

# **Recovery Strategy for European Butterflies**



**Butterfly**  
**CONSERVATION EUROPE**

# Recovery Strategy for European Butterflies



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## Production

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## Executive Summary

1. This report sets out Butterfly Conservation Europe's Strategy for the recovery of European butterflies, particularly Habitats Directive butterflies and their habitats. It sets a long term vision, targets for 2020 and action needed for such recovery, in line with the EU Biodiversity Strategy and Actions agreed by EU Heads of Government in 2011 (European Commission 2011).
2. BC Europe's Long term Vision for 2050 is "A more sustainable Europe where butterflies, moths and other wildlife and their habitats have recovered, thrive and are enjoyed by people both for their own sake and for the ecosystem services, including pollination, that they provide. The importance and value of well functioning ecosystems to economic and social wellbeing is well understood and development respects the capacity of the environment and safeguards irreplaceable natural capital."
3. BC Europe Headline Target for 2020 is "Halt the loss of European butterflies and restore them and their habitats in so far as feasible by 2020." This follows the EU target for 2020 "Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss."
4. Effective implementation of these targets, including reforms to the EU Common Agriculture Policy, to support protection and sustainable management of semi-natural grassland, will be crucial to halting the loss of butterflies and securing improvements in their conservation.
5. There are 29 butterflies protected under the EU Habitats Directive. Reports by EU Member States (2000-2006) on the Conservation Status of Habitats Directive butterflies show that most of them have unfavourable – inadequate (U1) or unfavourable - bad (U2) status across all EU Biogeographic zones.





6. The habitats that butterflies depend on, especially grassland habitats and those dependent on agricultural management, are also in unfavorable condition (CEC, 2009).
7. The following broad habitat types, listed in the EU Habitats Directive, are important for butterflies: Agroecosystems, Grasslands, Heaths and Scrubs, Forests, Wetlands, Coastal Ecosystems. All of these broad ecosystems have been assessed by the European Environment Agency, on the basis of EU Member State Reports, as having Unfavourable - Inadequate (U1) or Unfavourable – Bad (U2) Conservation Status at present, but with some potential for improvement (EEA, pers. Comm.).
8. **BC Europe Headline Target: By 2020, improve the conservation status of all Habitats Directive butterfly species and species on the 2010 Red List of European butterflies.**
9. Four operational targets (A, B, C and D) for butterfly recovery are set out, together with their target species. A table is given showing all these species allocated by Priority for action: High (15 Habitats Directive sp, 25 non Habitats Directive sp); Medium (12 Habitats Directive sp.); and Low (4 Habitats Directive sp.)
10. High Priority butterfly species on the Habitats Directive requiring urgent conservation measures are:

<b>Critically Endangered:</b>	<i>Coenonympha oedippus</i> , <i>Colias myrmidone</i> , <i>Lycaena helle</i> , <i>Phengaris (Maculinea) arion</i>
<b>Vulnerable:</b>	<i>Coenonympha hero</i> , <i>Erebia christi</i> , <i>Erebia sudetica</i> , <i>Euphydryas maturna</i> , <i>Lopinga achine</i> , <i>Phengaris (Maculinea) teleius</i> , <i>Polyommatus (Plebicula) golgus</i>
<b>Near Threatened:</b>	<i>Leptidea morsei</i> , <i>Parnassius apollo</i>
<b>Least Concern:</b>	<i>Pseudophilotes bavius</i>

11. High Priority butterfly species not on the Habitats Directive requiring urgent conservation measures are:

<b>Critically Endangered:</b>	<i>Coenonympha phryne</i> , <i>Pieris wollastoni</i> , <i>Pseudochazara cingovskii</i>
<b>Endangered:</b>	<i>Gonepteryx maderensis</i> , <i>Pararge xiphia</i> , <i>Pieris cheiranthi</i> , <i>Plebejus zullichi</i> , <i>Polyommatus humedasmae</i> , <i>Pseudochazara euxina</i> , <i>Turanana taygetica</i>
<b>Vulnerable:</b>	<i>Boloria polaris</i> , <i>Coenonympha orientalis</i> , <i>Coenonympha tullia</i> , <i>Colias chrysotheme</i> , <i>Euchloe bazae</i> , <i>Gonepteryx cleobule</i> , <i>Hipparchia bacchus</i> , <i>Hipparchia tilosi</i> , <i>Polyommatus galloi</i> , <i>Polyommatus orphicus</i> , <i>Polyommatus violetae</i> , <i>Pseudochazara amymone</i> , <i>Pseudochazara orestes</i> , <i>Pyrgus cirsii</i> , <i>Tomares nogelii</i>



*Coenonympha hero* has almost vanished from Western Europe and is listed on the Habitats Directive. It is listed as Vulnerable and is a high priority for BC Europe.



***Good habitat management for butterflies: an active pastoral system with a lot of variety at a landscape scale including mosaics of different habitats.***

12. Generic guidelines are given for good habitat management for butterflies. These guidelines and specific measures for Habitats Directive species are detailed in Van Swaay, et al (2010):
  - I. Manage at a landscape scale.
  - II. Maintain active pastoral systems.
  - III. Manage for variety.
  - IV. Avoid uniform management (especially in hay meadows).
  - V. Habitat mosaics are crucial.
  - VI. Active woodland management is often essential.
  - VII. Monitoring is essential.
13. Thirty specific actions are prioritised to support butterfly recovery across Europe. These are related to the actions set out in the EU Biodiversity Strategy under its first 3 targets:
  - EU target 1: Fully implement the Birds and Habitats Directives
  - EU target 2: Maintain and restore ecosystems and their services
  - EU target 3: Increase the contribution of agriculture and forestry to maintaining and enhancing biodiversity
14. In conclusion, the paper calls on the EU, European governments, farmers, land managers and other decision makers, NGOs and stakeholders to work together and mobilise the necessary resources and implement the actions set out in this Strategy and thus help to halt the loss of biodiversity and secure some recovery by 2020, for the benefit of this and future generations.

