

Small mammal survey on agricultural land during conversion and into full organic production

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ABSTRACT

Loss of food and suitable habitat due to modern intensive farming and the decline of mixed farming systems has led to a reduction in numbers of small mammals on farmland in the UK. Organic production systems are believed to encourage biodiversity. Small mammal surveys were carried out on Coswinsawsin Organic Demonstration Farm in November 1999, April and November 2000 and October 2001. 50 Longworth traps were set in pairs at 5 metre intervals along a hedgerow and checked morning and evening for three days. Trapped mammals were identified, weighed and with the exception of shrews, marked by a small fur clip before release. The wood mouse was the most prevalent species trapped. Other species included the bank vole, the field vole and the common shrew. The highest number of shrews was caught during the April survey. No change in population size or species diversity was demonstrated.

Keywords: organic farming; bio-diversity; small mammal survey

INTRODUCTION

Many species of small mammals have declined in numbers on farmland in the UK. The main causes of species loss or decline are the loss of food and suitable habitat due to intensive farming and loss of traditional mixed farming systems. Organic production systems are believed to encourage species bio-diversity (Anon 2000). The establishment of Coswinsawsin Organic Demonstration Farm offered the opportunity to monitor fluctuations in small mammal populations and species diversity from the beginning of conversion and into organic production.

MATERIALS AND METHODS

Surveys were carried out in November 1999, April and November 2000 and October 2001 (years 1 and 2 of conversion and year 1 of full organic status) under a licence granted by the Nature Conservancy Council for England authorising capture of live shrews (*Soricidae*). A total of 50 Longworth live traps were filled with hay and baited with grain, apple slices and tinned dog food. The traps were set in pairs at five metre intervals in sheltered positions along the base of a west facing Cornish hedgerow. The traps were checked in mornings and evenings for three consecutive days during each survey. With the exception of shrews, which were released immediately after weighing, trapped mammals were

removed for identification, weighed, sexed and marked by a small fur clip before being released. The traps were re-baited and reset as necessary.

RESULTS

The wood mouse (*Apodemus sylvaticus*) was the most prevalent species trapped. Other species caught were the bank vole (*Clethrionomys glareolus*), the field vole (*Microtus agrestis*) and the common shrew (*Sorex araneus*). The greatest number of common shrews was caught during the April 2000 survey. However, as they were not clipped for identification, those revisiting traps could not be identified with certainty. To gain some idea of numbers caught, shrews of identical weight trapped on subsequent days were presumed to be re-trapped so not included in the count (Table 1). The number of wood mice increased during the November surveys compared with the April survey.

Table 1. Number of small mammal species trapped and recorded in surveys on farmland during conversion and into full organic production

Date	wood mouse	bank vole	field vole	common shrew
Nov 99	17	9	0	0
Apl 00	8	8	2	16
Nov 00	22	5	0	2
Apl 01	cancelled due to foot and mouth disease outbreak			
Oct 01	12	1	0	1

CONCLUSION

There is no evidence of change in species variety or numbers trapped and recorded during conversion to organic production on this farm. The survey will be continued in order to identify future changes in small mammal populations and species diversity and to determine relationships with time under organic management and crop rotation within the system.

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REFERENCES

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