

Developing a basis for the active
conservation of Turkey's butterflies

Final report 2011
BBI-Matra/2008/015



Butterfly
CONSERVATION EUROPE

**Final Report
October 2011 for the
BBI-Matra/2008/015 project:**

Developing a basis for the
active conservation of
Turkey's butterflies

Butterfly Conservation in Turkey – Final Report 2011

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October 2011

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1.1. Background information

This project has started in the beginning of 2009 and was successfully finished in June 2011 as planned. The progress during 2009, the first project year, has been good, with the only real bottleneck in building commitment and involving the key stakeholders, particularly people in central government and among the high scientific circles in Turkey. In 2010, the second year of the project, work was focused on developing the outputs, and drawing on the network of contacts, expertise and expanding the project impact on the butterfly conservation in the country. During the 2011, last project year, the focus was on finalizing the products in the most efficient and effective way and bringing them to the wide audience.

The project aimed establishing and developing the basis for the active conservation of Turkey's butterflies. This aim can be seen back in the project objectives, products and the approach as well as in the activities conducted. The project had to start from zero and accomplish the first basic steps for the further development of the best practise concept for conservation of a certain group. So far, the project achieved this main goal and we are proud to share the experiences and the lessons learned in this challenging process.



Experts from Europe and US were involved in brainstorming together with DKM on the first Red List in Turkey, setting the bases for butterfly conservation there.

Experiences and main players



Butterfly Conservation Europe (BCE) was formed in 2004 as an umbrella organisation with the aim of halting and reversing the rapid decline of butterflies, moths and their habitats across Europe. A clear focus of the organisation is work with a wide range of partners in Europe, both governmental and non-governmental, to implement the Convention on Biological Diversity with respect to butterflies and moths and their habitats, and to contribute to achieving the EU target of halting biodiversity loss by 2010. BCE is a non-profit making organisation, registered in the Netherlands and comprises a non-incorporated consortium (network) of institutions and organisations, working to achieve the mission.



Dutch Butterfly Conservation - De Vlinderstichting (DBC), as one of the founders of Butterfly Conservation Europe, was actively involved in the project. Dutch Butterfly Conservation works on the protection of butterflies, moths and dragonflies since 1983 and has build up a lot of experience. The representatives of the leading partner are specialists in different fields with broad experience and capacities.



The Nature Conservation Centre (DKM), Ankara, Turkey is a NGO established in November 2004 under Turkish law, founded by a group of experienced Turkish and English ecologists and conservationists. DKM's main objective is to assist in the conservation of biodiversity through facilitating sound research, practical project implementation, capacity building and developing mutually beneficial partnerships. DKM is experienced in GIS and Remote Sensing in conservation, designing sampling and field methodologies for collecting biodiversity data, and using systematic conservation software in data analysis. DKM works in partnerships to increase and improve its capacity and to share experiences through capacity building & training.

Main persons involved in the project

Project staff

Chris van Swaay	Project leader, leading European specialist with broad experience in butterfly conservation and has essential role for the quality of the project achievements.
Svetlana Miteva	Project assistant at DBC with a good knowledge on the specifics of the nature conservation in South-eastern Europe.
Kars Veling	Communication specialist at DBC, involved especially for the communication work planned in the project.
Hilary Welch	Project manager at DKM, more than 30 years working in nature conservation including 10 years in Turkey.
Evrin Karacetin	Leading Turkish scientist on butterfly ecology
Alper Ertürk	Data entry, digitising, correcting and management
Didem Ambarlı	DKM Grassland Conservation Programme Coordinator butterfly watcher, grassland ecologist, liaison with butterfly watchers,

	fieldwork, extensive local conservation knowledge for many areas of Turkey
Can Bilgin	Associate Professor, Biology Department, Middle East Technical University, Ankara
Resit Akçakaya	Chair of the IUCN Species Survival Commission's Red List Standards and Petitions subcommittee
Asuman Aydın Gem	Project Assistant, Feb-Jul 2009 butterfly- and birdwatcher
Özge Balkız	Project Assistant Jan-Jun 2011 and DKM Species Conservation Programme Coordinator
Ayşe Turak	DKM Systematic Conservation Planning Programme Coordinator
Aslı Nur Bakan	DKM technical assistant Jan-Apr 2009
Ersoy Kılıç	DKM technical assistant Jun 2009-Jun 2011
Burcu Meltem	Butterfly watchers and freelance nature conservationists, edit of Red Book
Arik Akyüz	Graphic designer
Güngör Genç	Graphic designer
Hande Özü	Graphic designer
Mustafa Durmus	GIS specialist
Yıldırım Lise	UNDP Turkey, facilitated the butterfly watchers' workshop

Turkish volunteers

List of the main specialist and supporters who contributed to the project work:

Ahmet Baytas	Author of Turkey's first butterfly field guide, in Turkish and English
Ali Atahan	Experienced butterfly- and birdwatcher living in SE Turkey; fieldwork, photos, data, articles, red list assessments
Onat Basbay	Mining engineer, butterfly watcher and photographer based in Ankara; contributed with photos, METU fieldwork, data, articles, red list assessments, conservation strategy threats assessment
Adnan Ataç	Amateur wildlife photographer based in Ankara
Bahar Bilgen	Civil engineer, butterfly watcher based in Istanbul ; input to the Red List, and the Conservation Strategy threats assessments
Seda Emel Tek	METU biology student and butterfly watcher; input data to database, fieldwork, Red List
Yahya Emin Demirci	Butterfly watcher; input to the Red List
Ümit Durdu	Butterfly watcher based in Kars, E Turkey; input to the Red List and the fieldwork
Mecit Vural	Professor in Botany at Gazi University, Ankara and co-author of the Turkish Red Book of threatened plants; input to the Red List
Süleyman Ekşioğlu	Experienced butterfly- and birdwatcher based in Ankara; fieldwork, photos, data, articles, Red List Workshop participant
Hülya Alkan	Butterfly watcher and project volunteer; data and fieldwork
Hüseyin Ambarlı	Support for the Erzurum/Artvin field visit for distributing the anti-smuggling hand guide and posters
Mukadder Arslan	Butterfly watcher - articles and data
Halil Fırat	Butterfly watcher - data
Münir Hançer	Butterfly watcher - photograph for red list
Emre Kaytan	Experienced butterfly watcher - data
Fatih Köleli	Butterfly watcher - red list assessments, photos
Onur Sayar	Volunteer - data input
Oktay Subası	Butterfly watcher in Bitlis, E Turkey - data, photos, red list assessments
Olca Yegin	Butterfly watcher in Antalya, S Turkey - data, photos, red list assessments
Özgür Koçak	Butterfly watcher- data, photos
Uğur Zeydanlı	DKM General Director management advice and high level liaison, particularly with the authorities at METU
Bahtiyar Kurt	DKM Conservation Director project coordination, Dec 2010-Jun 2011
Günesin Aydemir	BUGDAY Association
Dr Ümit Özcan	Union of Chambers of Turkish Engineers and Architects, Chamber of City Planners

Pille Koorberg, Beyhan Argün and Pinar Hisir – coordinator and module leaders for the *Environment and Countryside under IPARDE* EU twinning project, Strategic Planning Department of the Ministry of Food, Agriculture and Animal Husbandry
 Ayse Isik Ezer Ministry of Environment and Forestry, EIA expert

International volunteers

Many BCE non BCE members supporters to the project, experts in a certain group of butterflies or a conservation problem have contributed voluntary to the project work:

Irma Wynhoff	German, DBC/BCE; translation of texts from Hesselbarth et al. for red list, facilitating obtaining papers, expert knowledge input to assessment for <i>Phengaris nausithous</i>
Vazrick Nazari	Author of Butterflies of Iran
Torben Larsen	Expert on the butterflies of the Levant, the Arabian peninsula and West Africa
Özge Özden	Butterfly expert in Cyprus
Szabolcs Sáfián	BCE Hungary, with good knowledge of butterflies in Turkey and in depth field knowledge of many groups; red list assessments
Rudi Verovnik	BCE Slovenia, butterfly expert and co-lead author of the revised European Butterfly Checklist; red list assessments
Martin Wiemers	BCE Austria, expert on <i>Agrodiaetus</i> butterflies and co-lead author of the revised European Butterfly Checklist; red list assessments
Christian Castelain	French, lepidopterist with experience of Turkey; red list assessments
Alireza Naderi	Leading Iranian lepidopterist, working at the National Institute of the Environment, Iran; red list assessments
Klaus Schurian	German, lepidopterist and author of many papers on Turkish butterflies; red list assessments
Wolfgang Eckweiler	German, lepidopterist and author of many papers on Turkish butterflies; red list assessments
Dubi Benyamini	Leading Israeli lepidopterist; red list assessments
Josef Settele	BCE Germany, lead author of the Climatic Risk Atlas of European Butterflies; red list assessments
Frédéric Carbonell	French, lepidopterist and author of many papers on Turkish butterflies; red list assessments
Dominique Dumont	Belgian, lepidopterist, described <i>Polyommatus bollandi</i> ; red list assessments
George Thomson	British, lepidopterist, described <i>Maniola halicarnassus</i>
Wolfgang ten Hagen	German, lepidopterist and author of many papers on Turkish butterflies; red list assessments
Annabelle Cuttelod	IUCN contact point for Red Lists
Neil Thompson	British, butterfly watcher and electronic engineer wrote macros for extraction of Hesselbarth data to Excel
Vladimir Lukhtanov	Russian, lepidopterist and author of many papers on Turkish butterflies
Martin Davies	British, butterfly- and birdwatcher with experience of Turkey; AOO adjustments workshop for red list
Peter Russell	British, butterfly- and birdwatcher with experience of Turkey; AOO adjustments workshop for red list
Bernard Fransen	Dutch, butterfly photographer; data for red list assessments
Ian Green	British, Director of Greentours Natural History Holidays; data
Bernard Kranenbarg	Dutch, Librarian at DBC; found, scanned and sent us many papers for the red listing process
Dirk Maes	Belgian, Ecologist at the Research Institute for Nature and Forest; expertise and papers for the red-listing process
Geoff Welch	British, International Management Plans Advisor for the RSPB (Royal Society for the Protection of Birds); guiding the threats assessment process, editing and text writing
Karen Nichols	British, butterfly photographer; photos for red list

Harry van Oorschot	Dutch, co-author of Hesselbarth <i>et al.</i> (1995); authorised digitising of data
Willy de Prins	Leading Belgian entomologist; red list assessments
Matt Rowlings	British, butterfly photographer; photos for red list
Paul Severns	American, butterfly expert; expert knowledge
Simon Spencer	British, BC UK, butterfly watcher; expert knowledge on farming and meadow management
Jose Tavares	Portuguese butterfly watcher; data
Albert Vliegenthart	Dutch, DBC butterfly expert; data

Our acknowledgments to all the people mentioned and those not mentioned here for their input and support for the success of the project goals and the butterfly conservation in general.

1.2. Executive summary

The importance of butterflies for identifying areas of conservation importance is now well recognised. The role and participation of the NGOs working on study and protection of this group is now well established. The authorities have realised that an NGO has the capacities and potentials to deliver with high professional quality results on : collect data of value for conservation, building partnerships based on wide open collaboration and prepare strategic documents with key importance for the national nature conservation policy as well as documents with good quality for immediate practical implementation.

Nevertheless, the difficult political environment regarding the nature conservation development in Turkey, the main project goals and objectives though challenging, were all achieved successfully. The key outputs of the project were:

- An updated and digitised data set available nationally and internationally through an online database.
- Authoritative and scientifically robust publications: a red list of Turkey's butterflies, a national Conservation Strategy and an initial list of PBAs.
- An international network of experts working on the butterflies of Turkey.
- Raised awareness of the importance of Turkey for butterflies through a variety of widely available popular articles and publications.
- Increased awareness amongst enforcement agencies and local communities of the illegal collection of butterflies in Turkey and of effective ways to combat it, resulting in several successful prosecutions.
- The Turkish representative in the BCE network recognised as an authoritative NGO, with the ability to provide technical support for the conservation of butterflies.
- Effective links developed with a core group of committed and active butterfly watchers, and capacity increased through providing individuals with opportunities for involvement in developing the red list and Conservation Strategy, systematic fieldwork, the attendance of butterfly camps and direct contact with butterfly experts from both within Turkey and abroad.
- Using existing contacts and the strengthened network the project facilitated the inclusion of practical butterfly-friendly management into forest management plans. In the long-term this revolutionary initiative will benefit butterflies in all of Turkey's forests (25% of the land area). Initial contacts were established with staff in the Ministry of Agriculture which have the potential for delivering similar long-term benefits in agricultural areas.

In addition to the planned outputs, the project produced:

- A revised national checklist.
- The first Red Book of Turkey's butterflies, printed in Turkish and available online in Turkish and English.
- The first global assessments of Turkish endemic butterflies with the threatened species submitted for inclusion in IUCN's global list of threatened species.

The project management is a co-operation between the butterfly specialists in Turkey and The Netherlands. Butterfly Conservation Europe and Dutch Butterfly Conservation, with their long experience in international project management, provided the overall project coordination as well as management support to the partner from Turkey – DKM. The work in Turkey was coordinated by Hilary Welch.

Project progress management

The formal part of the relations between the involved parties were set by contracts. The project organization itself is built on equal highly professional and friendly relations, which made the communications fluent.

The overall project management is done by the Dutch project leader Chris van Swaay. The internal overall project communication and the reporting was provided by the project assistant - Svetlana Miteva also at the Dutch office. The external communication was consulted with Kars Veling – communication expert and DBC.

Hilary Welch managed the project from DKM's office in Ankara, working closely with the staff there. For the work on the Red List and other strategic documents the close collaboration with Evrim Karaçetin and the expert support from BCE was used. There were developments in the DKM staff involved in the project. In May, Alper Ertürk, the project's part time data manager, left DKM to work for the General Directorate of Nature Conservation's Wildlife Management department. A part time replacement has been found.

The communication regarding the content of the work, like scientific discussions and debates, strategies to approach a problem, planning or adaptations to the planned, were based on the high respect to the opinion and the knowledge of the other team members.

