

Action for chequered skipper



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What we are doing

The chequered skipper butterfly (*Carterocephalus palaemon*) is one of the six key woodland species identified for action under the Scottish Forestry Strategy 2006. This note summarises the action being undertaken by Forestry Commission Scotland, either ourselves or in partnership with others, to help conserve the chequered skipper in Scotland. This note covers the period 2008/09 to 2010/2011 in depth, and in outline to 2015.

The chequered skipper is a small, spring butterfly of damp, sheltered, sunny woodland glades and woodland edges. In the UK it now only occurs in Scotland, following its extinction in England in 1976. It was first found in Scotland in 1939 and is thought now only to occur within a 25-mile radius of Fort William.

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Current status

The current status of chequered skipper in Scotland is unclear, primarily due to a lack of survey effort and probable under-recording. This is because of a lack of recorders in the remoter parts of Scotland where the butterfly occurs, the short survey period, the vagaries of the weather and the fact that it is easily overlooked.

The last national survey for chequered skipper in Scotland was in 1999, when there were estimated to be ten main centres of population and around 50 colonies in total.

Comparing the populations recorded in the period 1995-2004 with those recorded in the period 1970-1982 shows that the chequered skipper's range in Scotland had declined by 19%. There are too few monitored sites for a long-term population trend to be calculated.

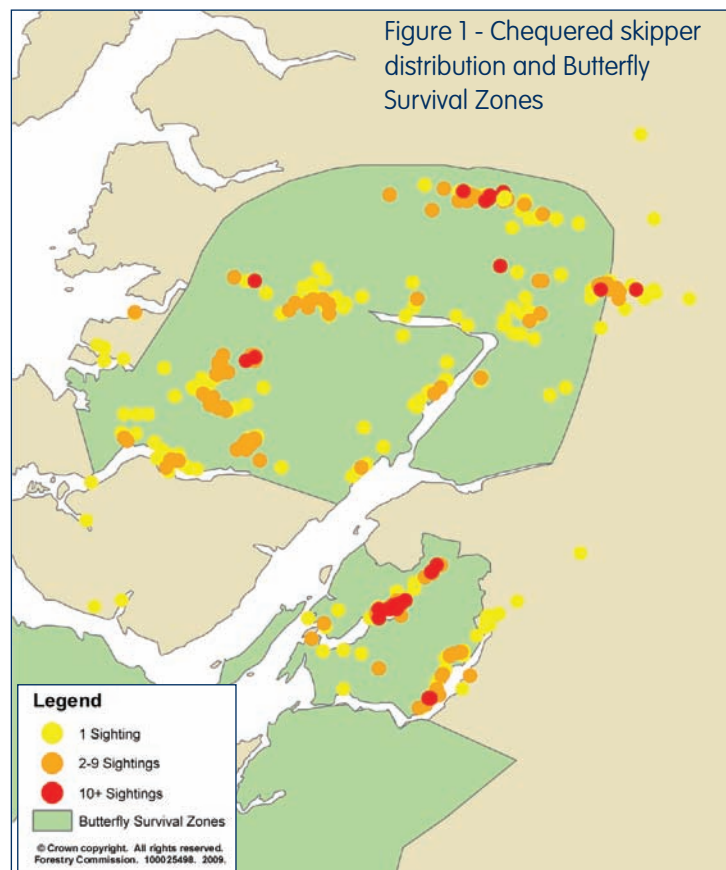
As a result of these declines and its limited distribution the chequered skipper was designated a UKBAP priority species and has both a national action plan and, in Argyll, a local action plan. The chequered skipper is protected from sale under the 1981 Wildlife and Countryside Act. This makes it illegal to trade wild-caught material.

Distribution

The chequered skipper has a very restricted and localised distribution in the UK, probably only occurring in the districts of Lochaber and north Argyll in the west of Scotland, as shown in figure 1. Between 1995 and 2004 it was recorded from thirty-two 10km squares in Scotland. In addition, apparently suitable habitat occurs outwith the current range and there have been recent unconfirmed records to the north on Skye, to the west on Mull and to the south in Kintyre.