## 1. Introduction

1.1 This paper sets out Butterfly Conservation Europe's (BCE's) Strategy for the recovery of European butterflies, particularly Habitats Directive butterflies and their habitats. It sets a long term vision, targets for 2020 and action needed for such recovery, in line with the EU Biodiversity Strategy and Actions agreed by EU Heads of Government in 2011 (European Commission 2011). Although the measures described are primarily focused on the EU and implementation of its legislation, the actions identified are relevant for other threatened butterflies across Europe. They are also likely to help the conservation of other European invertebrates and their habitats.

1.2 The paper summarizes the Conservation Status of butterflies listed on the EU Habitats Directive, as reported by EU Member States' governments in 2009 in accordance with Article 17 of the Directive. It makes links between Habitats Directive habitats and the butterfly species that depend on them. It proposes four specific targets for halting the loss of butterflies or improving their conservation status, in line with the analysis of potential habitat and species status improvements reported to the EU by the Biodiversity Topic Centre (ETC) of the European Environment Agency (EEA). The latter analysis underpins the setting of targets 1 and 3 of the EU Biodiversity Strategy.

1.3 The paper draws on the report by BC Europe "Do's and Don'ts for Management of Habitats Directive butterflies" (Van Swaay et al., 2010). It also refers to the threat status of butterflies identified in the European Red List of Butterflies (Van Swaay et al., 2010).

1.4 The paper outlines the management actions that could help achieve the proposed specific targets for butterfly recovery and the policy actions that are necessary, relating them to the priority actions identified in the EU Biodiversity Strategy.

1.5 In conclusion, the paper calls on key players to work together and mobilise the necessary resources and implement the actions and thus help to halt the loss of biodiversity and ecosystem services and secure some recovery by 2020, for the benefit of all.



## 2. BC Europe Long term Vision for 2050

A more sustainable Europe where butterflies, moths and other wildlife and their habitats have recovered, thrive and are enjoyed by people both for their own sake and for the ecosystem services, including pollination, that they provide. The importance and value of well functioning ecosystems to economic and social wellbeing is well understood and development respects the capacity of the environment and safeguards irreplaceable natural capital.



***BCE wants a more sustainable Europe where butterflies, moths and other wildlife and their habitats have recovered, thrive and are enjoyed by people. A Thecla betulae is enjoyed on a butterfly excursion.***

### 3. BC Europe Headline target for 2020

Halt the loss of European butterflies and restore them and their habitats in so far as feasible by 2020.



*Coenonympha oedippus* is one of Europe's most rapidly declining species, threatened by the drainage of its marshland habitat.

## 4. Context

4.1 European Heads of government agreed the following headline target for 2020 “ **Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss.**”

4.2 The EU Biodiversity Strategy designed to achieve this goal sets six targets; the first three of these are particularly relevant to the recovery of invertebrates. Effective implementation of these targets, including reforms to the EU Common Agriculture Policy, to support protection and sustainable management of semi-natural grassland, will be crucial to halting the loss of butterflies and securing improvements in their conservation status.

### 4.3 The first three EU Biodiversity Strategy targets are:

- **EU Target 1**  
To halt the deterioration in the status of all species and habitats covered by EU nature legislation and achieve a significant and measurable improvement in their status so that, by 2020, compared to current assessments: (i) 100% more habitat assessments and 50% more species assessments under the Habitats Directive show an improved conservation status; and (ii) 50% more species assessments under the Birds Directive show a secure or improved status.
- **EU Target 2**  
By 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15 % of degraded ecosystems.
- **EU Target 3<sup>1</sup>**
  - A. Agriculture: By 2020, maximise areas under agriculture across grasslands, arable land and permanent crops that are covered by biodiversity-related measures under the CAP so as to ensure the conservation of biodiversity and to bring about a measurable improvement in the conservation status of species and habitats that depend on or are affected by agriculture and in the provision of ecosystem services as compared to the EU2010 Baseline, thus contributing to enhance sustainable management.
  - B. Forests: By 2020, Forest Management Plans or equivalent instruments, in line with Sustainable Forest Management (SFM) (as defined in SEC (2006) 748), are in place for all forests that are publicly owned and for forest holdings above a certain size<sup>2</sup> (to be defined by the Member States or regions and communicated in their Rural Development Programmes) that receive funding under the EU Rural Development Policy so as to bring about a measurable improvement(\*) in the conservation status of species and habitats that depend on or are affected by forestry and in the provision of related ecosystem services as compared to the EU 2010 Baseline.

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<sup>1</sup> For both targets, improvement is to be measured against the quantified enhancement targets for the conservation status of species and habitats of EU interest in Target 1 and the restoration of degraded ecosystems under target 2.

<sup>2</sup> For smaller forest holdings, Member States may provide additional incentives to encourage the adoption of Management Plans or equivalent instruments that are in line with SFM.

