



Strasbourg, le 23 septembre 2003
[tpvs17f_2003]

T-PVS (2003) 17

CONVENTION RELATIVE A LA CONSERVATION DE LA VIE SAUVAGE
ET DU MILIEU NATUREL DE L'EUROPE

**Groupe d'Experts
sur la conservation des Invertébrés**

Cardiff (pays de Galles, Royaume-Uni), 6-7 septembre 2003

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Rapport

*Document
établi par
la Direction de la Culture et du Patrimoine culturel et naturel*

1. Ouverture de la réunion par le Président

Le Président, M. Yves Gonseth, souhaite la bienvenue aux participants (dont la liste fait l'objet de l'annexe 1 au présent rapport).

2. Adoption de l'ordre du jour

L'ordre du jour est adopté (voir annexe 2).

3. Rapport du Secrétariat: Recommandations adoptées (n^{os} 80, 81 et 85), Annexes amendées

Le Secrétariat rend compte des activités tenues dans le cadre de la Convention de Berne depuis la dernière réunion du groupe d'experts en 2000.

Le Comité permanent a finalement adopté les deux recommandations proposées par le groupe: la Recommandation n° 80 (2000) concernant la mise en œuvre du plan d'action pour la conservation de la moule perlière (*Margaritifera margaritifera*) et la Recommandation n° 81 (2000) concernant la mise en œuvre du plan d'action pour la conservation de *Margaritifera auricularia*. Toutefois, l'élément essentiel de l'un de ces deux instruments (la création d'un projet bilatéral entre la France et l'Espagne en vue de la sauvegarde de *Margaritifera auricularia*) est malheureusement resté lettre morte.

Le Comité permanent a également adopté la Recommandation n° 85 (2001) concernant la conservation de *Lithophaga lithophaga* et amendé l'annexe II pour y incorporer 2 nouvelles espèces : *Carabus hungaricus* et *Carabus bessarabicus*.

Le Secrétariat signale que la Convention de Berne a vu ses ressources baisser depuis la dernière réunion du groupe d'experts en 2000 et compte donc organiser désormais ces activités en collaboration avec des organisations intéressées, l'EIS, par exemple, et ce conformément à la Résolution n° 7 (2000) du Comité permanent sur le développement stratégique à moyen terme de la Convention. Le Comité permanent a demandé que les programmes d'activités de la Convention de Berne soient adaptés de manière à mieux suivre les questions pertinentes relevant de la Convention sur la diversité biologique, parmi lesquelles les invertébrés n'occupent plus une place de premier plan.

Le groupe prend acte de ces informations.

4. Progrès de la conservation des invertébrés depuis la dernière réunion (mai 2000) - Observations générales (les résumés des rapports nationaux sont les bienvenus)

L'Albanie, l'Autriche, la Belgique, la République tchèque, le Danemark, la France, l'Allemagne, la Grèce, la Hongrie, la Lettonie, la Lituanie, les Pays-Bas, la Norvège, la Pologne, l'Espagne, la Suède, la Suisse, la Turquie et le Royaume-Uni remettent leur rapport national (cf annexe 3).

On peut dire, en résumé, que la conservation des invertébrés a progressé dans la plupart des pays d'Europe, en raison surtout de l'énergie déployée par les organismes compétents pour adapter la législation et la pratique aux exigences de la Convention de Berne et de la Directive Habitats de l'Union européenne (pour les Etats membres de l'UE et les pays candidats). Ces deux instruments exigent, dans le cadre de la création du réseau Natura 2000 et du réseau Emeraude, la désignation de sites hébergeant les invertébrés énumérés dans les Annexes. Cet exercice, qui a demandé de gros efforts sur le terrain, a conduit à mieux connaître et à mieux gérer les espèces listées (dont le suivi à long terme pose encore certains problèmes méthodologiques qu'il y a lieu de résoudre). La législation a été actualisée dans un certain nombre de pays et a incorporé les invertébrés cités dans la Convention de Berne et dans la Directive Habitats (à l'exception des Pays-Bas pour lesquels trois espèces inscrites à l'annexe II de la Directive Habitats ne figurent pas dans la nouvelle loi sur la flore et la faune).

Il a été mis en place, dans quelques pays, des plans d'action pour la conservation de certains invertébrés.

5. Les Invertébrés dans le Réseau Emerald

[Résolution n° 6 (1998)]

Plusieurs pays rendent compte des différentes étapes de la création des réseaux Emerald et Natura 2000. La plupart des Etats membres de l'Union européenne, mais pas tous, ainsi que ceux dont l'adhésion est prévue pour 2004 et la Suisse, utilisent effectivement les invertébrés comme critère de choix des zones appelées à faire partie des réseaux.

D'autres Etats progressent plus lentement dans la constitution du réseau Emerald ou n'envisagent pas, pour le moment, d'utiliser ce même critère de choix.

Nombre d'experts soulignent que la liste contenue dans la Résolution n° 6 (1998) est loin d'être exhaustive. Ils relèvent également que cette dernière n'est plus en phase avec l'annexe II de la Directive Habitats et doit être actualisée.

Le groupe recommande donc la mise à jour de la Résolution n° 6 (1998) afin d'y incorporer les espèces ajoutées à l'Annexe II de la Directive Habitats. Le Secrétariat souligne l'utilité de cet exercice auquel il faut procéder pour l'ensemble des espèces et pas uniquement pour les invertébrés.

Les experts recommandent en outre que les invertébrés cités à l'annexe II de la Directive Habitats et dans la Résolution n° 6 soient suivis d'annotations taxonomiques, notamment lorsqu'une espèce citée a été scindée en plusieurs nouvelles espèces. Le Secrétariat relève que le Comité permanent a adopté, en 1993, une procédure d'annotations des annexes qui pourrait être utilisée ici (cf Recommandation n° 39 (1993) concernant les notes aux annexes de la Convention).

6. Cartographie des invertébrés. Initiatives de l'EIS et autres activités. Utilisation éventuelle dans le cadre de la mise en œuvre de la Convention de Berne

M. Marc Meyer, représentant de l'EIS, signale qu'en 2001, la European Invertebrate Survey a lancé un projet destiné à élaborer une norme en vue de la représentation cartographique de l'occurrence des espèces et des données écologiques, à mettre en ligne. Les fiches de données concernant les espèces seront ainsi mises à jour au fur et mesure de l'arrivée de nouvelles informations électroniques. La base de données sera gérée en Autriche (plusieurs partenaires ont déjà été choisis). L'EIS sera un réseau thématique dans le cadre du projet BIOCASE qui permettra d'obtenir également une liste normalisée des invertébrés européens et d'analyser la répartition des espèces et les tendances y afférentes. Huit pays participent déjà à ce projet-pilote.

Le groupe se félicite de cette initiative, et relève que cette représentation cartographique permettra d'améliorer la mise en œuvre et le suivi des invertébrés cités dans les annexes à la Convention. Les pays sont invités à soutenir comme il se doit ce projet européen.

7. Stratégie européenne des espèces exotiques envahissantes

M. Legakis, Président du Groupe de la CBD (SBSTTA), qui a élaboré les Principes directeurs/Directives sur les espèces exotiques constituant une menace pour des écosystèmes, des habitats ou d'autres espèces, explique que l'on cherche de plus en plus, à l'échelle mondiale, à régler les problèmes que posent les espèces exotiques envahissantes à la biodiversité indigène et combien il importe d'examiner leurs effets sur les invertébrés indigènes européens.

Le Secrétariat présente pour information le «Projet de stratégie européenne pour l'éradication des espèces invasives exogènes» en cours d'examen par le Comité permanent.

Plusieurs délégations soulignent:

- La menace qui pèse sur certaines espèces en particulier (par exemple celle que constitue la moule zébrée pour *Margaritifera auricularia*);
- La nécessité d'améliorer l'expertise taxonomique des organismes de conservation qui examinent la question des invertébrés potentiellement envahissants;

- Le risque que les instruments de libre-échange n'empêchent les gouvernements de prendre des mesures de prévention efficaces pour lutter contre les espèces exotiques d'invertébrés envahissants;
- La nécessité d'élaborer des guides d'identification des espèces exogènes d'invertébrés qui pourraient devenir envahissantes.

Le Groupe d'experts soutient le projet de stratégie européenne et exprime le vœu que les invertébrés soient pleinement pris en compte lors de la mise en œuvre de l'instrument par les gouvernements.

8. Stratégie de conservation des invertébrés en Europe et avenir du Groupe d'experts

Le Président signale que la ratification de la Convention de Berne et les travaux du Groupe d'experts ont conduit, dans son pays mais aussi dans nombre d'autres, à la prise en compte des invertébrés dans les activités nationales en faveur des espèces protégées et à la conservation des habitats intéressants apportant ainsi des arguments de poids à la protection de la diversité biologique. La Convention de Berne a eu, dans l'ensemble, des répercussions très positives sur la politique européenne de conservation de la nature. Il est évident que sa mise en œuvre pleine et entière pour les invertébrés exige des moyens accrus, à l'échelle nationale et européenne à la fois. Le Groupe d'experts a joué un rôle de premier plan dans la coordination et l'encouragement de la conservation des invertébrés en Europe et doit poursuivre son action sous l'une ou l'autre forme.