Due to the high level complexity of the goals the project is addressing, quite a number of the BCE network members and other supporters are involved voluntarily in the development of the some of the project products like the Red List by providing consultations, advices, and other expert support to the Turkish project team. This international expert cooperation work had a crucial importance for the success of the project and for the quality of the outcomes.

See more details in: Experiences and main players – page 6-8

Project financial management

The financial administration of the project in Turkey was provided by Ersoy Kilic at DKM and the overall financial project administration was done by the financial manager at De Vlinderstichting - Mr. Poppe Kloen.

The audit on the whole project financial administration was conducted by Albert Hooijer, "Alfa Accountants and Adviseurs" based on the financial documents provided by BCE, DBC (De Vlinderstichting) and DKM. The financial documents from DKM, Turkey are verified by the IHTISAS external accountancy bureau in Ankara, Turkey.

This chapter will present the project achievements, results and activities. The more significant problems and the lessons learned are mentioned. The original planning and the realisation are compared as objectives, products and time schedule. The activities are presented in more details.

3.1. Objectives: as planned

Objective 1: To develop a National Butterfly Conservation strategy, primarily focused on key sites (Prime Butterfly Areas), based on agreed, objective scientific criteria:

- a) the complete baseline dataset digitised and available for conservation studies,
- b) an agreed provisional Butterfly Red List,
- c) a candidate list of Prime Butterfly Areas
- d) a National Butterfly Conservation Strategy developed with the participation of all key stakeholders.

Target groups: NGOs, relevant government bodies (especially Ministries of Environment and Forestry and of Agriculture and Rural Affairs), project funders, Butterfly Conservation Europe

Objective 2: To build capacity for the active and sustainable conservation of butterflies.

Target groups: local butterfly watchers, relevant government bodies (especially Ministries of Environment and Forestry and of Agriculture and Rural Affairs).

This will result in more butterfly fieldworkers who can collect data, conservationists who can interpret it and government bodies able to promote, support and implement appropriate and sustainable conservation actions.

.....and as achieved

Objective 1: Developed National Butterfly Conservation strategy following a scientifically robust and objective methodology. The Strategy presents the key sites – selected to ‘capture’ all of Turkey’s butterfly species – and identifies eight priority actions required to counteract the main threats threatening Turkey’s butterfly fauna both at the site and national scale.

- e) the complete baseline dataset was digitised and is available for conservation studies,
- f) an approved Butterfly Red List was completed and published,
- g) an initial set of Prime Butterfly Areas was identified and published,
- h) a National Butterfly Conservation Strategy was developed with the participation of the key stakeholders and published.

Objective 2: To build capacity for the active and sustainable conservation of butterflies.

There is a group of butterfly fieldworkers who collects data, conservationists able to interpret it and government bodies willing and able to promote, support and implement appropriate and sustainable conservation actions, with focus on butterflies too.

Target groups: For both objectives the targeted groups were involved, no revisions were needed. Their cooperation and involvement in the process, though not always as expected, was available. The project team approached carefully the task and build up, which will serve in further conservation work in the country.

3.2. Products: planned and achieved

1. The Hesselbarth et al (1995) butterfly dataset digitised, incorporated into a GIS database and available for conservation studies. - *Done*
2. Red List Working Group meeting of key experts. - *Conducted*
3. Red List workshop involving all stakeholders who will use the list (butterfly watchers, NGOs, academics and government bodies). - *Conducted*
4. A project brochure. - *Produced*
5. Two posters to promote butterflies and the project: Common Butterflies of Turkey, and Conserving the Prime Butterfly Areas in Turkey. - *Both produced, the second in cooperation with National Geographic Turkey in 10 000 copies*
6. Project launch event with guided butterfly walks. - *Conducted, with some adaptations*
7. A provisional Red List of Turkey's butterflies published in an international scientific journal and available on the internet. - *Produced, publication distributed and submitted at IUCN*
8. PBA methodology workshop (in the Netherlands) - *Conducted, twice - in Turkey and in Hungary, in combination with the Strategy workshop*
9. A candidate list of Turkey's PBAs. - *Produced*
10. Conservation Strategy workshop. - *Conducted*
11. A National Butterfly Conservation Strategy for Turkey. - *Produced, printed and distributed among stakeholders*
12. Butterfly watcher and experts network development workshop. - *Conducted*
13. Butterfly training road show (parts 1 and 2) delivered at 6 locations. - *Conducted, format of the training was adapted to the local context, see activity 6*
14. Summer camp for butterfly training and networking. - *Conducted*
15. The trained and active nucleus of Turkish butterfly watchers increased. - *Achieved and important lessons learned*
16. A proposal for a research and conservation project on a priority PBA and one of its globally threatened species developed and submitted for funding by the core butterfly watcher group. - *Done*
17. Butterfly-friendly management prescriptions for forest management plans. - *Done*
18. A list of national agro-environmental support schemes which have the potential to encourage and promote HNV farming systems. - *Done*
19. Active conservation measures implemented on a selected PBA and a monitoring programme initiated. - *Conducted*
20. National Butterfly Conservation Strategy launch event. - *Conducted*

3.3. Time schedule for the main project outputs

In the process of the project execution, the team had realized, that in order to get the quality aimed for some of the outputs, especially those requiring communication with external specialists and additional data, more time will be needed. This was actually expected obstacle and though more work had piled for the end of the project, all was accomplished successfully and on time.

Main project outputs:

	Originally planned	Completed
<u>Updated and digitised butterfly data:</u>	31 July 2009	April 2010
<u>Butterfly Red List:</u>	30 September 2009	4 February 2011
<u>Prime Butterfly Areas:</u>	31 January 2010	31 January 2011
<u>National Butterfly Conservation Strategy:</u>	28 February 2011	June 2011
<u>Butterfly watchers capacity building:</u>	31 May 2011	Work done, but the process will continue beyond the end of the project
<u>Conservation in a selected priority PBA:</u>	28 February 2011	Work done, but the process will continue beyond the end of the project

3.4. Progress on the planned activities

1¹. All Turkish butterfly data available for conservation studies.

1.1. Bring together, scan and convert to Excel all existing data sources, including the Hesselbarth, van Oorschot and Wagener (1995) data set.

Despite all the challenges the goal was achieved and the data was digitized as planned and is now available for further analysis. The complete digitized data set is available for international conservation work since a copy of the complete database has been submitted to the Ministry of Environment's online database, Nuh'un Gemisi (Noah's Ark) as well as for the butterfly-recording system at BCE.

Details on the work:

Most Turkish butterfly data was gathered, evaluated and organised for the major three volume work by G. Hesselbarth, H. van Oorschot and S. Wagener, *Die Tagfalter der Türkei*, published in 1995. The project's first major task was to convert this 1,138 pages of published data to an electronic format which could be analysed and mapped.

Preparatory work:

- Permission was obtained from the publishers to digitise the Hesselbarth et al. (1995) data;
- Test pages were scanned, OCR (Optical Character Recognition) software was tested for its accuracy – particularly for representation of Turkish characters – and a system for extracting the text to a standard Excel format via macros was developed with the voluntary expert support of Neil Thompson (Butterfly Conservation UK).

Later on: Jan-Mar 2009:

- 1,138 pages of the book were scanned and saved as pdfs – work done by a professional bureau in Ankara;
- The pdfs were converted to text using OCR software, Abbyy FineReader Pro;
- Text pages were extracted to Excel via macros.

Apr 2009-Apr 2010:

- Errors and omissions in the Hesselbarth et al. data set were corrected;
- New records from butterfly watchers were added – sourcing, checking, and data reformatting;
- A system for including records with only province-level data was developed;
- Data were updated – searches of the scientific literature for recently described species or changes in taxonomic treatment since the publication of Hesselbarth et al. in 1995, identifying the records to use, deciding how to map them, extracting, digitising and identifying the locations.



Extensive manual correction and completion of data was needed and many hours (incl. voluntary) were spent



¹ The formulation and the numbering of the main activities follows the one of the project's budget planning

Problems encountered

Extensive manual correction and completion of data was needed because a) the data in the book was not presented consistently, b) there were data gaps and c) because the locations given in the book were vague. This work was scheduled to be completed by the end of May 2009 but lasted until April 2010. In order to avoid long delays to the Red Listing process the scarcer species were worked on first (c16,000 records) so that the data for these species would be ready for the Red List Workshop in August. This was achieved.

Involving volunteers and short-term staff in data management in an effort to get the work done created further data errors, problems with consistency and continuity, and extra work for staff.

Activity outputs and additional benefits

In April 2010 revised distribution maps were produced for more than 370 species.

In November-December 2010, further updates were made to the data for threatened species and new maps were produced for the 38 species with detailed assessments in the Red Book.

The final data set, as used for the Red Book, comprised more than 70,800 records, divided between few Excel spreadsheets:

- the Hesselbarth et al data set (up to 1995) 55,700 records;
- DKM survey data (2008-09) 7,500 records;
- literature and butterfly watchers (1995-2010), 7,600 records;
- Province-level data of around 5,000 records.

[In annexes see 01 and 02 groups with documents](#)

Despite the delays, those outputs which depended on the data – the Red Book, PBA and Conservation Strategy – were all completed and published before the end of the project.

1.2. Submit all data to a web-based open database

The data set was formatted for the Ministry of Environment's online database, Nuh'un Gemisi (Noah's Ark) and submitted to Nuh'un Gemisi and to BCE in July 2010.

Details on the work:

The data set had to be formatted according to the requirements of the Ministry of Environment's in order to be incorporated in their online database, Nuh'un Gemisi (Noah's Ark).

Problems encountered

Several butterfly watchers were cautious of sharing location data with DKM as they considered this would also make the data available to the wider international community. As a result, some records were omitted from the data set shared with the online databases.

Activity outputs and additional benefits

Butterfly data now available on the Nuh'un Gemisi online database.

See group 01.1 and 01.2 in annexes with documents and www.nuhungemisi.gov.tr

As a result of the data being organized and readily available it has been possible to respond to requests for information from international researchers. For example:

- Vadim Tshikolovets, a Ukrainian lepidopterist, working on a new book "Butterflies of Europe & the Mediterranean Area" requested expert help with finalizing the distribution maps for species occurring in Turkey
- Youri Martin, a PhD student Luxembourg, requested distribution data for *Lycaena dispar* for use in a project entitled Prediction of climate change related range expansion in a butterfly of European conservation concern: from patterns to mechanisms.

Additionally, the digitised data is being used in a project to identify priority areas for conservation in the Black Sea region, an initiative of the General Directorate of Forestry being implemented in partnership with DKM.

The online database of the Turkish Ministry of Environment: www.nuhungemisi.gov.tr



2. A provisional red list of Turkey's butterflies.

2.1. Bring together and analyse the existing three 'conservation red lists' and the various conservation criteria applied to Turkey's butterflies.

Extensive research, data entry and consultation with experts resulted in a revised Turkish checklist, and databases holding information on species and a catalogue of papers and references.

Details on the work:

- The four extant species' lists – Hesselbarth et al. (1995), Koçak and Kemal (2008), and the two European Red Lists (van Swaay et al. 1999 and 2009) were collated.
- A database was created for holding information on taxonomy, nomenclature, ecology, threats, distribution, population and status of each species (see screenshot below).
- A separate database was developed in EndNote for storing electronic copies of papers.
- Sourcing of papers focused on those dealing with identification and taxonomy of new species, and giving ecological information for all species (especially endemics).
- As part of BCE's contribution to the project, Irma Wynhoff agreed to translate selected ecological information in Hesselbarth for more than 60 species, and arranged electronic copies of around 60 key papers.
- Copies of three key references for the surrounding region were obtained, covering Europe, Russia and Iran.
- Between 13-20 June 2009, Evrim Karaçetin worked with the project team to support entry of information to the database and identify the most urgent work and problematic species.
- Between 8-9 August 2009 – immediately before the Red List Workshop – Chris van Swaay, Martin Wiemers, Rudi Verovnik, Evrim Karaçetin and Hilary Welch came together for a Taxonomy Workshop to resolve the differences in the species lists and create a revised checklist.



Asuman Gem, Evrim Karaçetin and Seda Emel Tek entering species information to the database at DKM



Taxonomy Workshop: left to right Martin Wiemers, Chris van Swaay, Evrim Karaçetin and Rudi Verovnik.

Attempts to involve Prof Dr Ahmet Ö Koçak and Dr Muhabbet Kemal (Van University) in the red-listing process were unsuccessful. Their input was thus limited to those papers and lists available over the internet. Without the cooperation and support of Turkish academics, sourcing papers with identification and taxonomic information for new species and ecological information for all species (especially endemics) was a major task.

For information on butterflies from other countries on Turkey's borders, national contacts in Syria, Iraq, Georgia and Armenia were contacted but no responses were received.

See 02.1 NewChecklist.xls in annexes

With so many changes to the Turkish checklist an annotated checklist is necessary and is in preparation. It will consist of the revised checklist together with information justifying the decisions taken for each taxa and will be available to download from DKM's website.

FileMaker Pro - [Population/Distribution]

File Edit View Open Format Records Script Window Help

Browse

Layout

Populatio...

Record

Find

Total

380

Unsorted

Species code

Genus

Species

Tr code 2001

Tr code 2009

Genus Tr 2009

Species Tr 2009

2008

Euphydryas

orientalis

1995

002650

Euphydryas

orientalis

Distribution

Extent Of Occurrence Tr since 1980

2,000

km

Area Of Occupancy Tr since 1980

80

km

Spatial adjustment

20

km

Global distribution

South European Russia, Transcaucasia, Kazakhstan, Turkey (Tuzov et al. 1997, Tuzov et al. 2000).

Distribution trend

Europe 1950-2000

decr. 80-100%

Europe 1995-2000

Turkey

The only published records since 1980 are from Ankara and Cankiri only (Barst, 2007). It is overlooked (mistaken for *summa*)? Central Anatolia (Barst, 2007). Malatya region no records since 1935. Watthor's data (2009, Ankara (VK01 and VK97). Kocak & Vernal, 2009. Amasya, Ankara, Bursa.