## 5. The State of EU Habitats Directive Butterflies

5.1 There are **31 butterflies protected under the EU Habitats Directive**:

<i>Agriades (Plebejus) aquilo</i>	<i>Lycaena dispar</i>
<i>Apatura metis</i>	<i>Lycaena helle</i>
<i>Clossiana (Boloria) improba</i>	<i>Melanargia arge</i>
<i>Coenonympha hero</i>	<i>Nymphalis vaualbum</i>
<i>Coenonympha oedippus</i>	<i>Papilio alexanor</i>
<i>Colias myrmidone</i>	<i>Papilio hospiton</i>
<i>Erebia calcaria</i>	<i>Parnassius apollo</i>
<i>Erebia christi</i>	<i>Parnassius mnemosyne</i>
<i>Erebia (medusa) polaris</i>	<i>Phengaris (Maculinea) arion</i>
<i>Erebia sudetica</i>	<i>Phengaris (Maculinea) nausithous</i>
<i>Euphydryas aurinia</i>	<i>Phengaris (Maculinea) teleius</i>
<i>Fabriciana (Argynnis) elisa</i>	<i>Polyommatus eros eroides</i>
<i>Hesperia comma catena</i>	<i>Plebicula (Polyommatus) golgus</i>
<i>Hypodryas (Euphydryas) maturna</i>	<i>Pseudophilotes bavius</i>
<i>Leptidea morsei</i>	<i>Zerynthia polyxena</i>
<i>Lopinga achine</i>	

5.2 Reports by EU Member States on the Conservation Status of Habitats Directive butterflies, in accordance with Article 17 of the Directive, for the period 2000 – 2006, and analysed by the European Environment Agency (EEA) show that most of them had **Unfavourable – inadequate (U1) or Unfavourable - bad (U2)** status across all EU Biogeographic zones (CEC, 2009; see Appendix 2,3). See table 1 below for details.



**Table 1. Current conservation status by biogeographic zone for Habitats Directive Butterflies (based on reports by Member States 2000-2006) (EEA, 2009).**

Key

	Favourable
	Unfavourable-inadequate
	Unfavourable-bad
	Unknown
	Absent

Species	Alpine	Atlantic	Boreal	Conti- nental	Macaro- nesian	Mediterranean	Pannon- ian	Steppic
<i>Agriades (Plebejus) aquilo</i>								
<i>Apatura metis</i>								
<i>Clossiana (Boloria) improba</i>								
<i>Coenonympha hero</i>								
<i>Coenonympha oedippus</i>								
<i>Colias myrmidone</i>								
<i>Erebia calcaria</i>								
<i>Erebia christi</i>								
<i>Erebia (medusa) polaris</i>								
<i>Erebia sudetica</i>								
<i>Euphydryas aurinia</i>								
<i>Hypodryas (Euphydryas) maturna</i>								
<i>Fabriciana (Argynnis) elisa</i>								
<i>Hesperia comma catena</i>								
<i>Leptidea morsei</i>								
<i>Lopinga achine</i>								
<i>Lycaena dispar</i>								
<i>Lycaena helle</i>								
<i>Melanargia arge</i>								
<i>Nymphalis vaualbum</i>								
<i>Papilio alexanor</i>								
<i>Papilio hospiton</i>								
<i>Parnassius apollo</i>								
<i>Parnassius mnemosyne</i>								
<i>Phengaris (Maculinea) arion</i>								
<i>Phengaris (Maculinea) nausithous</i>								
<i>Phengaris (Maculinea) teleius</i>								
<i>Plebicula (Polyommatus) golgus</i>								
<i>Polyommatus eros eroides</i>								
<i>Pseudophilotes bavius</i>								
<i>Zerynthia polyxena</i>								



## 6. The state of EU Habitats Directive Habitats important for butterflies

6.1 The habitats that butterflies depend on, especially grassland habitats and those dependent on agricultural management, are also in unfavorable condition (CEC, 2009). The following broad habitat types, listed in the EU Habitats Directive, are important for butterflies:

Agroecosystems  
Grasslands  
Heaths and Scrubs  
Forests  
Wetlands  
Coastal Ecosystems

All of these broad ecosystems have been assessed by the European Environment Agency, on the basis of EU Member State Reports, as having **Unfavourable - Inadequate (U1) or Unfavourable – Bad (U2)** Conservation Status at present, but with potential for improvement (EEA, pers. Comm.).



*Open forests are important for many butterflies.*

## 7. Butterfly Conservation Europe's Priority Butterflies for Conservation

Taking account of the current state of European butterfly populations, their abundance and vulnerability and the conservation status of the habitats on which they depend, BCE have defined priority species for conservation. These are set out in Table 2 below.

**Table 2. BC Europe Priority Butterflies for conservation**

**a) Habitats Directive butterflies, listed by 2010 European Red List category.**

(NB original scientific names given in brackets)

