

**European Community Directive
on the Conservation of Natural Habitats
and of Wild Fauna and Flora
(92/43/EEC)**

**Second Report by the United Kingdom under
Article 17
on the implementation of the Directive
from January 2001 to December 2006**

**Conservation status assessment for :
S4035: *Gortyna borelii lunata* - Fisher's estuarine
moth**

Please note that this is a section of the report. For the complete report visit <http://www.jncc.gov.uk/article17>

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S4035 *Gortyna borelli lunata* Fisher's Estuarine moth

Audit trail compiled and edited by JNCC and the Invertebrate Inter-Agency Working Group

This document is an audit of the data and judgements on conservation status in the UK's report on the implementation of the Habitats Directive (January 2001 to December 2006) for this species. Superscript numbers accompanying the headings below, cross-reference to headings in the corresponding Annex B reporting form. This supporting information should be read in conjunction with the UK approach for species (see 'Assessing Conservation Status: UK Approach').

1. Range Information^{2.3}

Gortyna borelli lunata is a rare moth with its known native distribution in the UK restricted to an area near Walton-on-the-Naze in north-east Essex. A colony in north Kent is believed to have been derived from an unauthorised introduction and has not been included in the discussion below.

1.1 Surface area of range^{2.3.1} **100km²**

The above estimate was calculated using records collected from 1990 onwards, within Alpha Hull software. Extent of occurrence was used as a proxy measure for range (see Map 1.1 below), at 10km² resolution. The value of alpha was set at 20 km to reflect the mobility of this species.

1.2 Date of range determination^{2.3.2} **2004**

1.3 Quality of range data^{2.3.3} **Good**

Due to the restricted nature of this species, it has been well-documented. Hence, the quality of data is good.

1.4 Range trend^{2.3.4} & Range trend magnitude^{2.3.5} **Stable**

There has been no sign of a decline in recent years.

1.5 Range trend period^{2.3.6} **1994 – 2006**

1.6 Reasons for reported trend in range^{2.3.7} **Not applicable**

1.7 Favourable reference range^{2.7.1} **100km²**

The decision tree in Note 1 has been used as a guide in determining the favourable reference range estimate (see 'Assessing Conservation Status: UK Approach').

There has been no range change recorded for this species; it has always been, and still is, restricted to a small area. The current estimate is therefore a suitable baseline for the favourable reference value.

Map 1.1. Current extent of occurrence and occupied 10 km-squares (2004)



1.8 Range conclusion^{2.8}

Favourable

Range is stable and not less than the favourable reference range.

2. Population of the species^{2.4}

2.1 Population estimate^{2.4.1}

6 sites

G. borelli lunata is known at six localities. The total population was estimated at 1000–5000 adult moths in 2000 (Gibson, 2000).

2.2 Date of population estimate^{2.4.2}

2000

2.3 Method of population estimate^{2.4.3}

3 = from comprehensive inventory

Annual surveys are undertaken by Writtle College.

2.4 Quality of population data^{2.4.4}

Good

Due to the restricted nature of this species, it has been well-documented. Hence, the quality of data is good.

2.5 Population trend^{2.4.5} & Population trend magnitude^{2.4.6}

Stable

2.6 Population trend period^{2.4.7}

2000 – 2006

2.7 Reasons for reported trend in population^{2.4.8}

Not applicable

2.8 Justification of % thresholds for trends^{2.4.9}

Not applicable

2.9 Main pressures^{2.4.10}

The main pressures to this species have included collection and inappropriate management of its habitat:

102 mowing/cutting

140 grazing

241 collection

530 improved access to site

622 walking, horse riding and non-motorised vehicles

720 Trampling, overuse

820 reclamation of land from sea, estuary or marsh

870 Dykes, embankments, artificial beaches, general

871 sea defense or coast protection works

900 Erosion

930 Submersion

941 inundation

2.10 Threats^{2.4.11}

The main threats to the species in Britain are sea-level rise and inappropriate management of its habitat:

102 mowing/cutting

140 grazing

530 improved access to site

622 walking, horse riding and non-motorised vehicles

720 Trampling, overuse

802 reclamation of land from sea, estuary or marsh

803 infilling of ditches, dykes, ponds, pools, marshes or pits

810 drainage

811 management of aquatic and bank vegetation for drainage purposes

840 flooding

870 Dykes, embankments, artificial beaches, general

871 sea defence or coast protection works

900 Erosion

930 Submersion

941 inundation

2.11 Favourable reference population^{2.7.2}

>8 localities

The decision tree in Note 1 has been used as a guide in determining the favourable reference population estimate (see 'Assessing Conservation Status: UK Approach').

This species is currently known from only six localities. Although the trend is stable, none of these populations are considered secure, and there is notable risk from stochastic events. The current estimate is hence likely to be more than 25% below the favourable reference population.

2.12 Population conclusion^{2.8}

Unfavourable – Bad

The current population is more than 25% below the favourable reference population.

3. Habitat for the species in the Biogeographic region or sea^{2.5}

The species is known to utilise coastal grasslands in Essex and Kent where the larval foodplant *Peucedanum officinale* (Hog's Fennel) is abundant.

3.1 Surface area of habitat^{2.5.2}

0.02km²

This species is currently thought to use an area of just 0.02km².