Chequered skipper occurs in two of the ten Butterfly Survival Zones in Scotland announced by Butterfly Conservation Scotland (BCS). These zones are deemed the most important landscape areas for priority butterflies and moths in Scotland.

The chequered skipper formerly occurred in the East Midlands of England where it was still fairly abundant up to the 1950's. The cessation of coppicing led to a rapid decline, resulting in its extinction in 1976. Feasibility studies have concluded that at present there is insufficient linked habitat to make a reintroduction attempt in England worthwhile. This enhances the significance of the Scottish population, and the work described in this plan will therefore make an important contribution to conserving this butterfly in the UK.



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Chequered skipper identification

The chequered skipper is one of four skipper butterflies that occur in Scotland. However, it is the only skipper that occurs in Lochaber and Argyll.

Given good views it is easy to recognise, however, it can be readily overlooked due to its small size and fast darting flight and may be misidentified as a moth. Being a skipper, it regularly holds its wings in a characteristic way, with hind-wings flat and forewings half raised - though it does also adopt more familiar butterfly poses when at rest. It can be distinguished from a moth as it has clubbed antennae instead of the thread-like or feathered antennae of most moths.

The golden, or sometimes silver, chequered pattern on a dark brown background on both pairs of wings is distinctive.



It is recommended that a butterfly net or camera is taken into the field to gain a closer look at the identifiable features. For more information on identification see the [UK Butterflies web site](#).

Threats

The main threats to remaining populations of the butterfly are inappropriate management, or lack of management, leading to loss of colonies; and fragmentation of the habitat between colonies, causing isolation of colonies. This is important for species like the chequered skipper which exist in a metapopulation, i.e. a network of geographically discrete colonies, which are linked by the dispersal of individuals between the colonies to form a single large population.

The management of small, isolated sites is generally unsustainable in the long term. If a colony at any one site goes extinct, the chances of recolonisation are low if other colonies are more than 5 km away. Therefore, it is important that management of individual colonies is planned in a wider landscape context.

Colonies have often been lost from sites that have been managed to encourage tree regeneration, as the glades and open spaces occupied by the butterfly have filled with young trees. In some cases colonies have become isolated as the woodland between them has matured.

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Though light grazing is ideal to maintain chequered skipper habitat (see below), if grazing levels are too high then livestock can be forced into the damper areas to feed on purple-moor grass (the caterpillar's main food plant) thus reducing the suitability of the breeding habitat. Over-grazing, particularly by sheep, can lead to both a loss of nectar plants and an excessive increase in the extent and density of bracken.

The effects of climate change on colonies is unclear but could be detrimental in pushing colonies further uphill into more unsuitable and marginal habitat. On the other hand, it could increase the area of suitable habitat with frost-free winters and warm, wet summers. Research will be needed to understand and predict these interactions.

Habitat requirements

It is essential that chequered skipper colonies have the right habitat requirements for all the life-cycle stages of the butterfly.

The chequered skipper is a butterfly of damp woodland edges or the open spaces within damp woodlands. It requires sunny, sheltered sites, usually south-facing, as both the adult butterfly and its caterpillar require a warm, almost humid micro-climate. Sites are usually below 200m altitude. The butterfly also requires purple moor-grass *Molinia caerulea* as this is the caterpillar's main, if not sole, food plant in Scotland. In England, wood false brome *Brachypodium sylvaticum* was its main food plant. This occurs at some of the Scottish sites and may well be used here too.

The chequered skipper has a one-year life cycle. The female butterflies usually lay their eggs on the food plant. They select lush purple moor grass tussocks growing in flushed sites, usually under bog myrtle, or light birch scrub, or at the edge of bracken stands. The caterpillars hatch after around three weeks and begin feeding on the leaf blades of the tussock. The caterpillars hibernate, pupate in April, and adults emerge in May.