<b>High Priority Species</b> Severe decline or extreme rarity	<b>Medium Priority Species</b> Slow decline or very local/ edge range sp	<b>Low Priority</b> Range expanding or stable
<b>Urgent action needed:</b> Maintain/restore habitats Monitor populations	<b>Action needed:</b> Maintain/restore habitats Monitor populations	<b>Action needed:</b> Monitor populations
<p><b>Endangered</b>  <i>Coenonympha oedippus</i>  <i>Colias myrmidone</i>  <i>Lycaena helle</i>  <i>Phengaris (Maculinea) arion</i></p> <p><b>Vulnerable</b>  <i>Coenonympha hero</i>  <i>Erebia christi</i>  <i>Erebia sudetica</i>  <i>Hypodryas (Euphydryas) maturna</i>  <i>Lopinga achine</i>  <i>Phengaris (Maculinea) teleius</i>  <i>Polyommatus (Plebicula) golgus</i></p> <p><b>Near Threatened</b>  <i>Leptidea morsei</i>  <i>Parnassius apollo</i></p> <p><b>Least Concern</b>  <i>Pseudophilotes bavius</i></p>	<p><b>Near Threatened</b>  <i>Parnassius mnemosyne</i>  <i>Phengaris (Maculinea) nausithous</i>  <i>Polyommatus eros eroides</i></p> <p><b>Least Concern</b>  <i>Erebia calcaria</i>  <i>Fabriciana (Argynnis) elisa</i>  <i>Euphydryas aurinia</i>  <i>Nymphalis vaualbum</i>  <i>Papilio alexanor</i>  <i>Papilio hospiton</i></p> <p>Threat from climate change:</p> <p><b>Endangered</b>  <i>Clossiana (Boloria) improba</i></p> <p><b>Least Concern</b>  <i>Agriades (Plebejus) aquilo</i>  <i>Erebia (medusa) polaris</i></p>	<p><b>Least Concern</b>  <i>Apatura metis</i>  <i>Lycaena dispar</i>  <i>Zerynthia polyxena</i>  <i>Melanargia arge</i></p>

**b) Red List butterflies not on Habitats Directive, listed by 2010 European Red List category**

<p><b>Critically Endangered</b>  <i>Coenonympha phryne</i>  <i>Pieris wollastoni</i>  <i>Pseudochazara cingovskii</i></p> <p><b>Endangered</b>  <i>Gonepteryx maderensis</i>  <i>Pararge xiphia</i>  <i>Pieris cheiranthi</i>  <i>Plebejus zulichii</i>  <i>Polyommatus humedasa</i>  <i>Pseudochazara euxina</i>  <i>Turanana taygetica</i></p> <p><b>Vulnerable</b>  <i>Boloria polaris</i>  <i>Coenonympha orientalis</i>  <i>Coenonympha tullia</i>  <i>Colias chrysotheme</i>  <i>Euchloe bazae</i>  <i>Gonepteryx cleobule</i>  <i>Hipparchia bacchus</i>  <i>Hipparchia tilosi</i>  <i>Polyommatus galloi</i>  <i>Polyommatus orphicus</i>  <i>Polyommatus violetae</i>  <i>Pseudochazara amymone</i>  <i>Pseudochazara orestes</i>  <i>Pyrgus cirsii</i>  <i>Tomares nogelii</i></p>		
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Table 3 below organizes high priority butterflies by primary habitat.

**Table 3. High Priority butterflies by primary habitat**

**a) Habitats Directive butterflies**

Dry Grassland	Wet grasslands and wetland	Open forest and scrub
<i>Colias myrmidone</i> <i>Erebia christi</i> <i>Erebia sudetica</i> <i>Parnassius apollo</i> <i>Phengaris (Maculinea) arion</i> <i>Plebicula (Polyommatus) golgus</i> <i>Pseudophilotes bavius</i>	<i>Coenonympha hero</i> <i>Coenonympha oedippus</i> <i>Lycaena helle</i> <i>Phengaris (Maculinea) teleius</i>	<i>Hypodryas (Euphydryas) maturna</i> <i>Leptidea morsei</i> <i>Lopinga achine</i>

**Lopinga achine: a butterfly of open woodland and scrub.**



**b) Butterflies not on Habitats Directive**

Dry Grassland	Wet grasslands and wetland	Open forest and scrub
<i>Boloria polaris</i> <i>Coenonympha phryne</i> <i>Colias chrysotheme</i> <i>Euchloe bazae</i> <i>Plebejus zulichii</i> <i>Polyommatus humedasa</i> <i>Polyommatus galloi</i> <i>Polyommatus orphicus</i> <i>Polyommatus violetae</i> <i>Hipparchia bacchus</i> <i>Pseudochazara amymone</i> <i>Pseudochazara cingovskii</i> <i>Pseudochazara euxina</i> <i>Pseudochazara orestes</i> <i>Tomares nogelii</i> <i>Turanana taygetica</i> <i>Pyrgus cirsi</i>	<i>Coenonympha tullia</i>	<i>Coenonympha orientalis</i> <i>Gonepteryx cleobule</i> <i>Gonepteryx maderensis</i> <i>Pararge xiphia</i> <i>Pieris cheiranthi</i> <i>Pieris wollastoni</i> <i>Hipparchia tilosi</i>



## 8. BC Europe Targets for improving the Conservation Status of European Butterflies.

In the light of the foregoing analysis, BCE has set 4 European butterfly conservation targets. These are set out below (also see Table 2 above).

