Wigtownshire, Galloway. (c. NX 4354)
 Mean annual peak c. 50.

A-W (1963): a flock of about 20, from time to time.

Peak annual counts, 1965-66 to 1978-79.

1965-66	28	1972-73	no count
1966-67	45	1973-74	41
1967-68	50	1974-75	no count
1968-69	no count	1975-76	19
1969-70	26	1976-77	66
1970-71	17	1977-78	no count
1971-72	62	1978-79	55

There are probably two separate flocks involved here, though possible movements between the two areas have not been studied. One flock, of c. 30 birds, feeds on farmland in the Bladnoch valley, and probably always roosts on nearby Clugston Loch. A similar sized group appears to frequent Wigtown Bay and the Cree Valley, and to feed both on farmland and on the peatlands of the Moss of Cree.

The conservation status of these birds is not known. There is fairly heavy shooting on the shores of Wigtown Bay where some of the geese do occur, but inland up the Bladnoch Valley they appear to be left alone.

Occasional higher counts from other localities in the area may refer to birds on passage to or from Loch Ken.

60. Loch Ken, Kirkcudbrightshire, Galloway (c. NX 7070) Mean annual peak 250, decreasing.

International importance

A-W (1963): 4-500. The main centre is off Parton and on the Livingstone Estate, but smaller flocks occur regularly at Crossmichael and Threave, and around the head of Loch Ken. Loch Stroan is also used as a roost and in open weather several of the hill lochs are sometimes visited as well.

Peak counts, 1962-63 to 1978-79

1962-63	530	1965-66	350
1963-64	250	1966-67	450
1964-65	300	1967-68	475

1968-
 1969-
 1970-
 1971-
 1972-
 1973-

Th
 altho
 the w
 been
 addit
 Certa
 Th
 tende
 are r
 almo:
 Th
 this s
 numt
 front:
 welcc

61. I
 A-W
 Ja
 ra

Peak
 1962-
 1963-
 1964-
 1965-
 1066-
 1067-
 1068-
 1969-
 1970-

The
 indeec
 forme
 early
 confir
 leave
 The
 thougl
 volunt
 yet. It
 estuar
 The
 edges
 boglar

1968-69	330	1974-75	340
1969-70	250	1975-76	360
1970-71	330	1976-77	280
1971-72	400	1977-78	250
1972-73	365	1978-79	240
1973-74	340		

The series of counts suggests a slow decline in numbers over the last eight years, although the flock did recover from a previous dip in the late 1960s. The area is also the wintering ground of several hundred, sometimes over 1,000, Greylags, and it has been suggested that the White-fronts are being driven away by the Greylags, with the additional possibility that an increase in the Greylags has led to more shooting. Certainly parts of the area are heavily shot and both species are included in the kill.

The distribution mentioned by Atkinson-Willes (1963) has changed, with a tendency in recent years to desert the area at the head of Loch Ken, where Greylags are now plentiful. Loch Stroan has also been abandoned as a roost. Feeding is almost exclusively on farmland, both arable and rushy grassland.

The maintenance of this flock poses a considerable problem. A ban on shooting of this species is unlikely to work effectively in view of the presence of substantial numbers of Greylags, while the establishment of a non-shooting refuge for the White-fronts would undoubtedly attract in many of the Greylags, which would not be welcomed either by the shooters or the farmers.

61. Dyfi estuary, Dyfed (SN 6392) Less than 50, declining.

A-W (1963): the flock of White-fronts present here, increasing from 100-150 in January to a peak of 500 in late winter, were believed to belong to the European race.

Peak counts, 1962-63 to 1978-79

1962-63	45	1971-72	75
1963-64	70	1972-73	64
1964-65	70	1973-74	57
1965-66	107	1974-75	36
1966-67	100	1975-76	36
1967-68	100	1976-77	66
1968-69	88	1977-78	49
1969-70	130	1978-79	40
1970-71	130	1979-80	58
		1980-81	72

There is now no doubt that the White-fronts wintering on the Dyfi estuary are indeed Greenland birds, but it seems equally certain that Russian White-fronts formerly occurred here. Quite when the change-over took place is not known. By the early 1960s there are records of geese in late March and April which virtually confirms them as Greenland White-fronts, as Russian White-fronts traditionally leave their British haunts in the middle of March.

The slow decline of this population has been going on for many years. Shooting is thought to have been a major cause but in recent years the local wildfowlers have voluntarily banned shooting of the species, though without arresting the decline as yet. It is thought that some may still be getting shot, while shooting disturbance of the estuary could also be having an adverse effect.

The geese roost on the estuary mudflats, and traditionally flighted to feed on the edges of Borth Bog, a very extensive area of wet grassland, rough grazing and bogland. The area is a National Nature Reserve. At other times the geese may be

found feeding on farmland adjacent to the estuary, and in the last few winters have spent almost all their time here, often roosting in the same place.

62. Crinan Moss, Argyll, Strathelyde (NR 8293) Occasional reports, true status obscure.

A-W (1963): no records.

