

# The History of North Meadow, Cricklade

R. S. Wolstenholme

## Summary

North Meadow, Cricklade is located Northern Wiltshire, at the western end of the Thames Valley, between the River Thames and the River Churn. It is owned and managed by Natural England and historic common rights remain vested in the Cricklade Court Leet. A long continuity of past agricultural management has given rise to a very diverse and interesting floral community including a large proportion of the British population of Snake's-head Fritillaries. North Meadow is one of the best known examples in Britain of an ancient meadow. The meadow is designated under European law as a Special Area for Conservation together with Clattinger Farm SSSI, for the Lowland Hay Meadow communities they hold. The former is particularly noted for the relatively large natural population of the rare Snake's head Fritillary (*Fritillaria meleagris*) which it supports, and for which it is the most important British site.

## Introduction

Located in Wiltshire, north-west of the town of Cricklade, North Meadow is 44.7 ha (110.2 acres) in extent. It forms an 'island' bounded by the rivers Thames to the south and Churn to the north, which are linked by tributaries to the east and west of the meadow. Flooding of the site occurs periodically, particularly during the winter months and this has shaped the habitat and past and present management. It is the notable survival of an historic system of management which has given rise to many of the reserve's important features, and is a key factor in the conservation value of the site. The documentation of land use history of the reserve is of great value in understanding ecological relationships and provides an unusually comprehensive body of background information against which current scientific studies can effectively be interpreted, and future management planned.

## Ownership of North Meadow, Cricklade

North Meadow is under an unusual form of land tenure imposed on it by the 1814 Inclosure Act. The 1814 Act regards the site as a meadow within the Manor of Great and Little Chelworth within the late Forest of Braden, to which certain persons exercised either common grazing rights or the right of first vesture. The later 1824 Act split the meadow up into allotments, establishing the allotment holders as the rightful owners of first vesture. The Act left the freehold ownership within the Manor. Since that time the manorial rights to the land seem to have disappeared (apparently by default), the freehold rights now being exercised by the allotment holders - subject to the other restrictions placed on the land by the Act.

The 1814 Act also established the commonable rights of the inhabitants of the Manor of the Hundred and Borough of Cricklade to depasture their stock in the meadow between the 12th August and the 12th February each year. This is the right to take everything growing on the land by the mouths of stock, but not in any other way. These grazing rights are legally administered by the Court Leet which is made up of a number of local inhabitants. The Court still meets several times a year in the Town. The Court Leet also appoints a Hayward to supervise the grazing on North Meadow, and to collect the grazing fees. The revenues received either go back into the management of the meadow or to the town, even though the Court now invites graziers from a wider area.

Stones in the meadow mark the allotment boundaries. One plot is privately owned by a local person but the rest of the site is now under the ownership of Natural England.

The Nature Conservancy Council (now Natural England) began to purchase land in 1970 when 21 acres were acquired. This site was scheduled as an SSSI in April 1971, and was finally declared as an NNR in March 1973. One plot of land in the meadow still does not belong to NE and the NCC prior to re-notification, had no direct control over the management practised on there. However, the complex legal position with regard to the reserve and its status as a Lammas Land, has meant that, in practice, past management of the different compartments has in fact remained fairly uniform. Only minor variations in management, e.g. in hay-cutting dates and manure spreading, seem to have occurred, although these may have contributed to the slight differences in flora which occur across the meadow.

Prior to NCC purchase it was a good example of surviving unimproved Lammas Land. It was previously divided into 14 haymaking allotments with individual owners responsible for hay making on their own allotment. The restricted period of common grazing together with the fact that each allotment holder had common grazing rights over his and the whole of the other respective allotments meant that there was no individual incentive to improve respective haymaking allotments (by applying fertiliser). This ensured that the nutrient sensitive meadow grassland remained undamaged.

