2000

COUNCIL OF EUROPE CONSEIL DE L'EUROPE

Strasbourg, 19 May 2000 **T-PVS (2000) 26**
[tpvs26e_2000.doc]

CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE AND NATURAL HABITATS

Group of Experts on Conservation of Invertebrates

6th meeting
Neuchâtel (Switzerland), 13 May 2000

REPORT OF THE MEETING

Secrétariat Memorandum
prepared by
the Directorate of Sustainable Development

This document will not be distributed at the meeting. Please bring this copy.
Ce document ne sera plus distribué en réunion. Prière de vous munir de cet exemplaire.

The Group of Experts on the Conservation of Invertebrates held its 6th meeting in Neuchâtel (Switzerland) on 13 May 2000, in accordance with the terms of reference set up by the Standing Committee.

The Standing Committee is invited to :

1. thank the Swiss conservation authorities, the Canton of Neuchâtel and the City of Neuchâtel for the material support for the meeting ; thank the Swiss Centre for Cartography of Fauna for the excellent preparation of the meeting ;

2. take note of the report of the meeting ;

3. examine and, in appropriate, adopt the draft recommendation enclosed on Action Plan for *Margaritifera margaritifera* (Appendix 4) and and Action Plan for *Margaritifera auricularia* (Appendix 5) ;

4. when taken decisions on the programme and budget for 2001 to 2003, take into account the following activities :

- Strategy on Invertebrate Convservation in Europe ;
- Red Book on Odonata ;
- Strengthening of Bern Convention website with invertebrate information ;
- European Project on conservation of *Margaritifera margaritifera* ;

5. when deciding on the future of this group, take into account a possible co-ordination with other initiatives on invertebrate conservation, such as the European Invertebrate Survey, which might be asked to play a future role in assessing the Convention on invertebrate issues.

1. Opening of the meeting by the Chair

The Chair of the Group, Mr Anastasios Legakis (Greece), welcomed participants, noted that it was 10 years since the Group first met and opened the meeting.

A list of participants appears in Appendix 1 to this document.

2. Adoption of the agenda

The agenda was adopted as it figures in Appendix 2 to this document.

3. Secretariat Report

The Secretariat informed the Group that the Standing Committee to the Convention had adopted in December 1998 its Recommendation No. 65 on the conservation of Maculinea butterflies, as suggested by the Group. In addition, the Standing Committee had agreed to include in its programme of activities the extension to Southern and Eastern Europe of the study on invertebrates canditates for Appendix II of the Convention and the Action Plans for *Margaritifera margaritifera* and *Margaritifera auricularia.* Another work that was finished was the Red Book of Rhopalocera. All these three reports were to be discussed later in the agenda.

The Standing Committee had also taken the suggestion of the Group to review activities concerning marine biodiversity, another subject proposed by the Group. The Committee examined in December 1999 the report presented by the consultant, Mr Costello, but wanted the report to be revised before any further decision. The main purpose of the report is to analyse what activities on conservation of marine life are being carried out by other international initiatives and conventions so as to define a possible role for the Bern Convention on the conservation of marine life.

The Secretariat also informed the Committee on the progress in the setting-up of the Emerald Network, notably by the completion of pilot projects in Bulgaria, Slovenia and Russia in 1999. In year 1999 and 2000, pilot projects have started in the Czech Republic, Estonia, Latvia, Poland, Turkey and Slovakia. Moldova and Romania are to start projects in year 2000 so that 11 non-EU states are already deeply involved in the exercise. In EU the Natura 2000 Network is also progressing fast, so that many areas are being targeted for conservation as a result of having Bern Convention invertebrates, quite good news.

At the Council of Europe a process of prioritisation of activites has meant that the Organisation will concentrate on political and human rights issues, which may mean a certain downsizing of action in the field of environment. This means that the Bern Convention will have to work more efficiently, looking for external partners that may wish to collaborate with the Council of Europe in keeping a meaningful environment sector.

For the Group of Experts this meant that the regularity of its meetings (every two years) would be examined by the Standing Committee. It was likely that the Group was only to meet on an *ad hoc* basis or in co-operation with other organisations. A discussion on the future of the Group is to be held in point 9 of the agenda.

4. Progress in invertebrates conservation since the last meeting

The delegates of Austria, Belgium, Czech Republic, France, Germany, Greece, Ireland, Luxembourg, Moldova, the Netherlands, Norway, Poland, Slovenia, Spain, Switzerland, Turkey and the United Kingdom presented their reports, that of Belgium concerning only the Walloon Region.

These national reports are presented in Appendix 3 to this document.

The Chairman summarised the reports as follows :

- there had been in the last two years an increase in action towards conservation of invertebrates, both in the implementation of action plans and in the establishment of protected areas in Europe, this in particular focussed on the setting-up of the Natura 2000 Network and – more recently – in the Emerald Network ;

- much work was being done in states that are candidates to the accession of the European Union ;

- research on invertebrates seemed to be progressing well, thanks in particular to well-established institutions (universities, museums and specialised institutes or centres) and to the active involvement of amateurs ;

- in most European states, governments and scientists was building at the national level a strong co-operation on invertebrate issues ;

- there was lack of international collaboration, such as the one facilitated by the group. That would be a reason to try to make the group more active and look for its survival in whatever appropriate form ;

- new technologies, and particularly Internet, were changing the way in which information was being communicated on invertebrate issues. The Group should try to use the Council of Europe website to enhance its activities.

5. Action Plans for *Margaritifera margaritifera* and *Margaritifera auricularia* – Water quality standards related to the presence of *Margaritifera margaritifera*
[documents T-PVS (2000) 9, T-PVS (2000) 10, T-PVS/Invertebrates (2000) 2]

Both Action Plans were presented by the experts, Mr Rafael Araujo and Mrs Marian Ramos. The Group welcomed the Action Plans, which were very much needed, raised their quality and wished that they be circulated for comment before their final version.

The representative of France informed the Committee on the survey of *Margaritifera auricularia* carried out in France, which had produced positive results for 5 rivers.

The Group recommended the governments of Spain and France to co-ordinate a common conservation initiative for the species, which is probably the most threatened mollusc in Europe. EU LIFE programme was mentioned as a possible funding source.

The Group instructed the Secretariat to prepare a Draft recommendation along the same lines as Recommendation No. 65 (see Draft recommendation in Appendix 4 to this document).

Discussing *Margaritifera margaritifera*, the Group noted that there was no protocol for carrying out standarised surveys for the species.

The Group asked the Secretariat to prepare another draft recommendation for *Margaritifera margaritifera* insisting in particular in the need of international collaboration (Draft recommendation in Appendix 5 to this document).

Water standards allowing the development of *Margaritifera margaritifera* populations

Mr Speight presented a document pointing out the usefulness of *Margaritifera margaritifera* for improving water quality by may of their filtering action. He suggested that, as *Margaritifera margaritifera* was extremely sensitive to water pollution, a new water quality standard be established for Europe, one that takes into account the needs of this species and other aquatic organisms.

The Secretariat provided to circulate the paper to concerned governments for comment. Regarding a proposal to co-ordinate a project on conservation of *Margaritifera margaritifera* in Europe the Secretariat informed the Committee that, in the present circumstances, the Bern Convention Secretariat was in no position to co-ordinate such project, however interesting.

6. **Red Data Book on Butterflies (Rhopalocera*)***

Mr Chris van Swaay presented this report (published in Council of Europe Nature and Environment Series No. 100).

The Group expressed its satisfaction for the completion of this very useful book and wished that the same approach be used for other groups.

7. European Red Lists of Invertebrates
[document T-PVS (99) 41]

The Secretariat presented the document, which had been compiled by Professor Balletto. The Secretariat reminded the Group that the study was to complement the report compiled by Mr John Haslett (document T-PVS (98) 9) so a list of potential candidates for the Convention and, eventually, for the Habitats Directive – might be screemed. The idea was to have available information on threatened invertebrates in case the Bern Convention, or the Habitats Committee of the Habitats Directive, may wish to amend those texts.

After an exchange of views the Group decided that the list proposed had many omissions, needed revision and could not proceed in that stage to the Standing Committee. The Group felt that it would perhaps be more sensible to prepare Red Dat Books (such as the one on butterflies) for the main invertebrate groups, out of which a Red Data List (or Book) might be drawn. It was clear that this was a long-term task and that the limited financial means of the Convention would not be enough. Thus the Group suggested the Secretariat to contact the European Commission and the European Environment Agency to explore whether there was support for this exercise.

Mr van Helsdingen presented a « Revised check-list of selected invertebrates » (document T-PVS/Invertebrates (2000) 1) which grouped the species mentioned in IUCN Red Lists, CORINE and international and European treaties and Directives. It was welcomed as a very useful exercise, which showed how heterogeneous were the sources of information and thus the lists included in Red Books and international legislation.

8. Suggestions for invertebrate conservation activities within the framework of the Convention 2001-2003

Following the news on possible reductions of resources at the Convention, the Group insisted on the need to look for alternative solutions. It was suggested that the European Invertebrate Survey (EIS) might be an appropriate partner for continuation of the activities of the Group. The Secretariat was asked to explore with EIS the terms of a possible memorandum of co-operation which might allow to collaborate with EIS. As this organisation meets every two years (next meetings in 2001 and 2003) it would be possible to look for eventual inputs from EIS into the Bern Convention, in the appropriate manner.

Mr Mariano Gimenez-Dixon, representative of the Species Survival Commission of the World Conservation Union (IUCN) proposed also to strengthen collaboration with existing SSC Specialist Groups and the use of new IUCN criteria for new Red Books and Red Lists.

Some activities were suggested for the future :

- Report on a strategy for invertebrate conservation in Europe (information available, information needed, priorities, calendar for action) ;

- Red Book on Odonata ;

- Strengthening the Bern Convention website, adding more information on invertebrates ;

- Project on conservation of *Margaritifera margaritifera.*

9. Election of Chair and Vice-Chair

Mr Yves Gonseth (Switzerland) was elected Chair and Mrs Maria Ramos (Spain) Vice-Chair.

10. Other business

No other business was raised.

A P P E N D I X 1

LIST OF PARTICIPANTS / LISTE DES PARTICIPANTS

_____

I. COUNTRIES / PAYS

AUSTRIA / AUTRICHE

Dr R. John HASLETT, Institute of Zoology, University of Salzburg, Hellbrunner Str. 34, A-5020 SALZBURG.
Tel: +43 662 80 44 56 00. Fax: +43 662 80 44 56 98. E-mail: john.haslett@sbg.ac.at (E)

BELGIUM / BELGIQUE

Mr Marc DUFRÊNE, Responsable de l'Observatoire de la faune, de la flore et des Habitats, Directeur du Centre de recherche de la nature, des forêts et du bois, 23, avenue du Maréchal Juin, B-5030 GEMBLOUX, Belgique.
Tel : +32 81 62 64 29. Fax : +32 81 61 57 27. E-mail : m.dufrene@mrw.wallonie.be (F)

CZECH REPUBLIC / RÉPUBLIQUE TCHÈQUE

Mr Jan ŠUMPICH, Agency for Nature Conservation and Landscape Protection of the Czech Republic, Husova 2115, P.O. Box 135, CZ-58001 HAVLÍCKU BROD.
Tel : +420 42 451 244 94. Fax : +420 42 451 250 07. E-mail : hb@nature.cz (E)

FRANCE / FRANCE

Mr le professeur Jacques LHONORE, Societas Europaea Lepidopterologica (SEL), Professeur des Universités, Equipe de Biologie des Organismes et Biodiversité, Laboratoire de Biosystématique des insectes, Université du Maine, Avenue Olivier Messiaen, F-72085 LE MANS CEDEX 09.
[« La Châtaigneraie », le Haut-Tucé, F-72240 LAVARDIN, France.]
Tel : +33 2 43 83 32 51. Fax : +33 2 43 83 39 33. E-mail : lhonore@univ-lemans.fr (F)

Mr Jean-Pierre LUMARET, Professeur, Laboratoire de zoogéographie, Université de Montpellier 3, Route de Mende, F-34199 MONTPELLIER CEDEX 5.
Tel: +33 4 67 14 23 16. Fax: +33 4 67 14 24 59. E-mail: jean-pierre.lumaret@univ-montp3.fr (F)

Mr Gilbert COCHET, Correspondant au MNHN-Paris, Office pour l'information éco-entomologique – OPIE, B.P.30, F-78041 GUYANCOURT CEDEX.
Tel : +33 4 75 58 51 43. Fax : +33 4 75 58 53 37. E-mail : gilbert.cochet@wanadoo.fr (F)

Mr Pierre ZAGATTI, Directeur de Recherche INRA, OPIE, Route de Saint-Cyr, F-78000 VERSAILLES, France.
Tel : +33 1 30 83 31 18. Fax : +33 1 30 83 31 19. E-mail : zagatti@versailles.inra.fr (F)

Mr Robert GUILBOT, Office pour l'information éco-entomologique – OPIE, B.P. 30, F-78041 GUYANCOURT CEDEX, France.
Tel : +33 1 30 44 13 43. Fax : +33 1 30 83 36 58. E-mail : guilbot@jouy.inra.fr (F)

Mr Guy PINAULT, Président, Office pour l'information éco-entomologique du Languedoc-Roussillon (OPIE-LR), 1, rue Littré, F-66170 MILLAS, France.
Tel : +33 4 68 57 27 49. Fax : +33 4 68 57 27 49. E-mail : pinuche@wanadoo.fr (F)

GERMANY / ALLEMAGNE
Dr Horst GRUTTKE, [Federal Agency for Nature Conservation], Wissenschaftlicher Rat, Bundesamt für Naturschutz (BfN), Konstantinstr. 110, D-53179 BONN.
Tel: +49 (0)228 8491 105. Fax: +49 (0)228 8491 200. E-mail: gruttkeh@bfn.de (E)

GREECE / GRÈCE
Mr Anastasios LEGAKIS, Assnt. Professor, Athens University, Zoological Museum, Department of Biology, Panepistimioupolis, 157 84 ATHENS.
Tel : +301 7274372. Fax : +301 7274604. E-mail : alegakis@biology.db.uoa.gr (E)

IRELAND / IRLANDE
Mr Martin SPEIGHT, Dr, Research Branch, National Parks & Wildlife Service, 7, Ely Place, IRL-DUBLIN 2.
Tel : +353 1 647 23 00. Fax : +353 1 662 02 83. E-mail : speightm@indigo.ie (E)

LUXEMBOURG / LUXEMBOURG
Mr Marc MEYER, Conservateur, Musée national d'histoire naturelle, Section zoologie, 25 rue Münster, L-2160 LUXEMBOURG.
Tel : +352 46 22 33 ext. 404. Fax : +352 47 51 52. E-mail : mmeyer@mnhn.lu (F)

MOLDOVA / MOLDOVA
Dr Zaharia NECULISEANU, Chief of Pedozoological Laboratory of the Institute of Zoology, Academy of Sciences of Moldova, str. Cosmonautilor 9, bir. 635, 2001 CHISINAU.
Tel : +373-2 22 52 08. E-mail : zoologica@yahoo.com (E/F)

NORWAY / NORVÈGE
Mr Frode OEDEGAARD, Dr Scient., Norwegian Institute for Nature Research, Tungasletta 2, N-7485 TRONDHEIM.
Tel : +47 7380 1555. Fax : +47 7380 1401. E-mail : frode.odegaard@ninatrd.ninaniku.no (E)

POLAND / POLOGNE
Mr Jaroslaw BUSZKO, Professor of entomology, N. Copernicus University, Institute of Ecology and Environmental Protection, Gagarina 9, 87-100 TORUN.
Tel: +48 56 6114469. Fax: +48 56 6114443. E-mail: buszko@biol.uni.torun.pl (E)

RUSSIAN FEDERATION / FÉDÉRATION DE RUSSIE
Mrs Lioudmilla VOLKOVA, Expert of Biodiversity Conservation Centre, Scientific Researcher in Severtsov Institute for Ecology and Evolution of Russian Academy of Sciences, Prishvina str. 19-23, Post Box 40, RUS-127560 MOSCOW.
Tel: +7 095 1245022. Fax: +7 095 1247178. E-mai: lae@glasnet.ru (E)

SLOVENIA / SLOVÉNIE
Mr Mladen KOTARAC, Centre for Cartography of Fauna and Flora, Antolici ceva 1, SI-2204 MIKLAVŽ NA DRAVSKEN POLJU.
Tel: +386 1 4382440, +386 41 735429. Fax: +386 1 4382445. E-mail: Mladen.Kotarac@ckff.si (E)

SPAIN / ESPAGNE
Mrs Maria Angeles RAMOS, Museo Nacional de Ciencias Naturales, José Gutierrez Abascal 2, E-28006 MADRID.
Tel : +34 91 41 11 328 ext. 1116. Fax : +34 91 56 45 078. E-mail : m.ramos@mncn.csic.es (E)

SWITZERLAND / SUISSE
Mr Yves GONSETH, Centre suisse cartographie de la faune, CSCF, Musée d'histoire naturelle, Terreaux 14, CH-2000 NEUCHÂTEL, Switzerland..
Tel : +41 32 725 72 57. Fax : +41 32 717 79 69. E-mail : yves.gonseth@cscf.unine.ch
web site : http://www.cscf.ch

Mr Michel SARTORI, Musée zoologique, Case postale 448, CH-1017 LAUSANNE, Suisse.
Tel. +41 32 316 34 64. E-mail : michel.sartori@ie-zea.unil.ch. (F)

THE NETHERLANDFS / PAYS-BAS
Mr Peter van HELSDINGEN, Dr-Curator, Natural Museum of Natural History (Naturalis), Darwinweg 2, NL-2333 CR LEIDEN.
Tel : +31 71 568 7620. Fax : +31 71 568 7666. E-mail : helsdingen@nnm.nl (E)

TURKEY / TURQUIE
Mrs Nilsun ERGÜL, Biologist, Ministry of Environment (Çevre Bakanligi), Eskisehir Yolu 8 km, 06530 ANKARA.
Tel : +90 312 287 99 63 ext. 2408. Fax : +90 312 286 22 71. E-mail : cevre@cevre.gov.tr (E)

UNITED KINGDOM / ROYAUME-UNI
Mrs Deborah PROCTER, Species Adsivor, Joint Nature Conservation Committee, Monkstone House, City Road, GB-PETERBOROUGH PE1 1JY.
Tel: +44 (0)1733 866809. Fax: +44 (0)1733 555948. E-mail: procte_d@jncc.gov.uk
web site: http://www.incc.gov.uk (E)

Mr Paul T. HARDING, Biological Records Centre, Centre for Ecology & Hydrology, Monks Wood, Abbots Ripton, GB-HUNTINGDON Cambs. PE17 2LS, United Kingdom.
Tel : +44 148 777 2405. Fax : +44 148 777 3467. E-mail : pha@ceh.ac.uk (E)

Mr Keith ALEXANDER, Leader, Biological Survey Team, National Trust, 33 Sheep Street, Cirencester, Gloucestershire GL7 1RQ, United Kingdom.
Tel : +44 01 285 651818. Fax : ++44 01 285 657935. E-mail : xeakxa@smtp.ntrust.org.uk (E)

II. OBSERVERS / OBSERVATEURS

IUCN – The World Conservation Union
Mr Mariano GIMENEZ DIXON, Programme Officer-SSC, IUCN – The World Conservation Union, Rue Mauverney 28, CH-1196 GLAND, Switzerland.
Tel: +41 22 999 01 55. Fax: +41 22 999 00 15. E-mail: mgd@hq.iucn.org (E)

European Invertebrate Survey
Mr le professeur Jacques LHONORE, Vice-Président, European Invertebrate Survey,
Societas Europaea Lepidopterologica (SEL), Professeur des Universités, Equipe de Biologie des Organismes et Biodiversité, Laboratoire de Biosystématique des insectes, Université du Maine, Avenue Olivier Messiaen, F-72085 LE MANS CEDEX 09.
[« La Châtaigneraie », le Haut-Tucé, F-72240 LAVARDIN, France.]
Tel : +33 2 43 83 32 51. Fax : +33 2 43 83 39 33. E-mail : lhonore@univ-lemans.fr (F)

Dr Harald SCHREIBER, Secretary General of European Invertebrate Survey (EIS), FR Biogeographie Universität des Saarlandes, POB 151150, D-66041 SAARBRÜCKEN.
Tel: +49 6897 798 104. Fax: +49 6897 798 155. E-mail: h.schreiber@rz.uni-sb.de (E)

Mr Desmond KIME, Assistant Secretary, Council of European Invertebrate Survey, Institut royal des sciences naturelles de Belgique, Rue Vautier 29, B-1000 BRUXELLES.
Tel/Fax : +32 2 380 63 30. E-mail : des.kime@skynet.be (E/F)

Observatoire national des invertébrés (France)
Mr Pascal DUPONT, Observatoire national des invertébrés, Cidex 116, 1286 rue de Belledonne, F-38920 CROLLES, France.
Tel : +33 4 76 92 19 75. E-mail : pascal.dupont5@wanadoo.fr (F)

III. APOLOGISED FOR ABSENCE / EXCUSES

Mr Grygory Parchuk (Ukraine / Ukraine)
Mr Bruno Julien (European Commission / Commission européenne)
Mr Darrin T. Stevens (Malta / Malte)
Mr Patrick van Klaveren (Monaco / Monaco)
Mr Vladimir Domashlinets (Ukraine / Ukraine)
Mr L. Azzi (Algeria / Algérie)
Mrs Marie-Christine van KLAVEREN (Accobams, Monaco)
Mr J.G. van der MADE (De Vlinderstricthting, Austria)
Mr Jean-Pierre Ribaut (Pax Christi, France)
Mrs Anita Le Brech-Georges (Laboratoire d'évolution des systèmes naturels et modifiés, France)
Mr Jochen Lüttmann, (FÖA Landschaftsplannung, Germany)
Mr Cornelis Neet (Université de Lausanne, Suisse)
Mr Emilio Balletto (University of Turin, Italy)
Mrs Paola Magnani (Fondazione Europea Antonio Bana –FEIN, Italy)
Organisation for Economic Co-Operation and Development (OECD) / Organisation de coopération et de développement économiques (OCDE)
World Conservation Monitoring Centre

IV. CONSULTANTS / EXPERTS CONSULTANTS

Mr Rafael ARAUJO, Consejo Superior de Investigaciones Cientificas, Museo Nacional de Ciencias naturales, José Gutiérrez Abascal 2, E-28006 MADRID, Spain.
Tel : +34 91 41 113 28 ext. 1126. Fax : +34 91 564 50 78. E-mail : rafael@mncn.csic.es (E)

Mr Chris van SWAAY, De Vlinderstichting, Postbus 506, NL-6700 AM WAGENINGEN, The Netherlands.
Tel : +31 317 46 73 46. Fax : +31 317 42 02 96. E-mail : vlinders@bos.nl (E)

V. INTERPRETERS / INTERPRETES

Mrs Ingrid CATTON-CONTY, 26, rue de l'Yvette, F-75016 PARIS.
Tel: +33 1 44 50 04 22. Fax: +33 1 40 50 80 84. E-mail: Ingcatton@aol.com (E/F)

Mrs Sylvie NOSSEREAU, 6, avenue Alfred Carteron, F-91370 VERRIERES-LE-BUISSON.
Fax: +33 1 69 20 66 41 (E/F)

M^{me} Starr PIROT, Chemin des Mollards, CH-1261 St. GEORGE, Suisse.
Tel/Fax:+41 22 368 20 67. E-mail : spirot@dellmail.com (E/F)

VI. SECRETARIAT / SECRÉTARIAT

Council of Europe / Conseil de l'Europe, Directorate of Sustainable Development / Direction du Développement Durable, Nature and Landscape Division / Division de la Nature et des Paysages, F-67075 STRASBOURG CEDEX, France
Tel : +33 3 88 31 20 00 Fax : +33 3 88 41 27 81 / 82 / 83

Mr Eladio FERNÁNDEZ-GALIANO, Head of the Nature and Landscape Division / Chef de la Division de la Nature et des Paysages
Tel : +33 3 88 41 22 59 Fax : +33 3 88 41 37 51 / 27 84 E-mail : eladio.fernandez-galiano@coe.int
web site: http://www.coe.fr

Mrs Véronique de CUSSAC, Nature and Landscape Division / Division de la Nature et des Paysages
Tel: +33 3 88 41 34 76. Fax: +33 3 88 41 37 51. E-mail: veronique.decussac@coe.int
web site: http://www.coe.fr

A P P E N D I X 2

Strasbourg, 21 January 2000
[OJ-e]

CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

Group of Experts
on Conservation of Invertebrates

6th meeting
Neuchâtel (Switzerland), 13 May 2000

_____

AGENDA

1. Opening of the meeting by the Chairman

2. Adoption of the agenca

3. Secretariat Report

4. Progress in invertebrate conservation since the last meeting (April 1998)
   General comments (writtens summaries of national reports welcome)

5. Action plans on *Margaritifera margaritifera* and *Margaritifera auricularia* – Presentation of the report by the experts. Water quality standards related to presence of the *Margaritifera margaritifera*

6. Red Data Book of Butterflies (*Rhopalocera*) – Presentation by experts

7. European Red List of Invertebrates

8. Possible amendment of Appendix II

9. Suggestions for invertebrate conservation activities within the framework of the Convention for 2001 to 2003

10. Election of Chairman and Vice-President

11. Other business

A P P E N D I X 3

NATIONAL REPORTS

1. Austria
2. Belgium (for the Walloon Region)
3. Czech Republic
4. France
5. Germany
6. Greece
7. Ireland
8. Luxembourg
9. Moldova
10. the Netherlands
11. Norway
12. Russia
13. Spain
14. Switzerland
15. Turkey
16. United Kingdom

1. AUSTRIA

_____

Report on progress in invertebrate conservation in Austria, 1998 – 2000

by Dr. John R. Haslett, Institute of Zoology, University of Salzburg

_____

A. Vienna

- **Butterfly mapping** 135 species of butterflies have been recorded with the limits of the city, about 75% of which are classified as endangered in the Austrian red list. Habitats of particular importance for butterflies in Vienna have been identified. Species occurrences in each of the city`s districts (`Bezirken`) have been listed and suggestions for future conservation management have peen made.