**Target A** - Halt the decline as soon as possible in population and range and, where practicable, secure some recovery<sup>3</sup>, for the High Priority butterfly species which are in severe decline or extremely rare and for those Medium Priority Species, which are in slow decline or very local or at edge of range

High Priority Habitats Directive Butterflies	High Priority Red List Butterflies	Medium Priority Habitats Directive Butterflies
<i>Coenonympha oedippus</i> <i>Colias myrmidone</i> <i>Lycaena helle</i> <i>Phengaris (Maculinea) arion</i> <i>Coenonympha hero</i> <i>Erebia christi</i> <i>Erebia sudetica</i> <i>Hypodryas (Euphydryas) maturna</i> <i>Lopinga achine</i> <i>Phengaris (Maculinea) teleius</i> <i>Plebicula (Polyommatus) golgus</i> <i>Leptidea morsei</i> <i>Parnassius apollo</i> <i>Pseudophilotes bavius</i>	<i>Coenonympha phryne</i> <i>Pieris wollastoni</i> <i>Pseudochazara cingovskii</i> <i>Gonepteryx maderensis</i> <i>Pararge xiphia</i> <i>Pieris cheiranthi</i> <i>Plebejus zullichii</i> <i>Polyommatus humedasaе</i> <i>Pseudochazara euxina</i> <i>Turanana taygetica</i> <i>Boloria polaris</i> <i>Coenonympha orientalis</i> <i>Coenonympha tullia</i> <i>Colias chrysotheme</i> <i>Euchloe bazae</i> <i>Gonepteryx cleobule</i> <i>Hipparchia bacchus</i> <i>Hipparchia tilosi</i> <i>Polyommatus galloi</i> <i>Polyommatus orphicus</i> <i>Polyommatus violeetae</i> <i>Pseudochazara amymone</i> <i>Pseudochazara orestes</i> <i>Pyrgus cirsii</i> <i>Tomares nogelii</i>	<i>Parnassius mnemosyne</i> <i>Phengaris (Maculinea) nausithous</i> <i>Polyommatus eros eroides</i> <i>Erebia calcaria</i> <i>Fabriciana (Argynnis) elisa</i> <i>Euphydryas aurinia</i> <i>Nymphalis vaualbum</i> <i>Papilio alexanor</i> <i>Papilio hospiton</i>

<sup>3</sup> Measured by an improvement in conservation status across the EU for Habitats Directive butterflies and their habitats compared with reported levels in Article 17 reports in 2009. For butterflies not listed in the Habitats Directive, measured by an improvement in Red List Status reported in 2011.



**Target B** – For Habitats Directive butterflies threatened by climate change, increase the resilience of existing populations and facilitate their movement into favourable climate space<sup>4</sup>, wherever practicable. For threatened montane species slow their decline as long as possible by favourable management of their existing habitat.

#### **Habitats Directive Butterflies Threatened by Climate Change**

*Clossiana (Boloria) improba*

*Agriades (Plebejus) aquilo*

*Erebia (medusa) polaris*

**Target C** – For Habitats Directive species which have expanding or stable ranges, maintain or enhance populations<sup>4</sup> through favourable management of existing and potential habitats.

#### **Low Priority Habitats Directive Species**

*Apatura metis*

*Lycaena dispar*

*Zerynthia polyxena*

*Melanargia arge*



**Target D** – Prevent the extinction of any European butterfly, and halt declines in their abundance by 2020.

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<sup>4</sup> Measured by an improvement in conservation status across the EU for Habitats Directive butterflies and their habitats compared with reported levels in Article 17 reports in 2009. For butterflies not listed in the Habitats Directive, measured by an improvement in Red List Status reported in 2011.

## 9. Management Actions needed to achieve these targets.

9.1 This section of the Strategy highlights the management approaches that will support butterfly recovery or help to halt further losses. It also indicates the way in which both generic approaches and specific actions can be incorporated by the EU and Member States plans for prioritising, funding and implementing improved land management practices to support biodiversity and other ecosystem service benefits.

### 9.2 Generic Guidelines for good management for Habitats Directive Butterflies (from Van Swaay, et al, 2010)

- I. **Manage at a landscape scale.** Butterflies usually exist as a network of local populations between which there is some interchange of adults to form a metapopulation. Management should aim to maintain this population network across the landscape, accepting that not every locality may be suitable at any one time (though some core sites will be). Progressive loss of habitat suitability across a landscape, or new barriers to dispersal, can lead to loss of local populations and eventually regional extinction of a species through the breakdown of metapopulations.
- II. **Maintain active pastoral systems.** Grassland is the single most important habitat for butterflies and abandonment is the biggest single threat. Abandonment can temporarily lead to good conditions for many species, but will soon lead to scrub encroachment and eventual loss of suitable breeding conditions as open grassland turns to woodland. The maintenance of open grassland is thus essential, usually by the maintenance of active traditional pastoral systems, including livestock grazing and hay cutting. Socio-economic conditions will need to be considered to ensure such pastoral systems survive.
- III. **Manage for variety.** Grassland butterflies each have their own specific habitat requirements, so management should aim to provide a range of conditions, often based around traditional land use patterns. Some species require short vegetation, while others require longer vegetation. Others still require mosaics of vegetation types. Managing for habitat variety across a landscape is thus essential to conserve the full range of typical species.
- IV. **Avoid uniform management (especially in hay meadows).** Butterfly populations can be badly damaged, or can even become extinct, following intensive and uniform management, notably hay cutting. Cutting dates should be varied as much as possible across each Natura 2000 sites so that not all areas are cut within a narrow time window. Ideally a mosaic of small scale cutting should be implemented, replicating traditional management before mechanisation.
- V. **Habitat mosaics are crucial.** Many butterflies use resources found in a range of habitat types and require mosaics of different habitats in the landscape. For example, some species breed

along scrub or wood edges and need a mixture of scrub and grassland. Other species may lay eggs in one type of habitat and use nectar resources in another. The spatial scale of the mosaic will vary from region to region, and will often depend on the traditional land use pattern. Sometimes it will be small fields with small blocks of scrub or woodland, while in more extensive landscapes the mosaic may be very large scale.