Distribution notes

Recent records from Ankara and Cankiri only (Barst, 2007). It is overlooked (mistaken for *summa*)? Central Anatolia (Barst, 2007). Malatya region no records since 1935. Watthor's data (2009, Ankara (VK01 and VK97). Kocak & Vernal, 2009. Amasya, Ankara, Bursa.

Endemic, species

Endemic, subspecies

Map notes

map only

Key

1985-1994 records (Barst et al. 1993)

2001 records (GDM systematic, Barstov, Ankarali, Olgun & Nussli-Hofmann)

1995-2000 records (Hesselbarth et al. 1995)

before 1980 records (Hesselbarth et al. 1995)

Species collected for the first time

Provinces with records since 1950

Provinces with no records at all or none since 1950

Population trend

Europe 1950-2000

Turkey

Increasing

Stable

Decreasing

Unknown

Population notes

1999 eur RL: 75-100% distribution trend class

Conservation status

EUCA category

EUCA criteria

EUCA status

Europe 1995

1999 criteria

CA

Europe 2009

2009 criteria

EU Europe category justification 2009

Extent Of Occurrence Europe

km

Turkey 2009

Turkey 2009 status

Assessors

Welch, H.J., Karacatin, E. B.

Assessment date

24/12/2010

Assessed

Suggested

Approved

Kocak&Seven 1998

34

Kocak&Seven status notes

Turkey status notes

as This species has a restricted range and since 1988 has been recorded from four localities in three locations, in the provinces of Cankiri and Ankara; the individuals one new locality found in 2009. R1+2: The EOO within a minimum convex polygon is 2,000 km, and the AOO, adjusted to an occupancy of 20% in each 10x10 km, is 80 km. Both of these values qualify for EN (b)(ii). Occurs on dry flower-rich grasslands between 50-1500 m in open pine plantations or meadows and grassy vegetation alongside woods and disturbed places. (Hesselbarth et al., 1995). Much of this lowland grassland has been lost and is still threatened. In Atkaya (where the taxon has not been recorded since 1902) and its stronghold in Ankara habitat has and is still being lost to road widening, building developments, afforestation, and cultivation. The EOO and AOO qualify for EN

Click button to go to...

ecology

taxonomy

TO DO

EUCA Form p. 5

Red List data sheets

2.2. The lists analysis circulated for comment to national and international experts.

An examination of international journals had revealed that publication of a red list per se (activity 2.4) would not be possible in the way required by the project. Therefore, in order to achieve the desired objectives, this activity (2.2) was considerably expanded in order to produce a comprehensive and authoritative Red Book within the project and its budget.

So, following a Red List Workshop (*see activity 2.3 below*), detailed assessments for the threatened species, a full explanation of the methodology and introductory chapters by guest authors were researched and written. In February 2011 the Red Book was published electronically in Turkish and English, and 2000 copies of the Turkish version were printed. The Red Book was launched at the EU Delegation in Ankara (*see activity 5.3 for details*).

Details on the work:

- Threat assessments of all 381 species in Turkey were carried out using the globally accepted IUCN criteria (version 3.1, 2001), resulting in a provisional red list which was circulated to the General Directorate of Nature Conservation and National Parks at the Ministry of Environment and Forestry and to external experts.
- A mini workshop of experts was held in March 2010 at the 6th International Butterfly Symposium (Reading, UK) to discuss a selected list of species where a change in the percentage occupancy of the 10x10 km squares could potentially change the species' red list status.
- Full assessments of the 38 threatened species (Regionally Extinct, Critically Endangered, Endangered, Vulnerable and Near Threatened) and summary assessments of the 58 Data Deficient species were researched and written based on extensive and close consultation with relevant national and international experts.
- The international recognition of the value of Red Books was central to the decision to produce a hardcopy of the Red Book in Turkish. This would give the list greater authority in the eyes of the Turkish government and academics and an increased likelihood that the information would be used. Additionally, publication in both Turkish and English was considered to be the most effective way of communicating the significant amount of new and authoritative information on status and taxonomy of butterflies in Turkey with a wide range of international audiences. Thus, an editor and production coordinator was employed for the final 6-8 weeks of the publication process, and 2000 copies of the Red Book were printed.
- On 7 February 2011 the Red Book was launched in partnership with the Dutch Embassy, EU and BCE at the EU Delegation in Ankara (see activity 5.3 for further details). In addition to the species assessments, the book includes introductory chapters, a presentation of the methodology and the revised checklist of Turkish butterflies.



Red Book editing: left to right Burcu Meltem Arık, Özge Balkız, Hilary Welch and Evrim Karaçetin



*False chalk-hill blue (*Polyommatus corydonius*) on the Turkish field guide*

- Within Turkey, copies of the Red Book were distributed to Regional Directorates of the Ministries of Environment, Agriculture and Tourism, academics, NGOs, selected media contacts, university libraries, embassies, butterfly watcher contacts and others. Internationally, copies were sent to the experts involved in the assessments, IUCN and BCE. (For media coverage of the Red Book see activity 5.3.)
- PDFs of the Red Book, in English and Turkish, were uploaded to DKM's website (http://eski.dkm.org.tr/eng/red_list_eng.html).

Problems encountered

Although expansion of this activity resulted in a major delay to the finalization of the red list, it did not prevent the completion of all the other, dependent outputs, within the time frame of the project.

Activity outputs and additional benefits

Provisional Red List with those species to be considered at the Butterfly Symposium mini workshop indicated

[See 02.2 ProvisionalTrRedList_26Mar2010.xls in annexes](#)

Presentation for the mini workshop at the 6th International Butterfly Symposium

[See 02.2 Scale correction presentation.pdf in annexes](#)

The Red Book (published hardcopy in Turkish

[See 02.2 annexes for pdfs in Turkish and English](#)

As a result of the input from experts required for the species assessments, the project developed working relationships with many of the key butterfly experts working in Turkey and the surrounding region. They included: Vazrick Nazari (author of *Butterflies of Iran*); Torben Larsen (expert on the butterflies of the Levant, the Arabian peninsula and West Africa); Özge Özden (butterfly expert in Cyprus); Szabolcs Sáfián (Hungarian lepidopterist expert on the *Colias* group) and several experts (including Martin Wiemers) working on the notoriously difficult *Agrodiaetus* group. Additionally, logistical support was provided for the work on species assessments at Erciyes University.

In March 2011 assessments of the 13 endemics and three of the near-endemics classified as CR, EN and VU, were reformatted and submitted to IUCN for inclusion on the global Red List. These should be included on updates of the list in 2012.

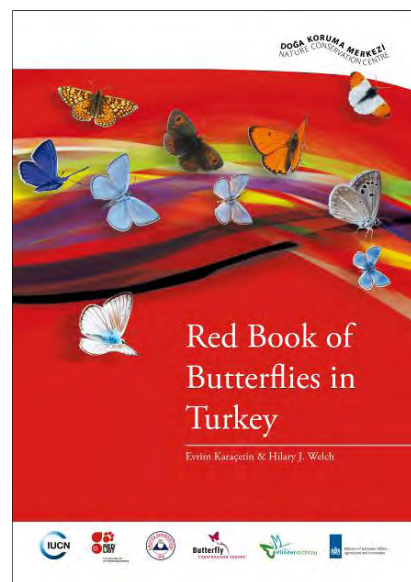
[See 02.2_Global assessments to IUCN folder in the annexes](#)

Articles on the Red Book appeared in issues of *National Geographic-Turkey*, *Atlas* and *Bilim ve Teknik* (Science and Technology) magazines, and on the Directorate of Forestry's web site

[See 02.2 with Red Book publicity annexes](#)

As a result of the researches for the species assessments and the developing media interest in butterflies, an article on butterfly diversity in Turkey was written by the project team and appeared as the cover story in the June 2010 edition of *Atlas*, a monthly magazine with a readership of 40-45,000

[See 02.2 Atlas_BflyArticle_June2010 pdf of the article and the article's English text in the annexes](#)



The Red Book of Butterflies of Turkey publication, launched on 7th of February 2011, in partnership with the Dutch Embassy, EU and BCE at the EU Delegation in Ankara

2.3. Hold a workshop to discuss and finalise the Red List with all key stakeholders.

Following the advice of Resit Akçakaya (Chair of the IUCN Species Survival Commission's Red List Standards and Petitions subcommittee), it was decided to use this workshop to introduce and start the Red Listing process (*see 2009 report*), rather than end it. This resulted in a change in the sequence of activities from what was envisaged in the proposal, with this workshop chronologically taking place after activity 2.1 and before 2.2.

The workshop was led by Resit who explained and provided guidance in using the red list criteria and provided RAMAS Red List software for calculating the Extent Of Occurrence of each species. The participants carried out rapid assessments of ninety species during the 3 day workshop.

Details on the work:

A Red List workshop was held on 10-12 August 2009, in the Middle East Technical University's Biology Department (Ankara). There were 16 participants who included seven Turkish butterfly watchers and six international butterfly specialists. The workshop was facilitated by Resit Akçakaya who had also provided a great deal of valuable advice and support over the internet to help the team in Turkey prepare for the workshop.

Problems encountered

None

Activity outputs and additional benefits

Rapid assessments completed for 90 species and entered to the database during the workshop. A report on the workshop appeared in Hürriyet newspaper.

See 02.3 in the annexes – on the Red List workshop and the report from Hürriyet newspaper's web site

Red list workshop: The team used many resources to carry out the assessments – key publications, the internet, GIS, the DKM butterfly database and RAMAS Red List software – plus the extensive expert knowledge of the participants.



2.4. Write a paper and submit the list to an international scientific journal for publishing and peer review.

As indicated in the 2009 Report, a review of the value of producing a paper on the red list was carried out following the publication of the Red Book (February 2011). As the methodology for producing the red list was more detailed and comprehensive than originally proposed (*see 2.2*) and explained in detail in the Red Book, it was considered the objectives of this activity had been delivered by the publication of the Red Book.

However, due to the ground-breaking approach taken to produce the red list, identify the PBAs and develop the Conservation Strategy in Turkey, it is important that this is shared with as wide an audience as possible. Thus, with production of the red list covered by the Red Book, ideas for two papers were developed presenting a) the PBA methodology and b) using national red lists to develop a national conservation tool kit. The paper on the PBA methodology is attached. It was submitted for publication and we expect soon to see it published to Biological Conservation scientific journal.

Details on the work:

A paper presenting the Systematic Conservation Planning procedures which were used and adapted for identifying the initial set of PBAs was written by the project team. The paper was submitted for publication to *Biological Conservation*.

Problems encountered

None.

Activity outputs and additional benefits

A pdf of the article is provided. [See the 2.4 annexes.](#)

It is hoped that future PBA studies will benefit from this new, objective and efficient approach for identifying PBAs.

3. A candidate list of Turkey's Prime Butterfly Areas (PBAs)

3.1. Develop a PBA methodology

A scientifically sound methodology was developed collaboratively with BCE members involved in previous PBA studies. The methodology followed Systematic Conservation Planning procedures and considered the limitations of the available data, the need to ensure that the final set of sites will be implementable, and the desire to include all species.

Details on the work:

- BCE members involved in previous PBA studies in Europe, Serbia and Bulgaria were contacted for input to the PBA methodology. A concept paper describing the methodology was circulated in August 2010.
- In September 2010, a scored list of priority or target species was developed to help guide the PBA selection process. Each species' endemism, conservation status, and distribution in- and outside Turkey was considered. This resulted in a list of 358 species which occur regularly in Turkey, but excluded 23 species which are considered migrants or vagrants. This list was circulated for comment.
- In October 2010, the data was organised and preliminary analysis to test the methodology gave a selection of 82-83 squares (sites).
- In November 2010 the species' threat categories were updated – to bring them in line with the final red list categories – the priority species scoring was refined and species list finalised.
- Four new important data sets were added or updated (Kırklareli, Küre Mountains, Kütahya and Karaman), a total of almost 2000 records, and the data set was finalised.
- The final methodology was presented to and discussed with the Board of BCE in Hungary during the International Butterfly and Moth Camp (see activity 6.3).

Problems encountered

Work on the data revealed previously unidentified errors in the Hesselbarth data set which would affect the PBAs selected. These were corrected and created a delay in finalising the list of sites.

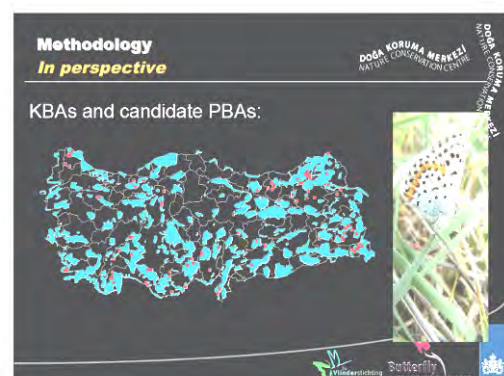
Activity outputs and additional benefits

A scientifically based methodology, published in the Conservation Strategy, which considered:
Minimum representation: the minimum number of sites at which each species is represented.

- Data age.
- Different types of values: e.g. species richness, endemism, national threat status.
- Size and contiguity of sites.
- Protected areas.

A Turkish resume of the PBA methodology is included in the Conservation Strategy ([See activity 4.2](#)). For a full description of the methodology [See in the annexes 03 group documents on PBA methodology](#)
For details on priority species scoring system [See 03.1_PBA Priority Spp scoring.xls in the annexes](#)

The discussions on the PBA methodology, the steps further toward sustainable PBA's identification and the processes behind were discussed with the BCE members again by the end of the project. See more information in annex [03.1_PBA_methodology_Hungary](#)



3.2. Analyse the digitised data

The data was analysed following the methodology and resulted in a set of 93 squares which was consolidated into 65 PBAs.

Details on the work:

MARXAN software and a simulated annealing algorithm was used to analyse the prepared data. The analysis involved 10 million steps; this was repeated 1000 times to come up with the most robust and optimal selection. This gave a selection of 93 squares comprised of: 50 essential squares – for which there is no alternative due to:

- a) the restricted ranges of rare species;
 - b) exceptional butterfly diversity;
 - c) the requirement to ensure minimum representation of each priority species at three sites;
- 43 most effective squares – which achieve minimum representation of all species and meet the criteria set in the methodology.

