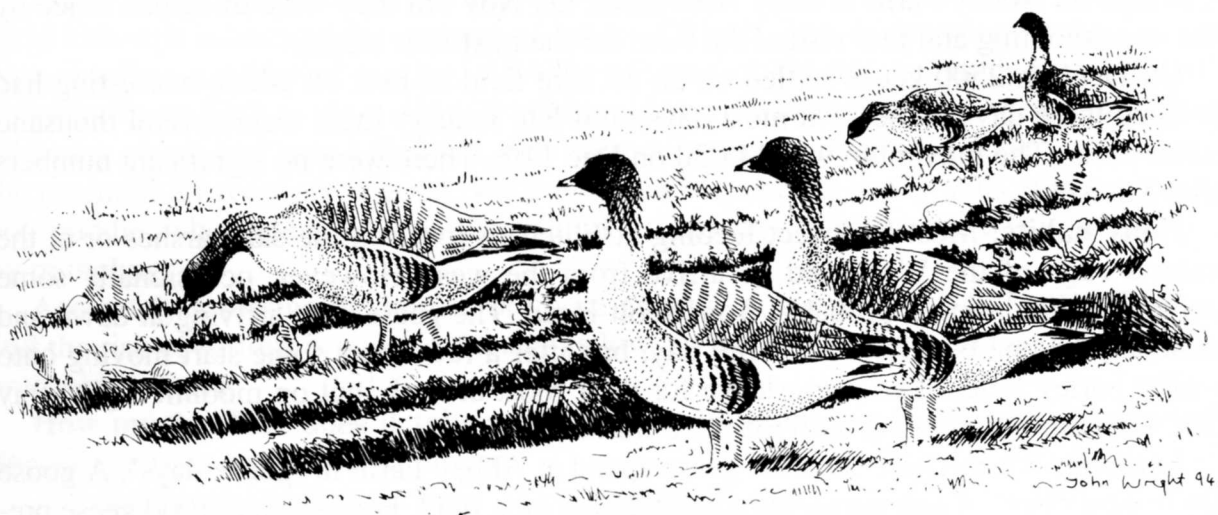


The farmer and the Pink-feet can be friends?

Edward Cross

A flock of geese appears against a winter sky. The birdwatcher looks, the rambler thinks 'Ah, they're back', but the farmer says 'Oh no' (or words to that effect!).

Norfolk has internationally important flocks of geese, but they have a bad reputation among some who work the land. Geese can severely damage crops, but are there situations in which these spectacular visitors can live happily alongside farming? This report looks at the attempts at Abbey Farm, Flitcham to encourage Pink-footed Geese to feed on a crop waste (sugarbeet tops) while minimising damage to growing crops.



(J. Wright)

There are two distinct populations of Pink-footed Geese. One breeds in Spitzbergen and winters in the Netherlands, Denmark and Belgium. It numbers about 30,000 (Madsen, 1987). The other population, which includes the geese that visit Norfolk, breeds in Greenland and Iceland and winters in Britain. The number in this group has increased rapidly since the 1960 total of 40,000. This had risen to 100,000 by the mid-80's and 232,000 in the 1991-92 winter.

Until a few years ago, up to 25,000 wintered in Norfolk, but more recently numbers have risen dramatically. Coordinated counts at the Snettisham, Scolt Head and Warham roosts gave totals of 33,380 in 1992-93 and 68,560 in 1993-94 (about 27% of the world population and the highest number ever recorded in Norfolk).

Pink-feet at Abbey Farm up to Spring 1993. Abbey Farm, Flitcham lies about 9 miles east of the Wash and 11 miles south of the coast at Thornham. It is a tenanted farm

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with 825 acres of arable land on chalky sandy soils and ranges from 75 to 260 feet above sea level.

Pink-footed Geese were first recorded at Flitcham in Dec 1978. The first flocks of over 1000 were seen in 1983-84 and 1984-85. This number has been exceeded every winter since then (Table 1). We first used the goose management methods described below in 1992-93, the first winter with over 10,000 geese.