- **Other projects** Further recent achievements in invertebrate conservation in Vienna include reintroduction of the crustacean *Triops cancriformis*, to newly restored suitable habitat (ephemeral fresh water bodies) in the area of the `Wienerberg`, production of an information folder on wild bees, and an assessment of the conservation needs of xylophilous coleoptera species occurring in the wooded Lainzinger Tiergarten nature reserve.

B. Salzburg Province

- **A potential protected area for butterflies** At previous meetings of this Group of Experts I have drawn attention to the urgent need for recognition of the conservation significance, and appropriate protective legislation, of a population of *Hypodryas maturna* that is centred on the outskirts of Salzburg, close to the German border. Now, more field data have been collected on both the butterfly and the site, and the information is being used to present the case for protecting and managing the area with specific reference to the conservation of the butterfly fauna.

The site also supports populations of a number of other Bern Convention butterfly species, including *Euphydryas aurinia*, *Lopinga achine* and *Maculinea* spp. However, the entire habitat mosaic is under immediate threat from tourist development, the road transport system and agricultural/forestry land management practices.

It must be stressed that this project, now in the hands of the local Salzburg government, is still in early stages, and will require strong National and European support, politically and financially, if appropriate protection status and management for the area is to be achieved.

- **Protection of the alluvial flood plain and gravel banks of part of the river Taugl** This area supports populations of a variety of locally rare and endangered invertebrate species, and has now been designated as a protected area. It is also to be nominated as a Natura 2000 site.

- **Aids for long term protection of invertebrate habitats and habitat structures** Invertebrate conservation has been facilitated by the a priori local government policy of protection of particular habitats. Also, maintenance of habitats and habitat structures is being secured by the new programme of governmental subsidies and financial reward to land owners/users for maintaining/creating important habitats and their desired management.

- **Other projects** Further initiatives include production of a new edition of the `Macrolepidoptera of Salzburg Province` (author G. Embacher), and a study, coordinated by the Salzburg branch of the Austrian Junior Conservationist Society, to map the distribution of the Zebra spider, *Argiope bruennichi*.

C. Carinthia

Numerous activities relating to general protection of habitats, including many important for invertebrates, such as wetlands and alpine regions. Also large projects to establish protection measures for the butterflies *Maculinea teleius* and *M. nausithous*, and a large project to protect the crustacean *Austropotamobius pallipes.* Also other, minor projects.

D. Other Austrian Provinces

No information has been received from other areas of Austria in time to be included here.

2. BELGIUM (For the Walloon Region)

_____

Report on invertebrate research in Belgium (1996-1998)
Report on invertebrate researches and actions in Belgium (1999-2000)
Wallonia

Mr Marc Dufrêne, Observatory of the Fauna, the Flora and Habitats (OFFH),
Centre de recherche de la nature, des forêts et du bois (CRNFB), Gembloux, Belgium

1. Surveillance and monitoring programs

Different research programs have been carried out or coordinated by the Centre de Recherche de la Nature, des For\u234\'90ts et du Bois (CRNFB), a scientific research station of the regional government located at Gembloux :

During scientist field works, a specific attention has been devoted on the inventory on *Margatifera margatifera* (Unio crassus} populations. Surprisingly, these two species seems to be still present in several places and one population of more than 1,000 specimens of *Margatifera margatifera* has been located on a river section which is smaller than 500 m. Several local actions are being undertaken there to prevent destruction or perturbation of this population that is the greater one identified in Wallonia. Next years, researches will be devoted to monitor this population and to know if reproduction still occurs. For more information, contact P.Gerard@mrw.wallonie.be.

Since 1996, the actions supported by the administration for Insects are coordinated by the Observatory of the Fauna, the Flora and Habitats (OFFH) at the CRNFB and realized by a naturalist network. In this frame, Butterflies (Lepidoptera : Rhopalocera), Dragonflies (Odonata) and Ladybirds (Coccinelidae) beneficiate of large scale monitoring projects in the Walloon region. More than hundred sites are surveyed each year by a team of naturalists. A special interest is reserved for species mentionned in international directives and conventions like the Bern one : populations are inventoried and site boundaries are mapped. Such informations are provided in the case of incidence studies or when sites of great biological interest are threatened. All available data managing by OFFH are integrated in databases linked with informations on species statute and ecology and site statute and inventory (GIS system). Some of the synthetic informations on species (species list, maps, ecology, protection statutes, ...) and monitoring programs are available on a Internet server (http://mrw.wallonie.be/sibw/especes/ and http://mrw.wallonie.be/sibw/organisations/OFFH/progISB/).

Since 1990, aquatic invertebrates data are also used in biotic indices (390 sites sampled all the three years). Since 1997, this inventory is coordinated by the CRNFB. Nevertheless, main informations are limited at present to genus or even families for all the groups. Next years, the specific level will be used for taxonomy. For more information, contact P.Gerard@mrw.wallonie.be.

A specific inventory program of butterflies from humid grasslands, fens and peatbogs with threatened butterflies *Boloria aquilonaris, Proclossiana eunomia, Lyceana helle*, ... is also carried on in Ardenne to identify all main populations and peripheric ones to settle up a network of potentially connected populations. For more information, contact M.Dufrene@mrw.wallonie.be.

Since this year, a preliminary inventory program is launched on saproxilic Coleoptera living in old deciduous forests with the help of naturalist working groups. A real problem for the development of this program is to find people able to assume the taxonomical identification of the collected specimens. For more information, contact M.Dufrene@mrw.wallonie.be.

Other research programs in Wallonia result from the dynamism of universities as the Mons-Hainaut University and the Agronomy Faculty of Gembloux on Hymenoptera and of naturalist groups (e.g. Grasshoppers : Orthoptera).

2. Atlas projects

The Dragonfly Atlas should finally be published this year. Its completion is supported by the Walloon region in the frame of the regional species monitoring project. A Butterflies atlas is planned too but with no deadline. For more information, contact Goffart@ecol.ucl.ac.be.

3. Red list

Red lists for Butterflies (Lepidoptera : Rhopalocera) and Dragonflies (Odonata) have been updated and are available for the Walloon region. For more information, contact Goffart@ecol.ucl.ac.be.

4. Protection statutes

Only nine of the about twenty species mentioned in one annex of the Bern convention and present in Wallonia have a protection statute in our regional legislation. In the frame of the implementation of the Habitat Directive, it seems that all the species of the Bern convention and also those cited in red lists will benefit of a such protection statute. For more information, contact S.Liegeois@mrw.wallonie.be.

5. Species action plans

In the frame of the Natura2000 network implementation in Wallonia, a specific attention have been paid to identify and to follow all the natural and introduced populations of *Euphydryas aurinia* (Lepidoptera) and *Melitea cinxia* (Lepidoptera). Protection actions (management, reserve statute, ...) are being carried out to define a specific site network. Actions are also realized in forest management plans in the Famenne area to increase the forest edges and borders that are more benefic for butterflies. {For more information, contact Goffart@ecol.ucl.ac.be.}

6. Other actions

This report is far to be exhaustive; other initiatives carried out by naturalist individuals and societies are surely launched on other biological groups. This report enhances mainly programs directly or indirectly supported and known
by the administration.

3. CZECH REPUBLIC

Protection of Invertebrates in the Czech Republic

Jan Šumpich & Václav Hlavác,
Agency for Nature Conservation and Landscape Protection of the Czech Republic

I. Legislative protection

Nature Conservation and Landscape Protection Act No. 114/1992 is the legislative foundation for the protection of ranges and species of plants and animals, including invertebrates. The purpose of the law is to help in preserving and restoring the natural balance in the country; protecting the variety of living forms, natural values and beauties; as well as promoting considerate use of natural resources (§ 1). A part of this law enables the establishment of particularly protected areas at places that are very significant or unique from the natural, scientific or aesthetic point of view. For this purpose, the law defines six categories of protected areas, which differ in acreage and natural scientific significance, and sets down conditions for their protection. The present extensive network of protected areas is a cornerstone of the protection of plant communities and animal populations, including invertebrates. Altogether, 28 large protected areas were established in the Czech Republic (4 National Parks and 24 Protected Landscapes) along with 2,226 protected areas (nature reserve *sensu lato*) of smaller acreage; out of these, 217 have a status of national significance (national nature reserve). Within the bounds of the protection of invertebrate species, 79 species and 12 invertebrate genera were selected; their list is a part of public notice 395/1992, which applies some provisions of the 114/1992 Environmental Act. There are three levels of species protection in the Czech Republic: endangered, very endangered and critically endangered species. Besides the individual protection of the selected taxons, § 16 of the 395/1992 public notice provides the fundamental principle of the complex protection of habitats of all particularly protected species as a basis of their protection.

During 1999-2000, a comprehensive amendment to the Nature Conservation and Landscape Protection Act of the Czech Republic is being prepared. The amendment aims to coordinate and unify Czech legislation concerning nature conservation with the legal norms of EU countries.

II. Conservation projects - *Margaritifera margaritifera*

In the Czech Republic, the River Pearl-Oyster *(Margaritifera margaritifera)* is listed among the protected species at the highest level of endangerment (critically endangered species). The species survives throughout the Czech Republic in several locations in the Vltava, Blanice and Malse river basins; small residual populations can be found in several other streams. The most numerous Central European population of this critically endangered lamellibranch has survived until now in the South-Bohemian Blanice river. Therefore, this protected area, which has Europe-wide significance for the preservation of oligotrophic communities, was included in the list of the biogenetic reserves of the European Council in 1996.

Increased attention, along with the implementation of active measures to support the populations, has been devoted to the *Margaritifera margaritifera* in the C.R. since the mid-eighties. The official conservation project has been carried out since 1993. During the first stage of the conservation program, between 1993 and 1998, the assessment of the present state and causes of endangerment of the residual pearl-oyster populations throughout the Czech Republic was completed. Also, original methods of semi-natural breeding and biotope management were developed. The results of the conservation project's first stage were also published in the proceedings from foreign conferences on the subject.

The results of semi-natural breeding of young pearl-oysters, which was successfuly launched in a model-area of the national natural monument Blanice, are unparalleled both here and abroad. For the very first time, we succeeded in inducing the growth of young stages in natural growth curves up to the age of eight. The conservation program has been implemented in seven particularly protected areas whose main protection goal is saving the *Margaritifera margaritifera's* populations and biotopes. In the following stages, we expect to involve 8 additional small river-basins that so far do not have a status of particularly protected areas.

The main problems in the conservation efforts of this species are the long-term changes of biotopes; unsuitable ways of farming in basins; the adaptations of water regime; and the area-wide eutrophisation and acidification of soils and waters. The priorities of the conservation program are the preservation of various forms of the *Margaritifera margaritifera* (according to biotope type, populations vary in a number of features) and maintenance of the numbers and positive age-structure of populations. Primarily, the method to reach these goals is the complex revitalization of the basins of interest. That can be done by taking measures to lower the eutrophisation and contamination of waters; to lower excessive erosion; and to ensure an adequate food supply (especially for the juvenile stages of the species).

III. NATURA 2000

In connection with the preparation of the Czech Republic to enter the European Union, the first necessary steps were made in order to comply with EU legislation. One of them is the preparation of the protected areas network, called NATURA 2000. A part of these preparations was, apart from other things, a comparison of lists of particularly endangered invertebrate species according to Czech law with the species lists compiled by the Bern Convention, Habitats Directive, and with the Red Book of the Czech Republic; some invertebrate groups were also compared with the ESC and CORINE lists. Following this analysis, a suggestion (plus the applications) was made in 1999 to include in the Habitats Directive some additional invertebrate species whose significance (the residual occurrence in the Czech Republic, critical decline of populations throughout Europe, etc.) is considered by the C.R. as supranational. Chart 1 shows the proposed taxons. Chart 2 shows, using as an example the order *Lepidoptera*, the level of equality and/or difference of the butterfly species protection in the C.R. with certain international red lists. Only the species that are proved to be found in the Czech Republic are mentioned in the chart.

At present, the thorough identifying and mapping the localities of both the included and proposed species in the Habitats Directive have been carried out. A part of this research work is also an assemblage of the bibliographic resources concerning the occurrence of these species in the Czech Republic.

IV. Other activities

A basis of the protection of selected species of plants and animals in delimited regions is a detailed knowledge of the species' spectrum in the particular region and precise information about ecological demands and zoogeographical ranges of these species. The revised checklists in particular contribute to the complex knowledge of insect fauna in the Czech Republic. The last completed checklist concerns butterflies and confirms that 3,333 butterfly species can be found throughout the Czech Republic. Partial, detailed studies on the ecology, synecology, bionomy, and zoogeography of invertebrates are published in many national and regional professional journals. Generally it can be said that entomology is a prestige science of the Czech Republic with a rich tradition. A great amount of useful information can be obtained from the cited sources. It is necessary to set out to obtain the missing information. Therefore, the Agency for Nature Conservation and Landscape Protection of the Czech Republic has started an intensive cooperation with the Czech Entomologic Society and together they intensively work on a special publication regarding insect protection in the C.R. - NATURA 2000, which will be available to society members. A part of this prepared publication is an appeal to

amateur entomologists to cooperate in mapping the habitats and localities of the protected invertebrate species identified by the Habitats Directive. The activity also has a significant promotional value and, what's more, it is focused on the representative group of entomologists. The expert seminars are held and articles in the professional press are published in order to educate the public about the NATURA 2000 project and to promote the project.

Table 1: Preliminary proposal of the amendment to the Annexes II and IV to the Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora

Name of taxa	**A**	**B**	**C**	**D**	**E**	**F**
Mollusca						
Anisus vorticulus					II, IV	AT, B, D, DK, F, IT, GB, NL
Belgrandiella slovenica	***	VU			IV	
Cochlicopa nitens					II	AT, D, DK, S
Gyraulus rossmaessleri					II, IV	W, N Europe
Pisidum amnicum					IV	Europe
Pseudanodonta complanata		LR			II, IV	W, N Europe
Truncatellina claustralis					II	AT, F, IT
Vestia ranojevici moravica	*				IV	
Arachnida						
Araneae						
Alopecosa sulzeri					II	
Aphantaulax cincta					II	F, IT
Arctosa maculata					IV	IT
Atypus muralis					II, IV	D
Cryptodrassus hungaricus	***				II	
Dictyna szaboi					II	
Haplodrassus bohemicus	*				II	
Crustacea						
Austropotamobius torrentium		VU	KO	III	II, IV	AT, D, F,
Triops cancriformis			KO		IV	W, S Europe
Insecta						
Ephemeroptera						
Arthroplea congener					II	D, FIN, GB, S
Electrogena quadrilineata	**				II	D
Ephemerella mesoleuca					II	AT
Ephoron virgo					II	AT, D, F, IT
Choroterpes picteti					II	B, D, F, IT, NL,
Oligoneuriella rhenana					II	AT, B, D, F, IT
Rhithrogena hercynia	**				II	D, F

Heteroptera						
Agramma tropidopterum					II	D, FIN
Aradus somcheticus					II	
Berytinus consimilis					II	F?, IT
Henestaris halophilus					II	Fennoscandia
Micracanthia marginalis					II	AT, D, DK, FIN, GB, NL, S
Notonecta reuteri					II	AT, D, F, FIN, IT
Phimodera flori					II	D
Neuroptera						
Dendroleon pantherinus					II	AT, F, IT
Chrysopa hungarica					II	AT
Mantispa styriaca			KO		II	AT, D, E, F, GR, IT
Myrmeleon bore					II	AT, D, FIN, IT, S
Mecoptera						
Bittacus italicus					II	D
Panorpa hybrida					II	D, FIN
Coleoptera						
Bolbelasmus unicornis			KO		II	AT
Carabus hungaricus hungaricus			KO		II	AT
Carabus variolosus variolosus			SO		II	
Cornumutilla quadrivittata					II	AT, IT, F
Eurythyrea quercus			KO		II, IV	C, S Europe
Necydalis ulmi					II, IV	AT, D, IT
Nicrophorus germanicus					II	C, S Europe
Lepidoptera						
Chamaesphecia palustris					II	AT, IT
Coenophila subrosea					II	AT, D, DK, F, FIN, GB, NL, S
Colias palaneo ssp. europome			SO		II	AT, D, F, FIN, S
Eupithecia gelidata					II	D, FIN, S
Luperina nickerlii					II	AT, D, E, F, GB, IT, IR, P
Maculinea alcon komplex		E	KO		II	AT, B, D, DK, E, F, GR, IT, NL
Pediasia truncatella					II	FIN, S
Phragmitiphila nexa			O		II	AT, D, F, FIN, IT
Xestia sincera					II	AT, D, F, FIN, IT, S

Legend:
Column A - Endemism: * endemic taxa, in the Czech Republic only; ** endemic taxa, predominantly in the Czech Republic; *** endemic taxa, marginally in the Czech Republic...
Column B - IUCN threat category (1996 IUCN Red List of Threatened Animals): EN - endangered; VU - vulnerable; LR - lower risk; DD - data deficient.
Column C - threat categories under the Regulation No. 395/1992 to the Czech National Council Act No. 114/1992 on the Protection of Nature and the Landscape: KO - critically endangered; SO - severely endangered; O - endangered
Column D - Bern Convention Annexes: II - strictly protected fauna species; III - protected fauna species.
Column E - number of adequate annex for species to be added: II ! - geographical restriction
Column F taxa present in the territory of current EU Member States

Chart 2 : Overview of the Czech and Moravian-Silesian butterfly species listed in the Czech and international red butterfly lists.

	CR		**Evropa**						
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Zygaenidae									
Zygaena laeta (Hübner, 1790)		E							
Sesiidae									
Chamaesphecia masariformis (Ochs., 1808)		E							
Pyralidae									
Pediasia truncatella (Zetterstedt, 1839)		V							
Lasiocampidae									
Eriogaster catax (Linnaeus, 1758)			II,IV	II	E		+	+	
Phyllodesma ilicifolium (Linnaeus, 1758)		E			V		+	+	
Sphingidae									
Marumba quercus (Den.et Schiff., 1775)	SO	V							
Hyles euphorbiae (Linnaeus, 1758)	O								
Proserpinus proserpina (Pallas, 1772)			IV	II	V		+	+	
Saturniidae									
Saturnia pyri	SO						+		
Hesperiidae									
Carterocephalus palaemon (Pallas, 1771)							+	+	
Heteropterus morpheus (Pallas, 1771)								+	
Papilionidae									
Zerynthia polyxena (Den.et Schiff., 1775)	KO	V	IV	II			+	+	
Parnassius apollo (Linnaeus, 1758)	KO	E	IV	II	R	V	+	+	
Parnassius mnemosyne (Linnaeus, 1758)	KO	V	IV	II			+	+	
Iphiclides podalirius (Linnaeus, 1758)	O								
Papilio machaon (Linnaeus, 1758)	O								
Pieridae									
Colias myrmidone (Esper, 1781)								+	
Colias palaeno (Linnaeus, 1761)	SO	E						+	
Lycaenidae									
Lycaena dispar (Haworth, 1803)		E	II,IV	II	E		+	+	
Lycaena helle (Den.et Schiff., 1775)								+	
Satyrium w-album (Knoch, 1782)		E							
Scolitantides orion (Pallas, 1771)								+	
Maculinea alcon (Den.et Schiff., 1775)	KO				E	V	+	+	
Maculinea rebeli (Hirschke, 1904)					E		+	+	
Maculinea arion (Linnaeus, 1758)	KO	E	IV	II	E	V	+	+	
Maculinea telejus (Bergsträsser, 1779)			II,IV	II	E	V	+	+	

Maculinea nausithous (Bergsträsser, 1779)			II,IV	II	E	E	+	+	
Plebeius argyrognomon (Bergsträsser, 1779)								+	
Vacciniina optilete (Knoch, 1781)								+	
Satyridae									
Hipparchia statilinus (Hufnagel, 1766)		E							
Chazara briseis (Linnaeus, 1764)	SO								
Coenonympha hero (Linnaeus, 1761)			IV	II			+	+	
Coenonympha tullia (Müller, 1764)								+	
Erebia sudetica Staudinger, 1861			IV	II	V		+	+	
Lopinga achine (Scopoli, 1763)		E	IV	II			+	+	
Nymphalidae									
Limenitis populi (Linnaeus, 1758)	O							+	
Limenitis camilla (Linnaeus, 1764)	O								
Neptis sappho (Pallas, 1771)	O							+	
Neptis rivularis (Scopoli, 1763)	O	E/V							
Apatura ilia (Den.et Schiff., 1775)	O							+	
Apatura iris (Linnaeus, 1758)	O							+	
Boloria aquilonaris (Stichel, 1908)								+	
Brenthis hecate (Den.et Schiff., 1775)								+	
Proclossiana eunomia (Esper, 1799)	O	E						+	
Euphydryas maturna (Linnaeus, 1758)	SO	E	II,IV	II	E		+	+	
Euphydryas aurinia (Rottemburg, 1775)			II	II				+	
Melitaea trivia (Den.et Schiff., 1775)								+	
Melitaea britomartis Assmann, 1847								+	
Geometridae									
Eupithecia gelidata Möschler, 1860		V							
Gnophos obscuratus (Den.et Schiff., 1775)							+		
Arctiidae									
Ammobiota festiva (Hufnagel, 1766)									
Chelis maculosa (Den.et Schiff., 1775)	SO								
Eucharia casta (Esper, 1785)	SO								
Callimorpha quadripunctaria (Poda, 1761)			II*						
Noctuidae									
Catocala electa (Vieweg, 1790)	SO								
Pyrrhia purpurina (Esper, 1804)		E							
Luperina nickerlii (Freyer, 1845)		E							
Hydraecia petasitis Doubleday, 1847							+		
Phragmatiphila nexa (Hübner, 1808)	O	E							
Xestia sincera (Herrich - Schäffer, 1851)		E							
Xestia rhaetica (Staudinger, 1871)		V							
Eugraphe subrosea (Stephens, 1829)		E							

Legend

Column 1: threat categories under the Regulation No. 395/1992 to the Czech National Council Act No. 114/1992 on the Protection of Nature and the Landscape : KO - critically endangered; SO - severely endangered; O - endangered.

Column 2: ŠKAPEC [ed.], 1992: Red Book of Threatened and Rared Species of Plants and Animals of Czech and Slovak Federal Republic 3. Príroda, Bratislava, 155 pp.: E - endengered ; V - vulnerable.

Column 3. Directive on the Conservation of Natural Habitats and Wild Fauna and Flora:

II - Enclosure II: Species of plants and animals of EC interest whose protection requires establishing particularly protected areas

IV - Enclosure IV: Animal and plant species of EC interest that require strict protection

* - the species is also considered a priority

Column 4. Convention on the Conservation of European Wildlife and Natural Habitats: II - strictly protected fauna species; III - protected fauna species
Column 5. GROOMBRIDGE [ed.] 1993: 1994 IUCN Red List of Threatened Animals: E - endangered; V - vulnerable; R - rare.
Column 6. WELLS S. M., PYLE R. M., COLLINS N. M., 1983: The IUCN Invertebrate Red Data Book. Gland : E - endangered; V - vulnerable.
Column 7. (The United Nations the Economic and Social Council: + present.
Column 8. Coordination of Information on the Enviroment of European Community (CORINE): + present

4. FRANCE

_____

Examen des actions menées en France depuis 1998 pour la conservation des invertébrés inscrits à l'Annexe 2 de la Convention de Berne

R. Guilbot
avec la Collaboration des Service du patrimoine naturel du MNHN,
de Mme M. Deschamps-Cottin (1), M H. Descimon (2),
MM G. Cochet (3) et J.L. Dommanget (4).

Au cours de ces deux années, en application de la Convention relative à la conservation de la vie sauvage et du milieu de vie en Europe, des actions ont été menées principalement sur l'entomofaune mais également sur les mollusques, particulièrement sur les Margaritiféridés. La Direction de la nature et des paysages du ministère de l'Aménagement du territoire et de l'Environnement développe des actions de protection de la diversité biologique sur les invertébrés. Sous son impulsion un projet d'Observatoire national des invertébrés se met actuellement en place avec le soutien des ministères de l'Éducation nationale, de la Recherche et de la Technologie, Direction de la Recherche, de l'Agriculture et de la Pêche, Direction générale de l'Enseignement et de la Recherche et d'organismes publics (INRA, MNHN, IRD, ONF) et de l'OPIE.

