Forester *Adscita statices*


# The Forester *Adscita statices* Linnaeus.

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|---|---|---|---|
| Climate Change Sensitivity: | MEDIUM | Ability to Manage: | MEDIUM |
| Non climatic threats: | HIGH | Vulnerability: | MEDIUM |

## Summary

The forester has been in decline across all of its range since the mid-20th century. The main reason for this decline has been agricultural intensification of its open grassland habitat, and abandonment leading to the encroachment of scrub and trees. Modelling suggests that the climate suitability for the species will decline across much of England. The impact of climate change is likely to operate through the degradation of its preferred habitat of unimproved wet or damp grassland. Because it has relatively poor dispersal, adaptation is likely to focus on ensuring the optimum management of existing sites and the restoration and creation of semi-natural grassland in close proximity to existing colonies.

# Description

The forester is a metallic green, medium sized moth. It is the most common and widespread of the three forester species seen in England, and with a wingspan of 2.5-2.8 cm it is also the largest. Like the other Burnet moths, it is day flying. It can be separated from the similar cistus forester *Adscita geryon*, which only occurs on limestone districts where common rock-rose is found, by its larger wingspan. The caterpillar is pale yellow-green and has a dark dorsal stripe. It also has fine white hairs on its back.

# Ecology and distribution

The forester is found in a range of habitats, including unimproved damp meadows, coastal marshes, flushes, downland, and Breck grassland. It requires a medium to tall sward containing its larval food plants: common sorrel and sheep sorrel, and its preferred nectar plants: ragged robin, meadow thistle, marsh thistle, viper's bugloss and devil's bit scabious, the preferred nectar source varying with habitat. It is typically found in small, discrete colonies and can occur in large numbers.

It is a day flying moth, and in warm years flies from mid-May through to July, with a few individuals occasionally recorded flying in early August. It produces a single generation a year, and has a relatively poor dispersal ability (Blaschke, Conradi & Lang 2002; Van der Meulen & Groenendijk 2005), with adults usually remaining close to the existing colony.

Eggs are laid in small batches. It overwinters as a partly grown larva, low down in the sward. At first it mines the leaves of the host plant, then feeds exposed on the lower leaves. It pupates in a cocoon spun near the ground and concealed by vegetation.

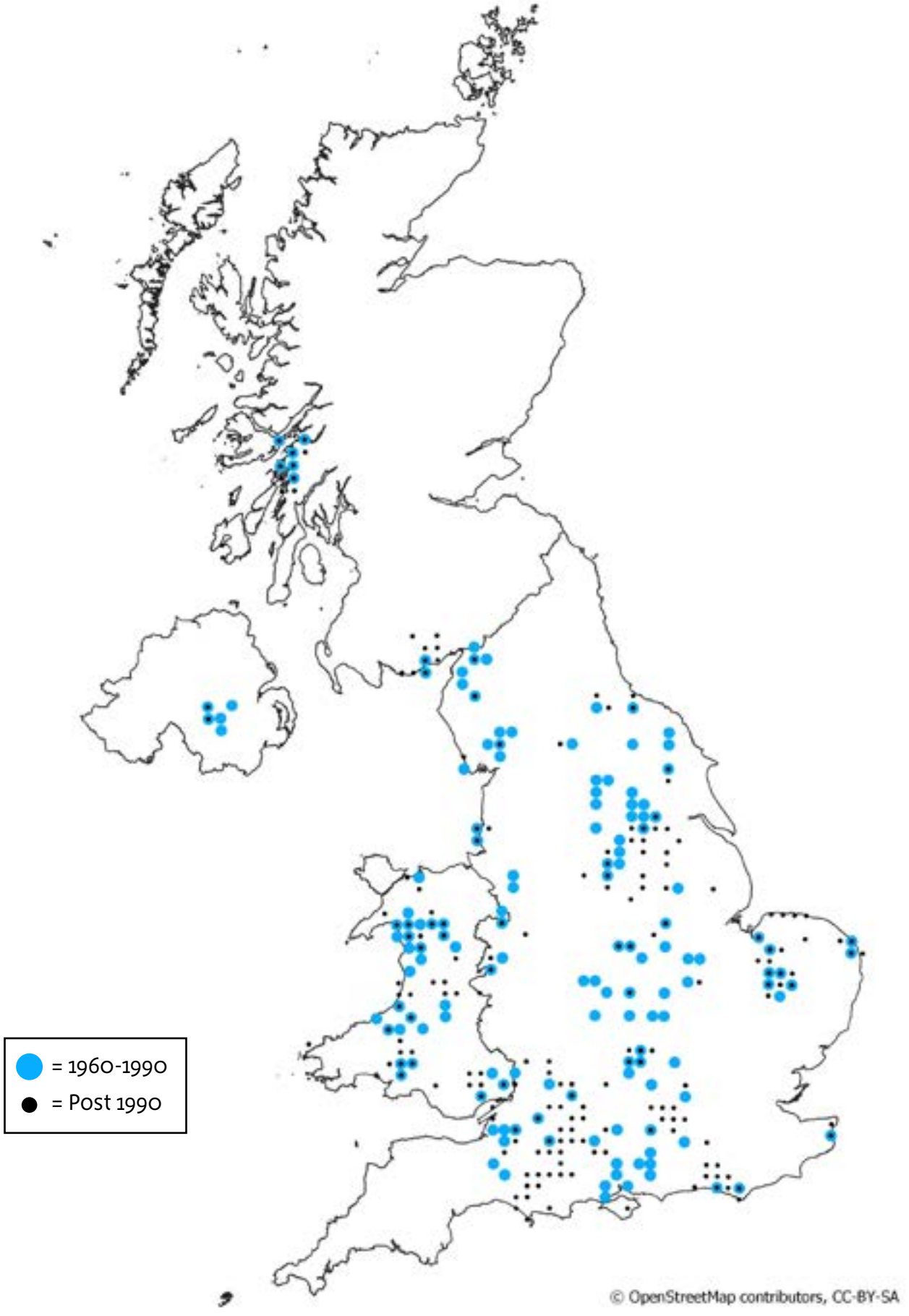
The forester has disappeared from almost half of its recorded localities since the 1940s, and losses have been particularly severe in the north (Heath & Emmett 1985). The species is found more frequently at sites within landscapes with high levels of unimproved grassland (Franzén 2002) and other semi-natural habitats. Historically the forester has been under recorded (N. Bourn pers. com.) and the apparent shift in its distribution in many regions reflects this, rather than climate driven change.