Table 1.

Maximum counts at Abbey Farm: October 1984 to February 1993.

1984-85	1,000	1987-88	3,000	1990-91	7,500
1985-86	3,000	1988-89	3,800	1991-92	3,800
1986-87	2,750	1989-90	2,000	1992-93	12,180

The 1993-94 winter: The first Pink-feet were 250 on Oct 6th. There were 2000 on Oct 11th, but for the rest of the month they fed on a neighbouring farm. 2000 first fed on beet tops on Abbey Farm in early November. On Nov 5th they were disturbed twice by pheasant shooting and few visited the farm for the next four weeks.

On Dec 5th 2500 geese settled on an 80 acre field of beet on which harvesting had finished three days earlier. On most days until late January there were several thousand on the farm. The maximum was 14,030 on Dec 17th. There were no significant numbers after Jan 31st.

Daily habits: Most Pink-feet feeding at Flitcham roost on the saltmarshes or at the water's edge of the Wash and so arrive from the west. However, occasionally some arrive from the north – probably from Scolt Head. The geese start arriving at dawn and most stay on one beet field for a full day, but after a few hours some start moving onto nearby barley fields. The geese leave for their roost at dusk, but on moonlit nights stay late, sometimes remaining until the next morning.

Feeding: We measure the time geese spend at Abbey Farm in 'goose days'. A goose day is equivalent of one goose spending 8 hours on a field. For instance, 1000 geese present for 2 hours equals 250 goose days.

In 1993-94 a total of about 308,000 goose days were spent at Abbey Farm. Over 97% of these were on beet fields (Table 2). Most of these were on 110 acres of beet land with light grazing on another 40 acres. The geese fed mostly on root crowns and unharvested roots, but also ate leaf stalks, beet leaves and weeds.

Table 2.

Total goose days on different field types in 1993-94 (and 1992-93).

	No. of goose days	Percentage of total in 1993-94 (and 1992-93)	
Sugarbeet	299,905	97.3	(80)
Winter barley	5,170	1.7	(10)
Barley stubble	2,970	1.0	
Set-aside ryegrass	100	<0.1	(10)
Total on all fields	308,145		

Field shape, size and position seem to be important factors in deciding where geese feed. They seem to prefer fields which give good all-round visibility, such as large, open

fields on hill tops. They left 70 acres of beet untouched in fields with poor all-round visibility. The age of the beet tops seems less important, since geese continue eating them up to 2 months after harvest. They also tolerate traffic, provided vehicles don't stop nearby.

The birds fed much less on set-aside ryegrass in 1993-94 than in 1992-93 (Table 2), although the same acreage was available. This is probably because in the first winter the crop was young and tender but, after a further 12 months on infertile soils, it seemed much coarser and may have been longer than geese like. Most grazing of barley stubble, where food is the sprouting grains, was completed in October.

Crop damage. Geese never graze sugarbeet before it is harvested, so the only crop at Abbey Farm which is vulnerable to damage is winter barley. During the winter it is only a few inches high so is suitable for geese. In 93-94 we had 225 acres of winter barley, of which 135 were grazed by geese at some time. As Table 2 shows only 1.7% of goose feeding was on winter barley. This seems low, but for the farmer two important questions remain:

Are the geese causing economic damage? The answer is: we don't know. Studies by Patterson (1991) conclude that any substantial level of grazing results in loss of crop yield although predicting the amount of loss is difficult. This is due to variations in soil type, weather and time of grazing. At Abbey Farm in 1993-94, the barley was (at least) temporarily set back as we could still tell in mid-April which areas had been grazed. But no barley plants had been killed (i.e. they were not completely grazed down), so perhaps the potential for recovery is good. We are helped because the sandy soils at Flitcham do not 'puddle' when geese walk on them (unlike some clay soils), so there is little damage by trampling.

Accurately assessing the impact of goose grazing would require a full study. But we feel the risk of serious economic damage is low, so we will continue to encourage geese onto Abbey Farm.