1. Actions dirigées vers l'entomofaune

1.1. Les inventaires

Le service du patrimoine naturel (SPN) constitue progressivement une banque de données à partir d'un travail d'inventaire dans le cadre du réseau national Faune-Flore. Dans ce cadre, 4 actions principales se sont développées avec le soutien de la Direction de la nature et des paysages :

- Inventaire des Crustacés décapodes,
- Inventaire des Orthoptères de France,
- Inventaire des mollusques,
- Inventaires des Odonates.

Le troisième séminaire "Inventaire et cartographie des invertébrés comme contribution à la gestion des milieux naturels français" organisé par l'Office pour l'information éco-entomologique de Franche-Comté, l'OPIE national et le service du patrimoine naturel s'est tenu à Besançon les 8, 9 et 10 juillet 1999. Les thèmes abordés se répartissent de la manière suivante :

- Inventaires, cartographie et suivi d'espèces : 15 exposés,
- Études des habitats et d'espèces : 6 exposés,
- Expériences de gestion : 6 exposés,
- Thèmes généraux et observatoires : 4 exposés.

Plusieurs espèces inscrites à l'annexe 2 de la Convention de Berne ont fait l'objet de communications : 4 espèces de lépidoptères *: Maculinea.sp, Euphydryas aurinia, Coenonympha oedippus* et *C. tullia* ; 1 espèce de Coléoptère : *Osmoderma eremita* et 5 espèces d' Odonates : *Coenagrion mercuriale, Leucorrhinia albifron, L. caudalis, L. pectoralis* et *Oxygastra curtisii.*

1.2. Les recherches

Le plan national d'actions "entomofaune" mis en place par la Direction de la nature et des paysages a permis de réaliser plusieurs études finalisées à la conservation des espèces inscrites à l'Annexe II de la Convention :

- **Distribution - écologie et conservation des *Melitaea* et *Euphydryas* en France**

Cette étude a permis de préciser la répartition des 19 espèces françaises; toutes sont en régression importante sur l'ensemble de leur aire de répartition. Deux espèces sont inscrites à l'Annexe II :

Euphydryas aurinia
La variation subspécifique de cette espèce est importante, pour chaque sous-espèce, les chenilles s'alimentent sur une plante spécifique. L'évaluation des populations est difficile compte tenu des régions et des sous-espèces. Dans le Nord et l'Ouest, les populations sont en régression. En Alsace, Lorraine, Bourgogne, Jura et Massif central, les populations commencent à régresser,

Euphydryas maturna
La distribution de cette espèce est de plus en plus fragmentée. Les populations sont faibles leur fluctuation rend difficile l'observation de cette espèce d'autant que les populations ont souvent un faible effectif,

- **Étude d'un Odonate protégé : Macromia splendens**

Les différents axes de recherches à poursuivre sont de préciser la bioécologie de l'espèce, de caractériser ses habitats et les influences anthropiques, de poursuivre des inventaires et de préciser l'état des populations (synthèse et cartographie nationale de l'espèce, stratégies conservatoires possibles...).

La répartition nationale paraît assez stable depuis la découverte de l'espèce en France. *Macromia splendens* se localise au sud-ouest du pays : sud du Massif central mais ne paraît pas franchir la vallée du Rhône à l'est et ne dépasse pas le département de la Dordogne au nord-ouest. Sa marge altitudinale se situe dans les Landes au niveau de la mer et jusqu'à 500 m d'altitude, au sud du Massif central. Ces populations ne paraissent pas en régression en dehors de cas particuliers (pollutions locales, mise en assec de retenues hydroélectriques, exploitation de granulat. L'étude se poursuit jusqu'en 2001.

- **Inventaire commenté des insectes Coléoptères endémiques de France continentale et de Corse**

Cet inventaire est actuellement en cours. Il doit établir : la liste générale des Coléoptères endémiques ; une liste thématique commentée (statut, biogéographique, écologie ; l'indexation des zones ou biotopes concernés par l'endémisme ; des propositions pour la conservation de ce patrimoine.

- **Mise au point des cahiers d'habitat du réseau Natura 2000**

L'intégration des insectes de l'Annexe II de la Convention de Berne dans l'élaboration des documents d'objectifs des Sites d'intérêts communautaires permet de définir des priorités de conservation pour ces espèces. Sont concernées : 6 espèces d'Odonates, 6 espèces de Coléoptères et 7 espèces de Lépidoptères. Ces cahiers d'habitat résument l'état des connaissances. Pour chacune des espèces la répartition géographique a été présentée, le risque de confusion avec d'autres espèces a été signalé, les caractères biologiques et écologiques ont été précisés tant en ce qui concerne les adultes

que le développement larvaire. Nous devons reconnaître que l'état des populations nous pose problème, il nécessite des suivis qui sont en l'état très incomplet. Des mesures de gestion ont été proposées ainsi que les axes de recherche à développer.

- **Suivi des populations de Parnassius apollo**

L'étude des populations de Parnassius apollo L. engagée en 1996, s'est poursuivie jusqu'en 1998. Ce travail a permis de mettre au point une méthodologie de suivi et d'établir un réseau de surveillance permettant d'assurer le suivi à long terme d'espèces sensibles.

Les populations de Parnassius apollo des Alpes et des Pyrénées sont solidement établies, pour les massifs d'altitude moyenne la situation est plus critique et nécessite des plans de gestion appropriés. Pour les populations des Cévennes, des actions de gestion spécifique sont mises en place. Au cours de ce travail, plusieurs axes ont été développés en essayant de faire le lien entre recherche fondamentale et biologie de la conservation. Par exemple, les rythmes d'activité des chenilles et adultes ont été étudiés, les différentes catégories d'activité choisies ont été décrites ainsi que le comportement de l'insecte in situ. L'amplitude des déplacements des chenilles a été étudiée en laboratoire et sur le terrain ainsi que les modalités de prise de nourriture, etc. (travaux de M^{me} M. Deschamps-Cottin - univ.. de Provence - 1999).

- **Suivi de la recommandation du groupe d'expert concernant les conséquences de l'usage des endectocides sur les invertébrés non cible (annexe 6 du rapport de la 5^{e} réunion)**

L'évaluation de l'impact écotoxicologique résultant de l'usage de médicaments antiparasitaires en élevage extensif est actuellement en cours. Une pré-étude sur l'impact des produits vétérinaires (endectocides) a été financée par l'Institut national de la recherche agronomique (INRA) dans le cadre d'une Action thématique programmée (ATP) ; ceci pour faire le relais avec un programme accepté par le ministère de l'Aménagement du territoire de l'environnement (programme 1998).

Six laboratoires sont mobilisés sur ce programme qui doit couvrir la période 2000-2002:

- INRA UR 66(Toulouse) (laboratoire de Pharmacologie Toxicologie ; P.Galtier) ;
- Université de Montpellier (Laboratoire de Zoogéographie ; J.P. Lumaret) ;
- INRA UR86 (Tours-Nouzilly) (Station de pathologie aviaire et Parasitologie ; D. Kerboeuf) ;
- INRA UR 111 (Dijon) (Laboratoire de Microbiologie des sols ; J.C. Fournier) ;
- INRA, UMR 188 ENV Lyon (Laboratoire de Toxicologie et Métabolisme comparé des Xénobiotiques ; P; Delatour) ;
- INRA UR 258 (Unité de Phytopharmacie et Médiateurs chimique ; C. Mougin)

1.3. Réseau de suivi

Depuis 1995, M. J. Lhonoré assure le suivi des populations armoricaines de *Maculinea alcon* et de celles des *Maculinea sp*. du Sud-Ouest de la France. De nouvelles stations ont été découvertes, souvent à faibles effectifs et isolées. Parallèlement à ce projet, plusieurs réseaux régionaux se sont constitués autour d'associations entomologiques, de parcs nationaux, de conservatoires régionaux et de réserves naturelles. Les inventaires entomologiques sont privilégiés, mais le suivi des populations d'espèces protégées commence à s'organiser. L'Observatoire national des invertébrés a, entre autres missions, celles de mettre en place des méthodologies de suivi et de centraliser et d'exploiter les informations.

- **Réserves naturelles de France**

En 1996, la commission scientifique des Réserves naturelles de France a lancé un second inventaire national du patrimoine naturel du réseau des réserves, avec l'objectif de mettre en place un observatoire du patrimoine naturel dont le but est de répondre aux besoins des gestionnaires. Les résultats montrent l'importance de la faune invertébrée hébergée dans de nombreuses réserves. L'une d'entre elles a été créée spécialement pour protéger *Carabus auronitens* cupreonitens endémique à la forêt de Cerisy. Certaines espèces de l'Annexe II de la Convention de Berne sont bien représentées au sein des réserves : concernant les Odonates, *Coenagrion Mercuriale* est présente dans 11 réserves soit 59 % des réserves, *Oxygastra curtisii* dans 7, *Lucanus cervus* dans 18, *Cerambyx cerdo* dans 7, *Parnassius apollo* dans 22, *Parnassius mnemosyne* dans 11, *Euphydryas aurinia* dans 13, *Maculinea arion* dans 13, *Thersamolycaena dispar* dans 6. *Papilio alexanor* et *Osmoderma eremita* ne sont représentées que dans une seule réserve chacune. Ces observations vont permettrent d'améliorer les connaissances. La commission scientifique de Réserves naturelles de France a identifié les espèces prioritaires en matière de conservation. Des suivis de populations se développent sur une quinzaine d'espèces figurant à l'Annexe II, particulièrement dans la Réserve naturelle des Marais de Lavours, dans l'Ain, et dans les Réserves naturelles de Haute-Savoie.

- **Réseau INVOD et BINVOD organisé par la Société française d'Odonatologie**

L'inventaire cartographique des Odonates de France (programme INVOD), qui collecte des données récentes issues d'un réseau d'observateurs, a été complété en 1994 par l'analyse et l'informatisation des données figurant dans la littérature spécialisée (programme BINVOD). Ces programmes, réunissant actuellement près de 120 000 données sur les Odonates de la France métropolitaine, permettent aujourd'hui de jeter les bases de l'observatoire permanent du patrimoine odonatologique national. En dehors des sources de données des programmes nationaux, l'Observatoire sera également enrichi par les informations issues des organismes s'occupant de la protection et de la gestion de l'espace.

- **Réseau du CREN Rhône-Alpes (depuis 1998)**

Une action "pilote" a été réalisée en 1999 dans la région Rhône-Alpes. Celle-ci s'est déroulée parallèlement à la mise en place au niveau régional du programme d'action de l'observatoire national sur les espèces de papillons diurnes liés aux zones humides :

Thersamolycaena dispar (Annexe II et IV de la DHFF)
Helleia helle (Protégée en France)
Maculinea alcon (Annexe IV de la DHFF)
Maculinea nausithous (Annexe II et IV de la DHFF)
Maculinea teleius (Annexe II et IV de la DHFF)
Boloria aquilonaris (Protégé en France)
Euphydryas aurinia aurinia (Annexe II de la DHFF)
Coenonympha oedippus (Annexe II et IV de la DHFF)
Coenonympha tullia (Protégée en France)

Ce programme a permis de visualiser un ensemble de problèmes pratiques inhérents à la construction de ce type de réseau, il va être reconduit 2000.

1.4. Information et Formations

L'Office pour l'information éco-entomologique, la Société entomologique de France et la Société française d'odonatologie ont organisé, avec l'aide de partenaires, des formations techniques et spécialisées sur les insectes destinées aux utilisateurs des milieux. Cet enseignement se présente sous la forme de stage (durée de 5 jours), à thème encadrés par des spécialistes dont la compétence en

garantit la qualité et la rigueur scientifique. À titre d'exemple, le programme des formations propose depuis deux ans les thèmes suivants :

- **Les insectes aquatiques** : approche exhaustive des différents ordres d'insectes aquatiques, de leur importance patrimoniale et de leur rôle de bio-indicateurs. Identification, réseaux de spécialistes, échantillonnage... ;

- **Les éphémères** : Approche exhaustive des différentes familles et du matériel nécessaire pour leur étude. Utilisation des éphémères pour évaluer la qualité des eaux et présentation de leur importance patrimoniale ;

- **Les Odonates** : Approche exhaustive de l'Ordre : biologie, écologie, reconnaissance des différents stades, stratégie d'inventaire et de recherche, suivi biologique et gestion, restauration des habitats aquatiques ;

- **Les insectes forestiers** : présentations des principaux Ordre et de leur biologie. Identification et échantillonnage. Sessions particulières sur les insectes ravageurs, patrimoniaux, indicateurs ;

- **Méthodes et techniques** ; Ensemble des méthodes nécessaires à l'étude des insectes. Problématique générale des Hexapodes (intérêts, recherches, conservation des espèces et des habitats...). Méthodologie d'échantillonnage, préparation, bibliographie, réglementation. Exploitation des résultats (logiciel, cartographie...).

L'Office pour l'information éco-entomologique Languedoc-Roussillon a organisé à Narbonne en octobre 1999 son troisième Festival international du film de l'insecte (FIFI). Le comité de sélection (SFRS, CNRS audiovisuel, IRD et OPIE) a proposé une vingtaine de films en provenance d'Europe, d'Amérique du Nord et du sud aux membres du jury, composé d'entomologistes et de cinéastes et présidé par le Professeur Gaspar de la faculté de Gembloux en Belgique. Plus de 20 000 personnes, toutes générations confondues, ont participés à cette manifestation.

2. Le statut de *Margaritifera margaritifera* en France (*Mollusca, Bivalvia, Unionacae, Margaritiferidae*)

La Moule perlière (*Margaritifera margaritifera*) fait partie des Invertébrés parmi les plus menacés d'Europe et a donné lieu à de nombreuses études sur sa répartition et sa biologie, en particulier en Allemagne, au Royaume6uni et en Fenno-Scandinavie ;

Alors que la malacologie française a produit de nombreuses publications durant le siècle dernier, les données les plus récentes, pour la Moule perlière, se résumaient, avant 1990 et pour l'essentiel, à la synthèse de Germain datant de 1930. Pourtant, cette espèce avait, depuis très longtemps, fait l'objet d'une attention particulière de l'homme pour sa capacité de produire des perles. La mise au point de P. Bouchet (1990) sur le statut des Mollusques menacés de France et l'inscription de *Margaritifera margaritifera* à l'annexe 2 de la Directive Habitat en 1992, suivie de sa protection au plan national la même année, ont suscité des recherches sur son statut actuel. De plus, par sa qualité de bio-indicateur, la Moule perlière témoigne remarquablement, par sa présence, de la pureté et de l'intégrité des rivières. Aussi, le ministère de l'Environnement et le Muséum national d'Histoire naturelle, relayés par des acteurs locaux, ont confié depuis 1994 le recensement de ce bivalve à G. Cochet. Les premiers résultats apportent des éléments récents sur le statut de l'espèce en France, sa répartition, l'évolution de ses effectifs et les causes de sa raréfaction.

Le recensement des cours d'eau à *Margaritifera margaritifera* en France montre que 80 rivières sont encore occupées dans les Vosges, le Massif armoricain, le Massif central, le Morvan et les Pyrénées. Comparativement aux données anciennes, ce statut indique une disparition de 60 % des stations. La dégradation de la qualité des cours d'eau est la principale cause de diminution. (Étude menée par Gilbert Cochet)

3. Discussion et conclusions

Les espèces d'Invertébrés inscrites à l'Annexe II de la Convention de Berne ont fait l'objet d'études et de suivis des populations, principalement sur les espèces d'insectes suivantes : *Parnassius apollo, Thersamolycaena dispar, Eurodryas aurinia aurinia, Coenonympha oedippus* et *Coenonympha tullia.* Le ministère de l'Aménagement du territoire et de l'Environnement a pris en compte, par des financements, la Recommandation n° 65 du Comité permanent (adoptée le 4 décembre 1998) sur la conservation des papillons *Maculinea alcon, Maculinea nausithous* et *Maculinea teleius.*

Parmi les autres invertébrés inscrit à l'Annexe II de la Convention seule la Moule perlière *Margaritifera margaritifera* a fait l'objet d'une étude.

Comme on peut le constater, la France a mobilisé sur la question des compétences nombreuses et complémentaires, ceci pour répondre à la recommandation concernant les "conséquences de l'usage des endectocides sur les invertébrés non cibles", votée à l'unanimité lors de la précédente réunion du groupe d'experts. Nous devons faire en sorte que cette recommandation soit entérinée par le Comité permanent de la Convention relative à la conservation de la vie sauvage et du milieu naturel de l'Europe.

Des actions de formation et d'information ont été soutenues et coordonnées.

La mise en place d'un Observatoire national des invertébrés engage une démarche à long terme. Il sera une structure de coordination et de centralisation des données. L'Observatoire permettra : d'évaluer l'état des populations d'invertébrés en France et d'assurer le suivi de leur évolution ; d'harmoniser des plans d'action sur les invertébrés ; de promouvoir la recherche ; de réaliser des synthèses et diffuser l'information. Il aura également une mission d'expertise nationale auprès des pouvoirs publics mais également auprès de la représentation française dans les instances internationales. Ce projet permettra de regrouper des partenaires potentiels : ministères, organismes publics, universitaires, associations de naturalistes mais également les usagés intéressés à la conservation durable de la diversité biologique.

Les auteurs

(1) Magali Deschamps-Cottin - Université de Provence - Laboratoire de systématique évolutive - case 5 - 3, Place Victor Hugo - 13331 Marseille Cedex 3
(2) Henri Descimon - Université de Provence - Laboratoire de systématique évolutive - case 5 - 3, Place Victor Hugo - 13331 Marseille Cedex 3
(3) ean-Louis Dommanget - 7 rue Lamartine - 78390 Bois d'Arcy
(4) Gilbert Cochet - Le village - 07130 St-Romain-de-Lerps

Références bibliographiques

Brin A., 1999 - Comment préserver le Grand Capricorne (*Cerambyx cerdo L.*) dans un réseau bocager traversé par l'A28 - Mémoire d'ingénieur, École Supérieure de l'Agriculture de Purpan, 59p.

Collectif, 1998 - Contribution à la connaissance de *Graellsia isabelae galliaegloria* Oberthur (*Lepidoptera, Attacidae*) connu uniquement de France - Rapports d'étude de l'OPIE, Vol. 3, Éd. OPIE, 36p.

Deschanps-Cottin M., 1998 - Facteurs écologiques de la distribution de *Parnassius apollo L.* (*Lepidoptera, Papilionidae*), du maintien et de l'extinction des populations en France. Conséquence pour l'établissement d'une politique de conservation efficace - Thèse de doctorat de l'Université de Provence, 196p.

Keith P., Guilbot R. et Cochet G., 1998 - Mollusques, Crustacés, Arachnides et autres petits invertébrés des eaux douces - Min. env, OPIE, SPN/MNHN, CSP, 48p.

Lhonoré J., 1998 - Biologie, écologie et répartition de quatre espèces de Lépidoptères Rhopalocères protégés (*Lycaenidae, Satyridae*) dans l'ouest de la France - Rapports d'étude de l'OPIE, Vol. 2, Éd. OPIE, 108p.

Rozier Y., 1999 - Contribution à l'étude de la Biologie de la Conservation de *Maculinea sp.* (*Lepidoptera, Lycaenidae*) dans les zones humides de la vallée du Haut-Rhône - Thèse de doctorat de l'Université Claude Bernard - Lyon I, 230p.

5. GERMANY

_____

Progress in invertebrate research and conservation in Germany (1998-2000) German report to the « Bern Convention Group of Experts on conservation of Invertebrates », 2000

by Hors Gruttke,
Federal Agency for Nature Conservation (Bundesamt für Naturschutz

_____

1. New activities on Bern Convention Invertebrates (BCI's)

1.1. German data sheets of Bern Convention Invertebrates (BCI's)

For all species of the appendices of the EU Directive on Fauna, Flora and Habitats (FFH), which comprises all BCI's of Germany, datasheets are going to be prepared by the Federal Agency for Nature Conservation. Besides standard information ass to taxonomical status or Red List status in Germany and FFH classification, detailed informations on habitat requirements, life history, historicald current distribution (see Fig. 1 and 2), reasons for decline and proposed conservation measures are provided. These data sheets will be published (in German) together with parpers on issues related to FFH-species which were presented at a symposium in November 1999 (Petersen et al. 2000).

1.2. *Margaritifera margaritifera*

Conservation measures on the freshwater pearl mussel in Germany are carried out by the German Federal states (Bundesländer). Reports on the current status of populations and the measures planned and taken have been sent to the authors of the Action Plan for this species (Araujo & Ramos) and are included in the paper to be presented at the expert meeting (see Action plan T-PVS (2000) 10).

1.3. « 100-Species-Basket » project

A number of approximately 140-180 species which are regarded as representative for relevant causes of endangerment in Germany will be selected for this project organised by the Federal Agency for Nature Conservation. Its main task is to develop a monitoring program for these key species in order to detect new trends in the decline of endangered wild animal and plant species in relation to effects of different types of land use.

The list of species is still under discussion. To date, 42 invertebrates are among the species selected (Crustacea 3, Echinodermata 1, Mollusca 10, Arachnida 6, Lepidoptera 6, Neuroptera 1, Orthoptera 6, Coleoptera 9), 11 of which belong to the group of BCI's : *Leucorrhinia pectoralis, Cerambyx cerdo, Osmoderma eremita, Rosalia alpina, Eriogaster catax, Euphydryas maturna, Lopingha achine, Lycaena dispar, Parnassius apollo, Astacus astacus* and *Margaritifera margaritifera*. The resulting data base shall also be used for the updating of Red Lists, to fulfill international reporting obligations and for the development of specific protection and management measures.

2. Other activities

2.1. Assessment of status of *Orthoptera* in German

The Federal Agency for Nature Conservfation has launched and is supervising a survey and research project which is intended to review and analyse population trends and current as well as historical distributions of all species of *Orthoptera* (93) in Germany in order to re-assess and evaluate their status of threat in more detail. The project has been started in 1998 and will be continued until the end of 2001.

2.2. Revision of the German « Species Protection Decree »

The « Bill on Species Protection » (Bundesartenschutzverordnung) which regulates the collection, possession, breeding and commercial trade of especially protected species has been revised in order to adjust this law to European (EU) legislation. New comprehensive species lists have been elaborated and will be officially published this year.

2.3. Symposium on Germany-wide Red Lists

In March 1999 a symposium was organised by the Federal Agency for Nature Conservation in which legal implications, applications and perspectives of Germany-wide Red lists have been discussed by experts of different taxonomical groups, administrators and planners. The participants came to the conclusion that Red Lists are broadly accepted conservation tools which are used on a regular basis in conservation related plannings and in intervention compensation procedures. Future updating should centre on adding taxonomical groups previously not covered, publishing complete species lists (checklists), including information on the national responsibility for particular species and biological and ecological data that are relevant to practice. The papers presented at the Symposium will be published within the next month (Binot et al. 2000).

3. References

Binot, M., Gruttke, H., Ludwig, G. & Riecken, U. (Eds.) (2000) : Bundesweite Rote Listen – Bilanzen, Konsequenzen Perspektiven. – Schriftenreihe für Landschaftspflege u. Naturschutz, 65, in press.

Petersen, B., Ssymank, A., Schröder, E. & Hauke, U. (Eds.) (2000) : Das europäische Schutzgebietssystem Natura 2000. ökologie und Verbreitung von Arten der FFH-Richtlinie in Deutschlant (mit Referaten und Ergebnissen eines Workshops au der Insel Vilm vom 22-26.11.1999). Schriftenreihe für Landschaftspflege u. Naturschutz, 68, in press.

Appendix Figures :

Figure 1 : Distribution map of *Euphydryas maturna* in Germany compiled by P. Pretscher 2000. Open circles : extinct populations (records until 1979) ; filled circles ; extant populations (records since 1980) ; ? : doubtful records. Altitudes in 300 m steps : not hatched 0-300 m, lightly hatched > 300-600 m, medium hatched > 600-900 m, dark hatched > 900 m.

Figure 2 : Distribution map of *Coenonympha hero* in Germany compiled by P. Pretscher 2000. Open circles : extinct populations (records until 1979) ; filled circles : extant populations (records since 1980) ; ? : doubtful records. Altitudes in 300 m steps : not hatched 0-300 m, lightly hatched > 300-600 m, medium hatched > 600-900 m, dark hatched > 900 m.

6. GREECE

_____

Report on the progress towards the conservation of Bern Convention Invertebrates in Greece, 1998-2000

Anastasios Legakis, Zoological Museum, Dept. of Biology,
Univ. of Athens, Panepistimioupolis, GR-157 84 Athens, Greece

1. Bern Convention Invertebrates and the Habitats Directive

The presence of BCIs in the sites proposed for inclusion in the Natura 2000 network is being used to document the importance of these sites during the implementation of Special Environmental Studies, an official procedure for the designation of protected areas.

2. Inventories

A computerised data bank is being created at the Zoological Museum of the University of Athens in collaboration with the Hellenic Zoological Society. This data bank will include detailed locality records, as well as data on the population status of all the fauna of Greece. In the first phase that will end in the end of 2000, a small number of invertebrate groups (Coleoptera Carabidae & Tenebrionidae, Orthoptera, Siphonaptera, Echinoderma, marine Bivalvia) will be included.

The Hellenic Zoological Society is in the final stages of the publication of the first volume of the Lepidoptera of Greece written by Dr. L. Gozmany in its series Fauna Graeciae. Further volumes of this series under preparation include the marine Gastropoda, the Cephalopoda and the slugs.