Le Secrétariat indique que, bien que les ressources financières de la Convention soient limitées, l'existence du groupe n'est pas menacée mais que, conformément à la Résolution n° 7 (2000) sur le développement stratégique à moyen terme de la Convention, il faudrait rechercher les synergies appropriées avec des réseaux scientifiques spécialisés (l'EIS en particulier) ainsi qu'une meilleure adaptation des activités du Groupe d'experts à certaines des priorités de la Convention sur la diversité biologique (par exemple la diversité biologique sylvoicole, la diversité biologique marine et côtière, l'initiative globale de taxonomie, les problèmes de pollinisation, etc.).

Le Secrétariat estime que le groupe a besoin d'une stratégie à long terme dans le cadre de laquelle seraient fixés un certain nombre d'objectifs et serait élaborée une feuille de route sur la conservation des invertébrés, à l'usage des gouvernements.

Les experts procèdent à un échange de vues détaillé sur cette question qui fait l'objet de remarques de la plupart des délégations. Certaines de ces observations sont résumées ci-dessous:

- L'idée d'une véritable stratégie est intéressante car le groupe d'experts et les gouvernements pourront ainsi envisager la conservation des invertébrés dans une perspective à long terme;
- Il conviendrait à cet égard de définir ce que le groupe doit faire et ne pas faire;
- La stratégie pourrait faire l'objet d'une initiative conjointe de la Convention de Berne et du Groupe européen de spécialistes sur les invertébrés, à créer par l'Union internationale pour la conservation de la nature (IUCN) (Commission de survie des espèces);
- Elle devrait fixer des objectifs précis et un calendrier;
- Elle ne porterait pas en particulier sur les espèces citées dans la Convention de Berne (même si ces dernières feront certainement l'objet de priorités) mais couvrirait d'autres invertébrés menacés et examinerait comment les préserver dans les zones agricoles, dans les régions sylvoicoles, dans les montagnes méditerranéennes, dans les landes et dans les autres écosystèmes gérés;
- Elle pourrait formuler des propositions aux fins de l'élaboration de listes rouges européennes;
- Elle pourrait chercher à accroître les synergies avec les spécialistes de la flore;
- Elle pourrait s'occuper de la gestion des invertébrés dans les zones protégées (exercice dont les résultats sont actuellement très mauvais) ;

- Elle devrait, dès le début de son élaboration, s'appuyer sur un plus grand nombre de parties prenantes et pas uniquement sur les spécialistes des invertébrés ou de la conservation de la nature.

Le groupe suggère de créer une équipe restreinte composée de M^{me} Ramos, M. Speight, M. Varga, M. Haslett et M^{me} Seddon qui seront chargés d'examiner la manière de procéder. Il est également proposé d'élaborer la stratégie dans le cadre d'un atelier prévu à cet effet.

Le Secrétariat indique que des fonds seront prévus au budget 2004 pour lancer cette activité mais que, pour l'heure, il n'est pas en mesure d'organiser l'atelier proposé et ne dispose pas des ressources nécessaires en la matière. Si d'autres acteurs (UICN, EIS) s'en chargeaient, la convention examinerait la question de sa participation, en fonction des ressources disponibles.

9. Propositions d'activités de conservation des invertébrés dans le cadre de la Convention pour la période 2004-2006

Le groupe propose au Comité permanent de faire de l'élaboration d'une stratégie européenne de conservation des invertébrés l'une de ses priorités.

10. Questions diverses

M. Akincioglu propose que la Turquie accueille une future réunion du Groupe d'experts.

M. Dupont offre son aide et son expertise sur les crustacés, dans le cadre de toute initiative européenne de conservation en la matière.

Aucune autre question n'est soulevée.

Annexe 1

Liste des participants

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Annexe 2
Groupe d'Experts
sur la Conservation des Invertébrés

7^e réunion
Cardiff (Royaume-Uni), 6-7 septembre 2003

ORDRE DU JOUR

1. Ouverture de la réunion par le Président
2. Adoption de l'ordre du jour
3. Rapport du Secrétariat: Recommandations adoptées (n^{os} 80, 81 et 85), Annexes amendées
4. Examen des progrès de la protection des invertébrés depuis la précédente réunion (mai 2000)
Commentaires généraux (les résumés écrits des rapports nationaux sont bienvenus).
Odonates
5. Les invertébrés dans le Réseau Emerald (Résolution n° 6)
6. Cartographie des invertébrés. Initiatives et autres activités de EIS. Application à la Convention de Berne
7. Stratégie européenne relative aux espèces exotiques envahissantes
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19. Turkey / Turquie
20. United Kingdom / Royaume-Uni

1. ALBANIA / ALBANIE



The Country Report from Albania

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Institutional Framework

In September 2001 the Albanian Government established the Ministry of Environment (MoE), considered as the fulfilment, from the administrative point of view, of the continues request of strengthening the role of environment in the decision bodies. It was an important step of institutional strengthening in the process of the consolidation of the governmental structure responsible of the environmental issues. The Ministry of Environment was based on the National Environmental Agency and was restructuring after the establishment with the approval of the Prime Minister. The new structure includes 6 Directorate, the Inspectorate and the PIU, named:

1. Directorate of Nature Protection
2. Directorate of Pollution and Prevent
3. Directorate of Policy Integration and Legislation
4. Directorate of Environmental Impact Assessment
5. Directorate of Communication and Foreign Relation
6. Directorate of Human Resources

The Inspectorate includes also the Regional Environmental Agencies distributed in all the country. The total number of the employer is 100.

Legal framework

There are a number of laws, which have been approved since 1991, and represent an important advancement in the legislative area:

- ◆ Laws on the Land and Its Distribution (no. 7491 and no. 7501, 1991)
- ◆ Law on the Forests and the Forest Service Police (no. 7623, 1992)
- ◆ Law on City Planning (no. 7693, 1993)
- ◆ Law on Plant Protection Service (no.7662, 1993)
- ◆ Law on Protection of Medicinal and Taniferous Plants (no. 7722, 1993)
- ◆ Law on Development of Areas with Tourism Priority (no. 7665, 1993)
- ◆ Law on Hunting and Wildlife Protection (no. 7875, 1994)
- ◆ Law on Fishing and Aquaculture (no.7908, 1995)
- ◆ Law on Pastures and Meadows (no.7917, 1995)
- ◆ Law on Water Resources (no. 8093, 1996)

During 2000-2002 the Ministry of Environment concentrate a lot of efforts on the legislation and prepared about 10 draft laws (most of them was elaborated for many years). 7 of the draft laws had been approved already by the Parliament and among them we can mention:

1. The Law of Environment (nr. 8934, dt. 5.09.2002)
2. The Law of protection of the sea environment from the pollution and damages (nr. 8905, dt. 6.06.2002)
3. The Law on Protected Areas (nr. 8906, dt. 6.06.2002)
4. The Law on environmental impact assessment (nr 8990, dt. 23.01.2003)

From the drafts that are under discussion in the Parliamentary Group we can mention two: The Biodiversity Protection Law and the Law for the Trasboundary Lake. Some by-laws and regulations based on these statutes have also been drafted and approved, as:

- ✓ The Government decree for stopping the logging in the forest
- ✓ The Government decision for the proclamation of the new nature monument in Albania
- ✓ Government decree for the administration of the protected areas
- ✓ Government decree for the procedures of the proclamation of the protected areas

With all the efforts made towards the improvement of the environmental legal system, there are still some gaps, especially related to the coastal zone, landscape diversity, etc.

International agreements

Albania is almost part of the main conventions related to the protection of nature. A list of this convention and the date of entering in force is attached to this document as Annex 2.

The engagement of Albania in international environmental convention and agreements is nearby arriving to be completed; however, implementation and fulfilling the duties specified in those are still lacking in many instances.

Invertebrate conservation

The level of knowledge on invertebrates in Albania is limited. The number of invertebrate experts working in scientific institutions is limited, too, and the economic support for scientific work is very small.

Among invertebrate groups, better known are molluscs, mainly terrestrials and freshwater. Last years the study of marine molluscs is increased, especially on coastal malacofauna. From insects, better known are Lepidoptera, Coleoptera, Hemiptera and Hymenoptera. From crustaceans, the studies were concentrated almost only on decapods, but last years their study is not going on. The same situation is for the study of echinoderms, too.

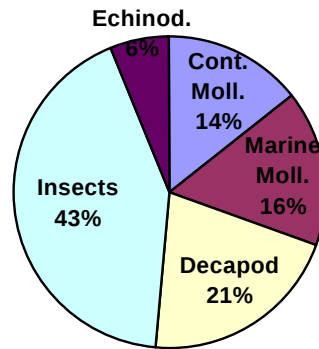
There have been also some sporadic studies on Myriapoda, Acarina, parasitic nematodes and flatworms.

The first red list of Albanian fauna was published in 1997. Data on endangered invertebrates from that list is given in Table 1 in the following.

Table 1

Groups	Categories							Total endangered
	E	V	R	I	K	T	C	
Continental molluscs	3	1	21	1	13		2	41
Marine molluscs	6		27	7	6			46
Crustaceans Decapods	1	1	53		2	2		59
Insects	4	40	57	13	7			121
Echinoderms	1		13	3				17
Total	15	42	171	24	28	2	2	284

Fig. 1. Assessment of invertebrate endangerment in Albania (1997)



According to the data given in Table 1 and Fig.1 above, among endangered invertebrates, the highest species number belongs to insects (43%) and then decapods (21%).

In the framework of implementing the biodiversity strategy, starting from 2000, the Ministry of Environment supports every year the monitory of fauna of the main coastal areas and lagoons of Albania. Most of these areas are protected areas. From invertebrates, this monitory includes coastal insects and molluscs.