Problems encountered

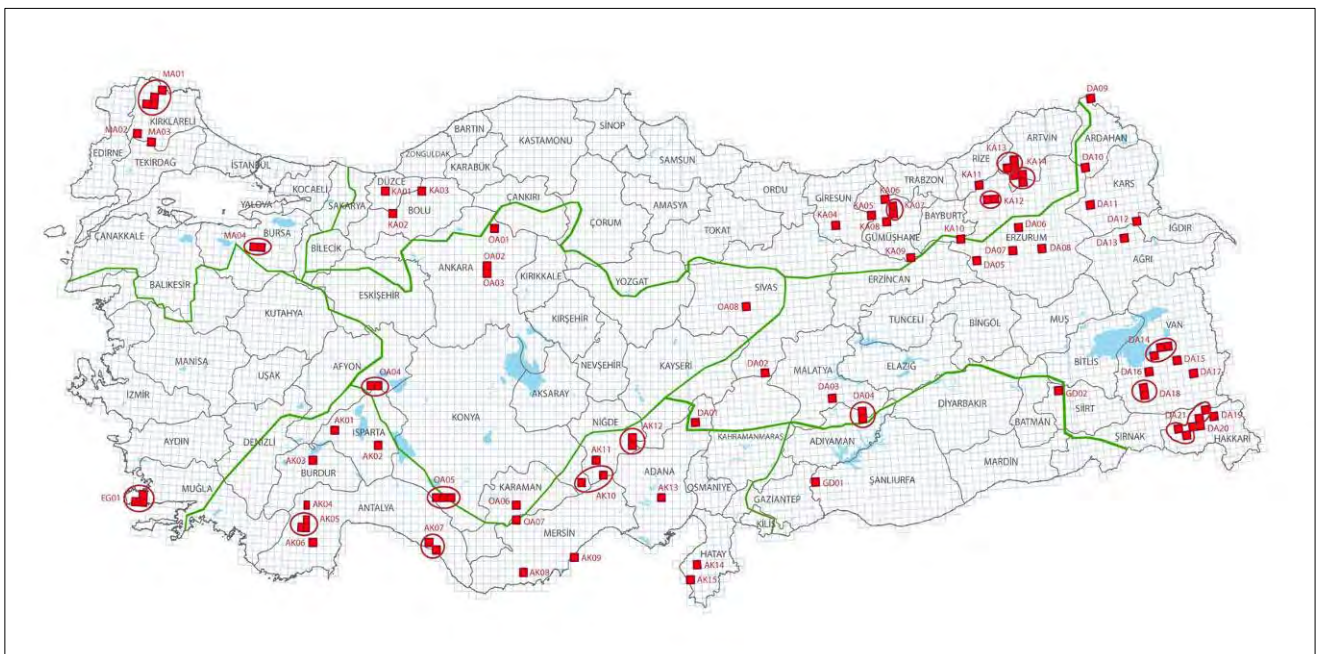
None

Activity outputs and additional benefits

The initial set of 93 squares (below), which translated into 65 PBAs, was published as an appendix in the Conservation Strategy. As more data becomes available this selection of sites will be refined and extended.

See the 03.2 annexes for more maps and information on the priority species in each PBA.

Map of Turkey, showing the set of 93 squares grouped into the 65 top squares, comprising the Turkish initial PBAs network



3.3. Publish a poster to present and promote the candidate PBAs

The poster was developed as a joint venture with *National Geographic –Turkey*, and published as a three-fold-out section in their July 2011 magazine.

Details on the work:

In January 2011 the project approached *National Geographic–Turkey* regarding the possibility of jointly producing the poster and distributing it with their magazine (circulation of 10,000).

The poster was designed as a map depicting the threatened species and the PBAs at which they occur, using information provided by DKM.

National Geographic commissioned local artist, Sancar Baris, to produce paintings of each of the 26 threatened species (CR, EN, and VU).

Evrin Karaçetin wrote an article on threatened butterflies to accompany the poster.

Problems encountered

None

Activity outputs and additional benefits

Poster and article in National Geographic–Turkey

[See pdfs in 03.3 annexes](#)

The publication of the poster and article coincided with news of the rediscovery of two threatened species (CR and DD) by a local butterfly watcher and provided the opportunity to publish it as 'latest news' opposite the poster ([see activity 6.6.3](#)).

The publication of the poster and article on the PBAs in the National Geographic Turkey, coincided with the rediscovery of two threatened butterfly species which was publish as 'latest news' opposite the poster



4. A National Butterfly Conservation Strategy for Turkey

4.1. Develop strategy elements with the participation of key stakeholder groups

All preparatory work for the Conservation Strategy was successfully implemented in early 2011.

Details on the work:

A list of potential stakeholders was compiled through a combination of existing contacts and visits to ministries to identify the most relevant departments and interested individuals, and through individual networks, input to development of the Strategy was extensive. With each the importance of butterfly conservation and the forthcoming Conservation Strategy were discussed.

*See pdf of **Conservation Strategy for Butterflies in Turkey**, page 10: Proposed conservation actions for butterflies in Turkey, for a list of the principal stakeholders consulted.*

An initial threat analysis and stress-based assessment, based on the recommendations of IUCN and the Conservation Measures Partnership (see

<http://www.conservationmeasures.org/wp-content/uploads/2010/04/Classification-of-threats-and-actions.pdf>), was carried out by the DKM team. This focused on the threats facing Turkey's butterflies at national and local levels.

A desk study was carried out to identify existing agro-support schemes with the potential to be used to encourage and promote High Nature Value (HNV) farming systems.

Problems encountered

None

Activity outputs and additional benefits

Threat analysis and stress-based assessment

See 04.1_ThreatsDriversActions_En.pdf in annexes

List of agro-support schemes, which could contribute to the promotion of HNV farming

See 04.1_Agri-support schemes.doc in annexes

Conservation Strategy for Butterflies in Turkey – in Turkish and parts in English. Within few months the full English version will be available online – another voluntary effort of the DKM team.

See in 04.2. group annexes the complete version of the Strategy in Turkish and translations of the main chapters in English (in 5 documents).

The Conservation Strategy for Butterflies in Turkey was published and launched in June 2011



4.2. Circulate a draft strategy to all stakeholders

The Conservation Strategy was developed and published following an internationally approved methodology and with input from key stakeholders.

Details on the work:

- One-to-one meetings were held with key stakeholders, obtaining their input to the Strategy through discussion of the threats analysis and stress-based assessment.
- Based on the results of these discussions a total of 95 potential conservation actions were identified to address the threats. Each action was then allocated to one of eight key work areas. Next, the top scoring actions in each work area were identified by calculating their frequency of occurrence ie finding those actions which addressed the most threats. These were considered the priorities for implementation (see table in Outputs).
- The texts were written for the chapters of the Strategy and maps were prepared for each of the PBAs.
- The Strategy was designed and published in June 2011.

Problems encountered

None

Activity outputs and additional benefits

Priority conservation actions for implementation (from the Conservation Strategy) – *see the table below*

Score	Conservation action description	Category	Activities which DKM is already implementing
19	Enable the implementation of legislation and procedures which benefit butterflies and biodiversity.	Law and Policy	Matra KAP project (<i>see 7.2</i>)
13	Provide Prime Butterfly Areas with a conservation 'umbrella' status which provides protection from damaging developments and supports the continuation of traditional agricultural practices which maintain the value of the sites for butterflies.	Land protection	
13	Draw up Species Action Plans for threatened species on the Turkish Red List, and use them as a resource in working together with nature conservationists, planners, investors and other stakeholders and land users.	Species management	Integrating biodiversity into forest management plans (<i>see 7.3</i>)
13	Visit all core Prime Butterfly Areas to determine continued presence of key species, compile comprehensive species lists, identify threats, define practical boundaries and research conservation opportunities.	Information and research	Work on METU Campus PBA (<i>see 6.6 and 7.5</i>)
4	Raise awareness of the vital role of invertebrates, and of the value of butterflies as visible indicators ecosystem health, selecting regional flagship species to tackle specific issues.	Education and awareness	
4	Together with Ministry of Food, Agriculture & Animal Husbandry and other experts, and drawing on the experience of EU member states, define the prescriptions for inclusion in agri-environment measures which will benefit butterflies, promoting landscape mosaics, High Nature Value farming and organic farming practices.	Livelihood, economic and other incentives	IPARD project agri-environment measure for biodiversity (<i>see 7.3</i>)
3	Work together with the Ministry of Food, Agriculture & Animal Husbandry and other relevant bodies to use ÇATAK and IPARD funding opportunities creatively to support the development of agri-environment and rural development initiatives, adding a criteria to the project selection process whereby actions which aim to manage or improve habitats for butterflies and/or other biodiversity are given priority.	External capacity building	Future project development (<i>see 6.7</i>)
1	Develop and disseminate conservation action recommendations for the management of grasslands and forests which benefit butterflies.	Land management	Habitat management guidelines for foresters (<i>see 7.3</i>)

- o 500 copies of the Strategy were printed in Turkish. A hardcopy is provided and there is a pdf in the annexes (it is available to download as a pdf from http://eski.dkm.org.tr/eng/strategy_eng.html.)

In addition to the project outputs, further documents are in preparation and will be available online from DKM's website by the end of 2011. These include a shorter, English version of the Strategy and technical appendices. Those files which are at an advanced stage of preparation are provided in the annexes.

4.3. Publish and launch the strategy

The Strategy was launched in June 2011, preceded by a press event on the Middle East Technical University Campus PBA.

Details on the work:

- On 25 June a press event was held on METU campus PBA to launch the Conservation Strategy (see activity 7.5.2). Interviews were given to TRT (television) and Radikal newspaper.
- On 27 June 2011 the final Strategy was launched with an event in METU's Culture and Convention Centre. Presentations were given on how the PBAs were selected and the Conservation Strategy was developed. The 40 attendees included Stefan Verbunt, Counsellor for Agriculture, Nature and Food Quality at the Dutch Embassy in Ankara.

Problems encountered

None

Activity outputs and additional benefits

Launch invitees and attendance list are provided as a hardcopy. *See in annexes group 04.2 the main parts of the Strategy in English*; Launch photos (*see in annexes in group 04.3*).

PDFs of two presentations given at the launch, both in Turkish: *Preparing a Butterfly Conservation Strategy for Turkey* given by Evrim Karaçetin, and *Selecting the Prime Butterfly Areas* given by Ayse Turak (*see in annexes the pdfs in group 04.3*). Article from Radikal newspaper's website (*see 04.3_Radikal_5Jul2011 in the annexes*)



Conservation Strategy launch at METU. Left up: Özge Balkız setting up the 'Welcome' table; left down: Bahtiyar Kurt (DKM Conservation Director) introducing the Strategy; right up: Ugur Zeydanlı (DKM General Director) answering questions from the audience (Stefan Verbunt is on Ugur's left).



Evrin Karaçetin, with media representatives on METU campus, presenting the Conservation Strategy on Butterflies of Turkey

5. Promotional materials to popularise butterflies and promote the principal project outputs

5.1. Produce a project brochure

A brochure covering a wide range of issues relating to butterflies in Turkey was produced and proved valuable at many levels due to the wide range of information it presented.

Details on the work:

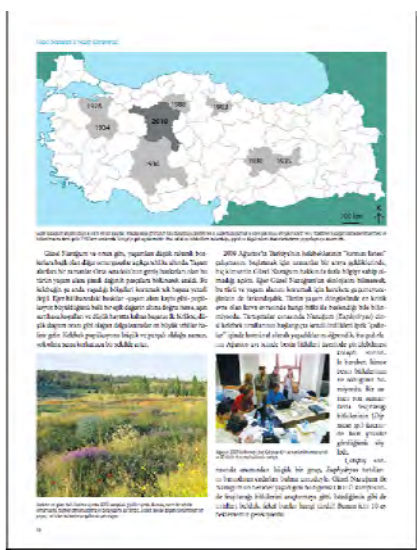
A brochure about butterflies in Turkey and the work of the project was produced in Turkish and English in June 2009. This was used extensively throughout the project and to support other work of DKM. It was distributed to everyone from local shepherds to village chiefs, and district mayors to academics and butterfly watchers.

Problems encountered

None

Activity outputs and additional benefits

- The brochure was printed in 2000 copies, 1500 in Turkish and 500 in English
See below and as pdf in 05.1 annexes
- In October 2009, as a direct result of the project's brochure mailing in July, *GEO* magazine published an introductory article on butterflies and butterfly watching, using information supplied by DKM
See below and as pdf 05.1 in annexes



Two pages from an article in the May 2011 edition of *Bilim ve Teknik*: this presented information on the Steppe Fritillary (*Euphydryas orientalis*), an Endangered species, and the research the project had been doing to learn more about its ecology. (*The English text for this article is given in the annexes.*)



5.2. Produce a poster of Turkey's common butterflies

A Turkish-English poster was produced presenting 64 of Turkey's most widespread butterflies. With this resource it was possible to attract the interest of *Bilim ve Teknik* ('Science and Technology' magazine) who adapted the poster for circulation with their magazine and developed a special issue focused on butterflies, which reached a readership of 40,000.

Details on the work:

A two-sided poster (Turkish-English) depicting 64 of Turkey's most widespread butterflies was produced and launched at the 6th Butterfly Symposium in the UK in March 2010. In May 2011 a revised Turkish only version of the poster was prepared and distributed with the May edition of *Bilim ve Teknik*. This edition also included 24 pages of articles on butterflies.

Problems encountered

None

Activity outputs and additional benefits

- 5000 copies of the poster were printed
See below, the hardcopy sent, and pdfs, En and Tr, in the 05.2 annexes
- *Bilim ve Teknik* poster and articles in circulation 40,000
See pdfs of articles and poster in 05.2 annexes



5.3. Kick-off meeting to introduce the project to all stakeholders and raise the profile of butterflies – used to launch the Red Book

As explained in the 2009 report, it was decided that it would be more beneficial to use this activity to launch the final red list to key stakeholders, especially government, as by the end of the first year it was foreseen that the list would be an authoritative technical document rather than the provisional list which was originally planned.