This area contains a wintering flock of Greylags, but there have been occasional reports of up to 100 White-fronts here as well. However none has been reported in the last five years.

It seems quite suitable for the geese, with extensive areas of wet pasture and bog.

63. Barr Loch, Renfrew (NS 3557) Irregular, up to 60 in early 1970s.

A-W (1963): no mention and not mapped.

A small flock turned up in this area for three years in the 1970s but has not been seen since. 65 were seen in March 1973, and up to 60 were present between January and March 1974. The following winter there was a single record of 48 in January 1975. Since then there have been only scattered reports of birds clearly on migration, between March and May. The adjacent Lochwinnoch has recently been made into an RSPB Reserve and conditions are probably now as favourable as they have ever been if the geese choose to reappear.

64. Various lochs in Ayrshire (CN 4010) Regular migration stopping places, occasionally used for longer period.

A-W (1963): no mention and not mapped.

There are a handful of reports of small numbers, less than ten during the 1950s, then in 1966-67 a flock of 18 was seen in December at Loch of the Lowes, and in February at Cumnock. In 1970-71, nine appeared at Drumore Loch near Maybole, while the following winter, 1971-72, a flock which peaked at 87 in December, was present all winter at Bogton Loch, about 15 km east. 14 were seen at Loch Spallander, 7 km east of Drumore Loch, in 1972-73, while in most succeeding years there have been from one to five at various dates, usually in the spring, in the general vicinity of Drumore Loch.

Most of these sporadic sightings at different lochs scattered over 25 km or more of southern Ayrshire, though not those in 1971-72, are probably of birds on passage to or from haunts in Galloway, to the south. A further confusing factor is the presence in the area of several hundred Greylags with which the White-fronts sometimes consort.

Deserted British Sites

a. Morecambe Bay, Lancashire and Cumbria (c. SD 4070) Former haunt.

A-W (1963): probably about 100.

Prior to 1940 this appears to have been a regular wintering haunt for up to 100 White-fronts which have been assumed to be Greenland birds though there are also reports of Russian White-fronts from the same area. There have been few records since the war, and in the period 1961-1970 the largest flock seen was 16, with an average annual peak of only four. These are usually seen as stray birds in the large flocks of Pink-feet in north Lancashire.

b. Anglesey, Clwyd (SH 4077) Probably deserted.

A-W (1964): Russian and Greenland White-fronts used to occur regularly, the latter, as usual, dispersing in small flocks in many areas. At present their visits are brief and infrequent, and the total numbers probably less than 50.

In the last two or three winters only Russian White-fronts have been seen on Anglesey, and the true status of the Greenland White-fronts, either now or in the past, remains completely obscure. Counts from 1962-63 to 1977-78 vary between 10 and 68 "White-fronts".

c. Tregaron Bog, Dyfed (SN 6863) Deserted haunt.

A-W (1963): This flock, numbering 450-500, arrives in strength and with great regularity in the middle of October, and, unless driven away by prolonged snow, remains in the district until the last week of April. In the past the geese have been carefully preserved, and their future is now assured by the creation of the Cors Tregaron National Nature Reserve, first declared in 1955.

Peak counts, 1962-63 to 1977-78.

1962-63	500	1970-71	5
1963-64	83	1971-72	12
1964-65	c. 100	1972-73	7
1965-66	c. 100	1973-74	9
1966-67	87	1974-75	0
1967-68	100	1975-76	5
1968-69	30	1976-77	0
1969-70	25	1977-78	6
		1978-79	0

The sudden and drastic decline in this flock coincided with the very severe winter of 1962-63 when the site became completely snow covered at the end of December and the geese were forced to leave. It appears that many of them went down to the coast and were there subject to heavy shooting and shortage of food. It is not clear what caused the almost complete disappearance in the late 1960s.

Acknowledgements

We would like to thank the very many people who have supplied us with information about the haunts and numbers of Greenland White-fronts throughout their range. Whilst they are too numerous to mention individually their absence from the list below does not in any way diminish our gratitude to them for their willingness to answer letters and queries, often taking considerable pains in doing so.

Deserving of special mention are, in Ireland: T. Cronin, Rev. B. Dillon, O.P., F. W. Fox, Eamon Grennan, S. Holohan, L. W. Mitchell, N. Murphy, R. Tottenham, John Weaving, R. G. Wheeler and a great number of country people, conversation with whom has led to so much valuable information; and in Britain: R. C. Dickson, A. G. Gordon, C. J. Headlam, S. Laybourne, T. D. H. Merrie and A. D. Watson.

Oscar Merne has drawn the large distribution maps of Ireland and has supplied photographs. He has also helped with data and in many other ways, and given much advice. Myrfyn Owen and Hugh Boyd have likewise helped in many ways, through discussions, reading of drafts and supplying facts and figures.

Clive Hutchinson has drawn the detailed site maps. Richard Mills has supplied photographs and Killian Mullarney sketches.

We are grateful to them all.