This monitory aims:

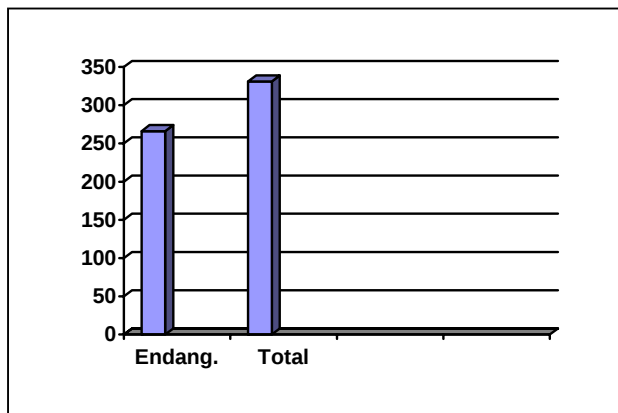
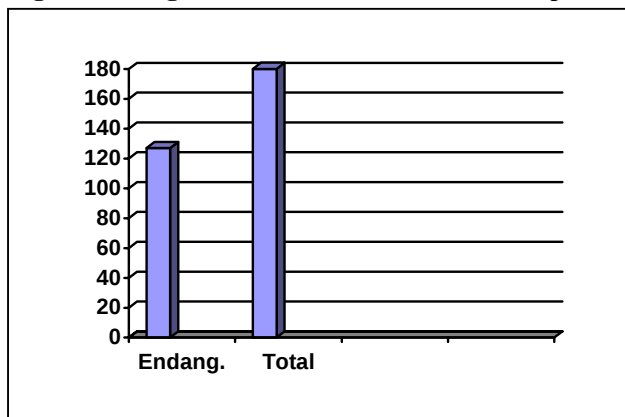
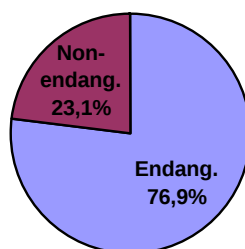
- knowledge of species composition;
- study of ecological situation in coastal habitats;
- assessment of the situation of the most important populations, bioindicator species, rare and endangered species;
- evaluation of damage level of coastal biodiversity, reasons and damaging factors;
- proposals on methods of amelioration of coastal biodiversity situation, determination of endangerment status of species and categorization of protected areas according to the IUCN categories and criteria.

Table 2 below, shows the endangerment assessment for molluscs according to the data from this monitory, but also from other studies of the last years.

Table 2. Assessment of molluscs endangerment in Albania (2002)

Groups	Categories						Total endang.	Total species
	CR	EN	VU	LR	DD	NE		
Continental molluscs	3		85	141	37		266	331
Marine molluscs		5	22	72	22	6	127	180
Total	3	5	107	213	59	6	393	511

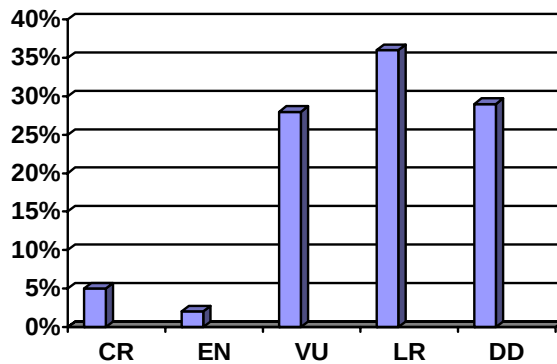
As it results from this table, Fig. 2, Fig. 3 and Fig. 4 in the following, the number of endangered mollusc species is very high compared to the total species number known.

Fig. 2. Endangered and total continental mollusc species number of Albania (2002)**Fig. 3. Endangered and total marine mollusc species number of Albania (2002)****Fig. 4. Percentage of endangered mollusc species of Albania (2002)**

76,9% of the mollusc species, known up to now in Albania are endangered. Percentage of endangered species is very high especially for continental molluscs, with 80%, while from marine molluscs, 70% are endangered.

According to the data of the last years, the assessment of insect endangerment is given in Fig. 5 below.

Fig. 5. Assessment of insect endangerment in Albania (2002)



32 species or 25% of the invertebrate species list of Bern Convention are known up to now in Albania (see Annex 1). All these species, except the sea urchin *Paracentrotus lividus*, are included in the red lists of the Albanian fauna. The most presented groups of Albanian invertebrates, included to the Bern Convention list are: insects with 11 species, molluscs with 9 species and crustaceans with 5 species.

The general situation of invertebrate fauna in Albania is difficult, especially in coastal areas. The main reasons for the difficult situation are linked to the increased human impact through: damage and alteration of the natural habitats, such as forests and wetland areas for development of infrastructure; illegal fishing with explosion; collection without criteria of molluscs, especially bivalves; organic and chemical pollution; low level of environmental education and public awareness.

Some recommendations and measures proposed for the amelioration of the situation of invertebrates are: strong reduction of human impact in forest, coastal and wetland areas; drafting of management plans for the existing protected areas; extension and designation of new protected areas; preparation of action plans for endangered species and important habitats; better cooperation between state institutional bodies, central and local government, administrative and scientific institutions, NGO-s etc. for an integrated protection of biodiversity and environment; cooperation between scientific institutions within the country and abroad for increasing expertise in invertebrate studies; continuous monitory and studies on ecology of invertebrate fauna, aiming to know as much as possible its situation, status of endangered species, reasons of endangerment and measures for the amelioration; awareness raising campaign on the importance of protection of invertebrate fauna.

ANNEX 1**Albanian Invertebrates belonging to the protected species of Bern Convention**

PORIFERA

Hippospongia communis
Spongia officinalis

CNIDARIA

Corallium rubrum

MOLLUSCA

Gastropoda

Charonia nodiferum
Charonia tritonis

Ranella olearia
Tonna galea
Zonaria pyrum

Bivalvia

Lithophaga lithophaga
Pholas dactylus
Microcondylaea compressa
Unio elongatulus

ANNELIDES

Hirudinea

Hirudo medicinalis

CRUSTACEA

Decapoda

Homarus gammarus
Maja squinado
Palinurus elephas
Scyllarides latus
Scyllarides arctus

INSECTA

Odonata

Lindenia tetraphylla
Gomphus flavipes

Coleoptera

Cerambyx cerdo
Lucanus cervus
Osmoderma eremita
Rosalia alpina

Lepidoptera

Maculinea arion
Papilio alexanor
Parnassius apollo
Parnassius mnemosyne
Zerynthia polyxena

ECHINODERMATA

Asteridae

Ophidiaster ophidianus

Echinidae

Centrostephanus longispinus
Paracentrotus lividus

ANNEX 2

International conventions where Albania adheres

- On May 30, 1990, Albania participated by accession to the **Barcelona Convention "For the Protection of the Mediterranean Sea against Pollution"** (Barcelona, February 16, 1976). Protocol Concerning Mediterranean Specially Protected Areas (1982) and the Protocol for the Protection of Biodiversity in the Mediterranean Sea (1996).
- On October 4 1991, Albania ratified the **ESPOO Convention (Finland) "On Environmental Impact Assessment in a Transboundary Context."**
- On March 18, 1992 Albania signed the convention **"On the Protection and Use of Transboundary Watercourses and International Lakes"** (Helsinki March 17, 1992). The ratification of the convention was done on January 5, 1994.
- The convention **"On Transboundary Effects of Industrial Accidents"** was approved in principle on March 18, 1992, and was ratified on January 5, 1994.
- On November 29, 1995 Albania participated by accession to the **Ramsar Convention** (Ramsar, 1971) or the **"Convention on Wetlands of International Importance especially as Waterfowl Habitat"**.
- On October 31, 1995 Albania signed the Bern Convention (September 19, 1979) **"For the Protection of Flora and Wildlife Fauna of the Natural Environment in Europe,"** which was ratified by the Parliament on March 2, 1998.
- Convention on **Climate Change**. □On October 3, 1994 Albania signed the basic text of this convention (New York, May 9, 1992). The Council of Ministers approved the accession of Albania to this convention by the decree no. 580 on June 29, 1993].
- Convention **"On Biological Diversity"** Albania signed the convention on January 5, 1994 and it entered into force on April 5, 1994].
- **The Convention on Combat Desertification** (December 4, 1996), Albania accesses to the convention in December 1999.
- **The Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters** (Aarhus-Denmark, June 25, 1998), Albania was among the 35 countries, which signed this convention and ratified it in 2000
- **The Convention on Protection of Migratory Species of Wildlife** known also as the **Bonn Convention** (Bonn, on June 23, 1979). Albania has access by the Parliament decision in November 2000.
- **The Convention on International Trade in Endangered Species of Wild Fauna and Flora** (Washington, D.C., on 3 March 1973, amended at Bonn, on 22 June 1979). Albania access to this convention by Parliament decision in March 2002.

2. AUSTRIA / AUTRICHE

Progress in the conservation of invertebrates in Austria, 2003

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As noted at previous meetings of this Group of Experts and at meetings of other, similar Groups, matters of nature conservation remain the concern of regional, rather than National Government in Austria.

The Local Government of Salzburg reports that:

Seven new NATURA 2000 reserves have been nominated. Each has relevance for invertebrate conservation. Particularly noteworthy are (i) The floodplain woodlands of the River Salzach, which provide habitat for the beetle *Cucujus cinnaberinus* and the arctiid moth *Callimorpha quadripunctaria*. Protection of oak-associated Lepidoptera species is also a central aim. (ii) The Zinkenbach-Karlgraben (habitat for the beetle *Rosalia alpina*) and (iii) Part of the lower slopes of the Untersberg mountain, just outside Salzburg. This site is particularly important, and includes populations of the butterflies *Euphydryas maturna*, *E. aurinia*, and *Maculinea teleus*, as well as the snail species *Vertigo angustior* and *V. geyeri*.