A prestigious launch for the Red Book was held at the EU Delegation in Ankara, an event hosted by DKM, the Dutch Embassy and the EU (Turkey). The event was well attended and was followed by positive reviews of the Red Book in high profile magazines.

Details on the work:

An event to launch the Red Book was held at the EU Delegation in Ankara on 7 February, in partnership with the Dutch Embassy and the EU (Turkey). More than 65 people attended including butterfly watchers, academics, EU staff, National Customs offices, General Directorate of Forestry, Directorate of Nature Conservation and National Parks, Ministry of Agriculture, Tübitak, funders (including UNDP and BTC – Baku-Tbilisi-Ceyhan Pipeline Company's Environmental Investment Programme) and NGOs (including Svetlana Miteva and Kars Veling from BCE).

Presentations were given by Resit Akçakaya, IUCN (via internet link from the United States), on the role of national red lists and Evrim Karaçetin on the red-listing process followed in Turkey.

Problems encountered

None

Activity outputs and additional benefits

Presentations given at the launch by Resit Akçakaya and Evrim Karaçetin

Articles and announcements regarding the Red Book appeared in various publications including National Geographic-Turkey, Atlas and Bilim ve Teknik magazines

For more information also see in 05.3 annexes: Red Book and information materials, invitees and attendees list, folder, photos of launch, presentations and publications



Red Book launch at the EU Delegation in Ankara.

Left up: From left to right: Didem Ambarlı (DKM), Stefan Verbunt (Dutch Embassy), Gürdogar Sarigul (EU)

Right: Evrim Karaçetin and Hilary Welch with copies of the Red Book.

Left down: participants



6. A trained and active nucleus of Turkish butterfly watchers

6.1. Workshop to discuss improving & extending services provided by the LepTR website

Using the kelebek-gozlemciligi Yahoo Group, butterfly watchers from all over Turkey were invited to a meeting in Ankara to introduce DKM and the project, and to establish and encourage greater communication within the network. Twenty butterfly watchers attended the two day meeting.

Details on the work:

A Butterfly Network Development Workshop was held 21-22 February 2009, at the Middle East Technical University in Ankara. The meeting was attended by 20 butterfly watchers from various regions of Turkey, invited via an open invitation to the kelebek-gozlemciligi Yahoo Group.

The workshop focused on encouraging greater communication between butterfly watchers and promoted the systematic collection of data with particular reference to key species and sites, and the importance of sharing data to assist conservation.

The event was also used to introduce the project and DKM to those members of the butterfly watcher community who use LepTR and who had expressed an interest in being involved with the project.

Problems encountered

None.

Activity output and additional benefits

A report on the workshop was produced by the independent meeting facilitators.

See 06.1 files in the annexes: pdf of report, in Turkish and English, also attendance list as a hardcopy, photos of meeting

- For many butterfly watchers the workshop provided the first opportunity to meet people they had been communicating with over the internet. This new contact led to joint planning of field trips.
- Systematically collected data, provided in Excel, was received from 12 butterfly watchers during the course of the project and was used for the Red Book and PBA work. Butterfly watchers collecting their data in a standard format and sharing it with DKM and/or the rest of the network remains an issue requiring further work.
- This workshop initiated interest in work on PBAs and threatened species which was further facilitated by the publication of the Red Book and Conservation Strategy (see 6.6).

The participants in the Butterfly Network Development Workshop held on 21-22 February 2009



6.2. Increase the size and geographic spread of the Turkish butterfly watcher network

Despite difficulties with enlarging the network, the project developed effective links with a core group of committed and active butterfly watchers with bases as far apart as Istanbul and Hatay.

Details on the work:

The project's focus was on building links with those individuals who already had a serious interest in butterflies and who were open to working with DKM. This decision was taken following discussion with Doga Dernegi regarding their experiences with establishing bird groups – the only successful groups were those where there were existing birdwatchers, keen to form a group. With encouragement and support it was hoped that this group would act as role models through which the network could grow.

Regular contact was maintained with the Ankara and Kayseri butterfly watchers through field trips and regular email contact. Visits were made to butterfly watchers in Çanakkale and Istanbul (*see 6.3 Training*). Through Kuzey Doga, a small bird-focused NGO active in the extreme NE, we involved Ümit Durdu, a student at university in the remote eastern province of Kars. Ultimately Ümit attended the February 2009 butterfly watchers' workshop; joined a week of DKM fieldwork in Gümüşhane, Bayburt and Erzurum in July 2009; participated in the Kaçkar Butterfly Camp; and attended the Red List Workshop in August 2009 to take part in carrying out the first rapid assessments. *See 06.2 annexes.*

Problems encountered

Pressure of work on the team to deliver other project outputs in mid 2009 – the Summer Camp followed by the Red List and Taxonomy Workshops – meant that planned visits to butterfly watchers in Antalya and Antakya had to be postponed and finally cancelled. During 2009 and continuing until late 2010, the butterfly watcher community became polarised due to strong personalities. The project team worked hard to remain detached from the issues discussed but eventually the kelebek-gozlemciligi Yahoo Group – the only forum used by all butterfly watchers – was abandoned by everyone and for more than 12 months the project team was not able to communicate with the whole community. It was not until late 2010, when the Red List was at an advanced stage, that it became possible to re-establish communication on a one-to-one basis and consult some of the more experienced butterfly watchers for the species assessments.

Although increasing the number and spread of butterfly watchers was the aim of this sub-activity, it was rapidly recognised that focusing on this did not contribute to the overall activity goal of a trained and active nucleus of able butterfly watchers willing and able to collect data for conservation.

Given the reality of the way support for nature conservation is developing very slowly in Turkey and the huge amount of time and resources needed to make it grow effectively, it was decided in late 2009 to put no further effort into increasing the number of butterfly watchers.

Developing serious butterfly fieldworkers who will go beyond their hobby of butterfly photography to recording and sharing data of value for conservation remains a challenge and was an issue identified in the Conservation Strategy. The most basic difficulty is involving anyone in serious survey work which requires regular commitment and following a prescribed methodology. Even among birdwatchers – a far bigger and longer established group – there remain only 10 people involved in the national Common Bird Monitoring programme, established in 2007 and run by the BirdLife partner. This is an area where DKM will continue to try and find effective and practical solutions.

At the start of the project DKM was not recognised as an organisation with practical or technical expertise in butterflies; by the end of the project, this had been overcome.

Activity outputs and additional benefits

- List of 48 butterfly watcher contacts

See 06.2 Excel file in annexes

- Ten butterfly watchers provided technical input to the red list species assessments

See Red Book, activity 2.2 annexes

- A butterfly watcher with established editorial and translation skills was employed to provide editorial support for the final stages of Red Book production

See Red Book, activity 2.2 annexes

- Butterfly watchers wrote articles and provided photographs for various published articles on butterflies

See two examples in 06.2 annexes and under other activities eg 03.3 and 05.2

Ümit Durdu participating in project activities. From up to down:

- butterfly watchers' meeting (Feb 2009),
- fieldwork on potential PBAs, here identifying a butterfly with expert Szabolcs Sáfián (Jul 2009)
- the red list workshop (Aug 2009).



In the field with the Çanakkale team (top) and Istanbul team (bottom)



6.3. Butterfly watcher training

The original plan for the project team to provide formal training proved impractical but alternative opportunities were found during the course of the project which provided committed butterfly watchers with a broader and more comprehensive range of experiences and skills.

Details on the work:

Training materials were developed and a training visit, to the Çanakkale team in NW Turkey, took place 24-25 April 2009. With the small group (six people) identification problems were discussed and a standardised system for recording and sharing their butterfly records was demonstrated. All participants were given a CD which contained:

- o The butterfly list for Çanakkale, using the digitised Hesselbarth data set;
- o Jpegs of all the distribution maps in Hesselbarth *et al.* (1995);
- o Photographs of all species from Hesselbarth *et al.* (1995)
- o PowerPoint slides by Ahmet Baytas giving tips on butterfly identification;
- o Automated Excel butterfly recording form;
- o Stickers for their notebooks giving:
- o The standard information to record on a field visit;
- o An explanation of the Beaufort scale (for standard recording of wind speed);
- o UTM grid kmz file for use with Google Earth and instructions how to import it.

The Istanbul team was visited 23-24 May 2009, given Istanbul versions of the CD, and identification issues discussed in the field.

In 2010, five butterfly watchers took part in two field trips to Malatya to look for Mesopotamian Blue (*Polyommatus dama*), an Endangered species which hadn't been seen for 10 years. (See 6.6 for details.)

Two butterfly watchers attended the 1st International Butterfly and Moth Camp in Hungary from 21-26 May 2011, organised by the Hungarian Natural Heritage Trust. They were Seda Emel Tek – a biology graduate from the Middle East technical University who had been involved in many earlier stages of the project as a volunteer, and Esra Ergin – new to butterflies but a past volunteer with the BirdLife partner, Doga Dernegi. The Camp was an excellent opportunity to develop capacity so DKM encouraged butterfly watchers to participate by offering to cover the costs of up to two people. It is certain that, without the financial support, Seda and Esra would not have been able to attend.

Problems encountered

As many of Turkey's most active butterfly watchers are mature, established and experienced photographers with a good knowledge of their local butterflies it was considered inappropriate to train them. Their presence as local 'authorities' also made it difficult for the project to make contact with the less experienced butterfly watchers in the areas where they were based.

Activity outputs and additional benefits

A training CD. *Some examples of the contents of the CD used for the Çanakkale visit are given in the 06.3 group of annexes*

Esra Ergin and Seda Emel Tek's report of their training experiences at the Hungary Camp *See pdf in the 06.3 annexes*

Reports of the field trips to search for the Mesopotamian Blue. *See 06.3 annexes for pdfs and activity 6.6 for more details. In the 06.3 annexes - a selection of photos.*

The resources developed for the training CD were used and shared with butterfly watchers throughout the project, and those butterfly watchers who submit data to DKM use and refer to these extensively.

Seda Emel Tek is actively pursuing enrolment for a Masters course, focused on butterflies.



*Kaçkar Summer Camp participants, the two minibuss drivers and the camp's hosts at Öğdem.
Photo ©Semsettin Turga*

*Ádám Kőrösi with Esra and Seda in a Hungarian meadow.
photo ©Esra Ergin*

Hungary Camp participants; Seda Emel Tek & Esra Ergin are the two ladies at the right hand end of the front row. BBI-Matra Project Manager, Hilary Welch (centre in yellow T-shirt) and DKM's General Director, Ugur Zeydanlı (to Hilary's right in dark red shirt) also attended for two days to discuss the project with BCE board members

photo ©Martin Warren





6.4. Summer camp for all butterfly watchers

A week long butterfly watching camp in the South Kaçkars PBA attended by participants from across Turkey provided training in a wide range of butterfly identification and monitoring techniques delivered by several international experts and the opportunity to discuss the threats facing butterflies in this region.

Details on the work:

Between 19-25 July 2009, 19 butterfly watchers (13 of them Turkish) joined a week of butterfly watching activities in the Kaçkar Mountains at Yusufeli. This area was selected because of its outstandingly rich butterfly fauna (it has since been identified as a Prime Butterfly Area) and because DKM has good local contacts and detailed knowledge of the area, both of which made planning and logistics simpler.

Turkish butterfly watchers participated from Ankara, Bursa, Çanakkale, Istanbul, Kars, Kayseri, Bitlis and Diyarbakır, and foreign experts joined (at their own expense) from the USA, Belgium and the Netherlands.

Daytime activities revolved around butterfly watching, photography, species identification and habitat-species relationships. In the evenings there was time for data entry, butterfly identification workshops and butterfly conservation presentations, the latter largely given by the foreign experts. All were enthusiastically attended by the participants, and understanding and communication were greatly facilitated by Ezgi Akdesir, a PhD Veterinary student from Uludag University, who translated the formal presentations. The talks provoked discussion about data sharing, the threats to the Kaçkars and what butterfly watchers could do to contribute to butterfly conservation.

Problems encountered

None

Activity outputs and additional benefits

- Kaçkar Camp Report and a selection of photos

See 06.4 group in the annexes

- Contacts were established between the Turkish and international butterfly watchers.
- All participants went away with an increased awareness and appreciation of the Kaçkar region for butterflies.
- Data collected during the camp was used for the Red Book and PBA work

See Excel file in 06.4 group the annexes for a summary of the butterflies recorded (KackarCampBflyRecords)

6.5. Butterfly network communication maintained on LepTR.org (i.e. via the internet)

Contact was maintained with the Turkish butterfly watching community via the internet and by the end of the project three new, independent web sites had been established.

Details on the work:

In a country the size of Turkey, effective national communication is only possible through use of the internet. At the start of the project, the butterfly watcher community was unified by the kelebek-gozlemciligi Yahoo group and the LepTR website. Here, questions were answered voluntarily by Ahmet Baytas, Evrim Karaçetin and the project assistant, with irregular input from Didem Ambarlı of DKM. When these sites stopped functioning effectively (*see activity 6.2*) communication was largely restricted to emails, but by the end of the project three new independent websites had been established which fulfilled the functions of the original e-group and website, without the need for input from the project team.

The internet was also used to keep in touch with the butterfly watcher community about the project: for example promoting the Butterfly Watchers' Workshop (Feb 2009), the Kaçkar Camp (July 2009) and the International Camp in Hungary (May 2011).

Problems encountered

Maintaining regular contact was time-consuming and depended on personal interest (since DKM is deliberately not officially represented in any of the groups), so when there was no project assistant (Aug 2009-December 2010 inclusive) communication was minimal. As mentioned under 6.2, the Turkish butterfly watching community split in mid 2009. This made communication and data sharing with the majority of observers extremely difficult and often impossible.

