



Northern Brown Argus

Aricia artaxerxes

Conservation status

Included on the Scottish Biodiversity List as considered to be of principal importance for biodiversity conservation in Scotland and in most urgent need of conservation action.

Wingspan 25-31mm

In the UK the Northern Brown Argus only occurs in northern England and Scotland. This small butterfly has a silvery appearance as it flies low to the ground over sheltered flowery grasslands. Northern Brown Argus primarily has an eastern distribution in Scotland with small, scattered colonies from the Borders north to Easter Ross, the exception being the predominantly coastal colonies in the south-west. It is confined to patches of species-rich grassland where its sole larval foodplant, Common Rock-rose, grows.

Identification

Northern Brown Argus is a small chocolate brown butterfly, with no traces of blue. In Scotland, most individuals are of the endemic race *artaxerxes* and have a characteristic clear white spot in the middle of the forewing thus, given a good view of its upperside, it is readily identifiable. However, due to its small size, swift, low and often darting movement, it can be difficult to detect and identify when flying. Its underwing pattern of white, orange and black dots and spots can closely resemble those of female Common Blues, whilst the very similar Brown Argus does not occur in Scotland. The sexes are similar in appearance.

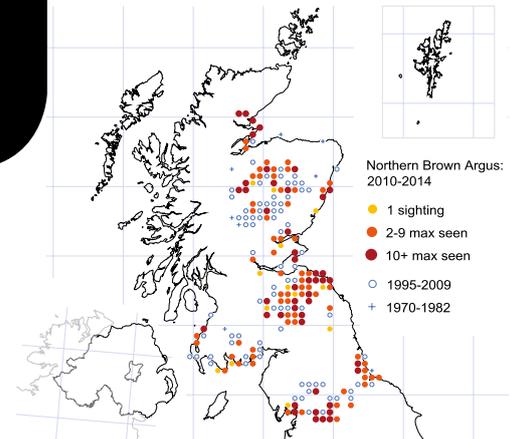
Life cycle

The species is single brooded with adults being recorded from early June through until the end of August, with numbers peaking from late June to early August. However, the flight period can vary considerably between years and between regions. The eggs are laid singly on the upperside of Common Rock-rose leaves, where they are highly visible and easily counted. Females select plants that have fleshy leaves, rich in nitrogen, and typically growing in sheltered situations. They lay most frequently in medium (6-10 cm) and taller (> 10 cm) swards. The young larvae feed on the underside of the leaves, leaving the upper surface intact. They hibernate while quite small at the base of the foodplant or on the ground. The larvae start basking in early spring before recommencing feeding. They are sometimes attended by ants. The larvae pupate in late May.

Colony structure

The butterfly forms discrete colonies that are generally small (< 100 adults). Most colonies breed on habitat patches < 1 ha in area and very few sites are larger than 10ha. Adults have very limited colonising ability, but movements up to several hundred metres have been recorded.

	J	F	M	A	M	J	J	A	S	O	N	D
Egg							■	■				
Caterpillar	■	■	■	■	■		■	■	■	■	■	■
Pupa					■	■	■					
Adult						■	■	■				



Foodplants

The most important foodplant is Common Rock-rose *Helianthemum nummularium*, though there are rare records of accidental egg-laying on other plants.

Habitat

In Scotland most colonies are found on species-rich calcareous grasslands, sea cliffs, sand dunes as well as on some man-made habitats including quarries, disused railway lines and tracksides. Most sites are sheltered, frequently with scrub, and have thin, base-rich soils on steep slopes, often with patches of bare ground, are well drained, unimproved grasslands, where Common Rock-rose grows in a lightly grazed or ungrazed sward.

Below Common Rock-rose, Northern Brown Argus' sole larval foodplant



Habitat management for Northern Brown Argus

The overall aim is to maintain a varied sward with a large proportion of Common Rock-rose areas in the medium (6-10cm) and tall (>10cm) categories. Site size is important - a minimum of 0.2ha is recommended to support a population.