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The adult butterflies are only active in warm or sunny weather from the third week of May until the end of June. They often congregate at sunny sheltered locations with lots of nectar plants, especially bugle, bluebell (wild hyacinth) and marsh thistle.

The chequered skipper lives in low density colonies over large areas. The males establish favoured perches, congregating around suitable nectar sites to form loose colonies. The females are more wide-ranging, laying their eggs whilst passing through suitable habitat, possibly over distances of several kilometres.

The chequered skipper's restricted range is due to the relatively mild winters and warm, damp summers that are prevalent in the Fort William area. These conditions are ideal for the development of lush purple

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moor-grass that stays green into the autumn and allows the caterpillars to feed for long enough to complete their development.

Chequered skipper management should aim to enhance the habitat in each of the colonies in a metapopulation, and to remove barriers to dispersal between colonies. Ideally, efforts should also be made to create new colonies nearby. For example, if the number of colonies in a square kilometre is increased from 5 to 10, it is much more likely that chequered skippers will persist in that area.

Information on management can be found on the [BCS website](#). In summary:

- The ideal management is light grazing. This helps keep glades open whilst also keeping areas flower-rich. Low-levels of deer browsing are particularly important at keeping scrub in check.
- If livestock grazing is not possible, rotational scrub clearance can prevent the loss of open ground.
- It is often necessary to control bracken to prevent excessive encroachment into both nectar plant areas and breeding areas. However, this will have to be carefully planned at sites where the pearl-bordered fritillary occurs, as that species is reliant on bracken.
- The maintenance of open space within woodlands allows chequered skippers to fly between colonies. In many cases the open 'corridors' have to be created or re-established.
- Rides and paths running east to west have a greater proportion of warmer south-facing edges. The inclusion of scalloped bays at intervals along the south-facing edge provides additional sheltered habitat.
- The regular cutting of regrowth on wayleaves provides suitable sheltered and open habitat, and their linear nature means that they can act as ideal corridors along which individuals can fly to neighbouring colonies.



Chequered skipper conservation action in Scotland to date

Recent conservation action for chequered skipper in Scotland has been co-ordinated by BCS. The focus has been on raising awareness of the butterfly and its conservation and management advice has been given at some sites. Examples of activities to date include:

- Producing a leaflet "**Learn about the chequered skipper**".
- Running training, workshops and demonstration days to promote monitoring and management of chequered skipper and other butterflies.

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- Establishing the S9 pilot woodland grazing trial to increase understanding of livestock grazing in woodland to enhance biodiversity.
- Monitoring chequered skipper populations through weekly butterfly transects at a number of sites, including some on the national forest estate.

The chequered skipper species action plan

Chequered skipper is a **UK BAP Priority species** for which Butterfly Conservation is lead partner. Work in Scotland is co-ordinated through a close working partnership between BCS, SNH and Forestry Commission Scotland.

Forestry Commission Scotland action for chequered skipper

Forestry Commission Scotland will contribute significantly to achieving the targets set out in the UKBAP for chequered skipper, which are to:

- Maintain the population at all known sites
- Where possible, increase the available habitat at known sites and adjacent areas, and attempt to link existing fragments of habitat.

Targeting our chequered skipper conservation actions

Our work on chequered skipper will be focussed on the two Butterfly Survival Zones designated by BCS that have key chequered skipper networks. We will aim to work at a landscape scale, which will require collaborative working with a number of partners and neighbours to create functioning and viable meta-populations of chequered skipper.

The following sections describe in more detail what we will do for chequered skipper.

Chequered skipper management on the national forest estate

We will manage a nature reserve on the national forest estate at Allt Mhuic on the north shores of Loch Arkaig, Lochaber, where we will undertake sympathetic management to enhance chequered skipper populations. Forest Research will conduct research at this site to gain a better understanding of the effects of the management regime, light cattle grazing, on both chequered skipper and pearl-bordered fritillary habitat.