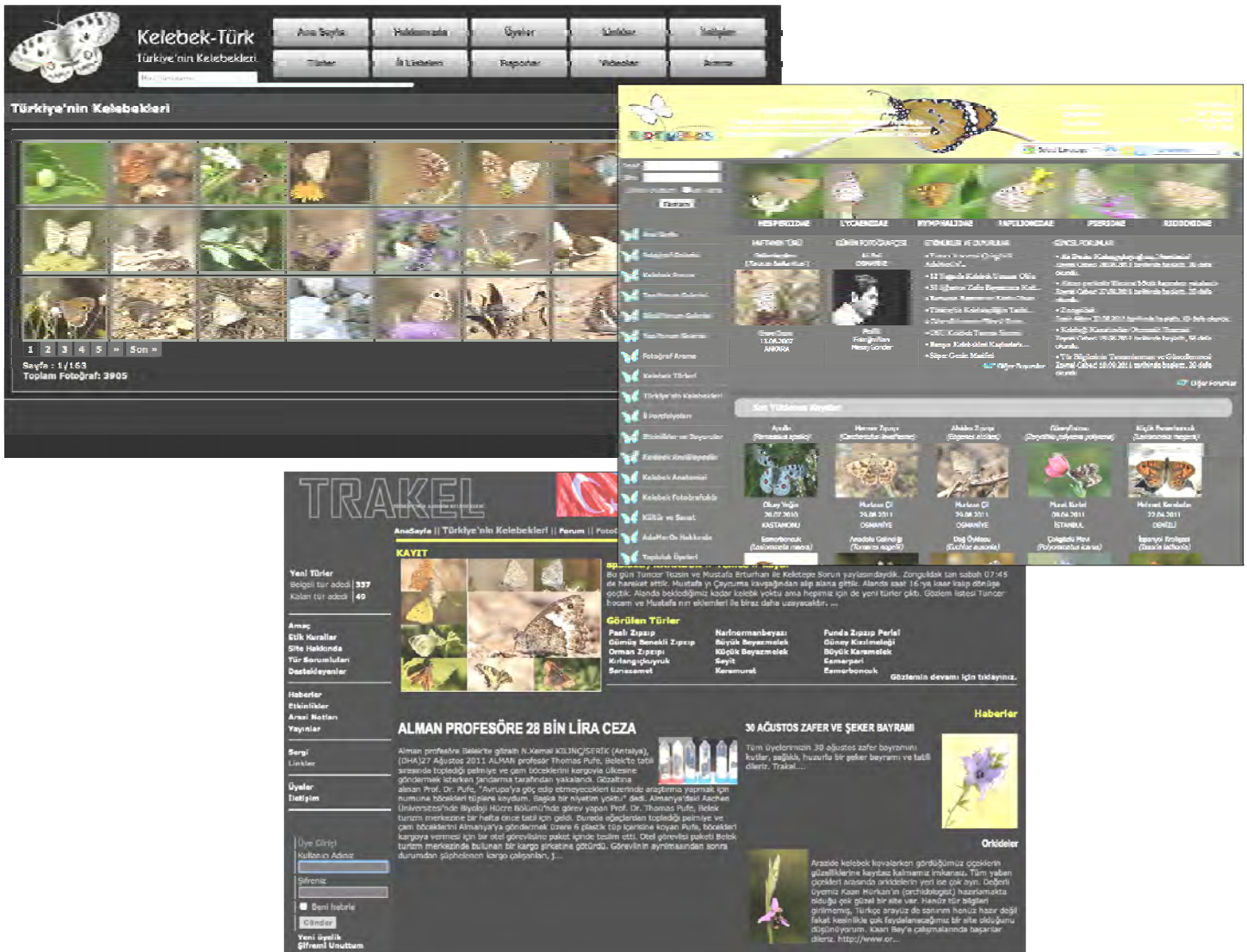
Activity outputs and additional benefits

There was a need to maintain contact with those in the original network who had appreciated the support that the e-group had provided, and in October 2009 a new 'by invitation only' Yahoo group was founded by one of the Ankara butterfly watchers, comprised of a mix of experienced and beginner butterfly watchers who generally have an interest in butterfly conservation. This was active and used to the end of the project; in June 2011 it had 34 members.

In the wider butterfly watcher community, three new websites were established during the course of the project:

- o kelebek-turk.com (launched in March 2009), and adamerkelebek.org (active since late 2010); both of these have only limited links to other websites.
- o TraKel.org (launched in late 2010). This site is a partner to the TraKus.org website which is used and managed by birdwatchers and TraMem.org for mammal enthusiasts; all three benefit from the same source of independent and private funding.

Overall the butterfly watcher network is now in a much healthier, stronger and more independent state than it was at the start of the project, and the websites provide valuable resources for butterfly watchers of all abilities. *See 06.5 group in annexes*



6.6. (and 7.4.) Collect baseline monitoring data on butterflies at a selected priority PBA

Following initial training in systematic data collection butterfly watchers were encouraged to identify and record all species seen during a field visit in order to provide basic monitoring of sites and species. Additionally, when opportunities arose, individuals participated in organised surveys.

Details on the work:

In 2009 and 2010, before the PBAs were confirmed and a single site could be selected, fieldwork aimed to gather information on a range of *sites, species and threats* by visiting localities which were potential PBAs, or areas where there were major *data gaps*.

Potential PBAs – 11-18 July 2009

Evrin Karacetin and Hilary Welch formed a survey team of four together with Didem Ambarlı (DKM Grassland Conservation Programme Coordinator) and Ümit Durdu (see 6.2 above). The sites visited included two of the PBAs listed in the European inventory: Kopdağı and Palandöken Mountains (PBAs); plus Torul, Demirkaynak (type locality for the endemic Turkish False Argus [*Aricia torulensis*]) and Gölyurt Pass.

Gaps in the data – May-July 2010

Amasya area – 25-27 May 2010: Third most species rich area in Turkey with 145 species (Hesselbarth *et al.* [1995]); location for steppe fritillary (*Euphydryas orientalis*), last recorded 1903. Four areas around the city were visited and steppe fritillary was not recorded. Below 1400 m, in the areas likely to be most suitable for the steppe fritillary, the natural grassland habitats were fragmented by cultivation, settlements and tree plantations, with some over-grazing, but there were also intact areas of a reasonable size which were rich in species. Above 1400 m the habitats appeared well-managed and less threatened.

Küre Mountains (Kastamonu and Bartın) – 7-11 June 2010

Part of the area is a national park, thus an opportunity to contribute data and recommendations to the park's management plan. A report on the fieldwork, including birds and butterflies, was submitted to the Directorate in September 2010.

Steppe (Sivas and Malatya) – 26 June-2 July 2010

One of the most threatened habitats in Turkey; important for many *Agrodiaetus* butterfly species – of which there are more than 50 in Turkey, many of them Data Deficient. Two localities, identified as priority for butterflies, were visited, to collect up to date information on habitats, species and threats.

Threatened species

Work on rare or threatened species took place throughout the project.

Mesopotamian blue (*Polyommatus dama*); Endangered

8-10 and 24-29 July 2010

Mesopotamian Blue is an endemic species, listed as Endangered by IUCN and last seen in 2001 with one individual at a single locality. Two teams visited sites in Malatya and Adiyaman.

Selected PBA – Middle East Technical University Campus

*Research into the biology of steppe fritillary (*Euphydryas orientalis*)* Endangered

During the Red List Workshop it was recognised that the foodplant and ecology of this species were unknown. Since steppe fritillary occurs on METU campus alongside marsh fritillary, Hilary Welch and Seda Emel Tek reared *Euphydryas* caterpillars feeding on teasel plants to discover which of the two species they were. The 80 butterflies – all marsh fritillary – were released on METU campus in May 2010. Following this study it was considered extremely unlikely that the foodplant of steppe fritillary was also teasel.

In early spring 2011, five members of the yirtikipirtik e-group were involved in searches for steppe fritillary caterpillars and, on 16 April many large *Euphydryas* caterpillars were found on *Scabiosa argentea* plants. Four caterpillars were collected, and by 2 May all had pupated, emerging as steppe fritillaries 28 days later.



Photo ©Süleyman Eksioğlu

Monitoring: false apollo (*Archon apollinus*)
transects: A 150 m transect was established and monitored on seven occasions between April 2009 and May 2011.
Regular recording: Visits made approximately twice a month throughout the butterfly season.



False apollo (Archon apollinus)

Data from these and other field visits were added to the data set for the PBA analysis.

Problems encountered

None.

Activity outputs and additional benefits

Potential PBAs

Fieldwork has shown that mining is a threat at several locations, including Kopdağı PBA. A gold mine has destroyed the type locality for the endemic Turkish false argus (*Aricis torulensis*) at Demirkaynak. As a direct result of the information collected on this visit this species was listed as Endangered during the red list assessments.

Gaps in the data

Amasya area: Four areas around the city were visited and information was collected on habitats and threats.

Küre Mountains: Part of the area is a national park. A report on the fieldwork (which included birds and butterflies) was submitted to the Directorate in September 2010. [See 06.6.2 group in annexes](#)

Steppe: Data from this and other field visits were added to the data set. [See 01.1_TurkeyButterflyData_ALL.xls in the annexes](#)

Threatened species

Mesopotamian blue (*Polyommatus dama*): Endangered; Butterflies were found in good numbers in five 10x10 km squares, four of them new localities. The second team, led by Evrim Karaçetin, collected baseline data on population size together with information on the butterfly's habitat and behaviour.

Two reports on the Mesopotamian Blue surveys were prepared by the participants [See 06.3 and 06.6.3 annexes](#)

Following publication of the Red Book, butterfly watchers were encouraged to collect new information on threatened species and project money was offered to cover their travel costs as an incentive. Two people chose species and collected new data before the end of June 2011.

Ottoman's Copper (*Lycaena ottomana*): Near Threatened; Ümit Basaran, a butterfly watcher from Edirne (Thrace), provided a report, including records from 2010 and 2011 with detailed location information and photographs of the butterfly and its habitat. [See annexes for Ottoman's Copper report, in Turkish – 06.6.3 annex](#)

Steely argus (*Aricia bassoni*) Data Deficient (last recorded 1976)

Bolland's Blue (*Polyommatus bollandi*) Critically Endangered (last recorded 1998) Following his involvement in these species assessments for two little known species in Hatay, local butterfly watcher, Ali Atahan, obtained permission from the Jandarma to visit the areas where they had been recorded (both were in sensitive border areas, close to Syria) and made visits in May 2011. Both species were refound and photographed, and data was collected on their habitats.

An article about the rediscoveries was published in National Geographic-Turkey in July 2011, on the page opposite DKM's PBA and threatened species poster.

Article from National Geographic-Turkey, July 2011, on the rediscovery of two rare butterflies, with Ali Atahan's photos. [See annex 03.3 for a pdf of the full article](#)

Selected PBA

*Research into the biology of steppe fritillary (*Euphydryas orientalis*):*

An article about the conservation status of the steppe fritillary and the research carried out during the project was published in *Bilim ve Teknik* magazine in May 2011. [A pdf of the published article and the English text can be found in the annexes 05.2. and 06.6.3](#)

Following the discovery of the foodplant, subsequent searches for eggs or 'nests' of young caterpillars have been unsuccessful and raise questions about the species' breeding cycle which have yet to be answered.

Steppe fritillary has only been recorded from 12 sites in Turkey since 1980 – all but one of the sites is in Ankara. In late May 2011 a visit was made to eastern Ankara, to an area where the species had been recorded in 2008. The butterfly was found at what turned out to be a totally new location. However, searches in the Çankırı area, where the species was last recorded in 1988, could find no suitable habitat.

Communication with a Ukrainian lepidopterist in 2011 revealed that steppe fritillary – considered a Turkish near endemic during the red listing process – is now considered by some experts to be a Turkish endemic. If this taxonomic change is widely supported it would make developing conservation action for the species a very high priority.

Work is continuing on METU campus and in the Ankara area to understand the ecology and habitat requirements of steppe fritillary, and to search for it at past and new locations.

- *Monitoring: False apollo (Archon apollinus)*. In the three years maxima were:

2009 – 37; 2010 – 4; 2011 – 11

- *Regular recording*: An analysis of current and historical records for the PBA has revealed the following changes in the butterfly community:

- 29 species not recorded since the publication of Hesselbarth *et al.* (1995);

- 8 species not recorded since 1980 (the cut-off date for inclusion in PBA and Red List analysis);

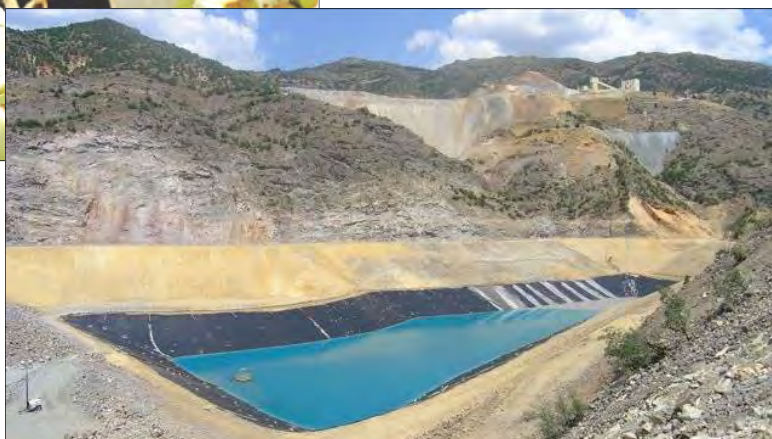
- 5 species added to the list.

A potentially more worrying change is that between 1999 and 2007, four once common species appear to have been lost from the PBA. It is suspected that these changes are related to major habitat changes, principally widespread tree planting since the 1950s and a cessation of cutting of the grassland habitats since c.2000. Further analysis of the data and work on the butterflies of the campus is planned, with the aim of developing a better understanding of the changes in the grassland habitats, the needs of the butterflies, and finding a way to influence and work with the authorities.



Ümit Basaran, a butterfly watcher from Edirne, provided a report, including records with detailed location and information on *Lycaena ottomana*, photographs of this butterfly and its habitat. Photo© Ümit Basaran

A gold mine has destroyed the type locality also for the endemic Turkish False argus (*Aricis torulensis*) at Demirkaynak.



6.7. Develop a project on a priority PBA and one of its globally threatened species

A project proposal focused on the Kaçkar Mountains PBAs and the dusky large blue (*Phengaris nausithous*) was developed, aiming to promote High Nature Value (HNV) Farming as a solution for the species' conservation. Unfortunately, the project was unsuccessful in attracting funding.