## **Management**

The hay is sold as standing crop by Natural England to local contractors to be cut after 1 July. The meadow may then be grazed under grazing rights (common) vested in the Cricklade Court Leet between 12 August and 12 February. In practice livestock are usually not available until late September and usually need to come off to prevent excessive poaching during January.

In the late 1990s cattle numbers rarely rose above 75, though prior to 1976 they are believed to have been regularly higher: e.g. 170 in 1969 (Latter 1970). There has been a continued reduction in the proportion of cattle and they have not grazed the meadow since the late 1990s. The demand for grazing of horses has increased but they pose problems for the site's management. When present in large numbers horses have a tendency to join into herds and gallop around, ripping up the turf. As a result, there is now an upper limit of 20 horses allowed on the meadow at any one time, with a consequent lack of sufficient grazing pressure. Management of the NNR is now focussing on securing the boundaries of the meadow and facilitating an improved grazing regime.

## **Special interest – species-rich floodplain meadow**

North Meadow is typical of the type of neutral hay meadow community once common in the flood plain of the Thames Valley. Over 250 species of higher plant occur on the meadow and the surrounding ditches.

Grasses (wild types) include abundant Red Fescue (*Festuca rubra*), Perennial Ryegrass (*Lolium perenne*), Meadow Foxtail (*Alopecurus pratensis*), Crested Dog's-tail

(*Cynosurus cristatus*), Yellow Oat-grass (*Trisetum flavescens*), meadow brome (*Bromus commutatus*) and Meadow Barley (*Hordeum secalinum*). The more unusual Smooth Brome (*Bromus racemosus*) is also present suggesting long continuity. Two other grasses, Sweet Vernal Grass (*Anthoxanthum odoratum*) and Quaking Grass (*Briza media*), suggest low nitrate levels.

The flora is rich in herbs with typical hayfield species such as Pepper Saxifrage (*Silaum silaus*), Yellow Rattle (*Rhinanthus minor*), Great Burnet (*Sanguisorba officinalis*) and Common Knapweed (*Centaurea nigra*). Adder's-tongue (*Ophioglossum vulgatum*), Common Meadow-rue (*Thalictrum flavum*), Downy-fruited Sedge (*Carex filiformis*) and Ragged Robin (*Lychnis flos-cuculi*) also occur. Devil's-bit Scabious (*Succisa pratensis*), Tubular Water-dropwort (*Oenanthe fistulosa*) and Strawberry Clover (*Trifolium fragiferum*) are also unusual characteristic components of this community and to a lesser extent Autumn Hawkbit (*Leontodon autumnalis*).

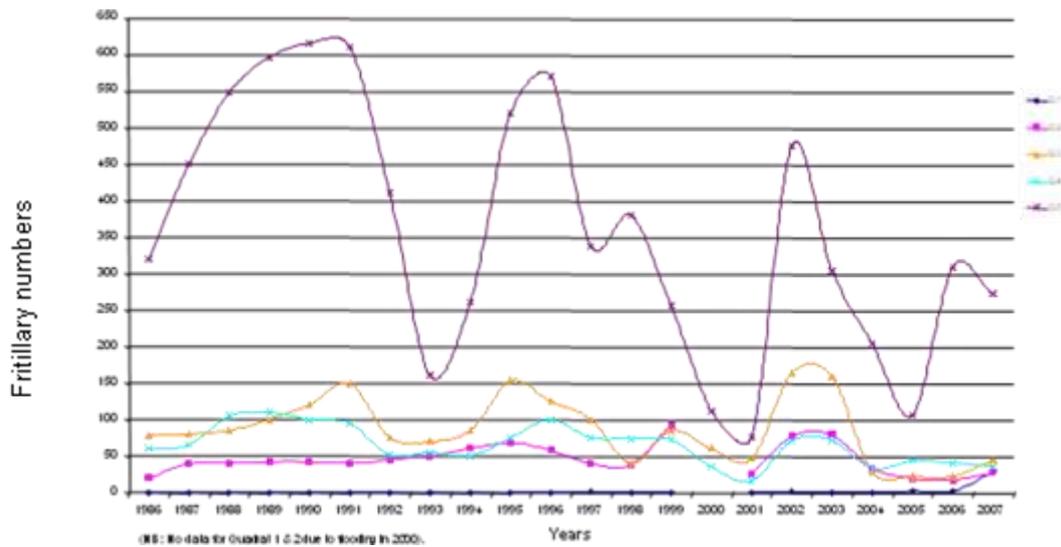
## **Special interest – snake's-head fritillaries**