A biodiversity data bank has been initiated at the Salzburg Museum of Natural History. The databank provides information about various invertebrate species in the museum collections, including invertebrates.

Local surveys of butterflies (particularly *Maculinea* spp) and Coleoptera are being undertaken at various sites around Salzburg.

Revision of local government subsidies available to land users to encourage active maintenance and management of landscape structures regarded as ecologically desirable.

The Local Government of Vienna reports:

There are ongoing efforts to map the distributions of various invertebrates within the city of Vienna, including Orthoptera and the Odonata species *Cordulegaster bidentata* and *C. heros*

And the molluscs *Cepaea vindobonensis* and *Zebrina detrita*.

Promotion of public awareness of butterflies in the city, under the caption 'more butterflies in Vienna' and a general move to support protection of butterflies in Vienna's parklands.

No information from other regional government offices in Austria has been made available.

3. BELGIUM (Wallonn Region) / BELGIQUE (Région wallonne)

Rapport d'évaluation de l'état des mesures de conservation prises en Wallonie pour les Invertébrés de la Convention de Berne

Cardiff - 6 septembre 2003

1. Mesures légales de protection

Le principal évènement depuis l'année 2000 est l'adoption d'un décret le 6 décembre 2001 qui modifie la Loi de la conservation de la Nature du 12 juillet 1973 pour prendre en compte explicitement et totalement les Directives Européennes CE/79/409 (Oiseaux) et CE/92/43 (Faune-Flore-Habitats) et de la Convention de Berne. Toutes les espèces citées dans les annexes de ces législations sont identifiées en droit wallon.

L'annexe 1 de ce rapport détaille le contenu de l'**Article 2 bis** de la Loi de la Conservation de la Nature qui définit les mesures de protection des espèces. Il s'agit non seulement de la protection des spécimens mais aussi de leurs habitats (§2 alinéa 4. *Il est interdit de détériorer ou de détruire les sites de reproduction, les aires de repos ou tout habitat naturel où vivent ces espèces à un des stades de leur cycle biologique*).

En pratique, pour les Invertébrés présents ou qui ont été présents en Wallonie (cfr Annexe 2), les mesures de protection des habitats ne concernent que 17 espèces de l'Annexe 2 de la Convention de Berne (3 espèces des Coléoptères, 4 de libellules et 10 de papillons dont deux nocturnes). Pour les espèces de l'Annexe 3, les espèces présentes font aussi l'objet de mesures de protection qui peuvent être aussi fortes que celles de l'Annexe 2 (pour *Lucanus cervus* et *Margaritifera margaritifera*) ou moindre quand il s'agit d'interdire (*Astacus astacus*) ou de limiter les prélèvements (*Helix pomatia*, *Hirudo medicinalis*).

Près de la moitié d'entre elles sont considérées comme éteintes depuis plusieurs années. Pour les autres, comme une majorité d'entre elles figurent aussi à l'Annexe 2 de la Directive européenne CE/92/43 (Faune-Flore-Habitats), le Gouvernement wallon a désigné le 26 septembre 2002 un certain nombre de sites qui recouvrent pratiquement toutes les populations connues, ou du moins les plus importantes. Plus de 216.000 ha ont ainsi été désignés en Wallonie (presque 13% du territoire wallon). Outre la protection légale, ces populations d'espèces bénéficieront de mesures actives de protection des sites qui les abritent encore avec notamment la mise en oeuvre de mesures de restauration.

2. Mise en oeuvre de plans d'actions

Le CRNFB a élaboré en 2001 un projet LIFE-Nature/B/8590 pour restaurer les habitats de la Moule perlière (*Margaritifera margaritifera*) en Wallonie. D'un montant de 2,3 millions d'Euros et prévu pour une durée de 4 ans, il devrait permettre de protéger directement les populations les plus importantes, de restaurer des conditions d'habitats et de populations de poissons-hôtes adéquates et de sensibiliser les acteurs régionaux à l'importance de la qualité des eaux. Les travaux de prospection entrepris dans ce cadre dans d'autres cours d'eau que ceux visés par le projet démontrent la présence de populations vivantes résiduelles ou plus ou moins importantes dans d'autres cours d'eau. Pour plus de renseignements, voir <http://mrw.wallonie.be/dgrne/sibw/organisations/offh/lifemp/>.

Les populations d'espèces de Libellules et de Papillons font l'objet d'un suivi régulier des populations menacées (convention de recherche de la Région wallonne avec l'UCL) de manière à suivre leur dynamique et à proposer la mise en oeuvre de mesures de gestion favorable aux acteurs responsables.

3. Contacts :

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Annexe 1 : Partie de l'Article 2 de la Loi sur la conservation de la nature du 12 juillet 1973 telle que modifié le 6 décembre 2001 pour y intégrer les contraintes de la Directive européenne CE/93/43 "Faune, Flore, Habitats") et de la convention de Berne

Art. 2bis. §1er. Sont intégralement protégées toutes les espèces de mammifères, amphibiens, reptiles, poissons et invertébrés :

1° strictement protégées en vertu de l'annexe IV, point a., de la directive 92/43/C.E.E. et de l'annexe II de la Convention de Berne, dont la liste est reprise en annexe II, point a.;

2° menacées en Wallonie, dont la liste est reprise en annexe II, point b.

§2. Cette protection implique l'interdiction :

1° de capturer et de mettre à mort intentionnellement des spécimens de ces espèces dans la nature;

2° de perturber intentionnellement ces espèces, notamment durant les périodes de reproduction, de dépendance, d'hibernation et de migration;

3° de détruire ou de ramasser intentionnellement dans la nature ou de détenir des œufs de ces espèces;

4° de détériorer ou de détruire les sites de reproduction, les aires de repos ou tout habitat naturel où vivent ces espèces à un des stades de leur cycle biologique;

5° de naturaliser, de collectionner ou de vendre les spécimens qui seraient trouvés blessés, malades ou morts;

6° de détenir, transporter, échanger, vendre ou acheter, offrir aux fins de vente ou d'échange, céder à titre gratuit les spécimens de ces espèces prélevés dans la nature, y compris les animaux naturalisés, à l'exception de ceux qui auraient été prélevés légalement avant la date d'entrée en vigueur de la présente disposition ainsi qu'à l'exception de celles de ces opérations qui sont constitutives d'une importation, d'une exportation ou d'un transit d'espèces animales non indigènes et de leurs dépouilles;

7° d'exposer dans des lieux publics les spécimens.

Les interdictions visées aux points 1°, 2°, 5°, 6° et 7° de l'alinéa précédent s'appliquent à tous les stades de la vie des espèces animales visées par le présent article, y compris les œufs, nids ou parties de ceux-ci ou des spécimens.

Art. 2ter. Les interdictions visées à l'article 2bis, §2, 1°, 2° et 3°, s'appliquent aux espèces figurant à l'annexe III, à l'exception de la détention temporaire d'amphibiens ou de leurs œufs à des fins pédagogiques ou scientifiques.

La détention, l'achat, l'échange, la vente ou la mise en vente des espèces de l'annexe III sont également interdits, ainsi que la perturbation ou la destruction des sites de reproduction des mammifères.

Art. 2quater. Toute personne responsable de la capture accidentelle ou de la mise à mort accidentelle de spécimens d'une des espèces strictement protégées en vertu de l'article 2bis est tenue de le déclarer au service de l'administration régionale désigné par le Gouvernement.

Le Gouvernement arrête, le cas échéant, les modalités de la déclaration.

Art. 2quinquies. Pour la capture, le prélèvement ou la mise à mort des espèces de faune sauvage énumérées à l'annexe IV et dans les cas où, conformément à la section 4, des dérogations sont appliquées pour le prélèvement, la capture ou la mise à mort des espèces énumérées aux annexes II et III, tous les moyens non sélectifs susceptibles d'entraîner localement la disparition ou de troubler gravement la tranquillité des populations d'une espèce sont interdits et en particulier :

1° l'utilisation des moyens de capture et de mise à mort énumérés à l'annexe V, point a.;

2° toute forme de capture et de mise à mort à partir des moyens de transport mentionnés à l'annexe V, point b.

Art. 2sexies. Par dérogation à l'article 2bis, sont autorisés en tout temps :

1° le déplacement à brève distance d'espèces, nids ou œufs menacés d'un danger vital immédiat à condition qu'ils soient déposés dans un milieu similaire proche de celui où ils ont été trouvés;

2° le transport d'une espèce blessée ou abandonnée vers un centre de revalidation pour les espèces animales vivant à l'état sauvage.