How to survey/monitor

Northern Brown Argus is best surveyed either by searching for adults or eggs, either intact or hatched. Egg surveys have the advantage that they are not weather dependent. Surveys to locate Common Rock-rose are also useful in helping to identify suitable breeding habitat that can subsequently be checked for occupancy by looking for adults or eggs. Monitoring is best undertaken either by adult timed counts or single species transects, or timed egg counts. The latter is best undertaken over set short time periods e.g. 15-20 minutes of continual searching, before moving on to another location. Habitat condition surveys can help identify the need for habitat management.

Grazing

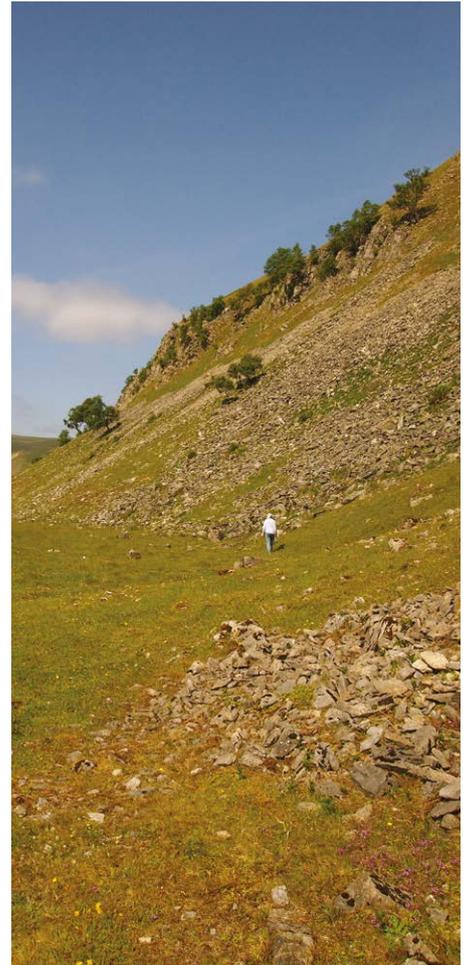
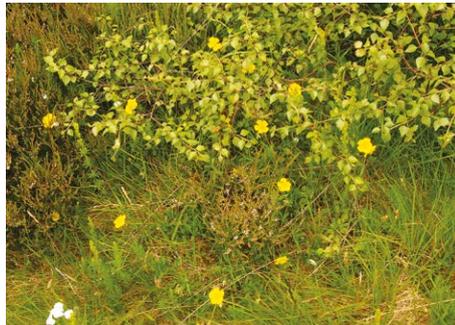
The most suitable grazing regimes have yet to be determined, but light grazing levels of up to 0.2 LU/ha/year are recommended. Sites managed by more intensive grazing regimes may still support the butterfly, but at a low population density. Proven regimes include winter or late summer and autumn grazing (e.g. 4 sheep or 0.5 cattle per hectare for four months). Alternatively, lighter year round grazing can be used, but stocking levels should be reduced to no more than 0.1 LU/ha between April and July. However, on more fragile hill systems, and on sites maintained primarily by rabbits, this may represent overgrazing. Care should also be taken to re-introducing grazing gradually on neglected sites.

Mowing

Mowing is always a poor alternative to grazing. However, where grazing is impractical, a single annual cut in the autumn (September) can maintain suitable habitat. Grassland should be mown on rotation, leaving some areas uncut each year. Some sward variation can be achieved by adjusting the height of the mower.

Scrub Control

Periodic scrub removal may be necessary at some sites although light, well-spaced scrub is often beneficial to provide shelter, especially on more exposed sites. Scrub can be cut on a rotation of 10-15 years to maintain existing levels of cover, and where scrub reduction is necessary the stumps should be treated with herbicide to prevent regrowth. On neglected sites, concentrate on controlling scrub lying within mosaics of grassland and scrub, where the foodplant is still present, in preference to dense scrub.



Top Left Northern Brown Argus egg

Top Right Typical Scottish upland Northern Brown Argus habitat

Middle Left In the absence of grazing birch can invade and shade out Common Rock-rose

Bottom Common Rock-rose bank



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