It has been declining in England and also across much of its European range (Pettersson, Nilsson & Franzén 2013), primarily due to agricultural intensification of grassland sites. Land abandonment or under-management, leading to encroachment by scrub and trees, has also been implicated in its loss from sites (Öckinger *et al* 2006; Fox 2013). In Europe the moth is still regularly found in protected areas of wetlands.

Management through light grazing to control scrub encroachment is recommended, but overgrazing is detrimental.

Butterfly Conservation's National Moth Recording Scheme presence records for Forester over 2 timeslices, 1960-1990 and post 1990, are shown on the map below (10km grid scale).

Presence of Forester records, 10km².
Source: Butterfly Conservation: Butterflies for the New Millennium.





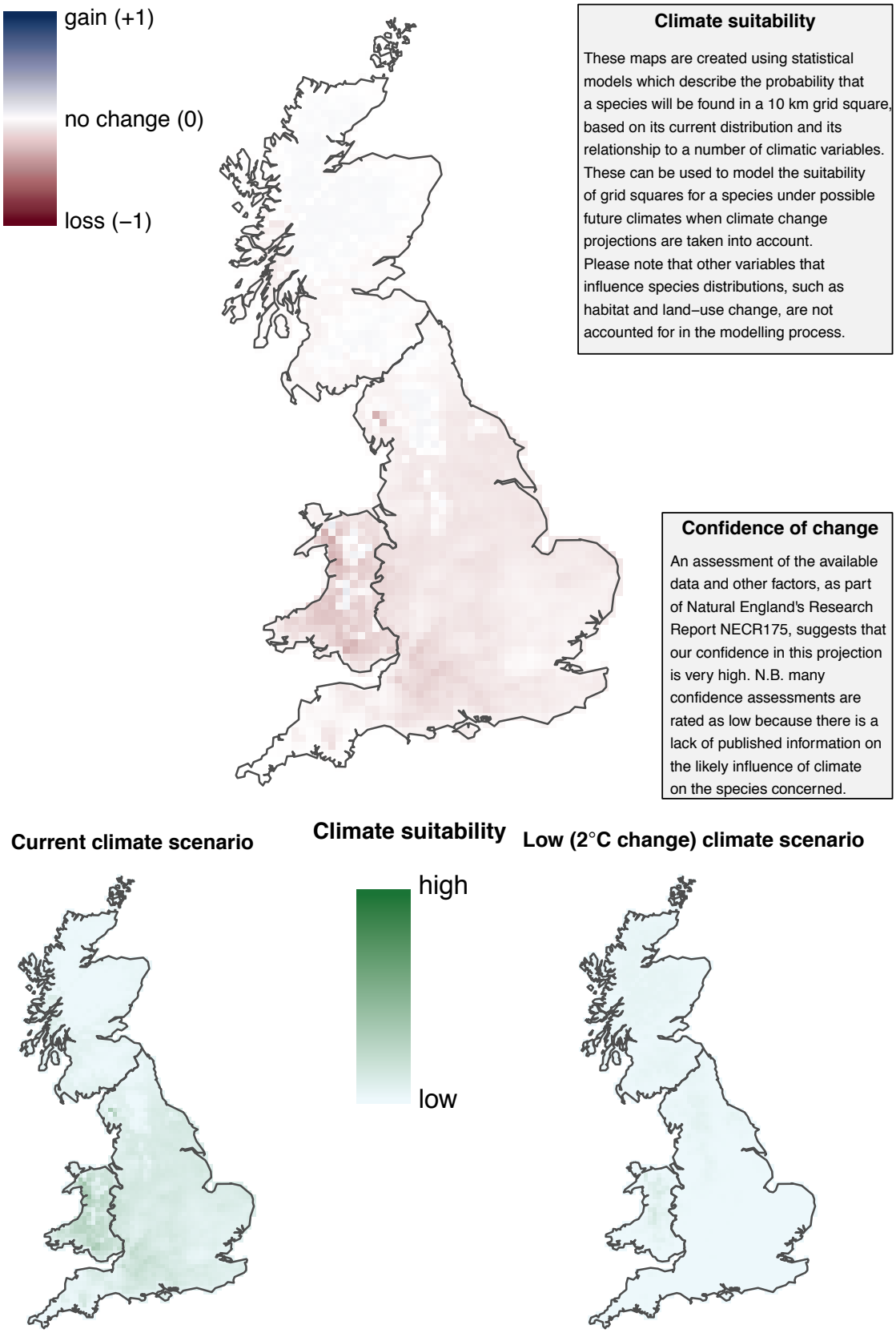
# Confidence in climate change impacts[24]