* * *

Annexe 2. Tableau synthétique des mesures de conservation prises pour les Invertébrés de la Convention de Berne présent en Wallonie

Convention de Berne Annexe 2	Liste rouge	Statut	Statut de protection en Wallonie	Directive CE/92/43	Nombre de populations connues en Site Natura2000
Invertébrés Insectes Coléoptères					
<i>Dytiscus lattissimus</i>	Oui	EX : éteinte	Décret 6/12/2001 : Annexe 2a	CE/92/43 - Annexe 2 CE/92/43 - Annexe 4	Sans objet
<i>Graphoderus bilineatus</i>	A vérifier	NE : non évalué	Décret 6/12/2001 : Annexe 2a	CE/92/43 - Annexe 2 CE/92/43 - Annexe 4	Sans objet
<i>Osmoderma eremita</i>	Oui	Cr : en situation critique	Décret 6/12/2001 : Annexe 2a	CE/92/43 - Annexe 2 prioritaire CE/92/43 - Annexe 4	100%
Invertébrés Insectes Libellules					
<i>Leucorrhinia caudalis</i>	Oui	EX : éteinte	Décret 6/12/2001 : Annexe 2a	CE/92/43 - Annexe 4	Sans objet
<i>Leucorrhinia pectoralis</i>	Oui	EX : éteinte	Décret 6/12/2001 : Annexe 2a	CE/92/43 - Annexe 2 CE/92/43 - Annexe 4	Obs. isolée cette année dans un site N2000
<i>Coenagrion mercuriale</i>	Oui	Cr : en situation critique	Décret 6/12/2001 : Annexe 2a Décret 6/12/2001 : Annexe 9	CE/92/43 - Annexe 2	95%
<i>Oxygastra curtisii</i>	Oui	Cr : en situation critique	Décret 6/12/2001 : Annexe 2a Décret 6/12/2001 : Annexe 9	CE/92/43 - Annexe 2 CE/92/43 - Annexe 4	100%
Invertébrés Insectes Papillons					
<i>Lycaena dispar</i>	Oui	En : en danger	Décret 6/12/2001 : Annexe 2a Décret 6/12/2001 : Annexe 9	CE/92/43 - Annexe 2 CE/92/43 - Annexe 4	60%
<i>Maculinea arion</i>	Oui	Cr : en situation critique	Décret 6/12/2001 : Annexe 2a	CE/92/43 - Annexe 4	100% mais apparemment pop. éteinte
<i>Hypodryas maturna</i>	Oui	EX : éteinte	Décret 6/12/2001 : Annexe 2a	CE/92/43 - Annexe 2 CE/92/43 - Annexe 4	Sans objet
<i>Parnassius apollo</i>	Non	NE : non évalué	Décret 6/12/2001 : Annexe 2a	CE/92/43 - Annexe 4	Obs.
<i>Coenonympha hero</i>	Oui	Cr : en situation critique	Décret 6/12/2001 : Annexe 2a	CE/92/43 - Annexe 4	accidentelle 100% mais apparemment pop. éteinte
<i>Coenonympha oedippus</i>	Non	NE : non évalué	Décret 6/12/2001 : Annexe 2a	CE/92/43 - Annexe 2 CE/92/43 - Annexe 4	Obs. douteuse
<i>Lopinga achine</i>	Oui	EX : éteinte	Décret 6/12/2001 : Annexe 2a	CE/92/43 - Annexe 4	en Belgique Sans objet

<i>Euphydryas aurinia</i>	Oui	Cr : en situation critique	Décret 6/12/2001 : Annexe 2a Décret 6/12/2001 : Annexe 9	CE/92/43 - Annexe 2	80% des populations connues ¹
<i>Eriogaster catax</i>	A vérifier	NE : non évalué	Décret 6/12/2001 : Annexe 2a Décret 6/12/2001 : Annexe 9	CE/92/43 - Annexe 2 CE/92/43 - Annexe 4	100%
<i>Proserpinus proserpina</i>	Non	XX : inconnue	Décret 6/12/2001 : Annexe 2a	CE/92/43 - Annexe 4	Sans objet
Convention de Berne Annexe 3					
Invertébrés					
Crustacés					
<i>Astacus astacus</i>	Oui	En : en danger	Décret 6/12/2001 : Annexe 4	CE/92/43 - Annexe 5	Sans objet
<i>Austropotamobius pallipes</i>	Oui	EX : éteinte	Aucune réglementation	CE/92/43 - Annexe 2 CE/92/43 - Annexe 5	Sans objet
<i>Austropotamobius torrentium</i>	Oui	EX : éteinte	Aucune réglementation	CE/92/43 - Annexe 5	Sans objet
Invertébrés Insectes Coléoptères					
<i>Lucanus cervus</i>	Oui	Vu : Vulnérable	Décret 6/12/2001 : Annexe 2b Décret 6/12/2001 : Annexe 9	CE/92/43 - Annexe 2	80%
Invertébrés Mollusques					
<i>Helix pomatia</i>	Non	Sans objet	AERW 24/02/1984	CE/92/43 - Annexe 5	Sans objet
<i>Margaritifera margaritifera</i>	Oui	Cr : en situation critique	Décret 6/12/2001 : Annexe 2a Décret 6/12/2001 : Annexe 9	CE/92/43 - Annexe 2 CE/92/43 - Annexe 5	90%
Invertébrés Vers					
<i>Hirudo medicinalis</i>	A vérifier	NE : non évalué	Décret 6/12/2001 : Annexe 4	CE/92/43 - Annexe 5	100%

¹ La CE demande de compléter les désignations de sites Natura2000 pour cette espèce. Des propositions seront évaluées par le GW.

4. CZECH REPUBLIC / REPUBLIQUE TCHEQUE

Progress in the conservation of invertebrates in the Czech Republic

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The conservation of invertebrates in the Czech Republic is still under the power of Nature Conservation Act (Nr. 114/1992), followed by decree Nr. 395/1992. The details of this act were mentioned in the previous report. Nowadays, the Czech Republic is in transition times in the scope of the law, because of the preparation of a new Nature Conservation Act, which will be in future followed by new decree with an extended list of protected species.

As progress in the invertebrate conservation should be reported three groups of problematics - NATURA 2000 sites, recovery programmes and distribution surveys.

In the scope of NATURA 2000 were prepared the proposals for SAC, with relevance for invertebrate conservation, too. The documentation was completed for pannonic bioregion, for the continental bioregion (second in the Czech Republic) will be completed in October 2003. The proposed localities include the sites of *Lucanus cervus*, *Osmoderma eremita*, *Bolbelasmus unicornis*, *Carabus variolosus*, *Carabus menetriesi*, *Carabus hungaricus*, *Rhysodes sulcatus*, *Graphoderus bilineatus*, *Limoniscus violaceus*, *Cerambyx cerdo*, *Rosalia alpina*, *Cucujus cinnaberinus*, *Euphydryas aurinia*, *Hypodryas maturna*, *Lycaena dispar*, *Eriogaster catax*, *Maculinea nausithous*, *Maculinea teleius*, *Colias myrmidone*, *Leptidea morsei*, *Callimorpha quadripunctaria*, *Ophiogomphus caecilia*, *Leucorrhina pectoralis*, *Stenobothrus eurasius*, *Vertigo angustior*, *Vertigo geyeri*, *Vertigo moulensiana*, *Margaritifera margaritifera*, *Unio crassus*, *Anisus vorticulus*.

In the Czech Republic is ongoing the succesful recovery programme of the Pearl Mussel (*Margaritifera margaritifera*). The population in the streams Blanice and Luzni potok in the western Bohemia are known as one of the strongest in the continental Europe. The Agency of Nature Conservation is trying to put into the practice the use-changes in the whole basin with the *Margaritifera* populations in the sense of this recovery programme. The population were negatively influenced by the floods in 2002, and again negatively by dry season in 2003, when the population from river Bystrina had to be transferred into Luzni potok.

The next ongoing project is the reintroduction plan of *Parnassius apollo* in Stramberk, in northern Moravia, conducted by CSOP (Czech Union for Nature Conservation, NGO). There are next recovery plans in preparation by Agency of Nature Conservation, namely for butterflies *Euphydryas aurinia* and *Parnassius mnemosyne*.

There were published several thoroughly prepared distribution atlases of invertebrates of the Czech Republic. In 2002 were published: Catalogue of Spiders of the Czech Republic (including the distribution grid maps of all the species)(Buchar & Ruzicka, 2002), Aquatic molluscs of the Czech Republic (including the grid maps and Red List)(Beran, 2002), Earthworms of the Czech Republic (including grid maps)(Pizl, 2002) and recently is printed the distibution atlas of butterflies of the Czech Republic (including conservation analysis)(Benes & al, in press). Next to that were in the past published preliminary Red Lists of terrestic molluscs (Jurickova, 1998) and mayflies (Soldan & al., 2000). In preparation is also the red list of beetles.