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A partnership project at Glen Creran will monitor and manage the south-facing hillside as a viable chequered skipper and pearl-bordered fritillary network. This includes national forest estate, land in private ownership and land managed by SNH, the majority of which is designated as a Site of Special Scientific Interest (SSSI) with chequered skipper being one of the notified features.

Lessons learned at these sites will be used to inform chequered skipper management elsewhere.

Seventeen sites on the national forest estate have been identified as having post-1980 records of chequered skipper. In addition, a further six sites have been identified within 1km of the national forest estate. We will target conservation effort to these sites, both by managing the national forest estate and working with neighbours to encourage a landscape-scale approach.

Good forest design and operational practice such as the maintenance of suitable open ground and appropriate bracken control will often benefit chequered skipper. Although a large amount of this kind of work will be carried out on the national forest estate, it is not possible to attribute a cost to it that is relevant to a single species like the chequered skipper. Work will include:

- Identifying core colonies and undertaking annual monitoring
- Improving habitat at extant colonies
- Identifying national forest estate that falls within the Butterfly Survival Zones for chequered skipper and ensuring that suitable management is implemented to improve connectivity between colonies.

This work will be undertaken in partnership with BCS who will act as specialist advisors.

Management of private woodlands for chequered skipper

The Scotland Rural Development Programme (SRDP) can provide grant support for management to help chequered skipper. This includes (*SRDP option in italics*):

- Vegetation management programme for habitat enhancement. (*Bracken Management Programme for Habitat Enhancement/Scrub and Tall Herb Communities*)
- Eradication of rhododendron. Can benefit chequered skipper at certain sites. (*Control of Invasive Non-native Species*)
- Woodland creation. Will be used to provide more shelter at exposed sites and to help create sheltered connectivity between colonies at very open and less wooded sites. (*Woodland Creation*)
- Forest plan preparation. Chequered skipper populations and their habitat are dynamic systems, changing as natural succession progresses. Management is often cyclical and has to be carefully planned to ensure that, at any point in time, suitable linked habitat is retained. (*Woodland Improvement Grant – Long term forest planning*)
- Respace natural regeneration. Used to open up dense stands of regeneration to allow better dispersal between colonies. (*Woodland Improvement Grant – Improving woodland habitats and species*)
- Small scale woodland thinning. Used to provide clearings (up to 0.25ha) to create or maintain suitable chequered skipper habitat or keep colonies linked. (*Woodland Improvement Grant – Improving woodland habitats and species*)