How much effort does it take to keep grazing on barley fields to a minimum?

Several methods have been employed:

- displaying plastic bag 'flags' to scare birds
- making a morning and afternoon visit daily when geese were present to frighten them off
- minimising disturbance to geese when they are feeding on beet tops. This includes scaring them off barley in a way that does not also frighten them off sugarbeet (e.g. never using shooting).

The only measure which significantly adds to the farm workload is making visits to frighten the geese. Checking 220 acres of barley sounds like a lot of work. Fortunately the geese only move onto barley which is immediately next to the beet when a flock is established. This means only a few barley fields need visiting. Despite this, checking twice takes about an hour a day. Serious grazing of barley occurs if a visit is missed, especially if the beet tops are running out or disturbance puts the geese off the beet. We will try to find a better method than flags to keep them off barley (one method in Scotland is to leave an old car in a vulnerable field). However, at present, visiting cereal fields is essential to minimise crop damage.

One fact which helps keep Pink-footed Geese off barley is that they are attracted to beet tops. This may not be true for other species, so our management techniques could well be ineffective with, for instance, Brent Geese.

Other factors in goose management.

- i) Shooting. Goose shooting is becoming infrequent at Abbey Farm. If geese are shot while flying in to feed on beet tops, they may move onto cereal crops. But if there is only a single shooting incident they may return to the beet within a few hours. On other

occasions they may avoid the farm several days.

ii) Supply of beet tops. In most years we grow about 200 acres of sugarbeet. Harvesting is from mid-September to mid-December. The 'tops' (the leaves and the top part of the root) are left on the field as waste after harvesting. On Abbey Farm they are not used as food for livestock, as they are elsewhere.

iii) Drilling spring barley. At Abbey Farm we follow sugarbeet with spring barley. Some farms now drill spring barley in November and December (2-3 months earlier than it used to be sown). This can increase yields, particularly on fields which do not drain well or slope steeply and so may be hard to cultivate in January and February. Early drilling means that the beet tops must be ploughed in soon after harvest giving the geese little time to eat them. But at Abbey Farm the best geese fields drain well and are quite flat. So we are under less pressure to drill spring barley early and beet tops can be left longer on the fields for geese.

Conclusions. There are very few species for which the British Isles are more important than the Pink-footed Goose as 85-90% of the world population winters here. The rise in numbers in Norfolk is mirrored by the increase at Flitcham. There are many reasons why geese like Abbey Farm. Some are not related to farm management:

- large fields with good all-round visibility,
- sandy soils which do not puddle,
- Pink-footed Geese like beet tops and can be kept off barley fields relatively easily,
- the farm is close to safe roost sites.

Other reasons are related to management:

- the low level of shooting and other disturbance,
- a good supply of beet tops which are not ploughed in early or fed to livestock,
- we are prepared to take measures (flags and visits) which reduce the risk that geese will significantly damage barley, so we do not see the geese as a threat and can therefore welcome them.

The land at Abbey Farm is typical of much of north-west Norfolk. There must be many acres of beet in the area which would be suitable for geese. Therefore, on some farms, small changes in management could provide geese with new feeding grounds. Encouraging geese to use such areas may help attract them away from clay soil fields where puddling is a real problem. Set-aside may also offer food for geese.

Is there a practical way to encourage Pink-footed Geese onto a farm and keep crop damage so low that there is no significant economic impact? I cannot answer this with certainty. However, this report does indicate that, in the right conditions, farmers too can see the incoming skeins as a spectacle to enjoy rather than something to dread.

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References. Madsen, J., (1987) Danish Rev. Game Biol. 12: 1-76. Status and management of goose populations in Europe, with special reference to populations resting and breeding in Denmark.

Patterson, I.J., (1991) Ardea 79: 179-186. Conflict between geese and agriculture; does goose grazing cause damage to crops?

C.E. Cross & Sons Farm was awarded first prize in the farmers category of the Wildfowl & Wetland Trust 1993 Waterlands Campaign Awards for their work on wetlands at Abbey Farm.)