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5. DENMARK / DANEMARK

Status 2003 of Danish invertebrates protected under the Bern Convention

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Species <i>II</i> = on App. II <i>III</i> = on App. III)	Protected as species by Statutory order	Other type of protection	Specific publications and websites containing detailed information
ODONATA			
<i>Aeshna viridis</i> (II)	Yes	Natura 2000, general habitat protection in Nature Protection Act, Red-list	Pedersen, H. & Holmen, M. 1994: Fredede insekter i Danmark Del 4: Guldsmede. - Entomologiske Meddelelser 62: 33-58. http://www.skovognatur.dk/dyrogplanter/insekter/mosaikguldsmed.htm
<i>Leucorrhinia albifrons</i> (II)	no (extinct)	General habitat protection in Nature Protection Act, Red-list	
<i>Leucorrhinia caudalis</i> (II)	no (extinct)	General habitat protection in Nature Protection Act, Red-list	
<i>Leucorrhinia pectoralis</i> (II)	Yes	Natura 2000, general habitat protection in Nature Protection Act, Red-list	Pedersen, H. & Holmen, M. 1994: Fredede insekter i Danmark Del 4: Guldsmede. - Entomologiske Meddelelser 62: 33-58. http://www.skovognatur.dk/dyrogplanter/insekter/kaerguldsmed.htm http://www.skovognatur.dk/dyrogplanter/insekter/kaerguldsmed.htm
<i>Ophiogomphus cecilia</i> (II)	Yes	Natura 2000, general habitat protection in Nature Protection Act, Red-list	Pedersen, H. & Holmen, M. 1994: Fredede insekter i Danmark Del 4: Guldsmede. - Entomologiske Meddelelser 62: 33-58. http://www.skovognatur.dk/dyrogplanter/insekter/groenkoellesmed.htm
COLEOPTERA			
<i>Dytiscus latissimus</i> (II)	Yes	Natura 2000, general habitat protection in Nature Protection Act, Red-list	Holmen, M. 1993: Fredede insekter i Danmark Del 3: Biller knyttet til vand. - Entomologiske Meddelelser 61: 117-134. http://www.skovognatur.dk/dyrogplanter/insekter/vandkalv.htm
<i>Graphoderus bilineatus</i> (II)	Yes	Natura 2000, general habitat protection in Nature Protection Act, Red-list	Holmen, M. 1993: Fredede insekter i Danmark Del 3: Biller knyttet til vand. - Entomologiske Meddelelser 61: 117-134. http://www.skovognatur.dk/dyrogplanter/insekter/skivevandkalv.htm
<i>Osmoderma eremita</i> (II)	Yes	Natura 2000, general habitat protection in Nature Protection Act, Red-list	Martin, O. 1993: Fredede insekter i Danmark Del 2: Biller knyttet til skov. - Entomologiske Meddelelser 61: 63-76. http://www.skovognatur.dk/dyrogplanter/insekter/eremit.htm
<i>Lucanus cervus</i> (III)	Yes (extinct?)	General habitat	Martin, O. 1993: Fredede insekter i Danmark Del 2: Biller knyttet til skov. - Entomologiske

		protection in Nature Protection Act, Red-list	Meddelelser 61: 63-76. http://www.skovognatur.dk/dyrogplanter/insekter/egchjort.htm
LEPIDOPTERA			
<i>Coenonympha hero</i> (II)	Yes	General habitat protection in Nature Protection Act, Red-list	Kaaber, S., Nielsen, P.S., Stoltze, M. & Terndrup, U. 1998: Fredede insekter i Danmark Del 5: Dagsommerfugle. - Entomologiske Meddelelser 66: 1-19. http://www.skovognatur.dk/dyrogplanter/insekter/herorandoeje.htm
<i>Euphydryas aurinia</i> (II)	Yes	Natura 2000, Action plan, general habitat protection in Nature Protection Act, Red-list	Kaaber, S., Nielsen, P.S., Stoltze, M. & Terndrup, U. 1998: Fredede insekter i Danmark Del 5: Dagsommerfugle. - Entomologiske Meddelelser 66: 1-19. http://www.skovognatur.dk/dyrogplanter/insekter/hedepletvinge.htm http://www.skovognatur.dk/natur/bevaring/pdffiler/hedeplet.pdf
<i>Hypodryas maturna</i> (II)	No (not present?)		
<i>Lycaena dispar</i> (II)	Yes	General habitat protection in Nature Protection Act, Red-list	http://www.skovognatur.dk/dyrogplanter/insekter/sortpletetblaaflugt.htm
<i>Maculinea arion</i> (II)	Yes	General habitat protection in Nature Protection Act, Red-list	Kaaber, S., Nielsen, P.S., Stoltze, M. & Terndrup, U. 1998: Fredede insekter i Danmark Del 5: Dagsommerfugle. - Entomologiske Meddelelser 66: 1-19. http://www.skovognatur.dk/dyrogplanter/insekter/sortpletetblaaflugt.htm
<i>Parnassius apollo</i> (II)	No (occasional visitor)		
<i>Parnassius mnemosyne</i> (II)	Yes	General habitat protection in Nature Protection Act, Red-list	http://www.skovognatur.dk/dyrogplanter/insekter/mnemosyne.htm
CRUSTACEA			
<i>Astacus astacus</i> (III)	Yes	Temporary prohibition of exploitation, general habitat protection in Nature Protection Act,	
HIRUDINEA			
<i>Hirudo medicinalis</i> (III)	Yes	General habitat protection in Nature Protection Act, Red-list, no commercial exploitation allowed	http://www.skovognatur.dk/dyrogplanter/andredyr/laegeigle.htm
GASTROPODA			
<i>Helix pomatia</i> (III)	Yes (introduced)	No commercial exploitation allowed	http://www.skovognatur.dk/dyrogplanter/andredyr/vinbjergsnegl.htm
BIVALVIA			
<i>Margaritifera margaritifera</i> (III)	Yes	General habitat protection in Nature Protection Act, Red-list	http://www.skovognatur.dk/dyrogplanter/andredyr/flodperlemusling.htm

6. FRANCE / FRANCE

Actions menées en France pour la conservation des invertébrés (2000-2003)

M. Pascal Dupont (Office pour les Insectes et leur Environnement)

Depuis la dernière réunion, les actions menées en France pour la conservation des populations d'invertébrés ont été menées principalement sur les Insectes et les Mollusques. Une partie de ces actions notamment l'informatisation des données ont été réalisés avec l'appui de la Direction de la Nature et du Paysage (DNP) du Ministère de l'Ecologie et du Développement Durable (MEDD)

1. TAXONOMIE

Plusieurs listes de référence pour la France ont été réalisées, notamment dans le cadre d'un programme national coordonné par le Muséum National d'Histoire Naturel (MNHN) (programme REFTAX). Il s'agit notamment des groupes suivants :

Mollusques terrestres et fluviatiles (P. Bouchet, O. Gargomini MNHN). La correspondance avec les noms d'espèces utilisés dans les différents textes français et européens est disponible. Ce travail a été réalisé en collaboration avec le projet Fauna Europaea.

Insectes

Ephémères (M. Brulin, G. Masselot, OPIE Benthos)

Odonates (J.L. Dommanget, SFO)

Hémiptères Cicadidae (S. Puissant (OPIE-LR, Boulard, M. EPHE)

Coléoptères Caraboidea et Scaraboidea (P. Zagatti INRA OPIE)

Coléoptères Tenebrionidae (F. Soldati, OPIE-LR)

Coléoptères (Cerambycidae) (H. Brustel (ESA Purpan), P. Bergé, C. Cocquempot (INRA)

Lépidoptères (G. Luquet, MNHN OPIE)

Parallèlement à l'élaboration de ces listes, il se constitue des banques de données (BDD) concernant la synonymie. La BDD la plus importante à ce jour est celle des Lépidoptères (6800 couples [Espèce de la liste de référence -Synonyme) (travail réalisé par l'OPIE).

2. INFORMATISATION DES CONNAISSANCES

2.1. Index bibliographique

Un index bibliographique a été réalisé pour l'ordre des Lépidoptères. Cet index concerne les revues suivantes :

- L'Amateur de Papillons [1922 - 1938]
- La Revue française de Lépidoptérologie [1939-1957]
- Alexanor [1959-2002]

2.2. Données de répartition

- *Echelle nationale*

- Odonates

L'informatisation des données de répartition des Odonates se poursuit à partir de l'inventaire national (programme INVOD) et des données de la littérature (programme BINVOD). Il y a actuellement 200 000 données (Coordination : J.L. Dommanget (SFO))

- Lépidoptères

L'informatisation des données de la littérature a débuté en 2003 pour l'ensemble des espèces de l'ordre. La base contient actuellement 45 000 données.

- *Echelle régionale*

Un atlas a été réalisé en Région Rhône-Alpes pour les Coléoptères Carabiques (Coordination RERA-Muséum de Lyon). Plusieurs atlas sont en cours de réalisation.

Coléoptères Cerambycidae (Région Rhône-Alpes, Coordination RERA-Muséum de Lyon)

Lépidoptères Macro-hétérocères (Région Rhône-Alpes, Coordination RERA-Muséum de Lyon)

Lépidoptères diurnes (Région Bourgogne et Franche-Comté, Coordination OPIE-Franche-Comté ; Région Provence-Alpes-Côte-d'Azur, Coordination OPIE-PACA et Assoc. Proserpine).

2.3. Données d'autécologie.

Une BDD est en cours d'élaboration pour les espèces phytophages. Elle a pour principal objectif d'être une aide pour l'évaluation de l'état de conservation des milieux herbacés ou arborés. Le référentiel utilisé pour la typologie des milieux est le Prodrome de la Végétation Française (Bardat, J. et al. à paraître). Les liaisons avec les typologies de la Directive Habitat-Faune-Flore, CORINE Biotopes et EUNISS sont inclus dans la base.

2.4 Gestion conservatoire des espèces

Une base de donnée sur l'ensemble des espaces naturels soumis à un plan de gestion est en cours d'élaboration. En liaison avec la BDD de répartition des espèces. Cette base doit permettre d'avoir des données facilement disponibles sur la prise en compte des espèces menacées en France. Elle sera d'une aide appréciable pour l'élaboration des stratégies de conservation nationales dans le futur.

3. ACTIONS DE GESTION CONSERVATOIRE

3.1. Réalisation de plan national d'actions.

Un plan d'actions national pour les Lépidoptères rhopalocères a été réalisé en 2001. Il met notamment en avant les priorités de conservation à l'échelle nationale et par domaine biogéographique.

3.2. Etat de l'avancement des actions de conservations sur les espèces menacées en Europe et/ou les insectes inscrits aux annexes de la Convention de Berne et de la Directive Habitat-Faune.