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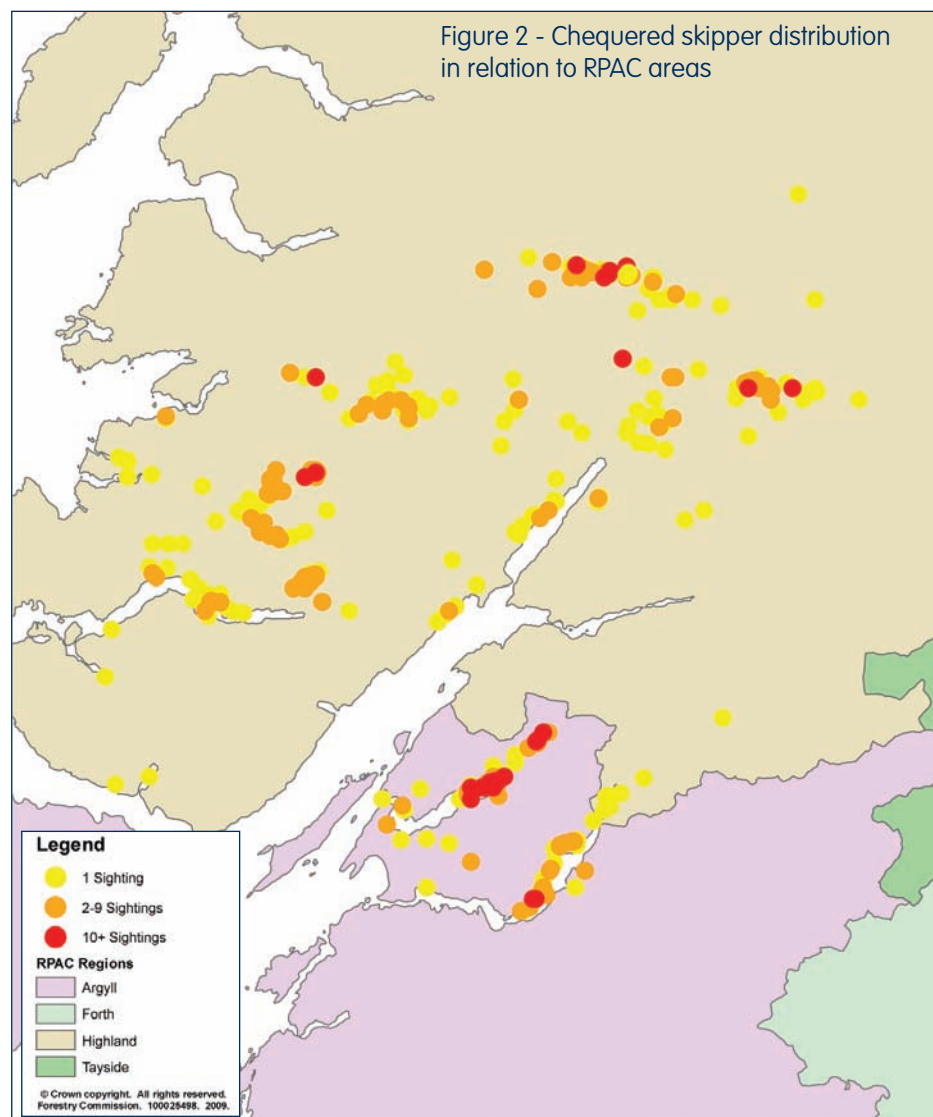
We will work with SGRPID, BCS and SNH to promote and support suitable management prescriptions in SRDP applications, and will provide technical guidance to help grant applicants. We will promote these measures where they help to maintain viable meta-populations or help to link existing colonies. Priority will be given to applications in the two Butterfly Survival Zones for chequered skipper.

We are developing a woodland grazing toolkit based on a series of pilot areas which will provide guidance on woodland grazing for butterflies. We hope to develop grant support based on this by 2010.

We are working with Forest Research to monitor both the vegetation and butterflies at the joint Forestry Commission Scotland and BCS nature reserve at Allt Mhuic. This work is helping to determine the effects of light cattle grazing on chequered skipper and pearl-bordered fritillary habitat and populations. It is hoped that lessons learnt here will be transferable to other sites.

Figure 2 shows chequered skipper distribution in relation to RPAC areas. Links to those RPAC areas relevant to chequered skipper are provided below.

Highland
Argyll



Reporting and review arrangements

An annual report of progress in carrying out the actions in this programme will be summarised on this site. This programme plan will be revised if required and will be reviewed in 2011/12.

Looking for chequered skipper

Adult chequered skippers are usually on the wing from the third week of May until the end of June. Adults tend to congregate where there are lots of nectar plants; they are particularly fond of bugle, bluebell (wild hyacinth) and marsh thistle. Choose a sunny, warm and if possible calm day and look for them in sunny and sheltered woodland edges or glades in south Lochaber and north Argyll.

The use of a butterfly net or camera is recommended to confirm identification.

Good colonies of chequered skipper can be seen at the following sites:

- Allt Mhuic Nature Reserve on the north shores of Loch Arkaig in Lochaber
- Glasdrum National Nature Reserve, owned and managed by SNH and the adjacent Glen Creran Woods managed by Forestry Commission Scotland
- Doire Donn Nature Reserve; Scottish Wildlife Trust nature reserve in Ardgour on the north-west shore of Loch Linnhe.

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