3. Threatened species list

A new version (March 1999) of the list of threatened, protected and endemic animal species of Greece produced by the author in collaboration with a number of specialists from Greece and abroad, has been circulated (Legakis 1999). It includes more than 380 threatened and/or protected invertebrate species and 1865 invertebrate species endemic to Greece.

4. Legislation

The Greek Government has initialled the preparation of a new law for the protection of plants and animals. A scientific committee has been set up to co-ordinate this activity.

5. References

Legakis A. 1999. *Threatened, protected and endemic animal species of Greece*. Zoological Museum of the Univ. of Athens.

7. IRELAND

Progress in relation to BCIs in Ireland (since the last meeting of the specialists Group)

Mr Martin SPEIGHT

Efforts have been focussed on the following species :

- *Austropotamobius pallipes*

The monitored re-introduction programme, concerning two lakes, is proving successful. The animals introduced have survived two years now and show every sign of having successfully established themselves. Effects on benthic vegetation are being examined, particularly on *Chara* spp, which form part of the diet of the crayfish.

A trial survey of important sites, based on wildlife management staff using crayfish cages provided, yielded unsatisfactory results – 50 % of the sites had not been examined due to shortage of staff time.

- *Margaritifera margaritifera*

Work on the ground has been limited to surveying rivers for *Margaritifera* populations and attempting to develop a technique for surveying young mussels (7-20 year-old specimens). We now know we have two rivers each containing more than 2.5 million mussels. We have not found any convenient way of surveying young mussels.

- *Vertigo* species

Continued survey has yielded more sites for *Vertigo augustior*. We find between 5 and 10 new sites each year, but not necessarily containing populations worthy of conservation effort. 1999 yielded only one good site.

- ***Website***

We are at present putting together material for incorporation into an all-Ireland invertebrates website. The Bern Convention species will be included in this exercise. Photographies of the species, species accounts and management recommendations are being prepared, together with a downloading facility for information to use in evaluation of sites etc.

8. LUXEMBOURG

Rapport 1998-1999 concernant le Grand-Duché de Luxembourg

Mr Marc Meyer

Depuis la dernière réunion, peu d'activités concenant les invertébrés de la Convention de Berne ont été effectuées.

Le projet le plus développé depuis des années est celui qui concerne la population de la moule perlière (*M. margaritifera*) dans l'Our, rivière belge d'abord, puis cours d'eau frontalier entre le Luxembourg et l'Allemagne. Cette population est encore assez importante, mais la reproduction est fortement réduite ce qui se traduit par l'absence d'individus jeunes. Un programme de renforcement du développement larvaire par des mesures *ex situ*, sur des truites indigènes, a montré un premier résultat, sept ans après la première campagne: des jeunes moules sont apparues dans le sédiment, un signe du succès du projet. Les problèmes de pollution organique des tributaires et de l'Our-même par contre n sont pas encore résoulus. Une meilleure concertation un un programme d'investissement des trois pays concernés est indispensable pour surmonter ces problèmes.

Depuis la saison 2000, les trois papillons inscrits dans l'annexe II de la Directive Habitats de l'UE et présents au Luxembourg (*E. aurinia, L. dispar, E. quadripunctaria*) sont cartographiés et un protocole de surveillance des populations a été défini par le Musée national d'histoire naturelle. Les résultats pourront être présentés lors de la prochaine réunion du groupe d'experts.

Par ailleurs, le soussigné n'a pas reçu d'informations sur d'autres activités en rapport avec les invertébrés de la Convention de Berne au Luxembourg.

Les mesures agro-environnementales appliquées actuellement au Luxembourg sont peu efficaces en ce qui concerne la sauvegarde des populations d'invertébrés terrestres liés aux terrains ouverts. Certaines espèces risquent même la perte de la majorité de leurs populations restantes, si ces mesures continuent à être appliquées d'une façon extrêment rigide (par exemple une seule date pour le fauchage tardif), provoquant ainsi une perte synchronisée d'habitats sur l'ensemble du territoire. Une révision de ces mesures en tenant compte des exigences écologiques des invertébrés serait urgente pour éviter qu'elles soient contraproductives, comme on l'a du constater pour *L. dispar*.

9. MOLDOVA

_____

Rapport relatif à la protection et à la conservation des invertébrés en République de Moldova

Les invertébrés de la République de Moldova, situation actuelle, l'inventaire et les recherches

Mr Zaharia NECULISEANU

Jusqu'à present, sur le territoire de la République de la Moldova, on a recensé plus de 15 000 espèces d'invertébrés. Dans les dernières deux décennies a été éffectué l'inventaire de plusieurs groupes d'invertébrés terrestres et édafices. Etudiés plus profondement et connus sont les groupes Coléoptères, Hyménoptères, Lépidoptères, Hétéroptères, Homoptères, Diptères, Nématodes, Colemboles, Acarines. Un grand nombre de travaux ont été publiés sur ces groupes.

Les programmes nationaux spéciaux concernant la recherche et l'inventaire des invertébrés dans ce contexte ont été effectués et s'effectuent par l'intermediaire des programmes républicains complexes de l'institut de Zoologie de l'Académie des sciences de R.M., de l' institut de Protection biologique des plantes, l'institut national de l'Ecologie, et de certaines universités**.** Ils restent les principaux centres de recherche fondamentale et applicative de la république concernant les invertébrés.

Peu d'attention est portée à la recherche de la faune des mollusques terrestres, des arachnides et de quelques groupes d'insectes. Il n'y a pas de registres, de bases de données sur beaucoup de groupes d'invertébrés. L'étude de quelques groupes des invertébrés cavernicoles, aquatiques reste insufisante.

Des échanges significatifs de l' état des invertébrés et de la faune en général se sont produit jadis dans la republique comme résultat de l'impact antropogène . Le dessèchement et la valorisation des zones humides et marécageues à partir des années 80 qui se sont produit dans les vallées du Prut, Nistru, Reut ont mené à ce que plus de 60 000 hectares de ces terrains qui servaient à l'habitat pour beaucoup de groupes des invertébrés , sont maintenant devenus des terrains agricoles.

La diminution excessive de la couverture naturelle verte par l'élargissement des surfaces des terrains agricoles a mené à leur xerofitization, aux échanges évidents dans la structure, composé et l'effectif de differents groupes et complexe des invertébrés terrestres et édafices.

On a transformé en terrains agricoles beaucoup de surfaces de steppe, dont la végetation de laquelle a été detruite et fragmentée. Seulement quelques fragments de steppe de la zone du Nord et de Sud de la République de la Moldova ont survécu: la superficie des steppes correspond seulement à 8,9 % du territoire par rapport à 30 % jadis.

Les transformations mentioneés ont causé la diminution excessive de la diversité biologique et la disparition d'un grand nombre d'espèces d' invertébrés.

Prochainement la deuxième édition du livre Rouge de la R:M apparaîtra. Parmi les 110 animaux inclus dans cette édition, 38 espèces sont des invertébrés. Quelques-unes de ces espèces sont citées dans les Annexes II et III de la Convention de Berne (tabl.1).

La liste des espèces d' invertébrés qui figurent dans le livre Rouge de la République de Moldova*

Tabl.2

Taxon	Taxon
ARTHROPODES	*Acherontia atropos L.*
INSECTA	*Callimorpha quadripunctata P.*
Mantodea	*Aglia tau L.*
Mantis religiosa L.	*Saturnia pyri Den., Schif.*
Odonata	*Eudia pavonia L.*
Coenagrion mercurialle	*Papilio machaon L.*
Coenagrion lindeni	*Iphiclides podalirius L.*
Orthoptera	*Parnassius mnemozine L.**
*Saga pedo L.**	*Zerynthia polyxena Den.,Schif.**
Coleoptera	*Catocala sponsa L.*
Calosoma sycophant L.	*Tomares nogeli Herr.,Schaff.**
*Carabus clathratus (L.)**	Hymenoptera
Carabus hungaricus Fabr.	*Scolia maculata Drury*
Carbus bessarabicus F.-W.	*Bombus fragranus*
*Cerambyx cerdo L.**	*Bombus paradoxus F.*
*Rosalia alpina L.**	*Xylocopa valga Gerst.*
*Morimus funereus Muls.**	Diptera
*Lucanus cervus L.**	*Satanas gigas Eversm.*
*Oryctes nasicornis L.**	CRUSTACEA
*Osmoderma eremita Csop. .**	*Paramysis baeri bispinosa Mart.*
Ischnodes sanguinicollis Pz.	*MOLLUSQUES*
Elater ferrugineus L.	BIVALVIA
Neuroptera	*Hypanis laeviuscula fragilis Milasch.*
Ascalaphus macaronius Scop.	*Hypanis colorata Eichwald*
Lepidoptera	*Hypanis pontica Eichwald*
Deilephila nerii L.	

* - espèces incluses dans les Annexes de la Convention de Berne

Projets relatifs aux invertébrés.

A présent sont mis en place plusieurs projets concernant les invertébrés dans le pays:

- La recherche sur les diversités biologiques forestieres(EUFORGENE);
- Le menagement de la qualité de l'eau et de la protection de la biodiversités dans le Nistru inferieur (la Banque mondiale);
- L'élaboration d'un guide didactique-informationnel:"*Les insectes rares et en voie de disparition en République de Moldova"* (REC-Moldova).

D'autres projets concernant les invertébrés on été proposés pour aprobation.

La Stratégie de conservation de la diversité biologique et paysagère de la République de Moldova a été finie cette année. Des activités de conservation des diversités biologiques seront menées pour la protection des espèces**,** ainsi que l'élargissement des superficies des aires protégées, la création de passages pour la migration et la dispersion des animaux (des passages sous les autoroutes (tunnels), la réunion de certains secteurs et des bandes de protection par la plantation de plantes et l'aménagement de nouveaux bandes, la restauration des habitats détériorés pour les espèces menacées, rares et vulnérables, l'interdiction de la fragmentation des habitats et ecosystèmes des zones protégées.

La Stratégie met en évidence les régions prioritaires pour la conservation des diversités des animaux de la R.M On engage une collaboration internationale avec les Etats voisins – la Roumanie et l'Ukraine - en vue de l'extension de la réserve biosphérique "Le delta du Danube" par l'inclusion dans sa structure de la réserve scientifique "Le Prute Bas".

Une collaboration bilatérale nécessite aussi la participation des régions du Prut-Moyen (avec la Roumanie), de Nistru inférieur avec la région Nord-Ouest de la mer Noire et la région de Nistru Superieur (avec l'Ukraine).

La mise en œuvre de toutes les mesures prévues dans ce document aura une influence positive et sur les invertébrés, qui prédominent dans tous les écosystèmes en nombre d'espèces et d'effectifs sur d'autres groupes d'animaux.

Réseau écologique national

Parmi les éléments importants de la Stratégie, on peut citer l'élaboration et la création du Réseau écologique national (REN), qui comprendra plus de 33 % de tout le territoire de la république et qui assurera un équilibre entre la pression antropogène et la capacité d'autorégénération naturelle.

En même temps, ce réseau devra représenter un système unique créé par le réseau des zones protégées (la loi concernant la création des zones protégées dans la R.M. a été votée en 1998), les zones forestières et d'autres écosystèmes représentatifs naturels qui existent encore dans différentes régions de la république.

Cette "construction écologique "comprendra une série de centres biosphérique et des corridors écologiques intégrés dans un réseau unique qui pourra assurer la stabilité écologique du territoire de R.M. La réalisation de ce shéma se préconise en 2 étapes:

1 - stabilité (jusqu' à 2000)
2 - amélioration de la qualité de l'environement (jusqu' en 2010)

Le concept de la création du REN doit être réalisé en collaboration avec plusieurs ministères et département, mais sa structure contient les élément principaux suivants:

- les centres de construction biosphérique(le noyau);
- les corridors écologiques de migration et de dispersion;
- les écosystèmes écologiques réorganisés;

L'hétérogénéité des paysages agricoles sera ameliorée par l'inclusion dans leur composition de différent types d'oasis biosphériques et l'accroissement du réseau des bandes forestières qui relient entre elles des surfaces boisées. Un tel réseau augmentera la diversité structurelle des écosystèmes et la biodiversité en général. Pour assurer le fonctionnement stable et l'intégrité des écosystèmes sur le territoire de ces centres biosphériques avec des corridors écologiques, un régime strict sera instauré qui prévoit:

- l'interdiction d'implanter des grandes unités industrielles;
- la limitation du transport et la construction des routes;
- l'augumentation sur le territoire des complexes naturels jusqu'à 30 % dans la zone de sylvosteppe et jusqu'à 20 % dans la zone de steppes;
- l'extension du réseau des zones protégées.

Pour assurer un équilibre dynamique, la protection et la conservation de la biodiversité, dans le cadre REN on préconise l'accroissement des surfaces boisées jusqu'à 286 000 hectares (dans la zone de sylvosteppe jusqu'à 240 000 hectares, mais dans la zone de steppe jusqu'à 46 000 hectares) ou 25,7 % du territoire.

Actuellement, la superficie des forêts et des bandes de protection qui peuvent être incluses dans le REN est égale à 207 000 hectares et le degré de boisement est de 19 %, y compris dans la zone de sylvosteppe – 176 000 hectares ou 20 % et dans la zone de steppe – 31 000 hectares ou 13,3 %.

On a constaté que les composantes du REN – les vallées et les zones humides des rivières Nistru et Prut, les réserves scientifiques existantes - sont d'une importance européenne pour la conservation de la biodiversité du bassin de la mer Noire et du delta du Danube. Ceux-ci servent en tant que principes aux corridors de vol et habitats pour les espèces migratoires pontiques, ponto-caspiennes et ponto-méditerranéennes. La migration de beaucoup d'espèces de papillons, coléoptères, hymenoptères, ainsi que de certains oiseaux, se fait le long de ces rivières du sud jusqu'au nord et vice versa, ainsi que sur des espaces plus vastes de l'Est à l'Ouest et inversement.

Compte tenu du fait que les terrains du fond forestier, que les zones et les bandes de protection des rivières et des lacs, que les zones naturelles protégées par l'Etat sont restés dans le domaine public, il est possible que le REN qui sera créé dans la république devienne partie intégrante du réseau pan-européen.

Le cadre légal

Dans la R.M. des lois et des règlement ont été adoptés visant la biodiversité en général (tabl.2).

Les lois visant la diversité des invertébrés tabl.2

1. La loi sur la protection de l'environnement(1992);
2. La loi zones et les bandes de protection des rivières et des lacs(1995);
3. Le règne animal(1996);
4. Les ressources naturelles(1997);
5. Le Code sylvique(1997);
6. Le Fonds des aires protégés d'etat (1998);
7. Le controle écologique intégré (1998);
8. Les espaces boisés des centres urbains et des localités rurales(1999).

Par leur contenu, ces documents prévoient la protection et la conservation de la diversité des invertébrés dans tous les écosystèmes de la république.

En même temps, R.M.a adhéré aux principaux traités internationaux qui complètent la législation nationale, concernant la biodiversité(tabl.3).

Traités auxquels la République Moldova a adhéré tabl. 3

A. Traités et lois concernant directement la conservation de la biodiversité 1. *De la conservation de la vie sauvage et du milieu naturel de l 'Europe(Berna, 1979);* 2. *Sur la biodiversité(Rio-de Janeiro, 1992);* *La Conception pan-européenne visant la conservation de la diversité biologique et des paysages(Sophia, 1995).*
B. Traités"horizontaux" concernant divers aspects de l'environnement, y compris la conservation

de la biodiversité 3. *Sur l'évaluation de l'impact sur l'environnement dans le contexte transfrontalier(Espoo, 1992);* 4. *Sur l'accès du public à l'information écologique, à la prise de décisions, à la justice visant l'environnement(Aarhus, 1998) .*
C. Traités et lois écologiques de branche ayant trait à la conservation de la biodiversité 5. *Sur la protection et l'utilisation durable du Danube(Sophia, 1994);* 6. *Sur la désertification(Paris, 1994);* 7. *L'agenda du XXI – éme siècle(Rio-de Janeiro, 1992);* 8. *La charte mondiale de la nature (New-Iork, 1980)*

Le cadre institutionnel

Dans la R.M., la mise en œuvre de la Convention concernant la protection et la conservation des diversités biologiques, y comprise des invertébrés, s'effectue par des instituts et organisations gouvernementales et non gouvernementales comme:

- Le ministère de l'Environnement et de l'Aménagement du territoire;
- L'Académie des sciences de la R.M (l'Institut de zoologie);
- l'Institut national d'écologie;
- l'Institut de protection biologique des plantes;
- le ministère de l'Education et des Sciences;
- le ministère d'Agriculture et d'Industrie d'usage;
- le service sylvicole d'Etat;
- l'association des zoologues (ONG);
- la société des énntomologues (ONG);
- la societé de Pédozoologie (ONG).

Il existe d'autres organisations actives agissant en partenariat, ce qui est indispensable pour la mise en œuvre des mesures de protection de la diversité des invertébrés et leurs habitats dans la R.M.

La situation socio-économique dans la période de transition que connaît la R.M.a des conséquences négatives sur la réalisation des programmes tehnico-scientifiques intersectoriels élaborés en commun par plusieurs instituts, les directions et le volume des recherches qui a dû être réduit à la cause des coupes budgétaires ces dernières années.

Néanmoins, en dépit de ces difficultés, la majorité des spécialistes continuent leurs activités dans leurs domaines respectifs et élaborent des nouveaux projèts de recherche sur la diversité des invertébrés aux niveaux national et international.

Recommandations concernant l'introduction de quelques espèces d'insectes carabides dans l'Annexe II de la Convention de Berne

***Carabus(Tomocarabus) bessarabicus bessarabicus* (Fischer., Waldheim, 1823)**

Classification
Embranchement: Arthropodes
Classe: Insectes
Ordre: Coleoptera
Famille: Carabidae

Cette espèce (l'espèce en cause) a été décrite par Ficher sur le territoire de la Bassarabie (à présent République de Moldova) en 1823. De là vient son nom; c'est une espèce typique à la steppe (steppicole) qui préfère les lieux (terres) vierges des steppes pontiques et kazakhes. Lorsqu'on avait detruit leurs habitats à la suite du défrichement des steppes du Sud et du Sud-Est de la RM, de la steppe de Budjeac surtout, l'aréal de cette espèces s'est brusquement réduit. Pendant le dernier siècle, l' espèce a été enregistrée sur le territoire de la République de Moldova une seule fois en 1937 près de la localité Tighina (Sud-Est de la R.M.).(Neculiseanu , 1992; 2000).

Répartition: En Ukraine, elle s'est conservée sur les territoires de quelques réserves steppicoles mais, un peu plus vers l'est, l'espèce donnée peut être rencontrée dans la région de Volga-bas (inférieur), la République du Kazakhstan, parfois atteint la Kaukhaze du Nord. (Kryjanovsky , 1983; 1995).

Statut

Europe centrale et orientale.

Carabus bessarabicus bessarabicus est une des espèces de carabides les plus menacées d'extinction d'Europe. Elle est donc gravement menacée d'extinction. Elle figure dans la livre Rouge de le République de Moldova. Le statut actuel de l'espèce d'après l'UICN correspond à la catégorie **"gravement menacée d'extinction (** d'apres les criteres B 1+ 2 c).

L'espèce ne figure pas dans les listes de la Convention de Berne et de la Directive Habitats.

Carabus (Pachystus) hungaricus scythus Motschulsky, 1847

Classification

Embranchement: Arthropodes
Classe: Insectes
Ordre: Coleoptera
Famille: Carabidae

Répartition

Espèce typique aux steppes pontiques. Au milieu du XIX^{e} siècle elle était fréquente dans les steppes entre les fleuves Nistru et Don. A la fin du même siècle, elle se rencontrait seulement en quelques lieux. Au cours du XX^{e} siècle, cette espèce n'a pas été cueillie ou signalée par aucun entomologue sur le territoire de R.M. Une telle réduction du nombre de la population de l'espèce s'est aussi produite dans la steppe d'Ukraine du Sud-Est, dans les dernières décennies celle-ci n'ayant pas été signalée que dans quelques-unes des stations de steppe de l'Est de l'Ukraine. Le défrichement prolongé des steppes peut amener à la disparition totale de cette espèce.

Statut

Europe centrale et orientale

Carabus hungaricus scythus, qui figure dans la livre Rouge de la République de Moldova, est considérée comme une espèce gravement menacée d'extinction. Son statut actuel d'après l'UICN, correspond à la catégorie **"gravement menacée d'extinction (**d'après les critères B 1+ 2 c).

L' espèce ne figure pas dans les listes de la Directive Habitats et de la Convention de Berne.

Bibliographie

Andreev A.V., Stratan V.S. 1994. Faune de Apoidea (Hymenoptera)dans la rezervation "Kodry" .Bull.de l´Acad. de Science de la Republ.de Moldova, nr.1, 32-37.

Derzhansky V.V.1997**.** List of the heteroptera of the republic of Moldova, 21 pp.

Kryjanovsky O.L 1983. Faune SSSR, Coleopteres, v.1, 2, 340.

Kryzhanovskij O.L., Belousov I.A.,Kabak I.I., Kataev B.M., Makarov K.V., Shilenkov V.G. 1995. A cheklist of the ground-beetles of Russia & adjscent lands(Insecta, Coleoptera, Carabidae), 271 pp.

Neculiseanu Z.Z., Stratan V.S, Vereschiaghin B.V., Ostaficiuc V.G.1992. Insectele rare si pe cale de disparitie din Moldova, 118 pp.

Neculiseanu Z.Z., Matalin A.V. 2000. A catalogue of the ground-beetles of the Republic of Moldova (Insecta, Coleoptera, Carabidae), 168 pp.

Nesterov P.I. 1988.Classe des Nematodes, 277 pp.

Podubnîi A.G. 1989. Psilidî (Homoptera, Psylloidea) iugo-zapada Evropeiscoi ciasti SSSR, 182 pp

Poiras A. 1998. Catalogue of the weevils and their host plants in the Republic of Moldova, 156 pp.

10. THE NETHERLANDS

_____

THE PRESENT STATE OF THE BCI'S IN THE NETHERLANDS

Reported by P. J. van Helsdingen
European Invertebrate Survey – Netherlands
Leiden, Netherlands

INTRODUCTION

Of the 19 Bern Convention invertebrates presently or formerly occurring in the Netherlands nine are extinct or probably extinct, six are critically endangered, one is endangered, one is vulnerable, one falls in the category 'Insufficiently Known', while one appeared in our country only sporadically in the past and therefore should be considered a straggler (classified as Rare below).

The Netherlands is a lowland country and first of all are a country of wetlands and waterbodies, including the larger rivers. The fauna is poor by nature, because the variation in available natural habitats is scanty. The submontainous, montainous, and alpine regions are completely lacking, while limestone grasslands are rare and restricted to the southern tip of the country.

Most wetlands suffer of bad water quality and are sometimes heavily polluted. Even wetland reserves suffer from the bad water quality, because the reserves are situated higher than the surrounding polder areas, resulting in a permanent seeping away of the water from the reserves towards the polders. This relatively high position of wetland areas is caused by the continuous setting of the surrounding agricultural areas where the water table is artificially lowered on request of the farmers, which hold the best cards and have the greatest influence on the polder authorities. Agriculture is economy! This leads to a shortage of water in the wetlands during the drier periods of the year, forcing management to choose between two evils: drying out of the wetland reserve, or pumping in of polluted water from the surrounding areas.

In many areas in the eastern part of the country the quality of the groundwater is severely deteriorating. Here, too, the country is largely drying out as a result of agricultural activities and water company activities. Heavy chemical pollution is seeping into the soil. Air pollution through industries and agriculture (intensive cattle breeding and cultivation of pigs) is a serious and persistent problem. A heavy toll is also paid because of housing development and the construction of new transport infrastructures and their impact on the available spaces left.

There are continuous efforts to improve upon the situation. The dehydration is recognized by all as a major proble. Polder administrations, which are responsible for the water management in the polders, were recently democratised and a number of nature-aware members were elected. The water quality is improving very slowly. The Nature Policy Plan has put the National Ecological Network politically firmly on the map, but the problems to implement this governmental decision are immense. The necessary reserves to complete the network are acquired at much too low a pace.

It is not surprising that under these circumstances the larger part of the fauna is under continuous stress and the species which are endangered will remain so, despite all good intentions. Changes and developments are reported upon below.

ODONATA

Aeshna viridis

National status: Vulnerable.

Distribution: fenlands in the central and northeastern parts of the Netherlands.

Reasons for decline: eutrophication; pollution; loss of habitat. The species is mainly dependent on the Soldier Plant (*Stratiotes aloides*) which is very sensitive of toxic pollutants, especially 'Atrazin' used in the cultivation of Maize, which cultivation has increased enormously over the last decades. Another possibility for egg deposition in Reed-mace (*Typha latifolia*). *Aeshna viridis* presently is vulnerable, although slowly recovering. It thrives best in areas where the water quality is stabilized through seepage.

Conservation measures taken: general improvement of the environment is in extremely slow progress.

Conservation measures proposed: speeding up of general improvements, such as suppression of excessive acidification and eutrophication and restoration of natural, dynamic groundwater regimes.

