

# Prime Butterfly Areas in Europe

## Priority sites for conservation

Edited by

Chris van Swaay<sup>1</sup>

Martin Warren<sup>2</sup>

## SUMMARY

<sup>1</sup> De Vlinderstichting (Dutch Butterfly Conservation), Postbus 506, NL-6700 AM Wageningen, The Netherlands. [www.vlinderstichting.nl](http://www.vlinderstichting.nl)

<sup>2</sup> Butterfly Conservation (UK), Manor Yard, East Lulworth, Wareham, Dorset BH20 5QP, United Kingdom. [www.butterfly-conservation.org](http://www.butterfly-conservation.org)



Butterfly  
Conservation

Published by National Reference Centre for Agriculture, Nature and Fisheries. Ministry of Agriculture, Nature Management and Fisheries, Wageningen, The Netherlands. c.700pp.

### Orders:

The report can be ordered by letter or by e-mail from De Vlinderstichting (Dutch Butterfly Conservation), stating: "Prime Butterfly Areas in Europe". The price is € 39 plus € 9.50 postage and packing for EU countries, Switzerland, Norway and non-European countries, and € 25 plus € 9.50 postage and packing for all other countries (i.e. central and east European countries).  
E-mail: [info@vlinderstichting.nl](mailto:info@vlinderstichting.nl)

## Why Prime Butterfly Areas?

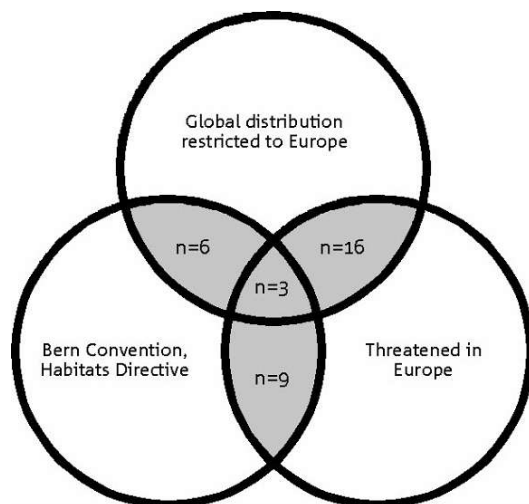
Europe is an important region for butterflies, containing 576 butterfly species, one third of which are endemic to the continent (includes the Azores, Madeira, the Canary Island, Turkey and Russia east to the Ural mountains).

The rapid economic development of the twentieth century has brought about profound changes in the European environment, with many deleterious effects on butterflies and other wildlife groups. The *Red Data Book of European Butterflies* (Van Swaay & Warren, 1999) provided the first comprehensive review of the status of butterflies across the continent. **The report showed that a large number of butterflies are declining through substantial parts of their range and that many species are highly threatened.** Out of 576 butterfly species known to occur in Europe, 71 species (12% of the total) are considered threatened according to new IUCN criteria. They comprise 19 globally threatened species and 52 threatened at the European level.

## Prime Butterfly Areas in Europe

This project aims to identify the Prime Butterfly Areas in Europe where conservation efforts should be focussed as a matter of urgency. The information presented here is also aimed at raising awareness of the plight of butterflies across Europe and the specific conservation problems they face. The results are intended to support other initiatives, like *Natura 2000*, the *Pan-European Ecological Network* (PEEN), the *Pan-European Biological and Landscape Diversity Strategy*, the *Emerald Network* and the *Bern Convention*.

## Target species



Prime Butterfly Areas are an initial selection of important butterfly areas in Europe, focussing on **target species** that are conservation priorities across this large and diverse region. Protection and proper management of these areas will not only help to conserve these target species, but also the many other characteristic butterflies they contain. Criteria have been devised to identify the most important areas for the specified target species in Europe, combined with a wide geographic coverage that includes both marginal and core populations.

**Figure i: Selection of 34 target species. Target species fulfil at least two of three criteria (grey-shaded). These species are used to select Prime Butterfly Areas.**

Site selection criteria were devised to identify the most important areas for the specified target species in Europe, combined with a wide geographic coverage that includes both marginal and core populations. The aim was to select the three 'best' sites or areas for each species in a country, either discrete individual sites for highly restricted species or larger regions for species that are still widely distributed. Prime Butterfly Areas for different species were combined wherever possible.

Data were gathered by distributing electronic questionnaires to expert national compilers from each European country who based their replies on detailed distribution data where available or personal knowledge. For each PBA, key data were collected on: location (coordinates, administrative region, altitude etc), butterfly species, habitats and land-uses, threats, protection, conservation issues. Standard lists of options were used for most of these

categories. The subsequent data provided was checked centrally and a draft version of each country chapter was sent to the national compiler for final checking.