A striking feature of the site is the large population of Snake's-head Fritillary (*Fritillaria meleagris*), with around 500,000 plants flowering each year. North Meadow is estimated to support about 80% of the wild British population of these plants.

Some information suggests this species is not a native component of the flora, for instance it is absent from Picksey Mead in Oxfordshire and probably only recently arrived in West Mead nearby. The New Atlas of the British and Irish Flora OUP says, "This species was cultivated in Britain by 1578 but only found in the wild in 1736; it has never been clear whether populations in traditionally managed floodplain meadows in C. and S.E. England are native."

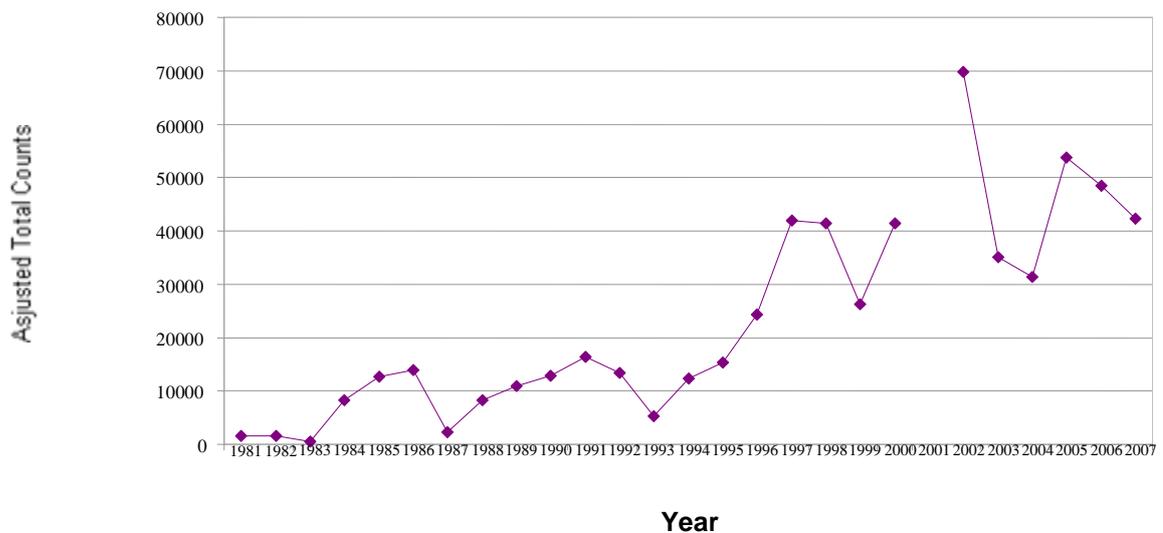
## **Population trends**

At North Meadow age classes are distinguished in the quadrat counts – seedling, 2-4 leaves, 5-7 leaves, and flowering. As the age classes all follow a broadly similar trend the overall population figure can be used allowing easier comparison with other sites.

