

Managing land for the Marsh Fritillary

Ensuring the long-term survival of the Marsh Fritillary, as with many other species, is probably more likely if sites are linked, enabling an exchange of adults between neighbouring colonies. The loss of suitable habitat can be detrimental by making the surviving populations more fragmented and thus isolated.

The Marsh Fritillary requires large areas of suitable habitat to survive but the precise habitat requirements in Scotland are not fully understood. However, the following general principles should benefit the Marsh Fritillary. A degree of light grazing, preferably by cattle, is essential to maintain flower-rich areas and devil's-bit scabious (the caterpillar's foodplant) in an open sward. Sheep selectively feed on devil's-bit scabious flowers and can thus reduce and even eliminate it from sites. Uncontrolled burning, drainage, agricultural improvement and cessation of grazing can all be detrimental.

The overall aim is to encourage a patchwork of short and tall vegetation 5-25cm (2-10in), with areas of abundant devil's-bit scabious on open damp moorland or grassland, with a good supply of nectar sources in sunny situations. Extensive all year grazing by cattle or ponies is ideal (0.2-0.3 LU/ha/year). Sheep grazing can also produce the required conditions but only if stocking levels are very low during the summer (<0.1LU/ha/year). Traditional breeds of cattle and horses are preferable as they are better at coping with coarse vegetation and are less selective. Autumn/winter grazing is also suitable as is spring/summer grazing on wetter sites. Longer periods of lighter grazing are preferable to shorter periods of heavier grazing. Some scrub cutting may be necessary. It is best to cut a little each year, between October and March avoiding clearing all the scrub as other insects and birds use it for shelter and breeding. This management will also benefit the day-flying Narrow-bordered Bee Hawk-moth that shares the same foodplant and occurs in similar habitat.

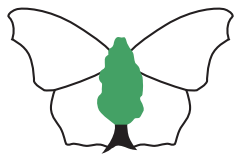
For more detailed information about management for Marsh Fritillary visit our website www.butterfly-conservation.org

December 2007



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learn about the Marsh Fritillary



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Saving butterflies, moths and their habitats

For more information about SNH's Species Action Framework visit <http://www.snh.org.uk/speciesactionframework>

Balallan House Allan Park Stirling FK8 2QG

Telephone: 01786 447 753 Email: scotland@butterfly-conservation.org

Head Office

Manor Yard East Lulworth Wareham Dorset BH20 5QP Telephone: 01929 400 209

www.butterfly-conservation.org Email: info@butterfly-conservation.org

Photographs by Alan Barnes, Paul Kirkland, Clive McKay, Tom Prescott, Paul Pugh, Martin Warren and David Whitaker

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The Marsh Fritillary butterfly is only found in Scotland in south Lochaber, Argyll and the Argyll Islands. Its long-term survival relies on extensive grazing, ideally by traditional breeds of cattle, to maintain its habitat in suitable condition. The name Marsh is a little misleading as it is not a true marshland species. A more appropriate name would be the Damp Grassland or Moorland Fritillary. Suitable sites are open, unshaded but often sheltered with abundant patches of devil's-bit scabious, the caterpillar's sole foodplant. The UK government has listed the Marsh Fritillary as a UK Biodiversity Action Plan Priority species, and it is also one of three species of butterfly and moth on SNH's Species Action Framework list, in need of urgent conservation action.



Spring caterpillar



Devil's-bit Scabious the caterpillar's sole foodplant



Cattle grazing is vital to maintain Marsh Fritillary sites in suitable condition



Caterpillars inside their protective web

benefits from light grazing

The Marsh Fritillary *Euphydryas aurinia* was once widespread in Britain and Ireland but has declined severely. It is now extinct in the eastern half of Britain and colonies are still disappearing by around 10% every decade. There are about 35 colonies in Scotland, these are some of the most important colonies in Europe.



The black caterpillars often bask in the sun

Early stages

Females lay their eggs in batches of 20 to 150 on the leaves of larger specimens of their sole foodplant devil's-bit scabious. The eggs hatch within a few weeks.

The caterpillars live communally within a conspicuous and protective silk web which they spin themselves. Counting these webs from August to October is often the most reliable method of monitoring the fortunes of this species. The caterpillars hibernate over the winter inside a smaller but thicker web, deep within a dense grass tussock where they can even survive temporary flooding.

The caterpillars emerge from hibernation in March and bask communally in the spring sunshine. They commence feeding before becoming solitary, dispersing and pupating. Their black colour enables them to warm up and feed quickly. The adult butterflies emerge in May or June.

Adult butterfly

Marsh Fritillary populations can fluctuate tremendously in size from year to year, contracting to core sites in lean years. Populations can decline due to poor weather, unfavourable site condition and parasitic flies and wasps whose grubs feed inside those of the Marsh Fritillary! Conversely populations can quickly recover in 'good' years.

Colonies vary in size with individuals rarely moving more than 1km in their lifetime, however, movements of up to 5km have been recorded between colonies. New colonies have recently been found on the edges of the Marsh Fritillary's Scottish range on the Isle of Bute and at Arisaig.

Size bars: actual size
Adult male (wing span)
 30-42mm (c1 1/2in)

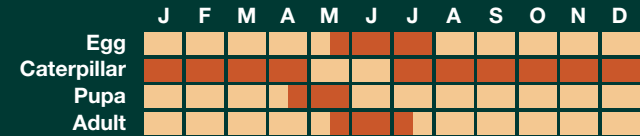
Adult female (wing span)
 40-50mm (c1 3/4in)

Caterpillar (fully grown)
 25-30mm (c1in)



Pair of Marsh Fritillaries

The checkerboard pattern of oranges, creams, browns and blacks make the Marsh Fritillary more colourful than Scotland's other three fritillaries, the Pearl-bordered, Small Pearl-bordered and Dark Green. Apart from a slight size difference males and females are similar.



Life-cycle of the Marsh Fritillary

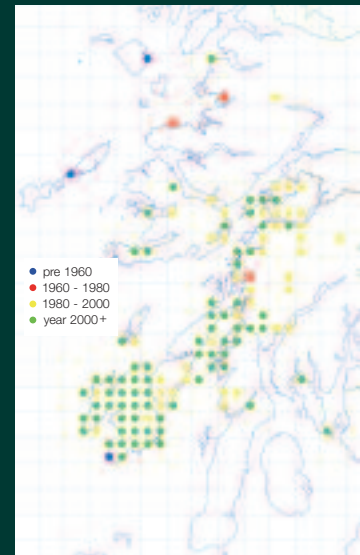
Do you have Marsh Fritillary on your land?

If you have the right habitats for the Marsh Fritillary on your land we are happy to provide detailed advice on suitable management.

Do you want to get involved?

We need your help to undertake survey and monitoring work to determine the distribution and annual fluctuations in the Marsh Fritillary population in Scotland. If you want to help or have seen Marsh Fritillary we would like to know.

If you can help us with either of the above please contact us: details on the back page.



Distribution of the Marsh Fritillary