3.2 Date of estimation^{2.5.3}

2004

3.3 Quality of data on habitat area^{2.5.4}

Good

The restricted nature of this species and recent focussed survey, mean that it is possible to estimate an area of habitat currently used.

3.4 Habitat trend^{2.5.5}

Decreasing

In areas of habitat currently used by the *G. borelli lunata*, particularly Skipper Island, areas of Hog's Fennel have been lost to coastal erosion and salt marsh encroachment, and it is believed that this decline may be continuing at a slow, but gradual rate. It is unclear over what time-scale these declines are occurring, but best available information suggests that post-1994 trends are reported as decreasing.

3.5 Habitat trend period^{2.5.6}

1994 – 2006

3.6 Reasons for reported trend in habitat^{2.5.7}

Not applicable

3.7 Suitable habitat for the species (in km²)^{2.7.3}

Unknown

3.8 Habitat conclusion^{2.8}

Unfavourable – Inadequate and deteriorating

Although it could be argued that habitat area and quality is sufficient to support the species at present, there is low confidence that it will be sufficient for the “long term survival of the species” (as would be required for a judgment of favourable). Habitat is, thus concluded, to be inadequate and deteriorating.

4. Future Prospects^{2.6}

Poor prospects

“Species is likely to struggle unless conditions change.”

Historically this species was vulnerable to collection of specimens, but it is now protected under the Wildlife and Countryside Act 1981, as amended. The main threats to the species in Britain are sea-level rise and inappropriate management of its habitat.

Skipper Island in Essex is currently a strong hold for the population. However, certain areas of hog’s fennel (upon which the caterpillars exclusively feed) have already been lost to coastal erosion and salt marsh encroachment. Complete inundation at some point in the future is inevitable, and this will result in the loss of *G. borelii lunata* from this site. Remaining sites may be too small to support a sustainable population. The long term survival of the species may therefore be dependant on the creation of sites not under threat from flooding (Essex Biodiversity Action Plan, available at www.essexbiodiversity.org.uk).

Because *G. borelii lunata* was only added to Annex II in 2003, as yet, no Special Areas of Conservation (SACs) have been selected for this species in the UK. However, a project managed from Writtle College and funded by the Rural Development Service under the Rural Enterprise Scheme (together with match funding contributions from Environment Agency, English Nature and the Cambridgeshire and Essex branch of Butterfly Conservation) aims to encourage and support farmers/landowners in creating and managing sites for *G. borelii lunata*. This will ensure a sustainable programme is put in place for the long-term conservation of the species (reported as part of the Essex Biodiversity Project, available at www.essexbiodiversity.org.uk).

The judgment of poor reported here i.e. that the species is “likely to struggle unless conditions change”, has been made on the basis that *G. borelii lunata* is expected to struggle unless proposed conservation measures prove successful. However, the efforts being invested into furthering our understanding of this species, and also into protecting it, are reflected in the “but improving” conclusion reported in 4.1 below.

4.1 Future prospects conclusion^{2.8}

Unfavourable – Inadequate but improving

Based on the information provided above, it cannot confidently be reported that “threats to the species are not significant; [and that the] species will remain viable on the long-term”. However, key threats are being addressed; providing active conservation work continues on this species, it is foreseen that prospects will improve.

5. Overall Conclusion^{2.8}

Unfavourable – Bad

Table 5.1. Summary of conclusions

Parameter	Judgement	Grounds for Judgement (in accordance with Annex C)	Reliability*
Range	Favourable	Range is stable and not smaller than the favourable reference range	1
Population	Unfavourable – Bad	Current population is more than 25% below favourable reference population	1
Habitat	Unfavourable – Inadequate and deteriorating	Any other combination	1
Future Prospects	Unfavourable – Inadequate but improving	Any other combination	2
Overall Assessment	Unfavourable – Bad	One or more Unfavourable – Bad	2

*1=High, 2=Moderate, 3=Low

High – Expert opinion is that the concluding judgement accurately reflects the current situation based on a professional understanding of the species. For range, population, and habitat, quality of data used to establish the current estimate has been identified as “good”; data used to inform trends is comprehensive and up to date.

Moderate – A greater understanding of the feature, or the factors affecting it, is required before a confident concluding judgement can be made by experts. For range, population, and habitat, the current estimate and/or trend are based on recent, but incomplete or limited survey data; or alternately, a comprehensive, but outdated (pre-1994) review.

Low – Judgements, and comprising estimates, are based predominately on expert opinion.

N/A – Assessment conclusion is “unknown”, on the basis of insufficient reliable information

6. References

Essex Biodiversity Project <http://www.essexbiodiversity.org.uk/>

GIBSON, C., 2000. *The conservation of Gortyna borelii lunata* Freyer (Lep: Noctuidae). Entomologist's Record & Journal of Variation. **112**(1), 1-5.

RINGWOOD, Z.K., HILL, J. & GIBSON, C., 2004. *Conservation management of Gortyna borelii lunata (Lepidoptera, Noctuidae) in the United Kingdom*. Journal of Insect Conservation. **8**(2/3), 173-183.

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Map Data Source

Scarce Macro Moth Review Data 1700-2003 (provided via the National Biodiversity Network (NBN) Gateway).