- VI. **Active woodland management is often essential.** Most woodland butterflies require some form of active management and this is essential for the survival of several threatened species. Management can either be regular thinning or rotational coppicing or planting. Some species also require the maintenance of open habitats within woodland, such as sunny clearings or paths/tracks. Traditional management is often a useful guide to suitable management, but may need to be adapted to suit modern timber markets.
- VII. **Monitoring is essential.** Some form of biological monitoring of Natura 2000 sites is essential to ensure management is maintaining the designated features. Butterflies are a sensitive indicator group that can be used to assess change (both positive and negative) and inform decision making. Many butterflies are easy to identify and there are often local volunteer groups or Societies who can help provide data. Monitoring can be as simple as successive species inventories, or can be structured around formal sampling procedures such as butterfly transects. The latter are more time consuming but can provide accurate population trends that can show deleterious changes at an early stage.



*Active woodland habitat management by small scale coppicing keeps small scale open habitats within woodland, essential for many woodland butterflies.*

### 9.3 Specific measures needed at EU and Member State level to improve the Conservation Status of Habitats Directive Butterflies.

The BC Europe Report on Management Do's and Don'ts identifies more specific actions that will sustain each Habitats Directive butterfly (Van Swaay, et al. 2010). These actions can be further refined to draw up guidelines for management for these butterflies in each biogeographic zone of the EU and so help meet the specific butterfly recovery targets identified in this Strategy. These approaches need to be discussed at the **EU Biogeographic Zone seminars on Natura 2000 management** and the necessary actions coordinated with the needs of other listed species and habitats and plans made for their funding and implementation.

Probably the highest priority for intervention is to try to stem and reverse abandonment of land and support sustainable grazing or mowing of semi natural grassland. This could be stimulated across the EU by reforms of the CAP, although the extent to which this will be achieved will depend on the way in which CAP monies are spent in each EU Member State and the drafting and implementation of detailed regulations, including those to protect permanent grassland.



*Abandonment is a major cause of butterfly decline across Europe. Without management, flower-rich grasslands soon become covered in scrub and typical grassland species disappear.*

To ensure implementation, the most important land management measures should be incorporated in implementation of the **Natura 2000 “Prioritised Action Frameworks”** (PAFs) developed by EU Member States, to help improve the funding and implementation of the Habitats Directive. Specific measures need to be incorporated in **Natura 2000 Site Management Plans, Agri Environment schemes** funded under CAP Rural Development Programmes and **Environmental measures in Cohesion Programmes**, drawn up in each EU Member State. They could also inform the way in which the new Pillar 1 “greening” **measures in the CAP** will be applied and the detail of **the implementing rules relating to Pillar 1 and 2 payments under the reformed CAP** which will be in place in 2014/2015.



## 10. BCE Action Plan to achieve BCE Targets A, B, C and D by 2020

The following actions for the recovery of butterflies have been prioritised and set out according to the Annex of the EU Biodiversity Strategy. They are designed to support implementation of targets 1, 2 and 3 of the EU Biodiversity Strategy and achieve BCE's Targets A, B, C and D. The key Actions from the EU Strategy are linked below with specific actions for butterflies. The extent to which these actions can be implemented by BCE will depend on the availability of resources.

**Key Actions from the EU Biodiversity Strategy and supporting actions for butterflies by BC Europe and partners.**

### EU TARGET 1: FULLY IMPLEMENT THE BIRDS AND HABITATS DIRECTIVES

To halt the deterioration in the status of all species and habitats covered by EU nature legislation and achieve a significant and measurable improvement in their status so that, by 2020, compared to current assessments: (i) 100% more habitat assessments and 50% more species assessments under the Habitats Directive show an improved conservation status

**EU Action 1: Complete the establishment of the Natura 2000 network and ensure good management**

1a) Member States and the Commission will ensure that the phase to establish Natura 2000, is largely complete by 2012.

***BC Europe Action 1: Review the sufficiency of the designated Natura 2000 network in the light of BCE's knowledge about the Prime Butterfly Areas of Europe and make recommendations for filling any essential gaps***

1b) Member States and the Commission will further integrate species and habitats protection and management requirements into key land and water use policies, both within and beyond Natura 2000 areas.

***BC Europe Action 2: Promote understanding of land use policies critical to sustaining and restoring butterflies and advise MS and the Commission***

1c) Member States will ensure that management plans or equivalent instruments which set out conservation and restoration measures are developed and implemented in a timely manner for all Natura 2000 sites.

***BC Europe Action 3: Advise MS on measures critical for butterflies to be incorporated in relevant Natura 2000 Management Plans***

1d) The Commission, together with Member States, will establish by 2012 a process to promote the



sharing of experience, good practice and cross-border collaboration on the management of Natura 2000, within the biogeographical frameworks set out in the Habitats Directive.

***BC Europe Action 4: Advise EU Biogeographic Zone Seminars on Natura 2000 Management of specific actions for butterflies and their habitats***

**EU Action 2: Ensure adequate financing of Natura 2000 sites**

2) The Commission and Member States will provide the necessary funds and incentives for Natura 2000, including through EU funding instruments, under the next multiannual financial framework. The Commission will set out its views in 2011 on how Natura 2000 will be financed under the next multi-annual financial framework.

