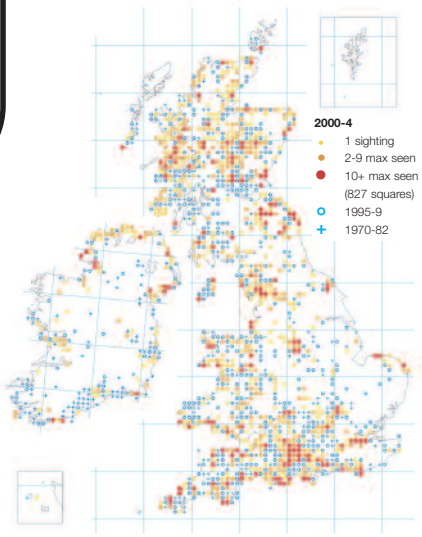
Butterfly Conservation

factsheet

Dark Green Fritillary

Argynnis aglaja

Conservation status
Regional priority in several England regions.



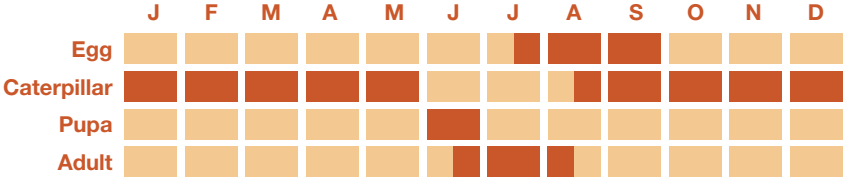
This large and powerful butterfly is one of our most widespread fritillaries and can be seen flying rapidly in a range of open sunny habitats. The males look similar to the High Brown Fritillary, which is far rarer but sometimes flies with them on Bracken-covered hillsides. The two can be distinguished from the underwing markings, visible when they are feeding on flowers such as thistles. The Dark Green has an olive-green coloration and lacks the row of red-ringed spots of the High Brown. The Dark Green also has rounded, less pointed forewings than the High Brown which has straight or concave outer edges to the forewings. Although the Dark Green Fritillary is still locally abundant in some regions, it has declined in many others, notably central and eastern England.

Life cycle

The Dark Green Fritillary is single-brooded, with adults flying from early June until mid-August. In warmer and more southerly locations the peak is usually from mid-June to mid-July, but it can be several weeks later at cooler, more northerly sites. The eggs are laid singly either on the foodplant or more usually on a nearby plant, dead leaves, or dead Bracken. Immediately after hatching, the larvae enter hibernation amongst the dead grass or leaf litter. They begin feeding on the first warm days of spring and, in cool conditions, the larvae bask on top of the vegetation often on dead leaves or dead grass. In warmer weather they remain concealed and feed in short bouts on young growths of violet. The Dark Green Fritillary breeds in cooler vegetation than the other violet-feeding fritillaries and selects fairly tall grassy vegetation, often next to patches of scrub where there are abundant large foodplants. The larvae pupate in the leaf litter or within grass tussocks.

Foodplants

Common Dog-violet *Viola riviniana* is used in many habitats but Hairy Violet *V. hirta* is used on calcareous grasslands, and Marsh Violet *V. palustris* on moorland and wetter habitats in the north and west. Other violets may be used occasionally.



Colony structure

The adults are highly mobile and the butterflies tend to occur at low densities over large areas within which there are small pockets of suitable breeding habitat. On the best sites, with greater concentrations of breeding habitat, adults can become very numerous and colonies tend to occupy more discrete areas. On a Yorkshire Dales site the population was estimated at over 2,000 adults on 30ha of limestone pavement, whereas on three Dartmoor Bracken slopes, populations were estimated at 300-500 adults. Butterflies move freely over hundreds of metres within their breeding areas, but most seem to stay within their colony. On Dartmoor a few adults were found to have moved between colonies separated by 1-2km and the butterfly has occasionally been found up to 5km from known breeding areas, suggesting that the species has reasonable powers of colonization.