### **431 Prime Butterfly Areas cover 1.8% of Europe**

An extensive network of the most important international sites for butterflies has been identified across Europe. A total of 431 Prime Butterfly Areas are distributed among 37 countries and three archipelagos, covering more than 21 million ha (1.8% of the European landcover).

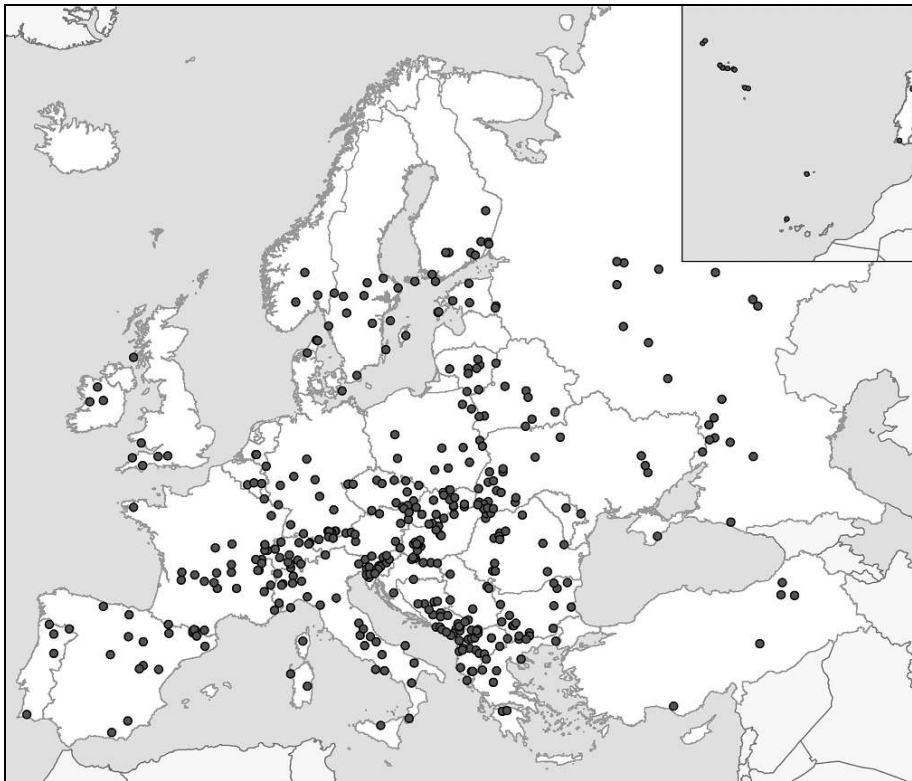


Figure ii: The location of the Prime Butterfly Areas in Europe. There are 431 PBAs in Europe covering more than 21 million ha, equivalent to 1.8% of the land area of Europe.

### **Occurrence of target species in PBAs**

The most frequently occurring species on the PBAs are *Maculinea arion* and *Euphydryas aurinia*, followed by *Parnassius apollo*, which is still widespread in mountainous areas within many countries. Together with *Maculinea teleius* these three species also have the largest number of discrete breeding areas, with at least 1000 estimated populations (table 10). In contrast, many target species have a very restricted range and are confined to just one or two European countries and a small number of PBAs. The sites selected are of the utmost importance for the conservation of these rare and threatened species in Europe. They include several endemics that are restricted to just one or two sites in the entire world, for example: *Gonepteryx maderensis*, *Hipparchia maderensis*, *Hipparchia azorina* ssp., *Polyommatus dama* and *P. humedasa*.

## Trends of target species on Prime Butterfly Areas

Information on trends shows that many target species are declining within PBAs, even within protected areas. This is extremely alarming and indicates that breeding habitats are deteriorating rapidly on most PBAs and that conservation measures are needed urgently. Very few species have undergone a recent increase on PBAs, the maximum being increases of *Euphydryas aurinia* at five sites. However trends of target species are not known on many PBAs, indicating the general need for increased monitoring of populations.

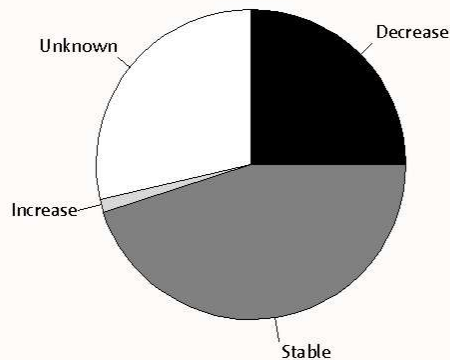


Figure iii: Trends of target species on Europe's PBAs.

