Flight of the Fritillary

Background

Open University (OU) scientists have been organising volunteers to count snakeshead fritillaries Fritillaria meleagris on North Meadow National Nature Reserve (Wilts) since 1999. Fritillaries are a rare species in Britain and are symbolic of a scarce floodplain meadow plant community found on less than 1500 ha in the UK. Our data show that on North Meadow fritillaries display a dynamic ecology, seemingly responding to changes in hydrology.

This member of the lily family relies on seeds for reproduction and its main pollinator is early season bumblebees. The reported decline of bumblebee populations may prove a problem for this rare plant. This project aims through volunteers, to better understand this relationship.

Objectives

To determine trends in fritillary populations.
To explore the relationship between fritillaries and bumblebees.
To establish the value of volunteers in data collection.

Methods

1. Continue fritillary counts at North Meadow (200 1 x 1 m² quadrats).
2. Set up two new volunteer groups to count fritillaries: Clattinger Farm (Wiltshire) and Lugg Meadows (Herefordshire) with 100 1 x 1 m² quadrats at each site.
3. Establish volunteer bumblebee surveys at each site following the Bumblebee Conservation Trust’s ‘Bee Walk’ method.
4. Observe bumblebee behaviour in April around fritillaries.
5. Run annual workshops to discuss findings with volunteers, gather feedback and shape the direction of the project.

Results so far

Fritillaries

2012 saw the wettest year recorded in England since records began. North Meadow was under water for ten months. 1800 plants were counted in 2012 at North Meadow, but after this extreme flooding, only five plants were found. This generated a lot of national publicity as North Meadow holds 80 % of the UK’s population of fritillaries and is a highly visited site. The count in 2014 will show us whether this species can remain dormant for a year and return undamaged.

In 2013, the counts at Clattinger Farm and Lugg Meadows were lower than in 2012, but not to the same extent as North Meadow and the number of flowering plants was actually higher at Clattinger Farm.

Bumblebees

The bumblebee surveys have become well established at two sites, but less regular at Clattinger Farm. All the common bee species have been recorded, plus one rarity at Lugg Meadow. The findings are shared with the Bumblebee Conservation Trust each year.

Volunteers

The volunteer counts have increased since we started the project, with heavy advertising in local press, wildlife trust magazines, websites and newsletters. However it is apparent that to sustain the numbers, regular re-advertising is required, otherwise numbers fall back to a small core of regular volunteers.

The workshops have been well received with good attendance at the Wiltshire workshop. More wide ranging advertising should be considered for the Lugg Meadows talk to encourage interest.

Next Steps

We want to continue the volunteer groups and possibly expand to a fourth site. We are looking to establish a webcam to observe pollinator behaviour in the field and we are encouraging groups of volunteers to observe fritillaries and pollinators for periods of time during April.

To volunteer as part of this project contact Floodplain-Meadows-Project@open.ac.uk