Main bibliography:

Geijskes, D.C. & J. van Tol, 1983. De Libellen van Nederland (Odonata). - (Hoogwoud, Netherlands).
Verspreidingsgegevens van de Nederlandse libellen, 1995. - European Invertebrate Survey - Netherlands (Leiden).
Schorr, M., 1996. *Aeshna viridis.* In: Helsdingen, P.J., L. Willemse & M.C.D. Speight (Eds.), 1996. Background information on invertebrates of the Habitats Directive and the Bern Convention 2: 226-238.
Wasscher, M., 1999. Bedreigde en kwetsbare libellen in Nederland. - European Invertebrate Survey - Netherlands (Leiden).

Coenagrion mercuriale

National status: Extinct.

Distribution: occurred locally in small rivers with good water quality in the eastern parts of the Netherlands. Last seen in 1955.

Reasons for decline: possibly because of canalisation of smaller rivers.

Conservation measures taken: none.

Conservation measures proposed: none.

Main bibliography:

Geijskes, D.C. & J. van Tol, 1983. De Libellen van Nederland (Odonata). - (Hoogwoud, Netherlands).
Verspreidingsgegevens van de Nederlandse libellen, 1995. - European Invertebrate Survey - Netherlands (Leiden).
Grand, D., 1996. *Coenagrion mercuriale*. In: Helsdingen, P.J., L. Willemse & M.C.D. Speight (Eds.), 1996. Background information on invertebrates of the Habitats Directive and the Bern Convention 2: 245-253.
Wasscher, M., 1999. Bedreigde en kwetsbare libellen in Nederland. - European Invertebrate Survey - Netherlands (Leiden).

Leucorrhinia albifrons

National status: Critically endangered.

Distribution: very local in oligo-mesotrophic fens in the Southeast and East, always in small populations. The last record from the Netherlands is from 1994, which might be the last record for the whole of northwestern Europe.

Reasons for decline: acidification; eutrophication; loss of habitat; expected to disappear soon because of gradual acidification of mesotrophic fens.

Conservation measures taken: general improvement of environment.

Conservation measures proposed: speeding up of general improvements, such as suppression of excessive acidification and eutrophication and restoration of natural, dynamic groundwater regimes.

Main bibliography:

Geijskes, D.C. & J. van Tol, 1983. De Libellen van Nederland (Odonata). - (Hoogwoud, Netherlands).
Verspreidingsgegevens van de Nederlandse libellen, 1995. - European Invertebrate Survey - Netherlands (Leiden).
Schorr, M., 1996. *Leucorrhinia albifrons.* In: Helsdingen, P.J., L. Willemse & M.C.D. Speight (Eds.), 1996. Background information on invertebrates of the Habitats Directive and the Bern Convention 2: 266-278.
Wasscher, M., 1999. Bedreigde en kwetsbare libellen in Nederland. - European Invertebrate Survey - Netherlands (Leiden).

Leucorrhinia caudalis

National status: Extinct.

Distribution: the species has disappeared, probably because of gradual acidification of mesotrophic fens; last record from 1970; no natural recolonization expected because the nearest population lives near Laon in France (150 km south of the Netherlands).

Reasons for decline: acidification; eutrophication; loss of habitat.

Conservation measures taken: general improvement of environment.

Conservation measures proposed: speeding up of general improvements, such as suppression of excessive acidification and eutrophication and restoration of natural, dynamic groundwater regimes.

Main bibliography:

Geijskes, D.C. & J. van Tol, 1983. De Libellen van Nederland (Odonata). - (Hoogwoud, Netherlands).
Verspreidingsgegevens van de Nederlandse libellen, 1995. - European Invertebrate Survey - Netherlands (Leiden).
Schorr, M., 1996. *Leucorrhinia caudalis.* In: Helsdingen, P.J., L. Willemse & M.C.D. Speight (Eds.), 1996. Background information on invertebrates of the Habitats Directive and the Bern Convention 2: 279-291.
Wasscher, M., 1999. Bedreigde en kwetsbare libellen in Nederland. - European Invertebrate Survey - Netherlands (Leiden).

Leucorrhinia pectoralis

National status: Endangered.

Distribution: very locally in the eastern part of the country in mesotrophic fens, but populations in decline in numbers. Small populations only.

Reasons for decline: acidification; eutrophication; loss of habitat.

Conservation measures taken: general improvement of environment.

Conservation measures proposed: speeding up of general improvements, such as suppression of excessive acidification and eutrophication and restoration of natural, dynamic groundwater regimes.

Main bibliography:

Geijskes, D.C. & J. van Tol, 1983. De Libellen van Nederland (Odonata). - (Hoogwoud, Netherlands).
Verspreidingsgegevens van de Nederlandse libellen, 1995. - European Invertebrate Survey - Netherlands (Leiden).
Schorr, M., 1996. *Leucorrhinia pectoralis*. In: Helsdingen, P.J., L. Willemse & M.C.D. Speight (Eds.), 1996. Background information on invertebrates of the Habitats Directive and the Bern Convention 2: 292-307.
Wasscher, M., 1999. Bedreigde en kwetsbare libellen in Nederland. - European Invertebrate Survey - Netherlands (Leiden).

Ophiogomphus cecilia

National status: Critically endangered.

Distribution: has disappeared before 1950; last published record from 1936. For many years considered to have become extinct. Rediscovered (=returned?) in 1995, seen again in 1996, which might point to a relict population.

Reasons for threat: eutrophication; canalization of brooks.

Conservation measures taken: none.

Main bibliography:

Geijskes, D.C. & J. van Tol, 1983. De Libellen van Nederland (Odonata). - (Hoogwoud, Netherlands).
Verspreidingsgegevens van de Nederlandse libellen, 1995. - European Invertebrate Survey - Netherlands (Leiden).
Schorr, M., 1996. *Ophiogomphus cecilia*. In: Helsdingen, P.J., L. Willemse & M.C.D. Speight (Eds.), 1996. Background information on invertebrates of the Habitats Directive and the Bern Convention 2: 324-340.
Wasscher, M., 1999. Bedreigde en kwetsbare libellen in Nederland. - European Invertebrate Survey - Netherlands (Leiden).

Oxygastra curtisii

National status: Rare.

The species does not belong to the indigenous fauna of the Netherlands. The species is only known from temporary settlements. There was a breeding population in the southern part of the country from 1925-1928. The species has been observed on several occasions more recently (around 1980).

Distribution: temporary settlements only.

Reasons for decline: temporary settlements only.

Conservation measures taken: none.

Main bibliography:
Geijskes, D.C. & J. van Tol, 1983. De Libellen van Nederland (Odonata). - (Hoogwoud, Netherlands).
Verspreidingsgegevens van de Nederlandse libellen, 1995. - European Invertebrate Survey - Netherlands (Leiden).
Schorr, M., 1996. *Oxygastra curtisii*. In: Helsdingen, P.J., L. Willemse & M.C.D. Speight (Eds.), 1996. Background information on invertebrates of the Habitats Directive and the Bern Convention 2: 341-349.
Wasscher, M., 1999. Bedreigde en kwetsbare libellen in Nederland. - European Invertebrate Survey - Netherlands (Leiden).

Stylurus flavipes
(*Gomphus flavipes*)

National status: Extinct (no breeding populations known).

Distribution: has disappeared before 1950; not seen for a long time since early this century (1902) and deemed not likely to return because the nearest European populations live in France and as far as Berlin. More recently (1990-1996) the species has been rediscovered on several places along the river Rhine, but there is no proof yet of true re-establishment of a population.

Reasons for decline: eutrophication; pollution of Rhine river basin and other larger rivers.

Conservation measures taken: none.

Conservation measures proposed: none.

Main bibliography:
Geijskes, D.C. & J. van Tol, 1983. De Libellen van Nederland (Odonata). - (Hoogwoud, Netherlands).
Verspreidingsgegevens van de Nederlandse libellen, 1995. - European Invertebrate Survey - Netherlands (Leiden).
Schorr, M., 1996. *Stylurus flavipes.* In: Helsdingen, P.J., L. Willemse & M.C.D. Speight (Eds.), 1996. Background information on invertebrates of the Habitats Directive and the Bern Convention 2: 350-364.
Wasscher, M., 1999. Bedreigde en kwetsbare libellen in Nederland. - European Invertebrate Survey - Netherlands (Leiden).

Sympecma braueri
[Present name: *Sympecma paedisca* Brauer]

National status: Critically endangered.

Distribution: oligo- and mesotrophic fens in the eastern part of the country. The species has strongly declined since the seventies. Recently (1990-1996) the species has been observed in a number of localities in the northern part of the country.

Reasons for decline: acidification; eutrophication; drying out; disappearance of seepage of groundwater; loss of habitat.

Conservation measures taken: general improvement of the environment is in extremely slow progress.

Conservation measures proposed: speeding up of general improvements, such as suppression of excessive acidification and eutrophication and restoration of natural, dynamic groundwater regimes.

Main bibliography:
Geijskes, D.C. & J. van Tol, 1983. De Libellen van Nederland (Odonata). - (Hoogwoud, Netherlands).
Verspreidingsgegevens van de Nederlandse libellen, 1995. - European Invertebrate Survey - Netherlands (Leiden).
Schorr, M., 1996. *Sympecma braueri*. In: Helsdingen, P.J., L. Willemse & M.C.D. Speight (Eds.), 1996. Background information on invertebrates of the Habitats Directive and the Bern Convention 2: 365-378.
Wasscher, M., 1999. Bedreigde en kwetsbare libellen in Nederland. - European Invertebrate Survey - Netherlands (Leiden).

COLEOPTERA

Cerambyx cerdo

National status: Critically endangered or Extinct.

Distribution: former records from eastern provinces (stands of oak).

Reasons for decline: unknown.

Conservation measures taken: none.

Conservation measures proposed: none.

Main bibliography:
Luce, J.-M., 1996. *Cerambyx cerdo*. In: Helsdingen, P.J., L. Willemse & M.C.D. Speight (Eds.), 1996. Background information on invertebrates of the Habitats Directive and the Bern Convention 3: 22-26.

Dytiscus latissimus

National status: Extinct?

Distribution: Used to occur in larger lakes; last records from early seventies.

Reasons for decline: changes in water quality?

Conservation measures taken: general improvemeny of water quality.

Conservation measures proposed: none.

Main bibliography:
Drost, M.B.P. *et al*., 1992. De Waterkevers van Nederland. (Leiden Natural History Museum)
Foster, G.N., 1996. *Dytiscus latissimus*. In: Helsdingen, P.J., L. Willemse & M.C.D. Speight (Eds.), 1996. Background information on invertebrates of the Habitats Directive and the Bern Convention 3: 31-39.

Graphoderus bilineatus

National status: Insufficiently known.

Distribution: precise distribution unknown.

Reasons for decline: unknown.

Conservation measures taken: none.

Conservation measures proposed: none.

Main bibliography:
Drost, M.B.P. *et al*., 1992. De Waterkevers van Nederland. (Leiden Natural History Museum)
Foster, G.N., 1996. *Graphoderus bilineatus*. In: Helsdingen, P.J., L. Willemse & M.C.D. Speight (Eds.), 1996. Background information on invertebrates of the Habitats Directive and the Bern Convention 3: 40-48.

Lucanus cervus

National status: Rare, nowhere common. Populations in the original core areas appear to remain stable.

Distribution: in larger forest areas in the eastern part of the country.

Reasons for decline: further decline seems to have stopped.

Conservation measures taken: none.

Conservation measures proposed: none.

Main bibliography:
Luce, J.-M., 1996. *Lucanus cervus*. In: Helsdingen, P.J., L. Willemse & M.C.D. Speight (Eds.), 1996. Background information on invertebrates of the Habitats Directive and the Bern Convention 3: 53-58.

Osmoderma eremita

National status: Extinct?

Distribution: ?

Reasons for decline: ?

Conservation measures taken: none.

Conservation measures proposed: none.

Main bibliography:
Luce, J.-M., 1996. *Osmoderma eremita*. In: Helsdingen, P.J., L. Willemse & M.C.D. Speight (Eds.), 1996. Background information on invertebrates of the Habitats Directive and the Bern Convention 3: 64-69.

LEPIDOPTERA

Coenonympha hero

National status: Extinct.

Distribution: disappeared from the Netherlands in 1957.

Reasons for former decline: dehydration of wet forests.

Conservation measures taken: none.

Conservation measures proposed: none.

Main bibliography:
Tax, M.H., 1989. Atlas van de Nederlandse dagvlinders. - (Vlinderstichting/ Wageningen).
Wynhoff, I., 1996. *Coenonympha hero*. In: Helsdingen, P.J., L. Willemse & M.C.D. Speight (Eds.), 1996. Background information on invertebrates of the Habitats Directive and the Bern Convention 1: 93-97.

Hypodryas aurinia
(Euphydryas aurinia)

National status: Extinct.

Distribution: disappeared from the Netherlands around 1980.

Reasons for former decline: dehydration of wet grasslands.

Conservation measures taken: none.

Conservation measures proposed: none.

Main bibliography: Tax, M.H., 1989. Atlas van de Nederlandse dagvlinders. - (Vlinderstichting/ Wageningen).
Wynhoff, I., 1996. *Euphydryas aurinia*. In: Helsdingen, P.J., L. Willemse & M.C.D. Speight (Eds.), 1996. Background information on invertebrates of the Habitats Directive and the Bern Convention 1: 121-126.

Lycaena dispar

National status: Critically endangered.

Distribution: there is a shift in the occurrence in the Netherlands in that it has declined in one reserve, while increasing slightly in two others; the total number of individuals is slowly decreasing.

Reasons for former decline: probably incorrect management of sites.

Conservation measures taken: efforts for correct management (mowing frequencies and timing).

Conservation measures proposed: a species recovery plan has been prepared but was not yet implemented.

Main bibliography: Tax, M.H., 1989. Atlas van de Nederlandse dagvlinders. - (Vlinderstichting/Wageningen).
Wynhoff, I., 1996. *Lycaena dispar*. In: Helsdingen, P.J., L. Willemse & M.C.D. Speight (Eds.), 1996. Background information on invertebrates of the Habitats Directive and the Bern Convention 1: 150-156.

Maculinea arion

National status: Extinct.

Distribution: last seen in 1964.

Reasons for former decline: wrong management of reserves.

Conservation measures taken: changes in management (mowing intensities).

Conservation measures proposed: management should follow the prescribed mowing intensities and time of the year.

Main bibliography: Tax, M.H., 1989. Atlas van de Nederlandse dagvlinders. - (Vlinderstichting/Wageningen).
Wynhoff, I., 1996. *Maculinea arion*. In: Helsdingen, P.J., L. Willemse & M.C.D. Speight (Eds.), 1996. Background information on invertebrates of the Habitats Directive and the Bern Convention 1: 157-163.

Maculinea nausithous

National status: Critically endangered.

Distribution: reintroduced at one site (reserve) in the South in 1990. The experiment has been successful and the population is slowly spreading from one meadow to several connecting road verges.

The number of individuals is slowly increasing.

Reasons for former decline: wrong management of reserves.

Conservation measures taken: changes in management (mowing intensities).

Conservation measures proposed: management should follow the prescribed mowing intensities and time of the year.

Main bibliography: Tax, M.H., 1989. Atlas van de Nederlandse dagvlinders. - (Vlinderstichting/Wageningen).
Wynhoff, I., 1996. *Maculinea nausithous*. In: Helsdingen, P.J., L. Willemse & M.C.D. Speight (Eds.), 1996. Background information on invertebrates of the Habitats Directive and the Bern Convention 1: 164-171.

Maculinea teleius

National status: Critically endangered.

Distribution: reintroduced at one site (reserve) in the South in 1990. The reintroduced population thrives on one meadow only, no further spreading has (yet) been observed.

Reasons for decline: reasons for former decline (wrong management) have been lifted.

Conservation measures taken: changes in management (mowing intensities).

Other conservation measures proposed: none.

Main bibliography:
Tax, M.H., 1989. Atlas van de Nederlandse dagvlinders. - (Vlinderstichting/Wageningen).
Wynhoff, I., 1996. *Maculinea teleius*. In: Helsdingen, P.J., L. Willemse & M.C.D. Speight (Eds.), 1996. Background information on invertebrates of the Habitats Directive and the Bern Convention 1: 172-179.

11. NORWAY

Protection and management of invertebrates in Norway – Status 2000

Frode ØDEGAARD
Norwegian Institute for Nature Research

There are now 10 invertebrates occurring in Norway which are listed on the Bern Convention Appendix II, as a diving beetle. *Graphoderus bilineatus* is recorded as new to Norway, recently. All these species are proposed for protection according to the Nature Conservation Act. The two butterfly-species *Parnassius apollo* and *P. mnemosyne* are protected, while the other species are awaiting an adoption by the Environment Ministry. The most important subpopulations of *P. Mnemosyne* have been monitored by capture/recapture methods for 12 years (Aagaard et al. 1997).

Reports on threatened and wulnerable species in Norway have been made for Coleoptera (Hanssen et al. 1997), Heteroptera (Ødegaard & Coulianos 1998) and Lepidoptera (Hansen & Aarvik 2000). These reports constituted the basis for the new Norwegian Red List (Directory for Nature Management 1999a). All the invertebrates listed in the Bern Convention Appendix II are included in the Red List, except for a diving beetle *Dytiscus latissimus.* The populations of this species are considered to be so large and widely distributed that the populations of this species are considered to be so large and widely distributed that the species does not need special protection in Norway. Political guidelines to give the threatened and vulnerable species a higher degree of legally binding protection are in process and will be presented to the Parliament for adoption. There is also an initiative for making action plans for threatened species.

There are three species of invertebrates that are listed on the Bern Convention Appendix III. Of these, the noble crawfish *Astacus astacus* and the pearl mussel *Margaritifera margaritifera* are regulated. The Norwegian localities for the noble crawfish are very well know (Taugbøl & Skurdal 1996), and a monitoring program in selected localities will start this year. The pearl mussel is known from 370 localities in Norway (Dolmen & Kleiven 1999) and is considered as vulnerable in the National Red List. Methodology for mapping and monitoring has been made for the pearl mussel (Larsen & Hartvigsen 1999), and a monitoring plan for the species is completed in t hese days. The leech, *Hirudo medicinalis*, is proposed for protection, and it is included in the National Red List as a rare species. At present, there are 35 localities of the leech in Norway (Dolmen et al. 1994, Dolmen pers. comm.).

A handbook for mapping of biological diversity at the municipality and county level has been published (Directory for Nature Management 1999b). This work is planned to cover the whole country within 2003 and the sectors will make use of this tool in management and use of areas.

There has been taken initiatives for discussing a revision of the legislation that concerns biological diversity. The aim is to end up with one strong and collective environmental act. Today, biological diversity is regulated by a number of separate legal instruments.

References

Aagaard, K., Hindar. K., Hansson, O., Balstad, T. & Fjellstad, W. 1997. Population structure and genetic diversity of Norwegian populations of *Parnassius mnemosyne* and *Parnassius apollo* (Lepidoptera). – NINA Oppdragsmelding 462 :1-20.

Directory for Nature Management 1999a. Norwegian Red List 1998. DN-report 3 :1-161.

Directory for Nature Management 1999b. Kartlegging av naturtyper. Verdisetting av biologisk mangfold. DN-handbok 13-1999.

Dolmen D., Økland, K.A., Økland, J., Syvertsen, K. & Rabben, J. 1994. Blodiglas utbredelse og levevis I Norge. –Fauna 27 :214-229.

Dolmen, D. & Kleiven, E. 1999. Elvemuslingen *Margaritifera margaritifera* – status og utbredelse I Norge. – Fauna 52 :26-33.

Hanssen, O., Ødegaard, F. & Kwamme, T. 1997. Proposal to Red List for Norwegian insects. Part 1. Beetles (Coleoptera). – NINA Fagrapport 031 :1-31.

Hansen, L.O. & Aarvik, L. 2000. Rare species of insects in Norway. 3 Moths and butterflies (Lepidoptera). – NINA Fagrapport 038 : !1-145.

Larsen, B.M. & Hartvigsen, R. 1999. Methodology for field work and categorising the freshwater pearl mussel *Margaritifera margaritifera* – NINA Fabrapport 037 :1-41.

Taugbøl, T. & Skurdal, J. 1996. Ferskvannskreps I Norge – kunnskapsstatus og forvaltningserfaring. Østlandsforskning-Rapport nr. 13/1996.

Ødegaard, F. & Coulianos, C.-C. 1998. Proposal to Red List for Norwegian insects. Part 2. True bugs (Hemiptera, Heteroptera). – NINA Fagrapport 033 :1-15.

12. RUSSIA

The present state of the Bern Convention insects in the Russian Federation and actions for their conservation

Document prepared by L.B.Volkova in collaboration with N.A.Sobolev, B.V.Beiko, C.V.Kotachkov, N.B.Nikitsky, A.V.Sviridov, E.M.Antonova, E.V.Mimonov.

In Russian Federation there are regions different on natural, social and economic conditions, and also on a structure and capabilities of natural ecosystems for environmental regulation.

A degree of a disturbance of ecological integrity of natural landscapes is resulted below (Sobolev, 1998).

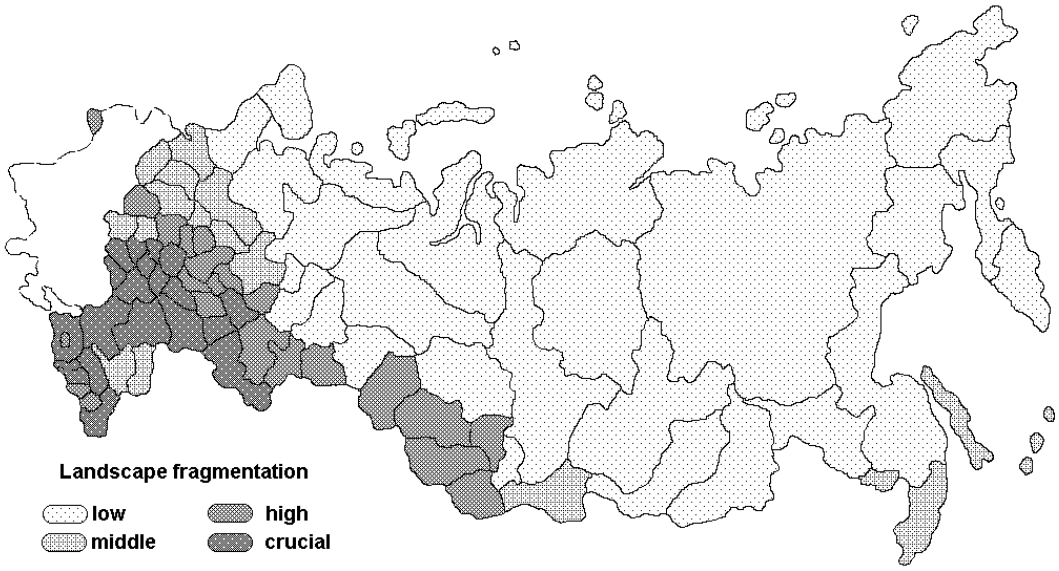


Fig. 1. A degree of a disturbance of ecological integrity of natural landscapes in the subjects of the Russian Federation.

Low - the natural framework has kept topographic continuity, despite of the availability of converted sites, including linear communications.

Middle - the natural framework is close to division on the separated large natural massifs.

High - the natural framework is sectioned into the separated natural massifs kept ecological communications (connections) between them.

Crucial - the insulated natural areas are not capable to auto-regulation, destroyed more than 50% of natural ecosystem area.

The degree of a disturbance of ecological integrity of natural landscapes (Fig. 1) is determined on the reduction of the area held by natural ecosystems, fragmentation and degradation of natural communities in miscellaneous regions of Russia.

Data concerning of disappearance of insect species in some regions of European Russia show that this process is actual in regions where the high or crucial fragmentation of natural landscapes is marked.

For example, Moscow region, explored better than others, has high level of natural landscape degradation. Nearly 2 % of butterflies (3 species from almost 130) and 20% bumblebees (6 species from 31) disappeared here for the last 40 years. In the region deforestation is 59 %, but in some districts forests occupy 70-80 % and large mammals (bear, lynx, wolf) inhabit there. In southern districts natural ecosystems cover only 10-20 % of area, many insect ecological groups became threatened. In the middle part of Moscow region rare and local vulnerable species has disappeared from more or less large fragments of ecosystems they belong to (*Parnassius apollo*, *Oeneis tarpeja* etc.). In the southern part where wooded steppe and steppe ecosystems are destroyed on almost 80-90 % of area, not only rare but also typical species belong to these ecosystems close to extinct (*Polyommatus coridon, P. daphnis*). The most endangered are insects of meadow steppe, wooded steppe, broad-leaf forests and dry pine-forests.

These observations can be extrapolated to the other regions. Under existing deficiency in the information the conclusion about the degree of danger can be estimate having in view the distribution of species. The more part of insect species area in Russia coincides with the regions of crucial and high fragmentation the more it is vulnerable.

As it is shown on the Fig.1, regions with the level of landscape degradation as high as in Moscow region form the belt throughout European Russia and southern part of West Siberia. So, it can be supposed that the process of insect disappearance begins there, too. Sub-boreal mixed forests and the band of broad-leaf forests, wooded steppe and in West Siberia steppe ecosystems are under the stress of human activity and rare species belong to them are probably threatened.

The total square of natural areas in the regions of the previous distribution of the broad-leaf forests (mixed coniferous-broad-leaf forests and broad-leaf forests) may be high, but really oakery, lime, marple and ash forests occupy now only a few per cents of their former territory because vegetation almost everywhere was changed by the forestry into coniferous and parvifoliate forests.