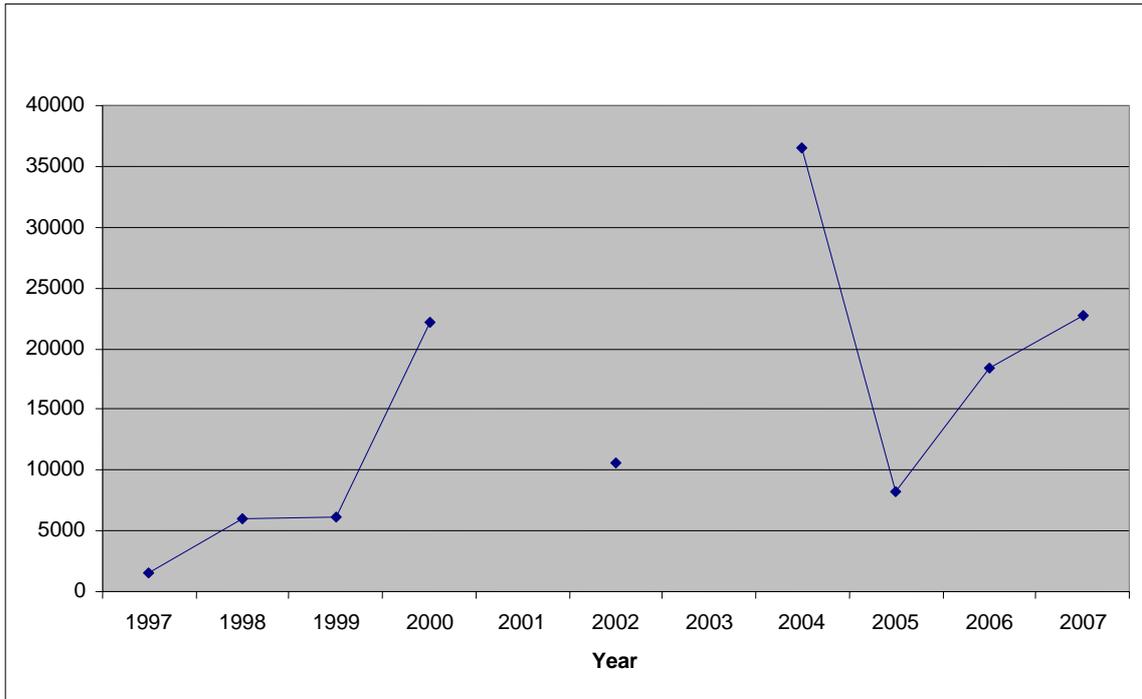


**Figure 1: Total number of Fritillaries (flowering and non-flowering) in Permanent Quadrats 1-5, 1986-2007**

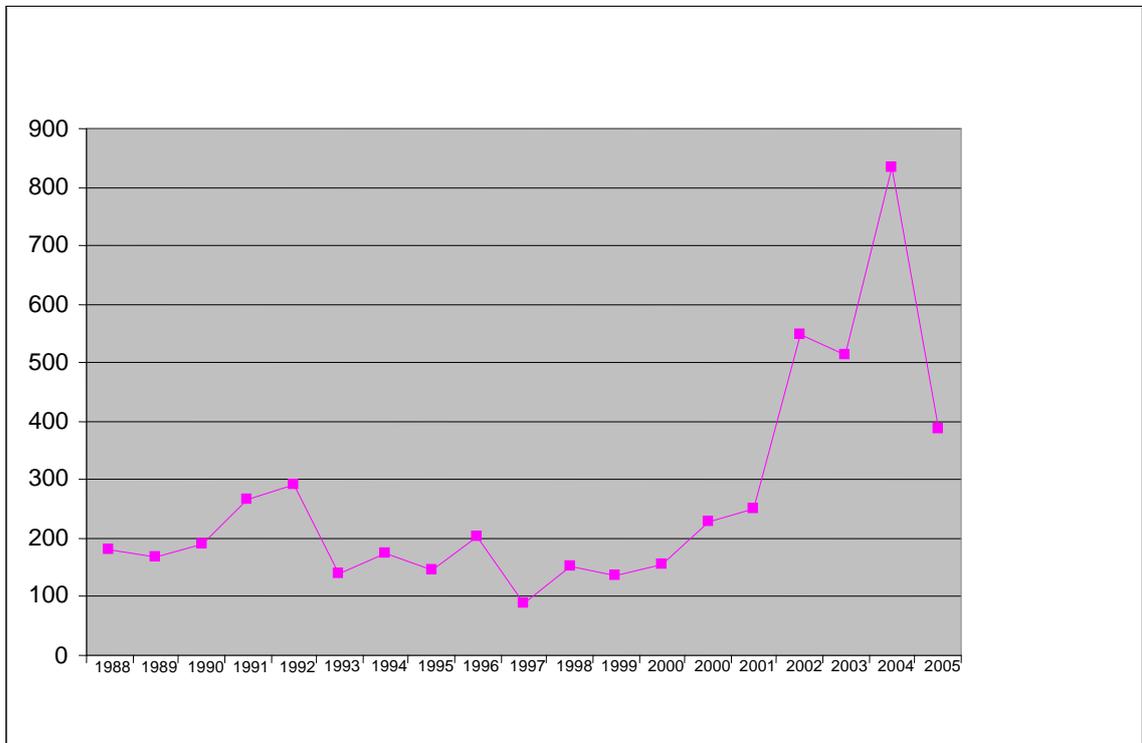
From flooding records at North Meadow the most frequently inundated are 1 and 2, then less frequently 4, then 3, and quadrat 5 is flooded least often.