The Royal Irish Academy kindly gave a grant to RFR towards expenses in the first two winters of his survey, and the Department of Fisheries and Forestry (Forest and Wildlife Service) did likewise in the last two, thus helping make the survey more extensive. RFR is also grateful to the Forest and Wildlife Service for permission to make use of some of their count figures and to their officials for unreserved help concerning sanctuaries and their activities in general.

MAO carried out his part of the survey whilst holding a post at the Wildfowl Trust funded by the Nature Conservancy Council.

Finally RFR owes David Scott an enormous debt of gratitude for much advice in many directions, but above all for all the typing he has done. He has also kindly driven RFR on many expeditions. A fearless driver he has ventured over almost unmotorable tracks and ground where fortune alone prevented us from becoming bogged. How rightly has he styled himself RFR's 'typist taximan'. RFR wishes to thank his wife for so much encouragement and advice.

Summary

The Greenland White-fronted Goose *Anser albifrons flavirostris* has declined in numbers in recent decades. A survey of all its known wintering haunts in Ireland (41) and Britain (23) was undertaken and detailed accounts for each haunt, together with no less than 34 which have been deserted (31 in Ireland, 3 in Britain), are presented. Each account covers numbers, habitat and actual or potential threats.

It was not possible to carry out a simultaneous census of the population but by bringing together all available information it is estimated that there are currently 14,300-16,600 birds in the population, compared with 17,500-23,000 in the 1950s. Numbers in Ireland have declined by about 50% from 12,700-17,300 to 7,500-8,600, while numbers in Britain have risen by about 13%, from 4,800-5,900 to 6,500-7,300.

The single most important reason for the decline is the loss of habitat, mainly bogs in Ireland. Shooting and disturbance also have adverse effects, particularly where habitat loss has concentrated the birds. The effects are much less in Scotland, where larger areas of farmland and strict control on shooting has enabled the birds to exploit the farmland and reduce their dependency on bogs. This cannot happen in Ireland while shooting continues.

There is evidence that recruitment to the population falls below mortality in many years, contributing to the decline in numbers. The reasons for this are probably complex and require investigation.

Currently there are open seasons for the goose in all the countries it visits, including Iceland, where it occurs on passage, and Greenland where it breeds. The greater part of shooting mortality takes place in winter. A recommendation that shooting of White-fronts should be banned in Scotland seems likely to become law within the next year or two. The Irish Government is here strongly urged to give the goose protection in Ireland as soon as possible. Research into poor breeding, management of reserves and other measures should follow, but it is suggested that a ban on shooting would have an immediate beneficial effect and ought not to be delayed.

Refe
Atkin
Berry
Boyd
Cabo
Dalgi
Hute
Kenn
E
Lamj
Ogilv
Owei
Ruttl
Saloi
Saloi
Stapl
Ussh
M.

References

- Atkinson-Willes, G.L. (Ed.) 1963. *Wildfowl in Great Britain*. London.
- Berry, J. 1936. *The status and distribution of wild geese and wild duck in Scotland*. Cambridge.
- Boyd, H. 1962. Population dynamics and the exploitation of ducks and geese. *Brit. Ecol. Soc. Symp.*: 85-95.
- Cabot, D. B. 1967. The status and distribution of the Greenland White-fronted Goose, *Anser albifrons flavirostris* in Ireland, Jan. 1967. *Irish Wildfowl Conservancy Res. Rep. No. 9*. 6 pp.
- Dalgety, C. T. and P. Scott. 1948. A new race of White-fronted Goose. *Bull. B.O.C.* 68:109-21.
- Hutchinson, C. D. 1979. *Ireland's Wetlands and their Birds*. Dublin.
- Kennedy, P. G., R. F. Ruttledge and C. F. Scroope, 1954. *Birds of Ireland*. Edinburgh.
- Lampio, T. 1974. Protection of wildfowl in Europe. *Finn. Game Res.* 34:16-33.
- Ogilvie, M. A. 1978. *Wild Geese*. Berkhamsted.
- Owen, M. 1978. The Greenland White-fronted Goose — the case for protection. Unpub. Rep., Wildfowl Trust. 3 pp.
- Ruttledge, R. F. and R. Hall Watt, 1958. The distribution and status of wild geese in Ireland. *Bird Study* 5:22-33.
- Salomonsen, F. 1967. *Fuglene pa Gronland*. Copengagen.
- Salomonsen, F. 1970. Birds useful to man in Greenland. Pp. 169-75 in Fuller, W. A. and Kevan, P. G. (eds). *Productivity and Conservation in Northern Circumpolar Lands*. Proc. Conf. I.U.C.N., Edmonton, 1969.
- Stapleton, L. 1976. *Birds of Clare and Limerick*. Limerick.
- Ussher, R. J. and R. Warren. 1900. *The birds of Ireland*. London.

R. F. Ruttledge, Doon, Newcastle, Co. Wicklow.

M. A. Ogilvie, The Wildfowl Trust, Slimbridge, Gloucester, England.