In the Centre and South of European Russia protection of insects is much more actual because critical fragmentation of a landscape here prevails. The most endangered natural ecosystems are steppe, wooded steppe and different broad-leaf forests. In the European part main threat for wooded steppe and northern steppes is the global decreasing of all kinds of natural ecosystems due of total ploughing up. Existing fragments have lost the diversity of their dynamic mosaic structure, isolation of habitats became significant for many invertebrates.

In given report Federal and accessible regional Red Data Books and Red Lists, general and local check-lists for different taxa, check-lists for some State Nature Reserves (I category IUCN), some local publications were reviewed. The report is far from completeness. Not all known publications were looked through by compiler.

The regional Red Data Books are legislative mechanism for habitat and insect conservation. As the entomofauna in many regions is not explored well, scientific level of regional Red Data Books sometimes is not high, in many cause taxa are not exhibited representatively. A deficiency of information is illustrated by those facts: there are 99 strict protected State Nature Reserves (I) in Russia, but check-lists of butterflies were published for a few of them; there are not annotated lists of Odonata and Coleoptera for Moscow region.

Some of the regional Red Data Books are not adopted by local authorities and they are in fact recommendations of scientists, and some times it is not indicated.

Categories used for estimate status of the species:
Critically endangered – the species may disappear in the near future because of the fast decreasing in number of individuals and inhabited sites and/or because of the extreme rarity.
Endangered – the species is rare, decreasing in number of inhabited sites and individuals within the considerable majority of inhabited sites, that may lead to its disappearance.
Vulnerable – the species is rare, the number of inhabited sites and the number of individuals in many inhabited sites decrease appreciably, but not critically.
Rare – the species is rare, but the number of populations and the total number of individuals seem to be stable or slowly decreasing
Lower risk – currently the species is not rare.

ODONATA

Aeshna viridis Aeshnidae II
Distribution. Small lakes with stagnant waters, especially and fenlands. Middle part of the European Russia (from western frontier to Ural mountains); forest and wooded steppe zones in southern part of the West Siberia (up to 600 N); southern part of the Far East (up to 450 N). Probably – throughout the southern part of the Middle Siberia.
Estimate status. European Russia – Rare; trend data deficient.
Reasons for decline. Loss of habitat through dehydration and ploughing of flood-lands, may be water eutrophication and pollution.
Conservation measures taken. Red Data Book of Karelia (1995). Red Lists of the Ryazan and Vladimir regions. Apparently occurs in protected areas (PA) with appropriate habitats.
Conservation measures proposed. One protected area of regional level (IV)[1] is currently planed in Moscow region.

Gomphus flavipes Gomphidae II
Distribution. Small lakes with *Typha spp*. in the middle (up to 600 N) and southern parts of the European Russia and in Northern Caucasus. Small rivers with still waters and oozy bottoms in the Southern Siberia (up to 550 N). Probably – southern part of the Far East.
Estimate status. Lower risk.
Reason for decline. Potential vulnerability of habitats.
Conservation measures taken. Red List of the Vladimir region. Apparently occurs in many protected areas with appropriate habitats.
Conservation measures proposed. None.

Leucorrhinia albifrons Libellulidae II
Distribution. Stagnant or almost stagnant waters. In European Russia mainly in the middle part, in Siberia area is limited: wooded steppe along southern boundary of Western Siberia to Northern Altai in the east. In the centre of European Russia it was always sporadic; in some sites it was common, in others only solitary individuals occurred.
Estimate status. Rare; trend data deficient.
Reason for decline. Species area coincides with the most disturbed part of the country: middle part of European Russia and wooded steppe in Western and Southern Siberia. Taking into account native rarity of the species and peculiarity of habitats it is very possible that species can be stressed in the most part of its area in Russia.
Conservation measures taken. None.
Conservation measures proposed. None.

[1] here and below the Roman numerals in the brackets indicate the IUCN (1994) category of PA management.

Leucorrhinia caudalis Libellulidae II
Distribution. Only stagnant or nearly stagnant waters. In European Russia mainly in the middle part. In Siberia its area is limited and torn: wooded steppe of the West Siberia and Baikal Lake area, everywhere local. In the centre of European Russia always sporadic; in some sites common, in others only solitary individuals.
Estimate status. Rare. Trend data deficient.
Reason for decline. Species area coincides with the most disturbed part of the country: middle part of European Russia and wooded steppe in Western and Southern Siberia. Taking into account native rarity of the species and peculiarity of habitats species can be stressed in the most part of its area in Russia.
Conservation measures taken. None.
Conservation measures proposed. None.

Leucorrhinia pectoralis Libellulidae II
Distribution. Stagnant waters. In European Russia everywhere except North. Wooded steppe in south of the West Siberia to Tomsk and north of Altai. In the centre of European Russia it always was uncommon, but in some sites numerous.
Estimate status. European Russia – Rare; trend data deficient.
Reason for decline. Unknown.
Conservation measures taken. Species occurs in Nation Park (II) "Losinyi Ostrov" (Moscow City).
Conservation measures proposed. None.

Lindenia tetraphylla Gomphidae II
Distribution. Dagestan only.
Estimate status. Rare. Trend data deficient.
Reason for decline. Unknown.
Conservation measures taken. None.
Conservation measures proposed. None.

Ophiogomphus cecilia Gomphidae II
Distribution. In a vast area: in Europe up to Polar Circle, in Western Siberia from 35o to 58o N , then from 50o to 55-57o N; northern boundary: Ekaterinbourgh – Krasnoyarsk – Sakhalin. In Siberia there are several subspecies in different landscape: forest, steppe and desert zones. Everywhere rare, in the east of Asian part more often, but usually solitary individuals occur. In Siberia in running water. Larval period is long: 3-4 years. Flight is week.
Estimate status. In developed agrarian regions of Europe and Asia perhaps Vulnerable. Trend data deficient.
Reason for decline. No data.
Conservation measures taken. None.
Conservation measures proposed. None.

Sympecma braueri Lestidae II
Distribution. From Baltic Sea to Pacific Ocean, up to 600 N (Tobolsk-Baikal-Ussury). In Siberia is common with exception of Far East. Dragonflies does not fly well.
Estimate status. Like previous species.
Reason for decline. No data.
Conservation measures taken. None.
Conservation measures proposed. None.

ORTHOPTERA

Saga pedo Tettigoniidae II

Distribution. Southern steppes in European and Asian Russia. Samara, Saratov, Voronezh, Rostov, Astrakhan regions, Krasnodarand Ctavropol territories, Northern Osetia, Chechnia, Ingushetia, Dagestan Republics, Sverdlov region, Bashkortostan Republic, Orenburg and Kurgan regions.
Regional data. Samara region – Zhiguli. Rostov region – in delta of Don River 4 sites in 1985-1988. Krasnodar territory - Anapa district. Chechno-Ingushetia – rare, Zhelkovskiy district. Dagestan Republic – rare, decreasing in number, 7 sites. Bashkortostan - 1 female near Kudalas Lake and Sibai-cyti. Orenburg – the species was common near Orenburg, now in some southern districts, everywhere rare. Sverdlov regions – in 1968 1 ind. near Ekaterinburg.
Estimate status. Critically endangered.
Reason for decline. Loss of the last remains of steppe, decreasing of unploughing area of steppe zone, fragmentation of habitats, intensive grazing and mowing. Species area coincides with the most disturbed part of the country: steppe zone. Taking into account native rarity of the species and its peculiarities it is expected to disappear soon.
Conservation measures taken.
Red Data Book of the USSR (1984) and Russian Soviet Federative Socialistic Republic (RSRSR) (1983). List of Species included in Red Data Book of Russian Federation (RF) (1997). Regional Red Data Books of Krasnodar territory, Dagestan Republic, Middle Ural (Perm and Sverdlov regions), Orenburg region.
The viable population inhabit Orenburgskiy (Orenburg region), Khoper (Voronezh region) nature reserves (I), historical museum-reserve Divnogopje (Voronezh region), protected area of regional level (IV) "Kamennaja balka" (Rostov region).
Conservation measures proposed. Red Data Book of Bashkirskaja ASSR (scientific recomendations) (1987).

COLEOPTERA

Cerambyx cerdo Cerambicidae II

Distribution. Recent precise distribution unknown. Probably settlements are possible only in a small areas of Precaucasus
Regional data. Krasnodar territory – in Kavkazskiy nature reserve very rare in two sites near Sergei-Pole. Lipetsk region – 1 specimen in local museum. Voronezh region – 1 individual in 1950th in Tellerman forest.
Estimate status. Critically endangered or temporary settlement possible only.
Reason for decline. Decreasing of southern broad-leaf forests, forestry.
Conservation measures taken. Species was included in the Red Data Book of the former USSR (1984). Now it is tncluded in the regional Red Data Books of Tatarstan Republic (it is noted there is no any information about this species in the republic), Krasnodar territory, Lipetsk region. Two local small populations inhabit Kavkazskiy nature reserve (I) (Krasnodar territory).
Conservation measures proposed. None.

Cucujus cinnaberinus Cucujidae II

Distribution. Middle part and south-west of European Russia. Rare. Under the bark of the oak and maple trees, seldom coniferous. But in Moscow region the species lives under the bark of the large decaying aspen (Populus tremula) trunks; aspen forests are usual.
Estimate status. Rare.
Reason for decline. Unknown.
Conservation measures taken. Red Data Book of Karelia Republic (1995). The viable population inhabits Prioksko-Terrasnyi nature reserves (I) (Moscow region).
Conservation measures proposed. None.

Dytiscus latissimus Dytiscidae II
Distribution. Northern and middle part of European Russia. In large ponds. Not common. Previously speceis was known as depredater.
Regional data. Tatarstan Republis - decreasing in number. Smolensk region - four sites. Vladimir, Moscow, Nizhny Novgorod, Lipetsk, Voronezh and Belgorod regions - rare.
Estimate status. Rare.
Reason for decline. Eutrophication, pollution.
Conservation measures taken. Regional Red Data Books of Tatarstan Republic, Smolensk region. Regional Red Lists of Vladimir and Nyzhnyi Novgorod regions. The viable population inhabits "Smolenskoe Poozerie" (Smolensk region) national parks (II).
Conservation measures proposed. None.

Lucanus cervus Lucanidae II
Distribution. Broad-leaf forest zone, wooded steppe and steppe zones in European Russia. The species strongly and rapidly declines in numbers and area.
Regional data. Moscow region – species does not belong to the indigenous fauna. Tatarstan – in two districts, rare, in some sites is common. Bashkortostan - rare, common in 3 districts. Chelabinsk region - one site. Volgograd region – common in some sites. Voronezh region – spesies was common before using of insectisides in forests in the middle of 1970th,. Since the begining of 1980th using of insectisides was stopped and in 1987-1988 beetles began to occur in some large fragments of forest (Shilov Les, Khrenov Bor, Belogorje, rare), common in Tellerman forest. Lipetsk region - rare, in one district. Chechen and Ingushetia Republics – rare. Dagestan Republic – only one population.
Estimate status. Critically endangered.
Reason for decline. Decreasing, fragmentation and degradation of broad-leaf forests. Disappearance of old oakery, unsuitable forest management, pesticides, collection. Disregarding of legislation.
Species area coincides with the most disturbed and populated part of the country. The species belong to one of most endangered natural communities - southern broad-leaf forests and steppen forests of the European Russia. Taking into account peculiarity of habitats (total depression of oakeries) and uncompatibility the species ecology with both traditional and intensive forestry, species is stressed in its whole area in Russia.
Conservation measures taken. Species was included in the Red Data Book of the USSR (1984). Now it is in the List of Species included in Red Data Book of Russian Federation (1997). Included in the regional Red Data Books of Tatarstan Republic, Krasnodar territory, Lipetsk region, in the Red Lists of Ryazan, Vladimir and Nyzhny Novgorod regions. Protected in Voronezh region.
The viable population inhabits Tsentralno-Chernozemnyi (Kursk region), Voronezhskiy and Khoperkiy (Voronezh region) nature reserves (I).
Conservation measures proposed. Red Data Book of Bashkirskaja ASSR (scientific recomendations) (1987).

Osmoderma eremita Scarabaeidae II
Distribution. Broad-leaf and mixed forests and wooded steppe of the European Russia. Northern boundary: Leningrag region – Moscow region – Tatarstan Republic – Kirov region - Bashkortostan Republic, southern boundary: Belgorod region - Saratov region – Samara region – Bashkortostan Republic. Isolated habitats are in Krasnodar territory.
Regional data. Kalinigrad region – rare, but stable, more often in Pravdinskiy district. Leningrag region - Lugesky district. Ivanovo, Tambov regions – one site. Known in Nijnyi Novgorod region (one site). Kirov region – Mamlige. Moscow region – two viable populations and thirt might be viable, too (records of 1930, rediscovered near 1970). Kaluga region – two viable populations (Kaluzhskie Zaseki nature reserve (I), Ferzikov district) and Kaluga-city. Ryazan region – in the park of Ryazan-city. Lipetsk and Belgorod regions – very rare. Voronezh region – three sites: very rare in Liskinskiy and Pogorenskiy district, stable population in the Tellerman forest.
Adigea Republic (Krasnodar territory) - two sites near Majkop.Tatarstan - Zelenodolskiy and Laishevskiy districts, very rare. Bashkortostan - Birsk and Upha district.
Estimate status. Endangered.

Reason for decline. Species is less vulnerable than previous species, owing to more vast area, more rapid development and less demands of the oakery age and size of trees. Otherwise like L. cervus.
Conservation measures taken. Species was included in the Red Data Book of the USSR (1984) and Red Data Book of the RSFSR (1983). Now it is in the List of Species included in Red Data Book of Russian Federation (1997). Regional Red Data Books of Smolensk and Moscow regions, Tatarstan Republic, Krasnodar territory. Red Lists of Vladimir and Nizhnyi Novgorod regions. The viable populations inhabit Kaluzhskie Zaseki (Kaluga region), Volgo-Kamskiy (some sites) (Tatarstan Republic) nature reserves (I), protected area (PA) of regional level (IV) in Moscow region.
Conservation measures proposed. Project of the regional Red Data Book of Bashkirskaja ASSR (scientific recomendations) (1987). Two protected area of regional level (IV) have been planed and submitted to conservation bodies (Moscow and Kaluga regions).

Rosalia alpina Cerambicidae II
Distribution. Northern Caucasus, isolated sites in wooded steppe of European Russia.
Regional data. Bashkortostan - three districts: Uphinskiy (Nagaevo), Gafurijskiy and Iglinskiy. Samara region - one district (Zhiguli). Voronezh region – three sites: Tellerman forest (stable, rare), Shipov Les and Voronezh-city (the accidental finds?). Known in Rostov regions, Krasnodar and Stavropol territories. Chechen and Ingushetia Republics – rare, moutains and premountains; more often than some other beetles, known from environs of Grozniy.
Estimate status. Critically endangered.
Reason for decline. Decreasing, fragmentation and degradation of broad-leaf forests. Collection.
Conservation measures taken. Species was included in the Red Data Book of the USSR (1984) and Red Data Book of the RSFSR (1983). Now it is in the List of Species included in Red Data Book of Russian Federation (1997). Included in Regional Red Data Book of Krasnodar territory. The viable population, small, but stable, inhabits Zhiguli nature reserves (I) (Samara region).
Conservation measures proposed. Red Data Book of Bashkirskaja ASSR (scientific recomendations) (1987).

LEPIDOPTERA

Apatura metis Nymphalidae II
Distribution. South-East of the Europe, south of Western Siberia (Irtish River valley from boundary to Tobolsk in Omsk and Tumen regions), Far East. There are three subspecies according these three localities.
Estimate status. Data deficient.
Reason for decline. Unknown.
Conservation measures taken. None.
Conservation measures proposed. None.

Clossiana improba Nymphalidae II
Distribution. The Northern-Eastern part of the European Russia (Nenetskiy national area, Western part of Arkhangelsk region and Komi Republis), Novaya Zemlya Islands, Polar Ural, Yamal, north of Eastern Siberia. Tundra, forest tundra. Rare and sporadic, only three sites are known in the Northern-Eastern part of European Russia.
Estimate status. Rare.
Reason for decline. Unknown.
Conservation measures taken. None.
Conservation measures proposed. None.

Coenonympha hero Satyridae II
Distribution. Temperate European Russia and Siberia, Far East. Forest zone, including middle taiga and wooded steppe.
Northern boundary is not clear. According the check-lists the species is absent in Kandlakshskiy (Murmansk region) (1999), Kivach (Karelia Republic) (1989) and Darvinskiy (Vologda and Yaroslavl regions) (1991) nature reserves. So it is doubt that the species is in the Pinezhskui (Arkhangelsk

region) nature reserve as it was supposed in the Red Data Book of the USSR (1984). On the large territory of the Northern-Eastern part of European Russia (Nenetskiy national area, Western part of Arkhangelsk region and Komi Republis) there is only one site near Siktivkar (62o). In Siberia northern bondary is in the middle part of Krasnoyarsk territory and Central Yakutia.
Southern boundary is in wooded steppe: Moscow region spesies is absent in the south of region, in Kaluga and Tula regions it is absent at all.
Species inhabitats upland bogs, damp moors and grasslands, wet meadows and grasslands in different forests or dry open woodland.
Regional data.
Tver region – usual in upland bogs and damp moor grasslands widely distributing in this region. Moscow region – six sites; in the core area in the north and east the habitats have strongly declined since seventies, but species appear to remain stable; in centre and south it became local or disappeared. Tatarstan Republic - became local, 6 sites in two districts (Zelenodolskiy and Spasskiy). Southern Ural (Bashkortostan Republic, Chelabinsk and Orenburg regions) – 28 sites, maily in Bashkortostan, more rare in Chelabinsk region and almost unknown in Orenburg region. In Asian part species is widely spread in habitats that are common and little affected.
Estimate status. Lower risk in Russia, Rare or Vulnerable in some regions in the south of species area.
Reason for decline. Dehydration of wet forests, felling, mowing and grazing in the forests.
Conservation measures taken. Species was included in the Red Data Book of the USSR (1984). Included in the regional Red Data Books of Tatarstan and Burijatia Republics and Moscow region. Included in the Red Lists of Vladimir and Nyzhny Novgorod regions.
The viable populations inhabit Volzhsko-Kamskiy (Tatarstan Republic), Baikalskiy and Barguzinskiy (Buriyatia Republic), Bashkirskiy and Shulgan-Tash (rare) (Bashkortostan Republic), Ussuryiskiy (common) (Primorskiy territory) nature reserves (I), Zavidovo (Tver region) national parks (II), one protected area of regional level (IV) in Vladimir region and three in Moscow region.
In Kivach (Karelia Republic) and Darvinskiy (Vologda and Yaroslavl regions) nature reserves (I) species is absent according more recent information; supposition about Pinezhskui (Arkhangelsk region) nature reserve should be verified.
Conservation measures proposed. Red Data Book of Bashkirskaja ASSR (scientific recomendations) (1987).

Coenonympha oedippus Satyridae II
Distribution. The south of forest and steppe zones of Eurasia, mountains of Southern Siberia, Far East. Southern taiga, more rarely in the wooded steppe zone. A local moorland and forest clearings, swampy meadows, flood-lands and river valleys.
Absent in Moscow, Kaluga and Tula region. The most northern site in the N.-E. of the European Russia – south of Komi Republic. Only one site in every region of Southern Ural (Bashkortostan Republic, Chelabinsk and Orenburg regions).
Estimate status. Data deficient.
Reason for decline. Unknown.
Conservation measures taken. None.
Conservation measures proposed. None.

Hyles hippophaes Sphingidae II
Distribution. Astrakhan region, Caucasus, Tuva.
Estimate status. No enough information.
Reason for decline. Unknown.
Conservation measures taken. None
Conservation measures proposed. None.

Hypodryas aurinia Nymphalidae II

Distribution. More often in West and Centre of the European Russia, Caucasus, Southern Ural, mountains of Southern Siberia. Absent in the Northern and Northern-Eastern part of European Russia (Murmansk and Arkhangelsk regions, Nenetskiy national area, Komi Republics). Local. In European part meadows and forest clearings, in Siberia stepped meadows in slopes and river valleys.
Regional data.
Tver region - common in some sites in wetlands in Undomel district. Moscow region – nearly 30 sites were known, 5 of them are destroyed, resent data about 9 sites. Kaluga region – rare and local, 6 sites. Tula - 8 isolated sites, in old needle-broad-leaf forests. Southern Ural (Bashkortostan, Chelabinsk and Orenburg region) – 6 sites, local, rare indivuduals. Altai - unusual.
Estimate status. Rare.
Reason for decline. In regions with high fragmentation of forests loss of habitats due dehydration of wet habitats, intensive mowing and grazing, building of summer cottages, natural succetion of vegetation and forest restoration on clearing.
Conservation measures taken. Included in the Red Data Book of Karelia Republic, Moscow region, Red Lists of Nyzhnyi Novgorod region.
The viable populations inhabit Darvinskiy (very rare) (Vologda and Jaroslavl regions), Prioksko-Terrasnyi (common) (Moscow region), Okskiy (rare) (Ryazan region), Bashkirskiy nature reserves (I), Losinyi Ostrov (Moscow region) national parks (II), Pless historical museum-reserve (local) (Ivanovo region), two protected areas (PA) of regional level (IV) in Moscow region.
Conservation measures proposed. Red Data Book of Moscow-city (project).
One PA is currently planed and two have been planed and submitted to conservation bodies in Moscow region.

Hypodryas maturna Nymphalidae II

Distribution. Temperate European Russia and Siberia, in east to central Yakutia and Transbaikalia, Caucasus, mountains of Southern Siberia. Everywhere local.
Regional data.
Northern-Eastern part of European Russia (Nenetskiy national area and Komi Republis) – 17 sites. Moscow region – 27 sites were known, 7 distroyed, now populations in 5 sites are known. Kaluga region – 2 sites. Tula – 9 sites. Southern Ural (Bashkortostan, Chelabinsk and Orenburg region) – 19 sites.
Estimate status. Rare.
Reason for decline. Natural succession of vegetation, loss of dynamic mosaic structure of the forest ecosystems.
Conservation measures taken. Included in the Red Data Book of Moscow region. The viable population inhabit "Kivach" (rare) (Karelia Republic), Darvinskiy (very rare) (Vologda and Jaroslavl regions), Prioksko-Terrasnyi (rare) (Moscow region), Okskiy (rare) (Ryazan region), Bashkirskiy nature reserves (I), Pless historical museum-reserve (local) (Ivanovo region), two PA of regional level (IV) in Moscow region.
Conservation measures proposed. One PA is currently planed and one PA has been planed and submitted to conservation bodies in Moscow region.

Lopinga achine Satyridae II

Distribution. South of forest zone and wooded speppe across European and Asian Russia.
Regional data. Tver region – rare. Kaluga region – rare, in some sites it is more usual. Tula region - common in forest zone, rare and local in wooded steppe. Southern Ural (Bashkortostan, Chelabinsk and Orenburg region) – 42 sites, local, grasslands in forests and wooded steppe. Lipetsk region - 7 sites. Altai - unusual.
Estimate status. Lower risk.
Reason for decline. In the original core area appear to remain stable.
Conservation measures taken. Included in the Red Data Books of Lipetsk region. The viable populations inhabit Prioksko-Terrasnyi (common) (Moscow region), Okskiy (rare) (Ryazan region),

Zhigulevskiy (common) (Samara region), Galichija Gora (Lipetsk region), Bashkirskiy nature reserves (I).
Conservation measures proposed. None.

Lycaena dispar Lycaenidae II
Distribution. Temperate European and Asian Russia, in Siberia up to middle taiga. Central Yakutia. Everywhere local.
Regional data. Northern-Eastern part of Euripean Russia (Nenetskiy national area, Western part of Arkhangelsk region and Komi Republis) – absent. Southern Ural (Bashkortostan, Chelabinsk and Orenburg region) – 43 sites, local, grassland and meadows. Moscow region – ~~not common,~~ currently 15 populations in 11 districts, 2 sites destroyed. Kaluga region – local. Tula region – common in forest part of region and 23 sites in wooded steppe part. Lipetsk region (six sites, rare)
Estimate status. Lower risk.
Reason for decline. Stable in the original core area. In Russia there is ecological optimum of species areas. So in the most disturbed areas species is not rare.
Conservation measures taken. Included in the Red Data Books of Moscow and Lipetsk regions. The viable populations inhabit Darvinskiy (rare) (Vologodsk and Jaroslavl regions), Prioksko-Terrasnyi (rare) (Moscow region), Okskiy (rare) (Ryazan region), Zhigulevskiy (common) (Samara region), Galichija Gora (Lipetsk region) national park (II), Bashkirskiy nature reserves (I), "Losinyi Ostrov" (Moscow city), Pless historical museum-reserve (common) (Ivanovo region), six PA of regional level (IV) in Moscow region and two in Moscow-city.
Conservation measures proposed.
Regional Red Data Book of Moscow-city.