**Figure 2: Estimated size of Snakeshead Fritillary population at Iffley Meadows**



**Figure 3: Clattinger Farm, Wiltshire Wildlife Trust total count**



**Figure 4: Upper Waterhay flowering 1998 to 2005**

## Population fluctuations

The North Meadow population shows a peak and trough variation with four to eight years between peaks, with a roughly fourfold difference between peaks and troughs at

one site. There are similar fluctuations at the other sites, although not as marked or as seemingly regular.

North Meadow population peaked in 1990/91, 1996, and 2002, with lows in 1993, 2001 and 2005. The nearest site, Clattinger Farm, generally either doesn't correspond or lacks data, although there is a corresponding trough in 2005. At Iffley, the population shows some correspondence. Upper Waterhay is generally an increasing trend over the years with no real correspondence in trends to North Meadow.

Zhang (1983) found that variation in fritillary density appeared to depend on differences in habitat conditions, soil-water conditions being probably the most important one. Distribution and age structure of the fritillary population reflected wet and dry habitat conditions, and additionally considerable fluctuation in the number of individuals was found in the low areas with high water tables. Zhang also postulated that waterlogging and anaerobic soil conditions may cause many individuals not to develop above-ground parts in some years. In addition, this effect could be compounded by the reproductive behaviour of the fritillary being strongly influenced by the behaviour of the plant in the previous year. These effects may explain the large periodic fluctuations apparent at North Meadow and other sites. Note also at North Meadow that the least frequently flooded quadrats, 5 and 3, support larger numbers of fritillaries. The wettest site at North Meadow, quadrat 1, consistently supports a low number of fritillaries. Quadrat 5 shows the greatest fluctuation in numbers and by far the greatest number of plants.

## Relationship to other sites

Within the Upper Thames catchment area there are the nearby lowland grassland SSSIs at Elmlea, Wildmoor Way, Clattinger Farm, Pike Corner and Upper Waterhay. The first three hold fritillary populations ranging from around a hundred up to several thousand.

A number of similar examples still exist around Oxford, e.g. Yarnton, Picksey and Iffley Meadows, where only the last holds fritillaries.

**Robert S. Wolstenholme,**  
[robert.wolstenholme@naturalengland.org.uk](mailto:robert.wolstenholme@naturalengland.org.uk)  
Natural England, Prince Maurice Court, Hambleton Avenue,  
Devizes, Wiltshire, SN10 2RT

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