Distribution change: **LOW CONFIDENCE** Mechanism: **LOW CONFIDENCE**

Climate envelope modelling suggests that the climate in England is likely to become less suitable for the forester, meaning that climate change is likely to play an increasing role in the species decline. The species itself is thermophillic, preferring warm microhabitats, but its preferred habitat appears to be wet or damp meadows or flushes, which are likely to be adversely impacted by changes in rainfall patterns, especially summer drying. Ensuring hydrological conditions are maintained in these wetter locations is likely to be a key adaptation response. In drier downland and Breck grassland habitats, wetter conditions may mean habitats become grassier. This is potentially detrimental for the forester and more ground disturbance may help to maintain suitability.

24 An assessment of the strength of evidence that distributions are changing and the mechanisms causing change are understood. Refer to Part B, section 5 of the species section introduction for more information.

Projected change in potential distribution of forester in the UK with a temperature rise of 2°C (Pearce-Higgins *et al* 2015).



Further information on these projections can be found in the introduction to the species section (Part A, Section 3 and Part B Section 5). Note that this is a guide to where a species may be able to survive, it does not capture other issues such as habitat availability and fragmentation – see text above for further details. Contains public sector information licensed under the Open Government Licence v3.0. Please also see acknowledgement and copyright at the beginning of this manual.

Please read this case study alongside the relevant habitat sheets.

# Adaptation options

The conservation or restoration of existing sites is the starting point for adaptation. Evidence suggests that buffering of existing sites through the restoration or creation of species rich grassland (Bergman *et al* 2008) and other semi natural habitats (Slancarova *et al* 2014) will also help build the resilience of existing populations.

- Site management to ensure the maintenance of a medium-tall sward with abundant sorrel and nectar plants. Scrub encroachment can be prevented through light grazing or clearance. Over-grazing should be avoided.
- Where possible, increasing the area of suitable habitat around existing sites by restoring or creating species rich grassland, and managing scrub on existing grassland sites, can help to increase populations.
- Identify areas within existing sites and the surrounding landscape that are likely to remain relatively unaffected by climate change, for example areas with a good water supply that are likely to remain damp, and ensure that these are under optimal management.
- Take measures to ensure that sites are not adversely affected by changes in hydrology, particularly reduced summer water levels and drying.
- When targeting habitat creation, identify sites that will increase the topographic variation covered by semi-natural habitats.
- Monitor known populations to determine the extent of any change. Measures should also be put in place to monitor the impact of adaptation actions.
- Undertake research to understand the species' habitat requirements at the landscape scale, to improve the targeting of habitat restoration and creation.
- If it is suspected that climate change is responsible for losses, undertake research to identify the mechanisms driving these losses.

# Relevant Countryside Stewardship options

***GS6*** ***Maintenance of Species Rich Grassland***

***GS7*** ***Restoration towards Species Rich Grassland***

***GS8*** ***Creation of Species Rich Grassland***

***GS13*** ***Management of grassland for target features***

***SP9*** ***Threatened species supplement***

# References and further reading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Butterfly Conservation **Forester Adscita statices** factsheet.

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Heath, J. & Maitland Emmet, A. 1985. The Moths and Butterflies of Great Britain and Ireland. Harley Books, Colchester. Vol. 2.

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Pettersson, L., Nilsson, S. G., & Franzén, M. (2013). Land-use changes, farm management and the decline of butterflies associated with semi-natural grasslands in southern Sweden. Nature Conservation, 6, 31.

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