Maculinea arion Lycaenidae II
Distribution: European part of Russia except North, Middle and Southern Ural, soputh of West Siberia, Altai Meadow and stepped meadow in the forests, on the slopes.
Regional data: in Norther, Eastern part of European Russia (Nenetskiy national area,
Rare in Volgoda, Yaroslavi, Samara regions. Moscow region – 7 sites for the whole history of exploring, now only one known population. Kaluga region – former records about one site. Tula region – absent. Tambov region – disappeared. Voronezh region – rare and local, common in one site. Western part of Arkhangelsk region and Komi Republis) – absent. Southern Ural (Bashkortost an, Chelabinsk and Orenburg region) – 47 sites, local, meadows and meadow steppe. Altai – rare.
Estimate status: Endangered.
Reason for decline: Significant part of the species area coincides with the most disturbed regions of European Russia. Loss of habitat due ploughing, intensive mowing and grazing.
Conservation measures taken: Included in the regional Red Data Book of Moscow region, Red List of Nyzhny Novgorod region. The viable populations inhabit (Vologodsk and Jaroslavl regions), Priokskp-Terrasnyi (common) (Moscow region), Zhiguliovskiy (rare and local) (Samara region), Bashkirskiy Zhiguliovskiy (rare and local) (Samara region) and Bashkirskiy nature reserves (I), museum reserve " Divnogorie" (Voronezh region).
Conservation measures proposed: One PA has been planned and submitted to conservation bodies in Moscow region.

Maculinea nausithous Lycaenidae II
Distribution: South of wooded steppe and steppe sone in east to Altai. Everywhere local wet meadows.
Regional data: Moscow region – 6 sites were known, now only one population. Kaluga region – one site. Tula – eight isolated sites. Southern Ural (Bashkortostan, Chelabinsk and Orenburg region) – 26 sites. Tambov region – disappeared.
Estimate status: Endangered.
Reason for decline: Significant part of the species area coincides with the most disturbed regions of European Russia. Loss of habitat due ploughing, intensive mowing and grazing.

Conservation measures taken: Included in the Red Data Book of Moscow region, Red Lists of Nyzhny Novgorod region. The viable populations inhabit Bashkirskiy nature reserves (I) and one protected area PA of regional level (IV).
Conservation memasures proposed: None.

Maculinea teleius Lycaenidae II
Distribution: Temperary Eurasia up to middle taiga. Meadow and stepped meadow in the forests, on the slopes.
Regional data: Moscow region – only one viable population. Kaluga region – one site. Tula – twelve isolated sites. Tambov region – rare and local. Southern Ural (Bashkortostan, Chelabinsk and Orenburg region) – 31 sites. Altai – rare.
Estimate status: Endangered.
Reason for decline: Significant part of the species area coincides with the most disturbed regions of European Russia. Loss of habitat due ploughing, intensive mowing and grazing.
Conservation measures taken: Included in the Red Data Book of Moscow region, in Red Lists of Nyzhny Novgorod region. The viable populations inhabit Prioksko-Terrasnyi (common) (Moscow region) and Bashkirskiy nature reserves.
Conservation measures proposed: One PA has been planned and submitted to conservation bodies in Moscow region.

Parnassius apollo Papilionidae II
Distribution: Central part of European Russia. In Siberia up to Jakutia and Transbaikalia.
Regional data: European part of Russia. Karelia – local small populations. Northern Eastern part of European Russia (Nenetskiy national area and Komi Republis) – only one site. Southern Ural (Bashkortostan, Chelabinsk and Orenburg region) – 31 sites. Smolensk region – rare, increasing in number. Ivanono region – one site. Moscow region – 18 sites were known, disappeared in the early 1970th). Wlafimir region – three sites. Kostroma regions – disappeared from some sites. Ivanovo region – three sites. Ryazan region – two local populations. Kaluga region – there were 4 sites, now in two sites. Tula region – species was known from two sites, in the second half of XXe Century disappeared. Samara region – 3 sites, very rare. Voronezh region – two sites? Lipetsk region – disappeared, one site at the beginning of XXe century. Chechno-Ingushetia – 3 sites. Tatarstan – 9 former and 5 recent sites in two districts. B ashkortostan – local populations in mountain area in 4 districts, in 3 of them common Orenburg region – critically endangered, now only in one place from six known before.
Asian part of Russia: Perm region – one site. Sverdlovsk regions – 13 sites. Altai – ommom on rocky southern slopes, terrase steppe and mesophilous meadows. Krasnoyarsk Territory – only southern part to south and east from Krasnoyarsk, rare, small local populations. Novosibirsk region – the most abundant population was destroyed in Togulchin district.
Estimate status: Critically endangered in European Russia.
Reason for decline: Significant part of the species area coincides with most disturbed regions of Russia. Felling, mowing and grazing in the forest, burning of the grass, recreation, collection and trade succession of vegetation. The main threat is unknown, the species rapidly disappear from areas with large square of habitats.
Conservation measures taken: Species was included in the Red Data Book of the USSR (1984) and Red Data Book of the Russian Soviet Federative Socialistic Republic (1983). Now it is in the List of Species included in Red Data Book of Russian Federation (1997).
Included in the regional Red Data Books of Karelia, Smolensk, Lipetsk, Orenburg and Moscow regions, Tatarstan, Middle Ural (Perm and Sverdlov regions), Krasnoyrsk territory, Buryatia. Included in the red lists of Kaluga, Ryazan, Vladimir and Nyzhnyi Novgorod regions.
The viable population inhabit Kerzhenskiy (Nizhinii Novgorod region), Zhiguliovskiy (very rare), (Samara gion), Voronezhskiy, Kavkazskiy (Krasnodar region), Volzhsko-Kamskiy (Tatarstan), Bashkirskiy, Visimskiy (Sverdlov region) nature reserves (I), Ugra (Kaluga region) national parks (II), PA of regional level (IV) in Vladimir region. In Darvinskiy (Vologosdk and Jaroslavl regions) nature reserve there were two local populations in 1950th, disappeared before 1960 due to forest succession.

In Prioksko-Terrasnyi nature reserves (I) there was last in Moscow region population disappeared due to mowing and collection in early 1970th. Reintroduction was not successful.
Conservation measures proposed: Red Data Book of Bashkirskaja ASSR (scientific recommendations) (1987). Shajtantau nature reserves (I) PA is proposed in Orenburg region.

Parnassius mnemosyne Papilionidae II
Distribution : Middle and south of the European part of Russia, in Siberia in the east only up to Tobolsk.
Regional data: Karelia – 5 sites, rare individuals. Tver region – very rare in Udomel district. Ivanovo region – seven sites. Pyazan region – three sites. Moscow region – there were 15 sites, now 5, only 3 viable populations. Kaluga region – at the beginning of XXe century – often near Kaluga city, since 1930 became rapidly to decrease in number, since 1960-1970 – rare and local, now 4 sites. In Tula region species was everywhere common at the end of XIXe century, unusual at the beginning of XXe century. Now nine isolated sites are known, in some of them species is not rare. Samara region – two stable populations.
Northern-Eastern part of European Russia (Nenetskiy national area, Western part of Arkhangelsk region and Komi Republis) – eight sites in mountain habitats, some local populations disappeared near Uhta city due to recreation, on the protected area in Petchoro-Ilichslyi nature reserve (I) population is stable. Southern Ural (Bashkortostan, Chelabirsk and Orenburg region) – 34 sites, meadows of forest and wooded steppe zones. Smolensk region – three sites. Vologia and Jaroslavi regions – one site. Tatarstan – 5 former and 7 recent sites in two districts. Perm region – one site.
Sverdlovsk region – 11 sites, in moutain forest habitats common, in plain habitats very rare. Bashkortostan – local populations. Voronezh region – more than 6 some small local populations.
Estimate status: Endangered.
Reason for decline: Exactly unknown, the species disappear from areas with large square of habitats.
Loss of habitats, felling, mowing and grazing in the forests and small forest rivers valleys, recreation.
Collection: Significant part of the species area coincides with the most disturbed regions of European Russia.
Conservation measures taken: Species was included in the Red Data Book of the USSR (1984) and Red Data Book of the RSFSR (1983). Now it is in the List of Species included in Red Data Book of Russian Federation (1997).
Included in the regional Red Data Books of Karelia, Komi and Tatarstan Republics, Smolensk, Orenburg, Lipetsk and Moscow regions, Middle Ural (Perm and Sverdlov regions), Krasnodar territory. Included in the red lists of Kaluga, Ryazan, Vladimir and Nyzhny Novgorod regions.
The viable populations inhabit Darvinskiy (rare) (Vologda and Yaroslavl regions), Prioksko-Terrasnyi (common) (Moscow region), Volzhsko-Kamskiy (Tatarstan), Kavkazskiy (rare) (Krasnodar territory), Zhigulevskiy (common), (Samara region), Petchoro-Ilychslkiy (Komi Republic), Bashkirskiy, Visimskyi (Sverdlov region) nature reserves (I), “Smolenskoe Poozerije” (Smolensk region), “Ugra” (two sites) (Kaluga region), Samarskaja Luka (Samara region), Mezhcherskiy (Ryazan region) national parks (II), Pless historical museum reserve (common) (Ivanovo region), three PA of regional level (IV) in Voronezh region.
Conservation measures proposed: Red Data Book of Bashkirskaja ASSR (scientific recommendations) (1987). One PA has been planned and submitted to conservation bodies in Moscow region.

Proserpina proserpina Sphingidae II
Distribution: Centre and South of the European part of Russia, Caucasus, Ural. In European Russia mainly in wooded steppe, rare and local.
Estimate status: Rare. Trend data deficient.
Reason for decline: Unknown.
Conservation measures taken: Included in the Red Data Book of Moscow region, Red Lists of Nyzhny Novgorod region. The viable population inhabit Prioksko-Terrasnyi (rare) (Moscow region) nature reserve (I), “Ugra” (very rare) (Kaluga region) and Losinyi Ostrov (Moscow city) national park (11), one PA of regional level (IV) in Moscow region.

Conservation measures proposed: Red Dat Book of Bashkirskaja ASSR (scientific recommendations) (1987), Red Data Book of Moscow city (project).

Zerynthia polyxena Papilionidae II

Distribution: Southern European taiga, southern Ural. Everywhere local. Sometimes common in local habitats.

Regional data: Tatarstan – 9 former and 7 recent sites in three districts. Southern Ural (Bashkortostan, Chelabinsk and Orenburg region) – 5 sites. Moscow, Vladimir, Tula regions – absent. Kaluga region – it was rare, now disappeared? Ryazan, Nizhny, Samara regions – some viable populations. Lipetsk region – seven sites, in some of them populations are viable. Voronezh region – rare and local, more than 5 small stable populations. Samara region – decreasing in number, more often in steppen forest on the banks of small rivers. Rostov region – two local populations in delta of Don River.

Estimate status: Endangered.

Reason for decline: Loss of habitats, mowing and grazing in the forests and meadows in river valleys, recreation, collection. Significant part of the species area coincides with the most disturbed regions of European Russia.

Conservation measures taken: Species was included in the Red Data Book of the USSR (1984). Included in the regional Red Data Books of Tatarstan, Orenb urg, Lipetsk regions. Included in the red lists of Ryazan, Vladimir and Nyzhny Novgorod regions. The viable populations inhabit Okskiy (common) (Ryazan region), Volzhsko-Kamskyi (Tatarstan), Zhigulevskiy (not rare) (Samara region), Galychja Gora (Lipetsk region) nature reserves (I), Samarskaja Luka (rare) (Samara region), PA of regional level (IV) “Kamennaja balka” (Rostov region), three PA in Voronezh region.

Conservation measures proposed: None.

13. SPAIN

Report on the progress towards the conservation of Invertebrates in Spain since 1998.

by Dr. M.A. Ramos. Museo Nacional de Ciencias Naturales (CSIC).
E-mail: m.ramos@mncn.csic.es

1. Legal protection of invertebrates in Spain

In Spain, responsibility for ensuring favourable conservation status of nature lies with the Ministry for the Environment (ME) although most of its powers are transferred to the 17 Autonomous Regional Governments.

The most general Spanish law in nature conservation is the National Endangered Species List (Royal Decree 439/90), originally containing only vertebrates and plants. Until 1996, in which *Margaritifera auricularia* was included in the "threatened with extinction" category (Order 20324 of 29 August 1996) after its re-discovery in Spain, the only protection for invertebrates was afforded by the international conventions signed by Spain and transferred to National legislation. Since then, a project was launched to update the law and to enlarge the list reviewing the status of the Spanish Biodiversity. This project has already promoted the inclussion of the following invertebrates species:

- Order 17307 of 9 July 1998:

- *Acrostira euphorbiae*	"threatened with extinction"
- *Halophiloscia canariensis*	"
- *Maiorerus randoi*	"
- *Pimelia granulicolis*	"
- *Rhopalomesites euphorbiae*	"
- *Patella candei candei*	"
- *Palinurus echinatus*	"
- *Minidopsis polymorpha*	"
- *Spelonectes ondinae*	"
- *Theodoxus velascoi*	"

- Order 13807 of 9 June 1999:

- *Patella ferruginea*	"threatened with extinction"
- *Pinna nobilis*	"vulnerable"
- *Dedropoma petraeum*	"
- *Charonia lampas lampas*	"
- *Centrostephanus longispinus*	"special interest"
- *Asterina pancerii*	"sensitive to habitat alteration"

- Order 5826 of 10 March 2000

- *Lucanus cervus*	"threatened with extinction"
- *Rosalia alpina*	"
- *Apteromantis aptera*	"

- *Gomphus graslinii*	"
- *Coenonympha oedippus*	"
- *Eriogaster catax*	"
- *Graellsia isabelae*	"
- *Coenagrion mercuriale*	"
- *Dorysthenes forficatus*	"
- *Buprestis splendens*	"Vulnerable"
- *Maculinea nausithous*	"
- *Chasmaropterus zonatus*	"
- *Carabus riffensis*	"

The National Commission of Flora and Fauna has approved recently the inclusion of

-*Margaritifera margaritifera* as "Vulnerable"

In the same way, the Spanish Malacological Society has very advanced a project to review the conservation status of all molluscan species with proposals to include some of them under the different categories of the National Endangered Species List. It will be presented in the nearest future to the Ministry.

At regional level some governments are publishing regional lists of protection or red lists although most of them do not include invertebrate species, and there is no Action Plans, either national or local, to recover invertebrate species.

2. Bern Convention and Habitats Directive Invertebrates

In connection with the invertebrate species included in Directive 92/43/EEC (Habitat Directive), and the Bern Convention, the Dirección General de Conservación de la Naturaleza (Ministry for the Environment) subscribed at the end of 1995 two research conventions, one with the Museo Nacional de Ciencias Naturales (hereafter MNCN) of the Spanish Research Council (CSIC) and the other with the Spanish Entomological Society whose aims were 1) to review and map the species distribution area with special emphasis on the species from Annexe II of the Habitats Directive, 2) to review the status of the populations and the biology and life cycles of the species, and 3) to evaluate real or potential threats in order to propose measures to protect species habitats or to control commercial exploitation for Annexe II and V species, respectively of the Habitats Directive.

It also emphasized surveys on *Margaritifera auricularia* and *Maculinea nausithous* to fulfill the Bern Convention recommendations (TPVS90-13E, 92-24E, 94-8E and 96-3).

One of their results were to produced maps on the species and to distribute them to the Regional Governments.

It can be mentioned the "re-discovery" of an alive population of *Margaritifera auricularia* obtaining aboundant data on its biology and life cycle (Araujo & Ramos, 1998a, b; Araujo et al., 2000), the "re-discovery of a population of *Vertigo angustior* (Gómez-Moliner, *et al.,* in press) in a reduced and very endangered habitat Northeast Spain. One alive specimen of *Unio crassus* (Araujo & Ramos, unpublished) was also found being necessary more studies to investigate the aboundance and status of this population.

3. Research

As a consequence of the results obtained respecting *M. auricularia* and once tested that its habitats are hightly endangered, a Convention has been established for two years (starting June 1999) between the Dirección General de Conservación de la Naturaleza (Ministry for the Environment) and the Spanish Research Council (Museo Nacional de Ciencias Naturales plus Instituto Mediterráneo de Estudios Avanzados) to continue research on the species. Its goals, among others, is to establish the distribution and aboundance of the species in the main section of the Ebro River, to determine habitat requirements (both for adults and juveniles -if they were found), to survey genetic variability among populations and genetic distances with closely related species, to finish the study of its biological cycle and determine possible native host fishes (including field studies and artificial infestations in acquaria). All these studies are focussed to get the bassic information for the design of an Recovery Plan to conserve and restore species populations.

Margaritifera margaritifera is declining in Spain as in many other countries around Europe because of the declining of salmonid rivers over this century. However recent surveys have enlarged the species´area not only to Galicia (Bauer, 1986) but also to Asturias and Zamora (Araujo & Ramos, In press). An study on species reproduction is currently running (Grande, Araujo & Ramos, unpublished). Deeper surveys are needed in Spain to know the real distribution and population status of the species.

Since 1993 (Carretero, *et al.*. 2000) the Parc natural de la Zona Volcànica de la Garrotxa.(Northwest Spain) is carrying out a plan to recover one population of*Unio elongatulus aleroni*. This plan includes more or less the same actions already described for *M. auricularia*, adding experiments on specimen translocations. Two host fishes have been identified: *Barbus meridionalis* and *Leuciscus cephalus*. The population shows a tendency towards ageing and decressing the number of newborns.

4. Inventories

The Spanish National Strategy for the Conservation and Sustainable Use of Biodiversity to fulfill the agreements of the Convention on Biological Diversity, has already been approved by the Parliament and published in 1999 although the Action Plans to Implement it have not yet been drafted.

Nevertheless, the *Fauna Ibérica*" research programme, coordinated by the MNCN continues producing interesting results such as the discovery of 418 new species to science or 520 previously unknown for the Iberian fauna, detection of cases of sexual dimorphism where male and female were considered as different species, being very important its contribution to clarify species nomenclature. Eleven monographs in the *Fauna Ibérica* series, including identification keys, descriptions, geographical distribution and biological data, have been published and seven other are in press.

A series of checklists will try to inventory at short term and by major phytoclimatic areas a half of the the 70.000 animal species estmated living in Spain with special reference to endemisms. This project is now under study by a recently created Foundation for the Biodiversity. The production of a data bank configured as a Geographical Information System is also among its main objectives but not enough finantial suport exist at present to fully develop it. Fauna Ibérica which began in 1989, has helped to create an atmosphere conducive to the promotion and improvement of both knowledge (systematic studies) and conservation of biodiversity as a whole.

5. References

Araujo, R., Bragado, D. & Ramos, M. A. 2000. Occurrence of glochidia of the endangered *Margaritifera auricularia* (Spengler, 1793) and other mussel species (Bivalvia: Unionoida) in drift and on fishes in an ancient channel of the Ebro River, Spain. Archiv für Hydrobiologie, 148(1): 147-160.

Araujo, R. & Ramos, M. A. 1998. Description of the glochidium of *Margaritifera auricularia* (Spengler, 1793) (Bivalvia, Unionidae). Philosophical Transactions of The Royal Society of London B, 353: 1553-1559.

Araujo, R. & Ramos, M. A. 1998. *Margaritifera auricularia* (Unionoidea, Margaritiferidae), the giant freshwater pearl mussel rediscovered in Spain. Graellsia, 54: 129-130.

Araujo, R. & Ramos, M. A. *Margaritifera margaritifera.* En: "Invertebrados no Insectos de la Directiva Hábitats en España". Serie Técnica del Ministerio de Medio Ambiente. In press.

Bauer, G., 1986. The status of the Freshwater Pearl Mussel *Margaritifera margaritifera* L. in the South of its European Range. *Biological Conservation*, 38: 1-9.

Carretero, M.A., Altaba, C.R. Bassols, E. Giráldez, S. & Rosell, C. 2000. El plan de recuperación de la náyade *Unio aleroni* en la comarca catalana de la Garrotxa. *Quercus*, 170: 24-30.

Gómez-Moliner, B, Martínez-Ortí, A., Robles, F. & Prieto, C. *Vertigo angustior* Jeffreys, 1830. En: "Invertebrados no Insectos de la Directiva Hábitats en España". Serie Técnica del Ministerio de Medio Ambiente. In press.

Grande, C., Araujo, R. & Ramos, M. A. Histological description of the gonad of *Margaritifera auricularia* (Spengler, 1793) and *Margaritifera margaritifera* (L. 1758) (Bivalvia: Unionoidea). Unpublished

14. SWITZERLAND

_____

Rapport sur les progrès de la conservation des Invertébrés en Suisse depuis 1998

Mr Yves GONSETH

1. Rappel

Durant ces 20 dernières années, la politique fédérale en matière de Conservation de la nature a privilégié la protection des habitats plutôt que celle des espèces. Divers inventaires nationaux ont ainsi été lancés et pour la plupart menés à bien :

- Inventaire fédéral des hauts-marais et des marais de transition d'importance nationale (1990)
- Inventaire fédéral des sites marécageux d'importance nationale (1990)
- Inventaire fédéral des zones alluviales d'importance nationale (1991)
- Inventaire fédéral des réserves d'oiseaux d'eau d'importance internationale et nationale (1991)
- Inventaire fédéral des sites de reproduction de batraciens d'importance nationale (1994)
- Inventaire fédéral des bas-marais d'importance nationale (1998)
- Inventaire fédérale des pelouses sèches d'importance nationale (en cours)

Comme les résultats de ces inventaires ont une incidence sur les politiques de protection de la nature des différents cantons, ces derniers ont aussi investi beaucoup de moyens pour répondre aux exigences de cette logique " habitat ". Ce contexte explique pourquoi la mise en place de plans d'action focalisés sur la protection d'espèces, et notamment d'espèces d'invertébrés citées dans les Annexes de la Convention de Berne, n'a pas beaucoup avancé.

2. Niveau légal

La Confédération suisse est en train de réformer la Loi fédérale pour la protection de la nature ainsi que les ordonnances (d'application) qui lui sont associées. Dans ce contexte la liste des espèces strictement protégées au niveau fédéral a été revue et corrigée. Toutes les espèces citées dans l'Annexe II de la Convention de Berne dont la présence en Suisse est prouvée ont été jointes à cette liste. Cela sous-entend que la capture et/ou le trafic d'individus appartenant à ces espèces seront strictement interdits sur tout le territoire suisse, des dérogations pouvant toutefois être demandées dans le cadre restreint d'études scientifiques.

3. Niveau pratique

Conscient qu'une politique intégrée de protection de la nature ne peut pas faire l'impasse d'une stratégie ciblée de protection d'espèces particulièrement menacées et/ou pour lesquelles la Suisse a une responsabilité particulière, l'Office fédéral de l'environnement des forêts et du paysage (OFEFP / BUWAL) a chargé le Centre suisse de cartographie de la faune (CSCF) de définir un programme de révision périodique des Listes rouges nationales d'espèces menacées déjà publiées (1994) et de proposer d'éventuels nouveaux groupes à traiter dans les années à venir.

Les lignes directrices de ce programme ont été définies en 1999 par le CSCF et fournies à l'OFEFP par le biais d'un rapport interne. Parallèlement à cela l'OFEFP a accepté de financer un projet pilote (le projet " Odonata 2000, cf. http://www.cscf.ch) lancé par le CSCF afin de tester si la stratégie définie dans ce document était applicable sur le terrain.

Dans le cadre de ce projet un rééchantillonnage complet ou partiel des sites ayant abrité des espèces rares et/ou fortement menacées est prévu afin de tenter d'évaluer l'évolution récente de leurs populations (1970 – 2000). Toutes les espèces de libellules présentes en Suisse citées dans les annexes II de la CB ont été prises en compte dans ce projet. Les premiers résultats obtenus (saison 1999), bien qu'encore provisoires, sont assez contrastés. Certaines espèces, et plus particulièrement celles dont les habitats préférentiels sont situés à basse et moyenne altitude, présentent une régression plus ou moins marquée (ex. *Leucorrhinia pectoralis*), alors que d'autres paraissent stables (ex. *Aeshna caerulea*) et que de nouvelles stations ont été découvertes pour certaines espèces très rares[2] (ex. *Coenagrion mercuriale)*. La saison de terrain 2000 devrait permettre d'affiner ces premières tendances.

D'autres groupes d'invertébrés devraient être traités selon la même logique ces prochaines années. Les groupes suivants ont été présélectionnés : forêts : Coleoptera Cerambycidae, Buprestidae, Lucanidae et Scarabaeidae ; evmnt Mollusca ; milieux aquatiques : Ephemeroptera, Plecoptera, Trichoptera et Mollusca ; milieux prairiaux : Lepidoptera Rhopalocera, Orthoptera, evmnt Hymenoptera Apoidea et Mollusca.

En 1999 l'OFEFP a en outre accepté de financer la phase préparatoire d'un " Programme national de conservation des espèces prioritaires de Papillons diurnes (Rhopalocera et Hesperiidae) " (cf. http://home.page.ch/pub/insecta.carron@vtx.ch/). Ce soutien a permis aux initiateurs du projet, quatre lépidoptérologues chevronnés, de définir une liste d'espèces (4 niveaux de priorité) pour lesquelles des programmes d'action devraient être rapidement mis sur pied.

La partie pratique de ce programme a débuté en 2000 avec l'accord et le soutien financier de quatre cantons. Les espèces concernées sont les suivantes : *Coenonympha tullia, Coenonympha oedippus, Iolana iolas, Mellicta deione* et *Pyrgus onopordi*.

En 1999 l'Institut fédéral de recherche sur la forêt, la neige et le paysage (FNP / WSL) a lancé un projet de synthèse des connaissances accumulées et du statut suisse des espèces citées dans l'Annexe II de la Convention de Berne (travail de diplôme de 6 mois). Le rapport relatif à ce projet n'est pas encore publié.