***BC Europe Action 5: Advocate adequate resourcing of EU Biodiversity Strategy implementation through CAP reform, LIFE and other measures.***

***BC Europe Action 6: Advocate funding of land management measures which will secure a measurable improvement in the conservation status of Habitats Directive butterflies, and other threatened European butterfly species.***

**EU Action 3: Increase stakeholder awareness and involvement and improve enforcement**

3a) The Commission, together with Member States, will develop and launch a major communication campaign on Natura 2000 by 2013.

***BC Europe Action 7: Highlight the reasons for declines in butterflies and illustrate cases of successful butterfly recovery and increase BCE's use of social media to highlight issues related to conservation of butterflies, moths and their habitats***

***BC Europe Action 8: Promote the benefits of investing in butterfly conservation as part of the strategy to secure recovery of threatened ecosystems, and deliver ecosystem services and wider socio-economic benefits.***

3b) The Commission and Member states will improve cooperation with key sectors and continue to develop guidance documents to improve their understanding of the requirements of EU nature legislation and its value in good management for promoting economic development.

***BC Europe Action 9: Contribute scientific and practical management advice for incorporation in relevant guidance documents (e.g. agriculture and forestry).***

3c) The Commission and Member States will facilitate enforcement of the nature directives by providing specific training programmes on Natura 2000 for judges and public prosecutors, and by developing better compliance promotion capacities.

***BC Europe Action 10: Provide the EU Commission with butterfly monitoring results, collected by BCE partners to help evaluate the effectiveness of implementation of EU policies, particularly in agriculture.***

#### **EU Action 4: Improve and streamline monitoring and reporting**

4a) The Commission, together with Member States, will develop by 2012 a new EU bird reporting system, further develop the reporting system under Article 17 of the Habitats Directive and improve the flow, accessibility and relevance of Natura 2000 data.

***BC Europe Action 11: Bring together the current Article 17 Reporting data of relevance to butterflies and their habitats and contribute their knowledge during the next Reporting round.***

4b) The Commission will create a dedicated ICT tool as part of the Biodiversity Information System for Europe to improve the availability and use of data by 2012.

***BC Europe Action 12: Seek funding to support extension of transect butterfly monitoring schemes to all EU Member State and other countries across Europe, in accordance with the methodology endorsed by EEA, and to develop a systematic process for reporting on butterfly indicators.***



***BCE supports transect butterfly monitoring extended to all EU member states and other countries across Europe.***

## **EU TARGET 2: MAINTAIN AND RESTORE ECOSYSTEMS AND THEIR SERVICES**

**By 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15 % of degraded ecosystems.**

### **EU Action 5: Improve knowledge of ecosystems and their services in the EU**

5) Member States, with the assistance of the Commission, will map and assess the state of ecosystems and their services in their national territory by 2014, assess the economic value of such services, and promote the integration of these values into accounting and reporting systems at EU and national level by 2020.

***BC Europe Action 13: Promote understanding of the importance and benefits of grassland and forest ecosystems including valuing and reporting on their biodiversity as well as the ecosystem services (e.g. pollination, carbon absorption), rural development and sustainable tourism benefits they provide.***

***BC Europe Action 14: Ensure that the ecosystem mapping exercise draws on the knowledge accrued during the EEA mapping of High Nature Value farming.***

### **EU Action 6: Set priorities to restore and promote the use of green infrastructure**

6a) By 2014, Member States, with the assistance of the Commission, will develop a strategic framework to set priorities for ecosystem restoration at sub-national, national and EU level.

***BC Europe Action 15: Promote understanding of the state of grassland ecosystems, (drawing on Article 17 data and the Reports on the European Grassland Butterfly Indicator) and the importance of restoring degraded grasslands ecosystems that have been subject to abandonment and to advocate them as a priority for restoration.***



***Restore degraded grasslands ecosystems that have been subject to abandonment.***

6b) The Commission will develop a Green Infrastructure Strategy by 2012 to promote the deployment of green infrastructure in the EU in urban and rural areas, including through incentives to encourage up-front investments in green infrastructure projects and the maintenance of ecosystem services, for example through better targeted use of EU funding streams and Public Private Partnerships.

***BC Europe Action 16: Promote inclusion in the implementation of the EU Green Infrastructure Strategy of funded actions to secure more landscape scale mosaics of sustainably managed land necessary for the recovery of biodiversity, including threatened grassland butterflies.***

***(NB relevant to implementation of Article 10 of the Habitats Directive)***

#### **EU Action 7: Ensure no net loss of biodiversity and ecosystem services**

7a) In collaboration with the Member States, the Commission will develop a methodology for assessing the impact of EU funded projects, plans and programmes on biodiversity by 2014.

***BC Europe Action 17: Advocate use of butterfly indicators, compiled from field monitoring data as part of this methodology.***

7b) The Commission will carry out further work with a view to proposing by 2015 an initiative to ensure there is no net loss of ecosystems and their services (e.g. through compensation or offsetting schemes).

***BC Europe Action 18: Work with European Habitats Forum (EHF) to ensure such an initiative respects the mitigation hierarchy and does lead to halting the loss of biodiversity and ecosystem functionality and connectivity and if possible secures some improvements***



***Butterfly Indicators, compiled from butterfly monitoring data, is a tool to assess the impact of EU policy.***

## EU TARGET 3: INCREASE THE CONTRIBUTION OF AGRICULTURE AND FORESTRY TO MAINTAINING AND ENHANCING BIODIVERSITY

3A) Agriculture: By 2020, maximise areas under agriculture across grasslands, arable land and permanent crops that are covered by biodiversity-related measures under the CAP so as to ensure the conservation of biodiversity and to bring about a measurable improvement<sup>5</sup> in the conservation status of species and habitats that depend on or are affected by agriculture and in the provision of ecosystem services as compared to the EU2010 Baseline, thus contributing to enhance sustainable management.