## Land-use on Prime Butterfly Areas

A great variety and intensity of land-uses are recorded within the Prime Butterfly Areas, reflecting the long history of human settlement and management of most habitats across Europe. As a result, the conservation of habitats and butterflies frequently depends on the continuation of traditional land-use practices, and suitable policies and programmes that can support them, or where necessary replace them. The main types of land-use recorded within PBAs are agriculture (62% of PBAs), forestry (60%), nature conservation (60%), tourism and recreation (50%).

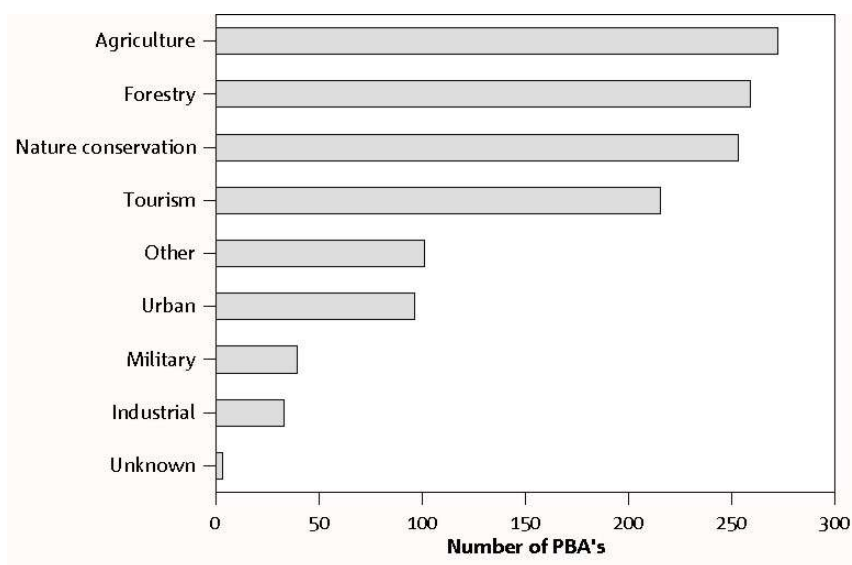


Figure iv: The land-use at Prime Butterfly Areas in Europe.

## Threats at Prime Butterfly Areas

The threats facing PBAs are diverse, ranging from adverse management activities, land-use, urban or industrial developments, and impacts of land-uses from neighbouring areas (e.g. pollution, drainage). The main types of threats affecting PBAs are intensification of agriculture (43% of the PBAs), afforestation of former open land (40%), isolation and habitat fragmentation (35%), abandonment of traditional land use (33%, mainly in Eastern and Southern Europe). Other important threats include: adverse management, the negative effects of tourism and recreation (especially within Alpine and Mediterranean habitats), the felling of woodland, land drainage, urbanization and burning of vegetation. Collecting is not considered to be an important threat to the target species within the PBAs.