[2] La découverte de nouvelles stations pour des espèces très rares ne peut pas être sans autre assimilée à une expansion, les inventaires réalisés à ce jour étant loin d'être exhaustifs.

15. TURKEY

National Report for Turkey

Mrs Serap KULELI

Three research projects on the North Anatolian Diurnal Lepidopters, the Odonata fauna and the medical leech (*Hirudo medicinalis*) are administered by the Ministry of Environment in the framework of the conservation of invertebrates (see below). The co-ordination required for the studies between the relevant institutions and universities has been achieved. Thus, the conservation of some marine in vertebrates species is ensured by the Ministry of Agriculture and Rural Affairs, with the "Marine Products Circulatory". Studies for the project "Systematic and Biological Research on the Scorpionidae fauna of Turkey" have been initiated by the Ministry of Environment.

National Report appended to the report of the 5th meeting of the Group of Experts on Invertebrates (28-29 April 1998)

Three important projects concerning invertebrates have been carried out:

- one on Odonata;
- one on Lepidoptera;
- one on Hirudinea fauna.

1. Odonata

Up to now no work has been done in Turkey on Odonata except of those few foreign researchers (SELYS 1850-1887, MORTON 1914-1929, SCHMIDT 1929-1965, St. QUENTIN 1932-1965, SCHNEIDER 1982-1992, DUMONT 1977-1994) and DEMIRSOY 1982-1995.

1.1. In this study, the samples which were collected from different parts of Turkey since 1966 and those collected for the last 15 years were compared to the samples present in Zoology Museum of Berlin and Hamburg, and Hydrobiology/Ecology Department of Gent University/Belgium. As a result, several synonym lists have been prepared for most of species including *Calopteryx* and *Cordulegaster*. Furthermore, the species were examined for their habits and behaviour on field. Their larvae were observed. At the end, the data and relevant literature were gathered together and for the first time comparative analysis was achieved.

1.2. Taking into consideration of Anatolian barriers (Anatolian Diagonal, North and South Anatolian Mountains), gaps (Amik Valley, Hamur stream, Çine stream, Kelkit Gap etc.) and geological period of Anatolian and Thrace regions, we have studied the hybrids among the population and their relationships.

1.3. We have projected the data on maps, regarding distribution areas, date of collection of the samples and number of males and females with respect to the information from the literatures.

1.4. The species whose existence are in danger due to environmental factors were determined and internationally catagorised. Possible protection methods for these species were advised.

1.5. The biotops that allow the survival of larvae were determined and the use of larvae as indicator for the degree of environmental pollution were stated. Unfortunately, some of the species were excluded from this examination due to either lack of larval samples or unavailability.

1.6. With the collective data which accumulated from all over Turkey, revision of the first work has already started (DEMIRSOY 1982). By using the facilities of Gent University, we have found the opportunity to study the different types of the species and for this we have started to revise the *Calopteryx* species of Turkey. For the first time, the transit between populations and gene flow among them were analysed on a large scale. The results were evaluated considering their geological past.

1.7. Documents which give description of varieties and species were stated. Synonyms were given. The results of the works related to Turkey including the habitation of species and their distribution out of Turkey were also provided by addition of relevant page numbers.

1.8. The species were analysed considering the last Glacial epochs of Anatolia (even Europe). Evolution and the relationships among the species were tried to explained with respect to their geological connections.

From the observations we have done in Anatolia for the last 25 years it is evident that the animals mentioned here are seriously subjected to various dangers. Members of this order, which are developmentally dependent on inland waters, have been recorded to encounter reducements in number oftenly in relation the factors such as water pollution and wetland extermination. In particular, the South Coast, which is rich in species, has experienced the extinction of some of the species which were confined distributally to that region. Among the main reasons for this we can include the new touristic avaibilities and the unproper wide application of insecticides.

2. Lepidoptera

In this report, totally 461 diurnal species of the order Lepidoptera (butterflies and moths) were studied from the faunistic, ecological and the environmental points.

Not only in the literature, but also unpublished data were taken into consideration, and a distributional map for each species listed in the report were prepared. Marked quadrates in each map were explained as localities in the text, with their provinces under the subtitle horizontal distribution for each species. Besides, the vertical distribution of each species were also indicated as minimal and maximal values.

In the report, endemic subspecies of the species, mentioned in the text were also added.

Ecologically, habitats were described, where the species inhabited. Foodplants of the caterpillars and the adults, phenology and the annual generations of each species were given.

Environmental problems regarding the wildlife of Turkish Lepidoptera were discussed and an evaluation was given consequently. Threatened species were determined, the necessary measurements were discussed.

In conclusion, the conservation of totally 275 diurnal species of Lepidoptera was proposed, and the necessity of further detailed researches on these subjects was emphasized. It was mentioned, that it is only possible to protect the threatened species of Lepidoptera in nature, if, not only their larval and imaginal foodplants, but also their living places (habitats) could be conserved, inside the established "reserve territories".

3. Hirudinea fauna

The aim of the study (Priority just about to medical leeches, determination of Hirudinea fauna in Turkey) carried out by Prof. Dr. D. Gülen, Yard. Doç. Dr. Selçuk Altinsaçli, Yard. Doç. Dr. Cüneyt Kubanç and Dr. Mustafa Kiliç was to investigate the presence of the fauna of Hirudinea in Turkey. The potential dangers against these populations were also investigated and the protective measures were proposed. The

material were collected from 16 regions and 27 stations: Terkos (Durusu), Uluabat (Apolyont), Gala (Celtik), Kozan, Sapanca, Ak_ehir, Ayazma, Bey_ehir, Iznik, Manyas, Karamik, E_irdir lakes, lake _amlar and Büyük Menderes, Çoruh rivers between the dates of 14 March 1996 and 20 August 1997.

The leeches play an important role in medicine. Their parasite species use some animals as host. Of these, *Hirudo medicinalis* and *Limneatis nilotica* are known as human parasites. Hirudin that is obtained from this blood suckers have an importance in medicine. The leeches species of Turkey have been determined in this project. The Minister of Environment has been informed about the protection of the leeches that are economical important. The Minister has also been informed by this project about the dangers of decreases in the density of leeches population in Turkey. The leeches that were collected from their environment have been fixed and put under conservation. The description of environment has also been put aside. The marking technique has been used for the determination of population density. Some areas have been given priority in terms of their immediate conservation. The related literature in this project has been reviewed. Some pollutants have been observed as contributors to the pollution of leeches natural environment. It has been proved that the leeches collection should be carried out at special seasonal periods. The biological features of these recovered species have been given in this project. The figures the graphics and the statistical evaluation related to this work also been included in the text. The eastern part of Turkey has not been included in this project because this part of Country does not have the economical leeches reservoir as a bulk and some other reasons have also put off this project out of the region. The results of this project are new records for Turkey. Therefore this study is original in this field.

Four different leeches species (*Hirudo medicinalis, Limneatis nilotica, Piscicola geometrica* and *Herpobdella octooculata*) and their distributional density were observed in 27 stations. In addition the living environment of leeches species in their ecological system were evaluated in this study.

16. UNITED KINGDOM

_____

Bern Convention - Invertebrates Group of Experts Meeting
UK Report - BERN Species

Mrs Deborah Procter, Species Advisor, JNCC, www.jncc.gov.uk

Seven invertebrate species listed in the Bern Appendices occur in the UK:

- *Lucanus cervus*
- *Margaritifera margaritifera*
- *Austropotamobius pallipes*
- *Hirudo medicinalis*
- *Coenagrion mercuriale*
- *Eurodryas aurinia*
- *Lycaena dispar*

Each of these species has a Species Action Plans drawn up under the UK Biodiversity Action Plan (1995). Targeted survey work has been used to determine more acurately the distribution and viability of populations of these species in the UK. Ecological research to aid conservation has also been undertaken for six of the seven species; the exception being *Hirudo medicinalis*.

UK Biodiversity Action Plan

Species Action Plans have been prepared for 288 invertebrate species and 28 species statements prepared for those species about which little is currently known (HMSO 1995, 1999).

EC Habitats & Species Directive

Much work has been devoted to submission of the UK SAC list and the subsequent moderation exercise. Work has begun to produce guielines to assess favourable conservation status for invertebrates on Sites of Special Scientific Interest (SSSI's)

National Biodiversity Network (NBN)
www.nbn.org.uk

The National Biodiversity Network (NBN) aims to mobilise data and information for nature conservation in the UK. The network is composed of 17 major projects which cover every aspect of standard setting, linking and using data and information. The Network is a partnership of government agencies, non governmental organisations and other research institutes.

Three elements of the NBN are outlined here:

Recorder 2000

Recorder 2000 is a powerful piece of biological recording software it is a collect/collate system, designed for individuals to collect their observations and pass them on to collation points without use of sophisticated computer networks or other advanced technology. The programme is built on a variety of standards. They include the NBN ' data model' which shows how biological data can be managed within relational databases, a transfer format and NBN dictionaries for species, habitats and administrative areas. Biotope and habitat surveys can also be made and combined with species-based recording. Recorder 2000 uses digital maps to record observations accurately and is compatible with most commonly used GIS sytems, such as MapInfo and ArcView.

Species Status Assessment

This is an umbrella project designed to house all taxon conservation status assessment work – it will provide a mechanism to appraise, approve and publish conservation status.

the project will:
- assign conservation status to species based on the 1994 IUCN criteria
- keep track of international conservation status
- determine what is of international importance within GB
- assign native/non native status

It will do this by working through a number of taxon specific expert groups membership of which will be drawn from across the invertebrate conservation community.

A red list will be published on the JNCC website probably annually i.e. so that the status is 'fixed' for a year. Some taxa will be updated annually, for others significantly longer review periods of 5, 10 or 15 years are far more likely.

Eight species status publications have been prepared and will be published in 2000.
- Coleoptera vol 3 - water beetles (revised by Foster);
- Diptera vols 2, 3, 4 & 5 – Empidoidea (revised by Crossley), Nematocera and Aschiza (revised by Chandler), Acalyptratae (revised by Ismay), Calyptratae (revised by Pont)
- Microlepidoptera vol. 3 Incurvariidae, Heliozelidae, Psychidae, Tineidae and Ochsenheimeriidae (revised by Sterling et al.);
- Macrolepidoptera (with distribution maps).

*The Biological Records Centre (*www.ceh.ac.uk/cehnew/links/BRC/index.htm)

The Biological Records Centre (BRC) based at the Centre for Ecology and Hydrology (Monks Wood) is co-funded by JNCC and the Natural Environment Research Council (NERC). BRC, established in 1964, is the UK national focus for non-bird species recording. It works with the voluntary recording community throughout the British Isles. Over 60 000 volunteer and professional naturalists collect data on the occurrence of species of plant and animal species of Great Britain and Ireland. Some 80 national societies and recording schemes and over 70 local records centres also contribute to the National Biodiversity Network. Five invertebrate distribution atlases have been published in the last two years:
- Orthoptera and allies
- Carabidae
- Cerambycidae
- Non-marine mollusca
- Aculeata (part 2)

As the result of a national re-survey of butterflies (Butterflies for the New Millennium project) a new butterfly atlas will be produced in March 2001.

HMSO (1995). Biodiversity: the UK Steering Group Report. Volume 2: Action Plans. HMSO, London.

HMSO (1999). UK Biodiversity Group Tranche 2 Action Plans. Volume IV – invertebrates. English Nature, Peterborough.

A P P E N D I X 4

Convention on the Conservation
of European Wildlife and Natural Habitats

Standing Committee

Draft Recommendation No. … of the Standing Committee (adopted on …) on the implementation of the Action Plan for the conservation of the pearl mussel (*Margaritifera margaritifera*)

The Standing Committee of the Convention on the Conservation of European Wildlife and Natural Habitats, acting under Article 14 of the convention;

Having regard to the aims of the convention, which are to conserve wild flora and fauna and their natural habitats;

Recalling that Article 1, paragraph 2, of the convention requires Parties to give particular emphasis to the conservation of endangered and vulnerable species;

Noting that populations of the pearl mussel (*Margaritifera margaritifera*) have suffered a decrease in their number throughout Europe and there is a reduction in their geographical distribution;

Noting that the pearl mussel has critically endangered populations;

Desirous to avoid a further loss of biological diversity in Europe;

Aware that the design and implementation of recovery plans may be a useful tool to redress the situation of the pearl mussel;

Recalling its Recommendation No. 22 (1991) on the conservation of the pearl mussel (*Margaritifera margaritifera*) and other freshwater mussels (Unionoida);

Recalling its Guidelines No. 1 (1992) on the taking of the pearl mussel (*Margaritifera margaritifera*) and on pearl fishing;

Recalling its Recommendation No. 51 (1996) on action plans for invertebrate species in the appendices of the convention, which asked to consider the implementation of action plans for *Margaritifera margaritifera ;*

Recalling its Recommendation No. 52 (1996) on habitat conservation for invertebrate species;

Recalling its Recommendation No. 59 (1997) on the drafting and implementation of action plans for wild fauna species;

Referring to the report containing suggested actions for *Margaritifera margaritifera* in Europe, compiled by Dr Araujo et Dr Ramos (document T-PVS (2000) 10 revised);

Desirous to take prompt action for the conservation of European threatened freshwater mollusc and in particular of *Margaritifera margaritifera*,

RECOMMENDS that relevant Contracting Parties to the convention and States invited to accede thereto or to attend sessions of the Standing Committee as observers :

1. consider carrying out (or, if appropriate, reinforcing) national action plans for *Margaritifera margaritifera*; take note, in that context, of the above-mentioned action plan; follow, as far as possible, the suggestions contained in Recommendation No. 59 on the drafting and implementation of action plans for wild fauna species;

2. promote international co-ordination in the conservation of *Margaritifera margaritifera.*

A P P E N D I X 5

Convention on the Conservation
of European Wildlife and Natural Habitats

Standing Committee

Draft Recommendation No. … of the Standing Committee (adopted on …) on the implementation of the Action Plan for the conservation of *Margaritifera auricularia*

The Standing Committee of the Convention on the Conservation of European Wildlife and Natural Habitats, acting under Article 14 of the convention;

Having regard to the aims of the convention, which are to conserve wild flora and fauna and their natural habitats;

Recalling that Article 1, paragraph 2, of the convention requires Parties to give particular emphasis to the conservation of endangered and vulnerable species;

Noting that all the few remaining population of *Margaritifera auricularia* are critically endangered;

Desirous to avoid a further loss of biological diversity in Europe;

Aware that the design and implementation of recovery plans may be a useful tool to redress the situation of *Margaritifera auricularia ;*

Recalling its Recommendation No. 22 (1991) on the conservation of the pearl mussel (*Margaritifera margaritifera*) and other freshwater mussels (Unionoida);

Recalling its Recommendation No. 35 (1992) on the conservation of some species of invertebrates listed in Appendix II of the convention which asked France to carry out a national survey of the species and Spain to take appropriate measures to protect the last remaining populations of the species;

Recalling its Recommendation No. 50 (1996) on the conservation of *Margaritifera auricularia* which asked Spain to establish, as a matter of urgency, recovery plans for the species;

Recalling its Recommendation No. 51 (1996) on action plans for invertebrate species in the appendices of the convention, which asked to consider the implementation of action plans for *Margaritifera auricularia*;

Recalling its Recommendation No. 52 (1996) on habitat conservation for invertebrate species;

Recalling its Recommendation No. 59 (1997) on the drafting and implementation of action plans for wild fauna species;

Referring to the report containing suggested actions for the *Margaritifera auricularia* in Europe, compiled by Dr Araujo and Dr Ramos (document T-PVS (2000) 9 revised);

Desirous to take prompt action for the conservation of European threatened freshwater molluscs and in particular of *Margaritifera auricularia*,

RECOMMENDS that France and Spain:

1. carry out as a matter of urgency national actions plans for *Margaritifera auricularia*; take note, in that context, of the above-mentioned action plan; follow, in that context as far as possible, the suggestions contained in Recommendation No. 59 on the drafting and implementation of action plans for wild fauna species;

2. set up a joint bilateral project to implement national action plans and ensure exchange of experiences and scientific information on the species;

3. ensure that the species receives appropriate conservation attention by international instruments and funding schemes.

A P P E N D I X 6

Recent changes in the status of the newly added species to the Bern Convention *Palingenia longicauda* (Olivier, 1791). 6th meeting of the experts on invertebrates of the Bern Convention, Neuchâtel, 13 May 2000.

Michel Sartori, Museum of Zoology, P.O. Box 448, CH-1000 Lausanne 17, Switzerland.

The European mayfly *Palingenia longicauda* (Olivier, 1791) (Insecta, Ephemeroptera) possesses several unique characteristics; it's the largest mayfly species in Europe (up to 8cm of wingspan), the one whose life cycle is the longest (3 years), the one whose emergence period is the most synchronous (3-5 days a year) and finally the one whose fecundity is the highest (up to 120'000 eggs per female). Besides this, the species is one of the earliest known with references in literature already since the 16th century.

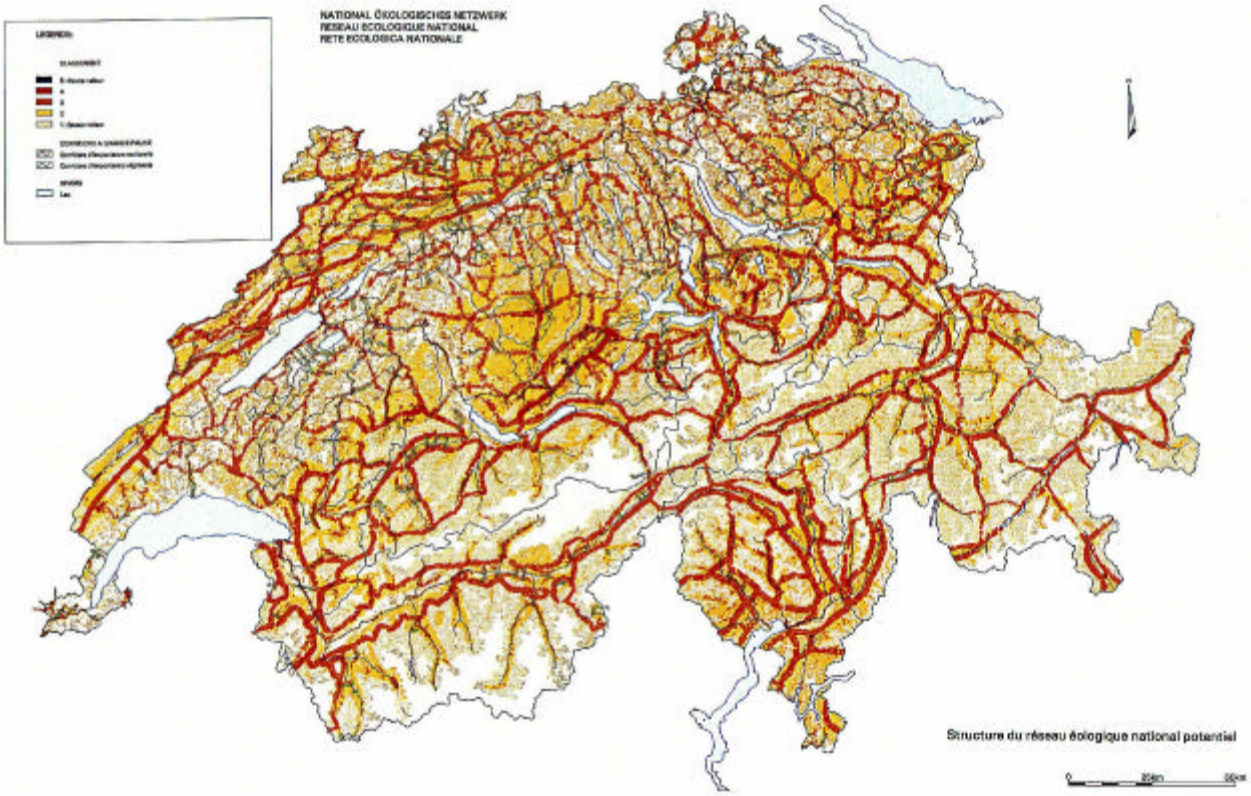
Formerly, the species was present throughout Central Europe, from the Netherlands to Ukraine. *P. longicauda* inhabits large rivers of low altitudes where the nymphs dig the river banks composed of silt and clay. Due to human impacts on the environment (industrial pollution, river embankments…), this species rapidly disappeared from Western Europe between 1900 and 1920. Since that time its largest refugee was the Danube basin, but in 1974, the last *P. longicauda* was seen on the Danube River. Thus, the species was then confined to the Tisza watershed, the largest tributary of the Danube River.

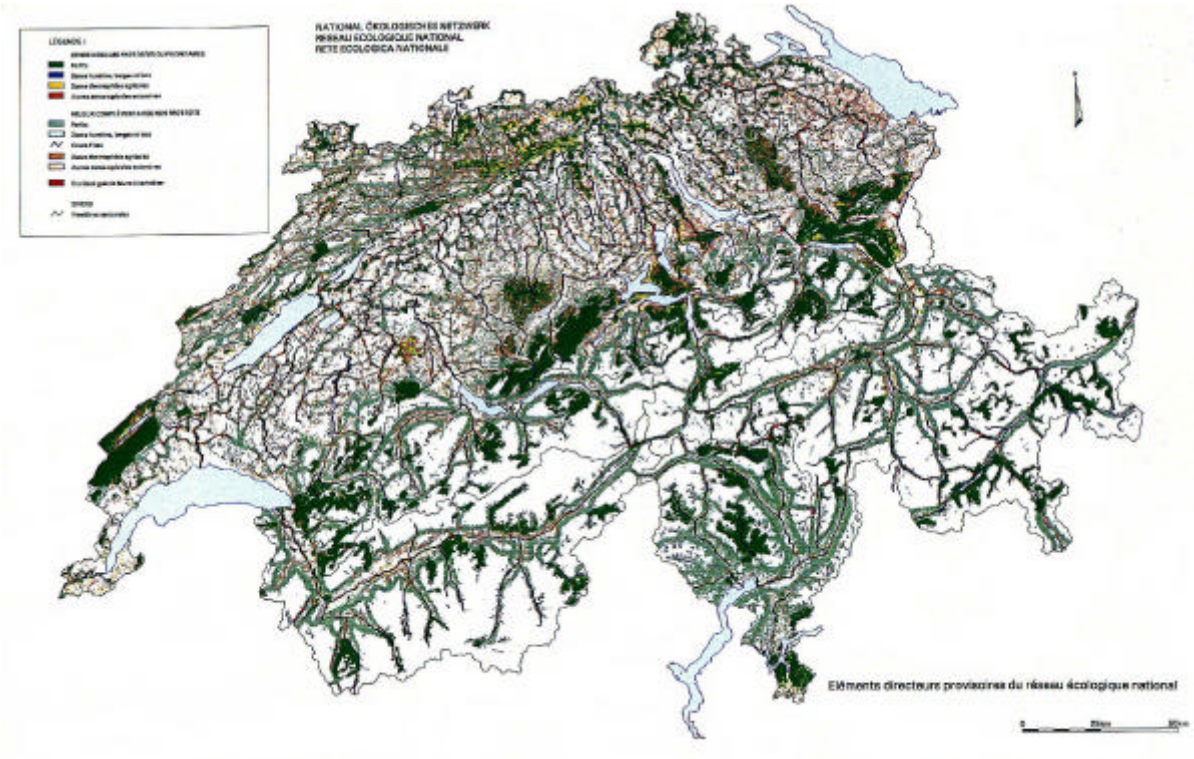
From 1990 until 1993, a team from the Museum of Zoology and the University of Fribourg investigated in more details the life cycle and behaviour of this species in the Tisza River. In 1994, we prepared a memorandum for the Council of Europe in order to present *P. longicauda* as a candidate for the Annex 2 of the Bern Convention. Our reasons were mainly based on the very restricted distribution area of the species, as well as the existence of potential threats from surrounding countries.

In 1998, *P. longicauda* was added to the Annex 2 of the Bern Convention, giving some legal bases to its global protection. But in February-March 2000, two huge pollution occurred in Romania leading first to the release of cyanide into the Tisza waters, and a couple of weeks later to the accidental discharge of more than 100'000 m^3 of waste waters contaminated with heavy metals.

Because of the high water levels in the Tisza it is actually impossible to say if some populations of *P. longicauda* survived or not. If not then this species must be considered as extinct. If some survived, then we have to investigate rapidly the opportunity to introduce this species in its former habitat (mainly Rhine River). Due to habitat fragmentation since one century, it is impossible for this species to colonise its former habitat by itself. Some preliminary investigations have been made suggesting that this is possible. But an international co-operation in that matter is needed

A field investigation is planed for next June and July at different places on the Tisza. We expect to find some answers to the above mentioned questions. A report will then be sent to the Nature and Landscape Division of the Council of Europe.


NATIONAL ÖKOLOGISCHES NETZWERK
RESEAU ECOLOGIQUE NATIONAL
RETE ECOLOGICA NATIONALE
Structure du réseau écologique national potentiel


NATIONAL ÖKOLOGISCHES NETZWERK
RESEAU ECOLOGIQUE NATIONAL
RETE ECOLOGICA NATIONALE
Eléments directeurs provisoires du réseau écologique national