***BC Europe Action 19: Work with other NGOs to promote reform of the CAP and good implementation to secure effective greening measures and increase support to farmers for maintaining the biodiversity of semi-natural grasslands (e.g. through support for High Nature Value Farming, increased funding for targeted agri-environment schemes, and landscape scale conservation initiatives).***

***BC Europe Action 20: Provide advice on management measures which will secure a measurable improvement in the conservation status of butterflies, including halting the loss of specific species and improving the Conservation Status of others, which depend on agroecosystems and grassland ecosystems.***

***BC Europe Action 21: Continue to monitor butterflies in the field and share results.***

B) Forests: By 2020, Forest Management Plans or equivalent instruments, in line with Sustainable Forest Management (SFM)<sup>30</sup>, are in place for all forests that are publicly owned and for forest holdings above a certain size<sup>6</sup> (to be defined by the Member States or regions and communicated in their Rural Development Programmes) that receive funding under the EU Rural Development Policy so as to bring about a measurable improvement\* in the conservation status of species and habitats that depend on or are affected by forestry and in the provision of related ecosystem services as compared to the EU 2010 Baseline.

***BC Europe Action 22: Provide advice on management measures which will secure a measurable improvement in the conservation status of butterflies, which depend on forest ecosystems, including halting the loss of specific species and improving the Conservation Status of others.***

***BC Europe Action 23: Continue to monitor butterflies in woodland and forest habitats and share results.***

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<sup>5</sup> For both targets, improvement is to be measured against the quantified enhancement targets for the conservation status of species and habitats of EU interest in Target 1 and the restoration of degraded ecosystems under target 2.

<sup>6</sup> For smaller forest holdings, Member States may provide additional incentives to encourage the adoption of Management Plans or equivalent instruments that are in line with SFM.



## **EU Action 8: Enhance direct payments for environmental public goods in the EU Common Agricultural Policy**

8a) The Commission will propose that CAP direct payments will reward the delivery of environmental public goods that go beyond cross-compliance (e.g. permanent pasture, green cover, crop rotation, ecological set-aside, Natura 2000).

***BC Europe Action 24: Work with other NGOs to promote effective funding and uptake of CAP greening measures under CAP 2013.***

## **EU Action 9: Better target Rural Development to biodiversity conservation**

9a) The Commission and Member States will integrate quantified biodiversity targets into Rural Development strategies and programmes, tailoring action to regional and local needs.

***BC Europe Action 25: Promote integration of targets for halting decline and securing some recovery of butterflies into Rural Development programmes and the use of the European Grassland Butterfly Indicator to evaluate progress.***

9b) The Commission and Member States will establish mechanisms to facilitate collaboration among farmers and foresters to achieve continuity of landscape features, protection of genetic resources and other cooperation mechanisms to protect biodiversity.

***BC Europe Action 26: Work with other NGOs to encourage practical collaborations that protect biodiversity***

## **EU Action 11: Encourage forest holders to protect and enhance forest biodiversity**

11a) Member States and the Commission will encourage the adoption of Management Plans, inter alia through use of rural development measures and the LIFE+ programme.

***BC Europe Action 27: Provide advice about management measures needed to sustain and restore Habitats Directive butterflies for incorporation in forest management plans and press for their implementation.***

11b) Member States and the Commission will foster innovative mechanisms (e.g. Payments for Ecosystem Services) to finance the maintenance and restoration of ecosystem services provided by multifunctional forests.

***BC Europe Action 28: Work with other NGOs to ensure biodiversity services and pollination services are both recognized and rewarded in any new framework relating to payments for***

*ecosystem services (PES).*

**EU Action 12: Integrate biodiversity measures in forest management plans**

12) Member States will ensure that forest management plans or equivalent instruments include, inter alia as many of the following measures as possible:

- ecosystem-based measures to increase the resilience of forests against fires as part of forest fire prevention schemes, in line with activities carried out in the European Forest Fire Information System (EFFIS);

***BC Europe Action 29: Promote use of wide rides in forest areas to support insect biodiversity as well as acting as fire breaks.***

- specific measures developed for Natura 2000 forest sites
- ensuring that afforestation is carried out in accordance with the Pan-European Operational Level Guidelines for SFM33, in particular as regards the diversity of species, and climate change adaptation needs.

***BC Europe Action 30: Provide advice on management measures to sustain and restore Habitats Directive butterflies dependent on forest management.***

## 11. Conclusion

There is much to do to secure a better future for butterflies, moths and their habitats. Butterflies can be seen as a flagship species indicating the health of ecosystems. Their survival depends on well functioning, resilient ecosystems and sensitive management of their habitats. If butterflies are thriving this will bode well for the health of the environment and the ecosystem services it provides. These underpin people's economic and social wellbeing. So, in conclusion, BCE calls on the EU, European governments, farmers, land managers and other decision makers, NGOs and stakeholders to work together and mobilise the necessary resources and implement the actions and thus help to halt the loss of biodiversity and ecosystem services and secure some recovery by 2020, for the benefit of this and future generations.

*Alpine grasslands are important for the rural economy but also for hundreds of butterflies and other insects.*



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