Details on the work:

In March 2010, a project proposal was developed and submitted to the EU Civil Society Dialogue grant scheme of the IPARD programme. The project focused on solving the problem of migration and abandonment in the Kaçkar mountains (a PBA) through promoting HNV Farming as a strand of sustainable development. This was essentially a rural development project (because that was where the funding opportunity lay) from which butterflies and other biodiversity would benefit; the specific species targeted was dusky large blue (*Phengaris nausithous*). The dusky large blue is categorised as Endangered in Turkey and Near Threatened on IUCN's global list.

Problems encountered

The project was unsuccessful in attracting funding.

Activity outputs and additional benefits

The application – 'Addressing rural development priorities through local dialogue' – was made by DKM (with input from butterfly watchers Ümit Durdu and Didem Ambarlı) together with the European Forum for Nature Conservation and Pastoralism, BCE and two local NGO partners.

[See in 06.7 annex a copy of the project concept note](#)

Ideas for further projects continue to be discussed and butterfly watchers have been encouraged to study threatened species (see 6.6 above) in the expectation that this will lead to more meaningful and well developed project ideas. Currently the best opportunities are in funding for research through TÜBİTAK (the Scientific and Technological Research Council of Turkey) and a proposal for work on grassland butterflies is planned. In the long-term a project with the Ministry of Agriculture is the aim, in order to develop DKM's relationship with the Ministry and find ways to work together for landscape conservation. The work already done within the BBI-Matra project, particularly that on species such as steppe fritillary and Mesopotamian blue, will provide a sound basis from which to develop a project which has the best chance of delivering effective conservation.

7. Capacity building on a selected PBA for effective implementation of active butterfly conservation

7.1 Identify the PBAs for implementing conservation action

Three PBAs were selected for implementing conservation action, based on a combination of geographical location and the potential for synergies with other project.

Details on the work:

Whilst each of the 65 PBAs makes a unique contribution to the conservation of Turkey's butterfly fauna, three sites were selected for immediate implementation of conservation activities (Middle East Technical University Campus [Ankara], South Kaçkars [Artvin], Palandöken Mountains [Erzurum]), based on the following criteria:

Geographical location – sites close to Ankara or in areas where DKM is already working (logistically feasible and existing relationships with local stakeholders).

Synergies with other projects – more effective outcomes and use of resources.

Problems encountered

The project proposal had identified the desirability of using conservation action on the PBAs as an opportunity to develop close working relationships with the Directorate of Forestry

and the Ministry of Agriculture at this stage of the project, but this proved impractical. A site-based approach through the PBAs was too restricting and DKM is in no position to dictate to the Ministries where they should work. Instead we identified opportunities where we could work with the Ministries on their terms – when their interest and commitment is likely to be greatest – and when we could also deliver the butterfly conservation messages (and ideally actions) which were our priority. With both these government departments the main issue at stake is sympathetic wider landscape management – to find ways to maintain a butterfly-rich countryside which would also benefit the PBAs.

The Directorate of Forestry (which now comes under the Ministry of Forestry and Water Affairs) has already recognised its responsibility for biodiversity in forests, and requested the technical support of DKM to adapt its forest management plans and silvicultural practices to ensure they benefit biodiversity. Once implemented these new plans (and the resulting improved understanding of the foresters) will benefit biodiversity in all forests, c.25% of Turkey's total land area. The BBI-Matra project gave a significant boost to this work, facilitating a greatly increased focus on butterflies, with greater expert involvement (and thus more authoritative results), and with extra butterfly surveys at the pilot site to test the overall methodology.

Within the Ministry of Agriculture and Rural Affairs (now the Ministry of Food, Agriculture and Animal Husbandry) there is, as yet, almost no awareness that biodiversity conservation is something that the Ministry should take some responsibility for. Financial support for High Nature Value (HNV) farming and well designed agri-environment measures are two instruments which could have major benefits for butterflies and go a long way to fulfilling that responsibility and, through the intervention of various partnership projects (funded by eg. BBI-Matra and the EU IPARD programme) these are issues to which some departments and individuals within the Ministry are already sensitized. The project team recognised that to develop a productive relationship with the Ministry it was thus most appropriate to develop themes and links on these two topics.

Confirming all the above, the analysis and consultation involved in developing the Conservation Strategy identified that for PBAs to remain rich in butterflies, almost all will require some continuation of traditional land use. This underlines the importance of involving the forestry and agriculture sectors in butterfly conservation as, in Turkey, 'active land management' and 'effectively protected areas' are not generally considered compatible.

Activity outputs and additional benefits

Three PBAs selected. [See activity 3 and 7.2-7.5. and the annexes to these activities for more information](#)

7.2. Seek local stakeholder participation in developing conservation actions

The project contributed to a complementary Matra-KAP project aimed at raising awareness of the procedures to follow in order to implement existing legislation to combat the illegal collection of butterflies. This resulted in greatly increased awareness at all levels and several successful prosecutions during the summer of 2011. During the final field visits, project staff gave presentations about the butterflies of each region and raised awareness of the local PBAs.

Details on the work:

From 15-22 May 2011 the BBI-Matra project assistant participated in meetings in Artvin, Yusufeli, Erzurum and Ispir to present a hand guide and poster promoting and explaining the procedure for implementation of the law relating to the control of the illegal commercial collection of butterflies. Local stakeholders at these meetings included District Governors; Jandarma; Customs officials; Provincial Directorates of Nature Conservation and National Parks, Agriculture and Rural Affairs, Culture and Tourism; village heads (muhtars); local NGOs; hotel and restaurant owners.

The meetings raised awareness of the importance of the area for butterflies and particularly of the local PBAs – South Kaçkars, Palandöken Mountains and Ispir. Local stakeholders were enthusiastic to use the materials to protect their local wildlife.

Cafes, pensions and hotels in all the main villages in the Yusufeli Kaçkars were visited and locals informed about the importance of butterflies and their smuggling. Additionally the

local minibas drivers were informed. A total of 150 booklets and posters were distributed and a further 200 left at the National Park Office.

Problems encountered

None.

Activity outputs and additional benefits

Detailed information on the eight day field visit is given in the Matra KAP project's '2nd Field Report'.

Butterfly diversity presentations given in Artvin and Erzurum.

Matra-KAP project poster in Turkish and English, provided as *hardcopies*.

Matra-KAP hand guide in Turkish, *hardcopy provided*. See also *07.2 group annexes*

There were many reports of the new resources and the illegal collection issue in the press (x16 in DKM's media archive). A selection of news reports is given in the *07.2 media coverage annexes*. Included are:

Reporting the publication of the hand guide See *07.2_kanal61_16Jul2011.pdf annex*

A report in a local Erzurum newspaper on the issue and the new hand guide and poster See *07.2_Palandoken Gazetesi_30May2011.doc* and <http://www.palandokengazetesi.net/haber-401-Kelebek-kacakciligi.html>

The value and effectiveness of this activity has been seen in the subsequent arrests and confiscation of illegal collections in Turkey during the summer of 2011, reported widely in the press. Examples include:

Following the visit to the Yusufeli Kaçkars the team received two reports of arrests. In June a pension owner reported a smuggler who had been collecting endemic tulips to the jandarma and he was later caught at the Bulgarian border.

A minibas driver from Yaylalar used his mobile phone to video Russian collectors catching butterflies. The jandarma were informed and the involved were taken into custody, their specimens confiscated and they were fined TL20,000. Following the reports of these cases in the media, there was increased interest in other regions and there were further arrests.

13 July 2011 – Customs were informed of people collecting plants in Rize (NE Turkey) and subsequently stopped six Czechs at the Kapikule border crossing (Edirne, NW Turkey), inspected the vehicle and found 6014 insects in boxes and tubes, mainly from the families *Coleoptera*, *Heteroptera*, *Diptera* and *Hymenoptera*. The specimens were said to have been collected for scientific purposes, but without a licence, and were the result of a one and a half month trip, to Central Anatolia and the Black Sea region. The collection was donated to Trakya University.

See *07.2_Hurriyet_13Jul2011.doc* in the annexes

In early August 2011 two Belgians were stopped at Antalya Customs with 147 butterfly specimens – including scarce and threatened species (*see photo*) – collected in Central and Eastern Anatolia. The collectors were fined TL28,490 (€11,140). A short TV news item on ATV about the arrest included a telephone interview with project team expert, Evrim Karaçetin.

Anti-smuggling hand guide for the police (Kelebek Kaçakçılığı ile Mücadele Kılavuzu) and Enjoy Turkey's nature – resources developed by a DKM project supported by the Dutch Embassy's Matra KAP programme



7.3. Raise awareness among Forestry and Agriculture Directorates of the value and practical conservation of butterflies

Capitalizing on 12 years experience of DKM's work with foresters, the project provided expertise and guidance to identify the priority forest dependent butterflies, develop a simple monitoring scheme and conservation oriented forestry management guidelines. With the Ministry of Agriculture work focused on using the opportunity of an IPARD project to develop contacts in the Ministry and to contribute to the development of the first agro-environment sub-measure for biodiversity.

Details on the work:

Forestry – *integration of biodiversity into forest management plans* (being implemented by DKM in partnership with the Directorate of Forestry).

- Project team members, BCE experts and local butterfly watchers assisted with:
- developing a scoring system to identify priority forest-dependent butterfly species;
- producing habitat management guidelines for the six priority species;
- meetings with forestry district staff in the Savsat pilot area, 25-31 May 2011, to promote butterflies as key element of forest biodiversity;
- testing the methodology for recording the priority species in the field.

Agriculture – *preparation of an agro-environment measure for biodiversity*

- Project team members joined the working group for the Environment and Countryside under IPARD EU Twinning Project being implemented by the Ministry of Food, Agriculture and Animal Husbandry:
- contributing data and expertise to inform the selection of the target site and species for an agro-environment sub-measure for biodiversity;
- participating in a visit to the pilot site to develop the details of the sub-measure through discussion with the local farmers and staff at the Regional Directorate.

Problems encountered

Forestry

Due to a lack of detailed knowledge of species' ecology and distribution, it has not proved possible to provide precise habitat management guidelines specific to Turkey.

Due to a communication failure between the authorities in the pilot region, the fieldworker was detained by the jandarma. The issue was resolved through intervention and liaison on the ground by DKM, but severely curtailed fieldwork.

Agriculture

Despite providing information on the close link between butterflies and agriculture, and promoting PBAs in Erzurum where changes in agriculture threaten many sites and localized species, for various logistical reasons the IPARD project team preferred to choose a site in Ankara, and a high-profile bird species for which agro-environment measures have already been developed successfully in the EU. The final measure is thus for great bustard (*Otis tarda*).

Activity outputs and additional benefits

Forestry

Scoring system, identifying the priority forest butterfly species. [See 07.3.1_Forests_TargetButterflies_final scores.xls in the annexes](#)

Texts provided for the six priority butterfly species' management guidelines, plus an example final, designed guidelines sheet for Caucasian squirrel. [See in 07.3.1 group annexes the habitat management guidelines files for 7 species](#). This project's expert input to the guidelines is now complete; the final designed documents will be produced later in 2011, towards the end of the Forest Project.

Report on Savsat forest district field visit. [See 07.3.1_Savsat Field Visit_May2011.doc in the annexes](#)

Butterfly records from fieldwork and Hesselbarth *et al.* (1995) [See 07.3.1_Savsat Bfly Records_Tr.xls in the annexes](#)

The outputs will be used in future forest management plans throughout Turkey, to be produced from 2012 onwards. The new forest management plans, which will include consideration of biodiversity, will thus benefit butterflies on all candidate PBAs with forests.

Agriculture

Suggested criteria to use in selecting the pilot site for the agri-environment measure, sent to the IPARD project team. [See 07.3.2_IPARD PotentialPilotSiteSelectionCriteria_DKM.rtf in the annexes](#)

Information provided by DKM at the site and species selection meeting of the IPARD project working group. [See 07.3.2_IPARD Site&SpeciesSelectionMeeting_24Mar2011.doc in the annexes](#)

Spreadsheet showing data layers for each of the IPARD provinces held by NGOs [See 07.3.2_IPARD_AvailableData_IPARDprovinces_DKM-WWF-DD.xls in the annexes](#)

Draft of the agri-environment measure for biodiversity developed for Turkey. [See 07.3.2_IPARD_AE submeasure BD_DRAFT_17May11.doc in the annexes](#)

Photos from workshops and visit to Regional Directorate and the pilot site. [See 7.3.2. jpgs in the annexes](#)

As a result of contacts made through the workshops, detailed land-use maps for each of the PBAs were obtained from the Ministry of Food and Agriculture free of charge. These are to be included in the Conservation Strategy online appendices. [See draft documents in activity 4.2 annexes](#)



DKM forest project manager, Deniz Özü (right) meeting with foresters in Savsat



*IPARD project field visit to Polatlı State Farm
Photo ©Pille Koorberg*

7.5. Conservation action on a priority PBA

Information was provided on the importance of two PBAs – South Kaçkars and METU Campus. The South Kaçkars are threatened by multiple ‘small scale’ hydro-electric schemes. A presentation about the PBA and the threats it faces was given at the 6th International Butterfly Symposium (UK, March 2010) and stimulated a petition, the establishment of a savekackars.com web site and ultimately a feature about the Kaçkars and the dams on CNN International TV. At METU Campus work focused on awareness raising, collecting baseline data and attempts to minimise the impacts on butterflies of chemical controls for forest pests.

Details on the work:

South Kaçkars PBA, Artvin (Yusufeli)

Threatened by ‘small scale’ hydro-electric power schemes (HES). This area in the mountains of NE Turkey supports 201 species of butterfly, more than are in most European countries (*see below*). The project contributed information on the importance of the PBA for a technical report on the anticipated effect of the hydro-electric schemes on the natural environment and the rural population, commissioned by the TEMA Kaçkar Sustainable Forest Use and Conservation project.

Evrin Karacetin gave a presentation about the importance of the Kaçkar Mountains for butterflies and the threats the area is facing from hydro-electric power projects at Butterfly Conservation UK’s 6th Butterfly Symposium, held in Reading, UK in March 2010.