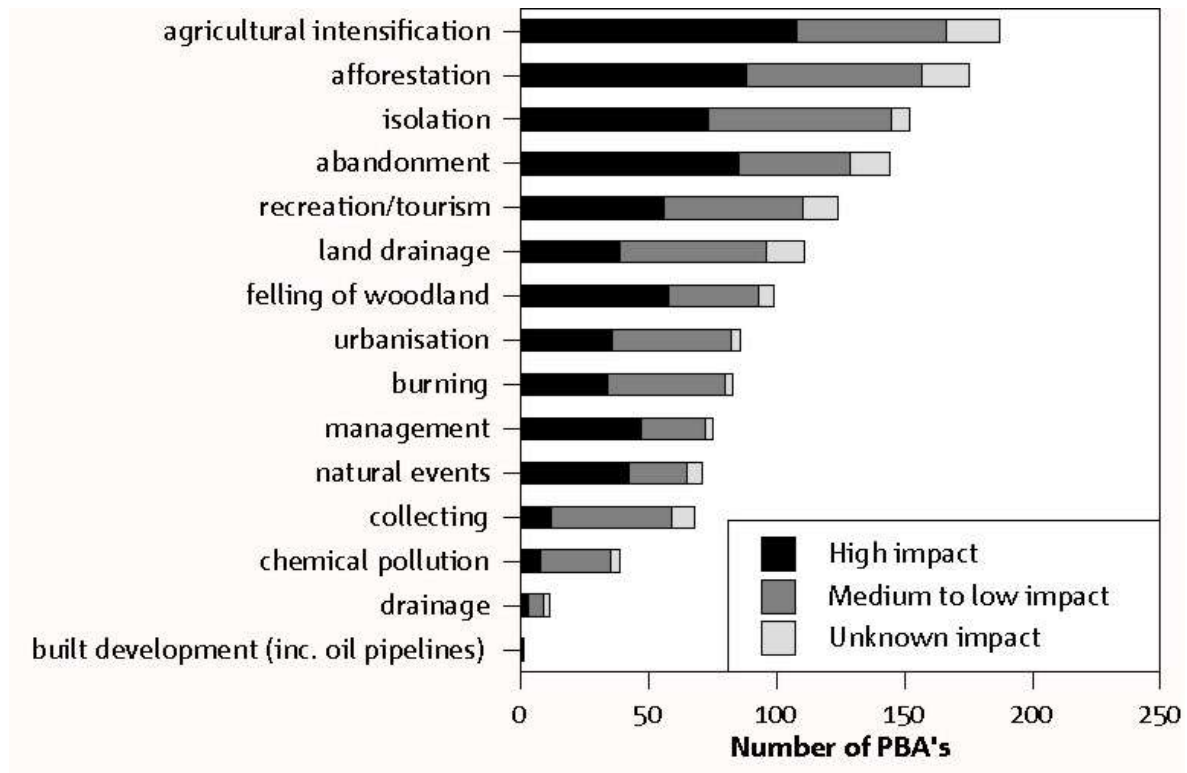


Figure v: Threats of target species at Prime Butterfly Areas.

## Protection status of PBAs

A total of 192 PBAs in Europe (44% of the total) have at least some protection under national law. In the countries of the European Union 53% of the PBAs was classified as well as a Natura 2000 site. Though this large overlap of PBAs with sites protected under the Natura 2000 program is positive, a lot of PBAs still have no international protection in spite of having major populations of butterflies for which Europe has a high responsibility.

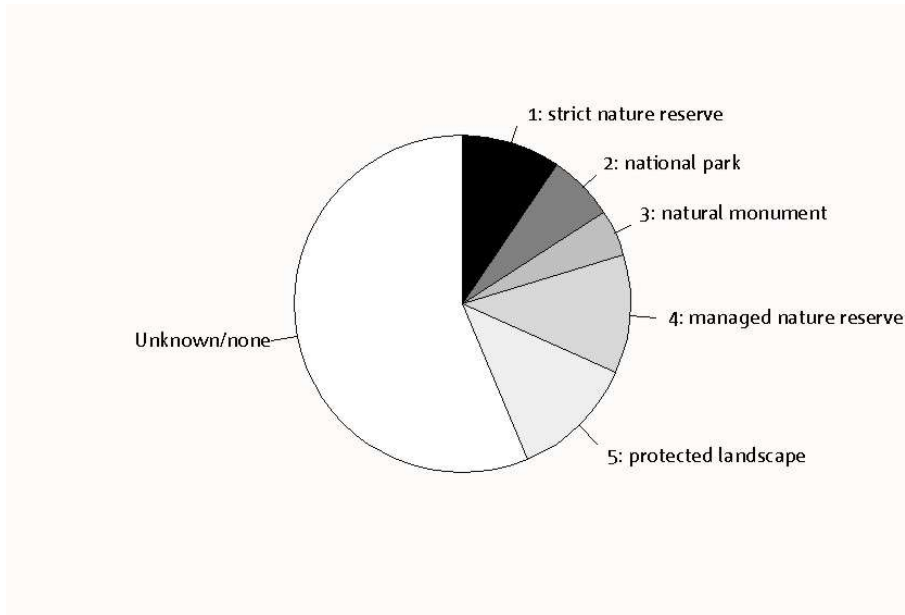


Figure vi: The main national protection status of Prime Butterfly Areas in Europe (PBAs can have more than one protection status).

## What actions need to be taken?

This report documents for the first time the most important butterfly sites across Europe and we urge national conservation agencies to use the list to target protection measures within their own country and to tackle the many problems that have been identified on individual PBAs. The following specific actions are recommended:

1. Designate PBAs as protected areas under national law (56 % of PBAs are not protected).
2. Protect PBAs under relevant international law (47% of PBAs in the EU are not protected under international laws).
3. Ensure sound habitat management within PBAs.
4. Take measures to conserve the wider environment and surrounding PBAs.
5. Monitor populations of target species and conduct research to identify appropriate habitat management techniques.
6. Revise pan-European legislation and add species identified in the Red Data Book of European butterflies.
7. Conduct a more comprehensive review of Important Butterfly Areas in Europe as soon as possible.
8. Keep the list of Prime Butterfly Areas up-to-date.