Habitat

Four main types of flower-rich grassland habitats, often with patches of scrub, are used:

1. Chalk and limestone grassland;
2. Damp grassland, flushes and moorland;
3. Grassland with Bracken *Pteridium aquilinum*;
4. Coastal grassland, dunes and scrub.

Other habitats used include woodland rides and clearings.

Habitat management for the Dark Green Fritillary

Chalk and limestone grassland

Aim to maintain a structurally diverse violet-rich sward with a high proportion of medium height turf, as well as patches of scrub.

Grazing

Extensive or periodic grazing by cattle is best, encouraging violet regeneration. Reducing grazing pressure in the spring and summer enables larger-leaved violets to develop. Sheep grazing can provide suitable conditions if grazed on rotation, leaving areas for 1-3 years to produce taller swards. Winter sheep grazing is known to maintain suitable conditions on Upright Brome dominated sites, especially compared to oat-grass or fescue dominated swards. Ungrazed or neglected sites can be ideal for a short period but soon suffer from invasion by coarse grasses and scrub.

Scrub Clearance

Scrub patches are often important because they support high violet densities used for breeding. Patches should be cleared on rotation and allowed to regrow, creating a mosaic of scrub and grassland of varying heights. Areas where scrub has been cleared are especially good for violet regeneration. On exposed sites some scrub may be beneficial by providing shelter.

Damp grassland, flushes and moorland

Aim to maintain damp or heathy vegetation where violets (often Marsh Violets) are abundant in medium height swards and suitable nectar sources are available. Waterlogged sites can be unsuitable especially under very acidic conditions.

Grazing

Extensive light cattle grazing is ideal, as some poaching encourages violet regeneration. Heavy grazing, especially by sheep, is detrimental. Where grazing is impractical autumn mowing and raking can be effective in maintaining suitable habitat.

Scrub Clearance

Scrub clearance can be undertaken as required. On afforested stream edges clearance of conifers and brash 5-10m back can create ideal habitat.

Grassland with Bracken

Aim to maintain abundant violets in medium height swards, in association with Bracken or scrub edges.

Grazing

Bracken/grassland mosaics encourage an abundant supply of violets by suppressing grass growth. Aim to maintain a light Bracken cover. Extensive cattle or pony grazing is ideal, especially in winter and early spring, as the trampling helps break up the dense standing trash which suppresses violet and grass growth. Some sites may be maintained by sheep grazing, though they are not as effective at trampling Bracken.

Bracken Control

Spraying in late summer or early autumn before the Bracken begins to die back can be effective in areas where dense Bracken is already established. Small-scale autumn and winter raking and disturbance of dense Bracken litter can also be beneficial. Periodic (3-10 year rotation) Bracken cutting by swipe in late May or early June can be used on ungrazed or too lightly grazed sites. Bruising by machine or by hand in June may also reduce Bracken densities. Scrub clearance (or burning) on a 5-10 year rotation can be undertaken, but scrub should not be eliminated as it often provides shelter.

Coastal grassland, dunes and scrub

The aims and prescriptions for coastal grasslands are the same as those for chalk and limestone grassland. Little is known about managing sand dunes for Dark Green Fritillary; however management practices aimed at maintaining herb-rich vegetation are likely to benefit the species.

above **In the uplands, sheltered violet-rich damp grassland and flushes with abundant nectar sources provide suitable breeding habitat**

below **Ideal calcareous grassland habitat with a high proportion of medium height turf with patches of scrub**

Butterfly Conservation

Saving butterflies, moths and their habitats

Head Office Manor Yard East Lulworth Wareham Dorset BH20 5QP

Telephone: 01929 400209 Email: info@butterfly-conservation.org

www.butterfly-conservation.org

Compiled by Sam Ellis, Martin Warren, Tom Brereton, Paul Toynton and David Chandler.
Photographs by Robert Thompson, Kelly Thomas, Paul Kirkland and Tom Brereton.
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