METU Campus PBA, Ankara

The project:

- produced an information sheet about the PBA and made regular efforts to meet with the Rector of METU, in order to initiate discussion of how the campus could be used for research, education and protection of endangered species.
- persuaded the university to use butterflies as the theme for their 2011 desk calendar, featuring 60 photographs taken on the PBA, by seven local butterfly watchers.
- organised a press event on the PBA to launch the Conservation Strategy and the PBAs (see activity 4).
- held meetings with METU’s Afforestation and Environmental Planning Director in order to identify how to minimise the impacts on butterflies of spraying to control pine sawfly.
- Particular concerns were expressed regarding the Endangered steppe fritillary.
- established and carried out two transects to collect comparable data on butterflies (particularly steppe fritillaries) to monitor the effects of spraying.

Problems encountered

METU Campus PBA: Despite excellent contacts at a high level within the university, a meeting with the Rector has so far not proved possible. No changes to the spraying regime were implemented.



Özge Balkız being interviewed on METU Campus.

Activity outputs and additional benefits

METU Campus candidate PBA information sheet [See 07.5.2 group annexes](#)

The 2011 desk calendar was distributed free of charge to all university staff.

Map of the whole of METU campus, with detail indicating the two monitoring routes, each divided into five sections. The orange areas are categorised as forest and the yellow areas 'open' habitats.

In fact, although many areas have been planted, currently large portions of the 'forest' are still effectively grassland.

South Kaçars PBA

The final HES report (in Turkish – HES Etkileri Uzman Raporu) is available to download from:

http://kackarlarsenin.org/images/HES_Etkileri_Raporu1.pdf and is included in the 07.5.1 group annexes.

Presentation given at the 6th International Butterfly Symposium

[See 07.5.1_KackarPresentation_Mar2010.pdf](#) in the annexes

The presentation at the 6th International Butterfly Symposium stimulated much discussion of what could be done to combat the plans and culminated in a petition – signed by all the delegates and later delivered by Butterfly Conservation (UK) to the Minister of Environment in Turkey – and a savekackars.com website. The website promoted the petition and generated a further 929 signatures; these were also delivered to the Turkish government. The website has now closed.

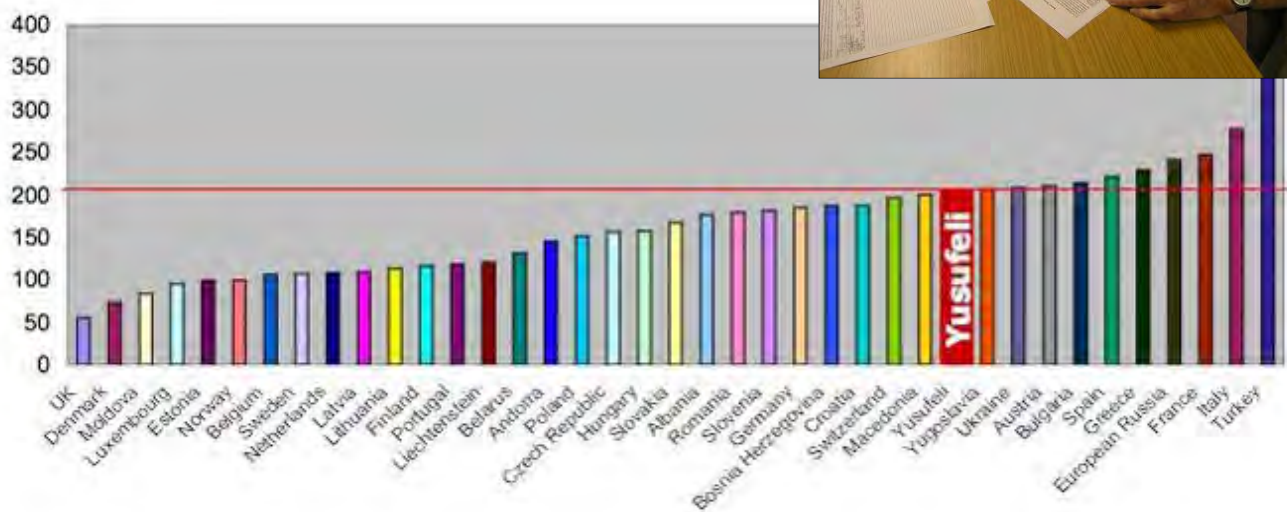
[See 07.5.1_savekackarswww_signatures.xls](#) in the annexes

Finding the information on the internet via links from Butterfly Conservation UK's website, in May 2010 a CNN film crew contacted DKM, and visited Turkey to make a film about the Yusufeli area and the hydro-electric dams. The programme interviewed several people from the TEMA Kaçkar Sustainable Forest Use and Conservation project and was shown on CNN International on the programme 'Earth's Frontiers' on 27 May 2010, and also on the internet. The programme is no longer available.

At the Butterfly Symposium, an article authored by Evrim Karaçetin and Hilary Welch was requested by and submitted to Wings, the Xerces Society for Invertebrate Conservation's journal. The article, published in the autumn 2010 edition, focuses on the richness of the Kaçkar mountains for butterflies and the hydro-electric power threat.

[See 07.5.1_Karacetin-Welch_Wings_Fall2010](#) in the annexes.

Delegates at the 6th International Butterfly Symposium signing the Save Kaçars petition.



The project did achieve its goals, though it was a fascinating challenge, since the goals were high, compromises were not acceptable for the project partners, the environment was dynamic and the processes relatively new. During the project work and the consultations some adaptations had to be made ensuring the project outcomes realisation, in some cases with rather higher quality than planned. The work was adjusted to the new circumstances and environment. This did not require significant changes in the budget planning, but in the focus of the activities envisaged and the time booked for them. There were also some fluctuations in the persons involved, but they were successfully compensated.

There was a moment when the team in DKM lacked a Project Assistant. That caused work to progress for a while slower than planned. Later, luckily an experienced Turkish biologist and conservationist have joined the project for the final 6 months, which ensured the successful completion of the work as quality and time planning.

Development of the digital data set has been a huge, undertaking which has taken longer than anticipated to finalise – this has been due both to the size of the data set (more than 70 000 records) and the number of errors inherent within it. Work on error correction continued longer than planned, but was finalized well on time enabling to deliver the other project results depending on it.

The Red List, arguably the most important output of the whole project, has involved many unforeseen tasks and thus delays. First there was the need to develop a single updated checklist from the three available; then there was the issue of accessing new data and knowledge of the rarer butterflies in order to assess threat status without the support of Turkey's most experienced lepidopterists; finally there was the important issue of ensuring that the species assessments followed IUCN's guidelines and criteria in order that the endemic species assessments were to a standard acceptable for IUCN's global list. All of these issues have been resolved very satisfactorily but have inevitably resulted in delays to other related activities.

The desire to communicate the work and involve actively the important Turkish authorities in the development and launch of the project outputs, particularly the Red List, also caused delays in the first half of 2010 when we were still hopeful and expected a positive outcome.

Given the way support for nature conservation is slowly developing in Turkey, putting more effort into increasing the number of butterfly watchers (see verifiable indicators) will contribute little to the establishment of the dedicated and capable group of butterfly fieldworkers which DKM and the project require. Our efforts had to focus on maintaining and developing the core group so that in time they will mature and develop as future role models through which the network can grow.

In Turkey's changing political climate it was considered vital that the project's most authoritative and internationally recognised output – the national Red List – should be made widely available. The aims were to ensure that it received serious attention at all levels within Turkey, and to make it available internationally for peer review and endorsement. Thus, adjustments were agreed for the final product. The project had planned to produce a provisional red list, and to make it available electronically. The decision was made to prepare a final list, ensuring its approval through the involvement of international experts in writing detailed species assessments, to publish it electronically in Turkish and English, to print 2000 copies as a Red Book (in Turkish), and to launch it together with influential partners, like the Dutch Embassy and the EU delegation in Turkey. Some adjustments were made to the work plan to ensure that this change did not affect any of the other project outputs, neither the agreements regarding the financial frames.

This project confirmed again, that BCE is able to supervise and facilitate complex projects and achieve the planned goals, considering all the factors of the working environment, brainstorming on the best approaches and various of activities, and based on good communication and analyses to ensure the quality and good timing of the envisaged outcomes.

DKM's position as a technical NGO working effectively in nature conservation has been firmly established.

At the start of the project, DKM – despite being the Turkish representative in the BCE network – was not recognised as an organisation with practical or technical expertise in butterflies. Now DKM is accepted as an authoritative NGO, with the proven ability to provide technical support for the conservation of butterflies. This change in perception is supported by:

- The EU Delegation in Ankara offered to host the launch of the Red Book; they recognised that it was a high quality technical publication which fulfilled their aims (because national red lists are a critical tool for identifying Natura 2000 sites), and provided a good example of what needs to be achieved in Turkey.
- The Netherlands Embassy's wholehearted support for this and two other butterfly projects (funded via the Embassy's KNIP and Matra-KAP funds), and their active involvement in the launch of both the Red Book and the Conservation Strategy, have demonstrated their belief in the abilities and values of DKM.
- DKM's work with the Directorate of Forestry, part of the Ministry of Environment and Forestry, contributed the proper integration of the biodiversity – including butterflies – into forest management plans which will be implemented nationally, starting in 2012.
- The Biodiversity Monitoring Unit (within the Ministry of Environment and Forestry) warmly welcomed the butterfly data set and has stated its intention to adopt the new butterfly checklist, developed by the project, in the government's online Nuh'un Gemisi database.
- The posters and hand guide developed by DKM to facilitate implementation of the law which controls illegal collection of butterflies have been very successful. They have facilitated several prosecutions and have raised national awareness of the issue. The enthusiasm with which the resources have been received, and their subsequent wide and effective use demonstrates that DKM not only successfully identified the need, but also produced resources appropriate for use by the wide range of stakeholders.
- The butterfly Red List, developed by DKM in consultation with BCE is the first Turkish Red List to follow and apply IUCN's guidelines and criteria.

The assumption in the log frame, that the Turkish government is able and willing to adopt the butterfly conservation priorities identified into national legislation and to enforce them, became invalid during the course of the project.

During the period the project was being implemented, a major conflict developed between the Ministry of Environment & Forestry (now the Ministry of Environment, Forestry and Water Affairs) and NGOs, with the result that the Ministry will no longer work or cooperate with almost all NGOs. There are two main reasons for this:

- The Ministry's policy on the distribution of licenses for Hydro Electric Schemes(HES): NGOs are describing the HES as the single biggest threat to natural areas. There have been many court cases contesting specific schemes which have resulted in the Ministry and NGOs being on opposing sides.
 - The new Nature Law: this was initially prepared under GEF2 and with the support of the EU, but now includes many changes which do not reflect the contributions of NGOs. As it stands, although the Law includes some improvements which bring Turkish legislation more in line with that in the EU, it also helps the HES projects by removing some legal obstacles. For this reason more than 80 NGOs are opposing it.
- Thus, although relationships between DKM and technical staff at the Ministry remain good, the Ministry's general policy has made it impossible for it to be officially represented in project activities.

In the context of the project, this conflict and lack of active involvement has had little effect as it did not prevent the successful completion of all activities. However, in the long-term it is important that the project outputs are used to facilitate effective conservation and for this a change in government policy, making nature conservation a priority, is needed.

The project's most important critical success factor was the strength of its team. Despite a mid-project period when there was no project assistant, regular voluntary support from the whole DKM team made it possible for the project manager to share tasks and continue to implement activities as planned, thus ensuring the successful completion of the project and all its outputs.

There were various problems and dilemmas, the project team had to tackle during the work, but finally all were arranged and solutions found. Most of them are explained in details in Chapter 3.4 presenting the activities.

One of the most significant problems were the changes in the nature conservation policy in Turkey, that caused limited interest to the efforts of the NGO sector in the country towards biodiversity conservation and sustainable development.

The Turkish NGOs are not happy with the new nature conservation law and do not believe that it will be a tool for better conservation of nature. NGOs (including DKM) have thus formed a union against this new law with the ultimate aim of changing it while it is in parliament. Suspicions about the new law have already been voiced in the most recent EU Enlargement Report for Turkey.

Against this background it has been impossible to develop a as productive as we aimed relationship with the Directorate, but they remain the single most important government body in relation to implementation of this project's outputs. There are also grave concerns that if the new Nature Conservation Law is implemented without change it will be rather difficult to use the project's outputs to take butterfly conservation forward in the near future.

An overview of all the costs (eligible and not eligible) is presented on the enclosed table (see Annex III - Final Financial Report). All the costs are in accordance with the project's financial planning. Due to the changes in the working political environment, the execution of the work planned in the project took as more time, especially for some of the planned activities, but since we considered them as such of high priority for the success of the whole project, we did some additional investments, by spending more time, which cost us more resources. The extra made costs are presented as not eligible.

Till now the project has used in total € 228 768 of which € 217 767 eligible.

These costs are divided as € 161 965 spent by DKM - the Turkish partner of € 161 025 eligible; and € 66 804 by the Butterfly Conservation Europe and Dutch Butterfly Conservation of which € 56 742 eligible. The difference of total € 11 001 is a contribution from the main partners, respectively € 10 062 from the Dutch team and € 940 from the Turkish team.

Accountability reports are in accordance with the local related legislation and regulations.

The final financial documents are based on the original primary documents kept at the offices of the both organizations – DKM and DBC (De Vlinderstichting).

The main documents presenting the financial situation are prepared by Hilary Welch and Svetlana Miteva, together with the office financial administrators at DKM - Ersoy Kilic and at DBC – Poppe Kloen.

Mr Serkan Civan, representative of the external independent accounting company “Ihtisas Accounting Bureau Serbest Muhasebeci Mali Müşavirlik ve Denetim Ortaklık Bürosu” - Ankara, is confirms all legal accounting procedures at DKM (Nature Conservation Center).

Poppe Kloen, financial administrator at the Dutch Butterfly Conservation (De Vlinderstichting), prepared the final financial report for the whole project and communicated the external auditing.

The audit (See annex II – Audit report) on the project has been conducted by Albert Hooijer, “Alfa Accountants and Adviseurs”.

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