MOLLUSQUES

Margaritifera auricularia

Lors de la précédente réunion G. Cochet signalait la présence d'une population dans le Bassin de la Vienne. Des inventaires ont été réalisés en 2001 et 2002 et plusieurs stations ont été découvertes dans le bassin de la Vienne et de la Creuse. En tout, 300 individus ont été observés. Aucune station n'est actuellement soumise à un statut de conservation. L'absence de l'espèce sur l'annexe II de la Directive Habitat-Faune-Flore, rends la création d'un site Natura 2000 difficile.

Patella ferruginea

Un suivi des populations est réalisé depuis 1992 aux Iles Lavezzi (Corse) à l'aide d'une méthodologie standardisée. A partir de 1999, le suivi annuel a été étendu sur plusieurs secteurs cibles après un inventaire exhaustif sur tous les îlots du golfe de Bonifacio et des Iles Cerbicale (Corse). Les premiers résultats (2003, à paraître) montrent que l'espèce est localisée en bord de mer, sur les stations avec une hydrométrie forte. La menace principale pour cette espèce dont les larves ont une dispersion très faible, est le

prélèvement par l'homme (J.M. Cuccioli, RN Boucles de Bonifacio, Office de l'environnement de la Corse). D'autres inventaires sont réalisés pour cette espèce en Corse (PNR Corse, DIREN Corse, AGENC, A. Menez (Université de Nice)).

Lithophaga lithophaga, *Pina nobilis*, *Margaritifera margaritifera*, *Unio crassus*, *Unio elongatus*, *Chondrina megacheilos*, *Vertigo angustior*, *Vertigo moulinsiana*,

Pas d'action spécifique réalisée depuis 2000.

INSECTES

Odonates

Coenagrion mercuriale

Pas d'action spécifique réalisée depuis 2000. La base de données du programme INVOD et les observations sur le terrain montrent que cette espèce n'est pas menacée en France.

Macromia splendens

Suivi annuel des populations sur un réseau de site dans le sud de la France à l'aide d'une méthode standardisée pour le dénombrement des exuvies (réalisé par J.L. Dommanget et D. Grand, SFO).

Leucorrhinia albifrons

Une des plus fortes métapopulations de cette espèce a été découverte dans les Landes par D. Grand (SFO). Le statut de protection des stations est à l'étude.

Leucorrhinia pectoralis

Des études dans le cadre d'une thèse de l'Ecole Pratique des Hautes Etudes a été réalisée par N. Greff (CREN Rhône-Alpes, SFO) sur le site des Dombes (Ain (01)). La thèse est en cours de rédaction. Ce travail apporte des éléments très intéressants sur la structure des populations, l'autécologie de l'espèce ainsi que sur les différentes échelles d'interventions en terme de gestion conservatoire : du paysage (écosystème de plusieurs dizaines de km²) au microhabitat (de l'ordre du m²). Le site des Dombes, proposé pour le réseau Natura 2000, renferme sans aucun doute la plus grande population française.

Gomphus flavipes ; *Gomphus graslinii*, *Ophiogomphus cecilia*, *Oxygastra curtusii*, *Leucorrhinia caudalis*

Pas d'action spécifique réalisée depuis 2000.

Orthoptères

Saga pedo

Pas d'action spécifique réalisée depuis 2000.

Coléoptères

- Coléoptères saproxyliques

Des études dans le cadre d'une thèse de Doctorat ont été réalisées sur les Coléoptères saproxyliques et la valeur biologique des forêts françaises par H. Brustel (2002). Celui-ci met notamment en avant, une liste de 300 espèces bioindicatrices permettant de faire une évaluation de l'état de conservation des écosystèmes forestiers en ce qui concerne les processus de décomposition du bois mort.

Cerambyx cerdo

Pas d'action spécifique réalisée depuis 2000. Nous tenons à rappeler que cette espèce n'est pas menacée dans le domaine méditerranéen.

Rosalia alpina

Pas d'action spécifique réalisée depuis 2000. Cette espèce n'est pas menacée en France.

Lucanus cervus

Pas d'action spécifique réalisée depuis 2000. Cette espèce n'est pas menacée en France.

Osmoderma eremita

Des inventaires sur le bocage de la Sarthe en 2000-2001, en relation avec la construction d'une autoroute, ont montré à ce niveau, la persistance d'une très forte métapopulation. Une estimation de l'état de conservation des populations françaises a été réalisée pour l'IFEN (P. Dupont (OPIE) et H. Brustel (ESA Purpan), non publié). Celle-ci montre principalement que :

- l'espèce est encore bien présente sur notre territoire.
- Il existe un déficit d'inventaire important et le nombre de stations réelles doit être très supérieur au nombre connu, notamment en zone de bocage.
- Très peu de populations sont en bon état de conservation. En effet, même si sur certains sites les effectifs paraissent abondants. Le renouvellement du microhabitat (gros volume de terreau) de l'espèce pose problème à long terme car on observe un déficit important dans les classes d'âge plus jeune sur la majorité des sites, notamment en zone de bocage.

Limoniscus violaceus, *Graphoderus bilineatus*

Pas d'action spécifique réalisée depuis 2000.

Lépidoptères*Papilio hospiton*

Pas d'action spécifique réalisée depuis 2000. Cette espèce endémique cyrno-sarde, n'est pas menacée en Corse.

Parnassius apollo

Pas d'action spécifique réalisée depuis 2000. Nous rappelons que seules les populations du Massif Central, du Jura ainsi que quelques populations abyssales du sud-est de la France sont menacées. L'entité spécifique n'est pas menacée en France.

Lycaena dispar

Pas d'action spécifique réalisée depuis 2000. Cette espèce n'est pas menacée en France.

Maculinea arion

Pas d'action spécifique réalisée depuis 2000. Seules les populations de plaine et de moyenne montagne sont menacées en France.

Groupe des espèces du genre *Maculinea*

J. Lhonoré coordonne des actions de recherche sur les espèces du genre *Maculinea*. Il a mis en place un réseau français de suivi des populations de *Maculinea* ; celui-ci pour l'instant basé sur la coopération bénévole et volontaire des participants collabore étroitement avec le réseau européen MACMAN. Actuellement les études scientifiques concernent principalement le comportement et l'autécologie de *Maculinea alcon* (Université de Tours ; GRECIA (GRoupe d'Etude des Invertébrés Armoricaains); Conservatoire botanique du Massif central ; Conservatoire des Sites Lorrains). Ces programmes sont réalisés à l'aide de financements propres aux différentes structures. Le Conservatoire des Espaces Naturels de Rhône-Alpes et l'OPIE poursuivent des études sur la gestion conservatoire de *Maculinea teleius*. Ils ont montré qu'une réhabilitation d'une prairie de fauche de basse altitude passait par une pression de fauche

importante (au minimum une fauche tardive par an) au cours des premières années (Dupont et Marciaux, 2003). Les inventaires se poursuivent à l'échelle régionale en France. Une des plus fortes métapopulations françaises de *Maculinea teleius* a été découverte en Lorraine en 2001 et 2003 par le Conservatoire des Sites Lorrains. Une métapopulation très importante de *M. rebeli* a été découverte dans le massif du Dévoluy (Hautes-Alpes) en 2000 par l'OPIE. Les populations de *Maculinea teleius*, *nausithous* et *alcon* sont suivies, annuellement dans la région Rhône-Alpes depuis 1999 par le CREN à l'aide d'une méthode standardisée. L'OPIE apporte une aide scientifique et technique pour la réalisation et l'analyse de ces suivis.

Coenonympha hero

Pas d'action spécifique réalisée depuis 2000. Les effectifs des populations de cette espèce sont en chute très importante. Il est urgent d'engager des études sur les dernières populations françaises dans le nord-est de la France.

Coenonympha oedippus

Une thèse de Doctorat codirigée par J. Lhonoré et un Professeur d'Université Allemande, débute en 2003 sur l'autécologie et la gestion conservatoire de cette espèce dans le sud-ouest de la France. Une des plus fortes métapopulations françaises a été découverte en Dordogne par le Conservatoire des Espaces Naturels d'Aquitaine en 2001-2002, mais l'espèce est fortement menacée et disparaîtra dans la prochaine décennie en l'absence de réelles mesures de sauvegarde. Les populations de Rhône-Alpes sont suivies par le CREN et l'OPIE, à l'aide d'une méthode standardisée.

Erebia sudetica

Pas d'action spécifique réalisée depuis 2000. Seules les populations du Massif central sont menacées en France.

Lopinga achine

Pas d'action spécifique réalisée depuis 2000. L'espèce est en régression dans une grande partie de la France, sauf dans un grand quart sud-est où l'espèce est commune. Des études sur l'autécologie de l'espèce et la gestion conservatoire des populations seraient les bienvenues.

Euphydryas aurinia

Des études sur la diversité génétique des populations françaises ont été réalisées par M. Zimmermann dans le cadre d'une thèse de Doctorat dirigée par H. Descimon. Ces études montrent une relative correspondance entre la diversité génétique et les différents écotypes liés à des plantes hôtes différentes. Une population située à Coustouges dans les Pyrénées-Orientales montre une diversité génétique exceptionnelle. Les Pyrénées orientales étant une zone refuge pendant la dernière glaciation pour de nombreuses espèces, cette population est peut-être une population relictive dont l'origine remonte à cette période.

Ces travaux montrent la nécessité, de tenir compte de la biogéographie pour mieux définir les priorités de conservation. Dans ce cadre pour de nombreuses espèces, la biologie de la conservation semble plus pertinente au niveau de la population (H. Descimon, comm. pers.).

Euphydryas maturna

Pas d'action spécifique réalisée depuis 2000. Les effectifs des populations de cette espèce sont en chute très importante. Il est urgent d'engager des études sur les dernières populations françaises dans le nord-est de la France.

Papilio alexanor, *Parnassius mnemosyne*, *Zerynthia polyxena*, *Fabriciana elisa*, *Eriogaster catax*, *Graellsia isabellae*, *Hyles hippophaes*, *Proserpinus proserpina*,

Pas d'action spécifique réalisée depuis 2000.

Insectes Coprophages et endotectocides

La prise en compte de l'impact des traitements vétérinaires sur la faune des invertébrés non-cibles a nettement progressé en France aussi bien dans le domaine professionnel des éleveurs que des vétérinaires. Il est vraisemblable que le mode d'administration le plus nocif pour la faune non-cible sera interdit en France à la fin de 2003.

J.P. Lumaret (Univ. Montpellier) a intégré un groupe de travail européen (DOTTS group) où il a la charge de superviser la mise au point de méthode commune pour l'évaluation des risques environnementaux. Ces tests toxicologiques seront intégrés à court et moyen terme dans les processus d'homologation des matières actives.

4. FORMATION ET DIFFUSION DE L'INFORMATION

4.1 Formation

Comme cela avait été signalé lors de la dernière réunion, l'OPIE, la Société Entomologique de France et La Société Française d'Odonatologie organisent des stages de formation technique et scientifique sur différents groupes d'insectes.

4.2. Diffusion de l'information

Un site internet a été créé pour diffuser notamment les informations sur les espèces menacées ([Http://inra.fr/Internet/Hebergement/OPIE-Insectes/observatoire/index.htm](http://inra.fr/Internet/Hebergement/OPIE-Insectes/observatoire/index.htm)).

Une revue scientifique EPHEMERA a été créée en 1999 par les membres de l'OPIE-Benthos.

4.3 Vulgarisation

Tout les deux ans un festival du Film sur l'insecte (FiFi) se déroule dans la région Languedoc-Roussillon, organisé par l'OPIE-LR. Il s'est tenu en 2001 à Narbonne (Aude). Il aura lieu cette année à Prades (66) du 15 au 19 octobre.

Un film sur certaines espèces de papillons des prairies humides a été réalisé par le SFRS. Il s'intitule : « Menaces sur le Maculinea, la biologie de la conservation appliquée aux zones humides ». Il a été réalisé par A. Monclin avec la collaboration scientifique de F. Darinot (RN Des Marais de Lavours), Y. Rozier (Muséum Lyon), A. De la Paz (Univ. du Maine).

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7. GERMANY / ALLEMAGNE

Progress in invertebrate research and conservation in Germany (2000-2003).

German report to the "Bern Convention Group of Experts on Conservation of Invertebrates" 2003.

by Horst Gruttke

Federal Agency for Nature Conservation, Konstantinstr. 110, D-53179 Bonn

1. Activities on Bern Convention Invertebrates (BCI's)

As all Bern Convention Invertebrates occurring in Germany are species of Appendices of the FFH-Directive, the 16 German Federal States are responsible for survey and monitoring programs according to German law. First basic surveys during the last years resulted in new data on habitats, spatial distribution and conservation status of FFH-species and monitoring programs are in preparation. (BEUTLER & BEUTLER 2002, SCHNITTER & MEYER 2001). Progress made until now is heterogeneous.

For standardizing monitoring methods across all Federal States a working group has been established in cooperation with national institutions (Federal Agency for Nature Conservation, BfN and Federal Ministry for Environment, Nature Conservation and Nuclear Safety, BMU)

Data sheets for all FFH-species are going to be prepared by the Federal Agency for Nature Conservation. Besides standard data as to taxonomical status, FFH classification or Red List status in Germany, detailed information on habitat requirements, life history, historical and current distribution, reasons for decline or proposed conservation measures will be provided. Publication of data sheets (in German) is scheduled for the end of 2003 and 2004 (PETERSEN et al. in prep., two Volumes). Detailed descriptions of methods for monitoring populations of FFH Appendix II species have been published separately (FARTMANN et al. 2001)

2. Extensive study on Orthoptera species in Germany

In 1998 the Federal Agency for Nature Conservation has launched a "research and development project" on *Orthoptera* in Germany. In this study population trend and current as well as historical distribution of all 84 species of grasshoppers, crickets and bush-crickets in Germany was reviewed and analysed in order to re-assess and evaluate the conservation status of the species in more detail and to test some basic principles for threat assessments of invertebrate species in Germany. Moreover, action plans and conservation strategies have been developed for 12 highly endangered species (e.g. *Oedipoda germanica* and *Gampsocleis glabra*). An additional analysis revealed that Germany has a national responsibility for the global conservation of populations of 11 species (e.g. *Isophya kraussii* and *Bryodemella tuberculata*) according to biogeographic criteria. The project was finished in 2001 and the results, including data sheets and distribution maps of all species, were published by MAAS et al. (2002).

3. Revision of national Red Lists on animals

The process of revision of the national Red Lists on animals was resumed. The publication of new lists is projected for 2008. The last compendium of Red Lists (BINOT et al. 1998) comprised various taxa of terrestrial, limnetic and marine animals. Several groups of invertebrates were included: various *Diptera*, *Macrolepidoptera*, *Trichoptera*, var. *Hymenoptera*, *Coleoptera* (for the first time assessed completely), *Neuropteroidea*, *Rhynchota*, *Thysanoptera*, *Orthoptera*, *Plecoptera*, *Odonata*, *Ephemeroptera*, var. *Arachnida*, var. *Crustacea*, *Mollusca*, *Porifera*, *Cnidaria*, *Annelida*, *Echinodermata*, *Echiurioidea*, *Tunicata*. *Pseudoscorpiones*, *Auchenorrhyncha*, *Syrphidae*, aquatic *Empididae* and *Dolichopodidae* had been considered for the first time at the national level in Germany.

The new compendium of Red Lists should comprise additional taxonomical groups previously not covered. Furthermore it is intended to publish checklists and to include information on the national responsibility for the conservation of particular species and supplementary biological and ecological data that are relevant to practice.

4. Research project on causes for the decline of threatened species

The Federal Agency for Nature Conservation has launched and is supervising a survey and research project on the main factors and causes responsible for population decline of threatened species. A catalogue of threat issues has been drawn up in order to standardize literature review and consultation of experts. A pilot study on *Odonata* had been carried out in 1999 (BINOT-HAFKE et al. 2000). The main project was started in 2002 and will be terminated in 2004. Invertebrate taxa being considered in this project - among them many BCI's - are: *Rhopalocera*, *Orthoptera*, *Branchiopoda*, *Carabidae/Cicindelidae* and water beetles (*Hydradephaga* and *Palpicornia*, e.g. *Dytiscidae*, *Gyrinidae*, and *Hydrophilidae*).

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8. GREECE / GRECE

Report on the progress towards the conservation of Bern Convention Invertebrates in Greece, 2000-2003

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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. BCIs have been recorded from 68 sites (25% of the total number of sites) and their conservation is taken into account when management plans for these sites are being drawn.

Of the 38 species that are included in Appendix II of the Bern Convention, 9 are also in Annex II of the Habitats Directive and a further 11 are in Annex IV. Four species are in the directive and not in the Bern Convention.

2. Inventories

A computerised data bank was created at the Zoological Museum of the University of Athens in collaboration with the Hellenic Zoological Society. This data bank includes detailed locality records, as well as data on the population status of many animal groups of Greece. Among the invertebrates, the groups that have been completed are marine Bivalvia and Echinoderma.

The Hellenic Zoological Society has published in 2001, volume VIII of its series *Fauna Graeciae*. It includes the slugs of Greece (Arionidae, Milacidae, Limacidae, Agriolimacidae). The first volume of the Lepidoptera of Greece written by Dr. L. Gozmany is in the final stages of publication in the same series. Further volumes of this series under preparation include the marine Gastropoda and the Cephalopoda.

Another list of invertebrates appeared in the series *Catalogus Faunae Graeciae* and concerns the Coleoptera Buprestidae (Mühle et al. 2000).

3. Legislation

The Ministry of Agriculture has initialised the preparation of a new law for the protection of plants and animals. The national Scientific Authority for the CITES Convention has been designated to co-ordinate this activity.

4. Publications

Mühle H., Brandl P. & Niehuis M. 2000. *Catalogus Faunae Graeciae: Coleoptera: Buprestidae*. Augsburg.

9. HUNGARY / HONGRIE

Progress Report on Invertebrate Conservation in Hungary

- 2000: A Butterfly and Dragonfly Conservation Group has been formed in the Hungarian Society for Ornithology and Nature Protection.
- 2001: New list of Protected Species was issued by the Ministry of Environment, 290 spp. of Invertebrates, 272 spp. of Insects and 18 spp. of Molluscs have been included; *incl. Habitat Directive species*, 51 Insects and 13 Molluscs.
- 2001: Hungary has initiated to include into the Habitat Directive Annexes II and IV several Invertebrate species, characteristic for the Pannonian biogeographic region (see: Appendix).
- 2002: 29 Insects and 5 Molluscs proposed by Hungary (and partly also by other Candidate Countries) have been accepted and included into the Annex II by the Habitats Committee on 24 April 2002.
- 2002-2006: Two Hungarian research groups (Hungarian National Nature History Museum and the Dept. Zoology and Evolution of the Debrecen University) started to co-operate in the EU research programme on Ecology and Conservation of Maculinea butterflies (MacMan)
- 2002: A Wetland Butterfly Monitoring Programme has been started by the Butterfly and Dragonfly Conservation Group
- 2002-2003: Outlining the Natura 2000 Network of Hungary, based on the proposals
 - (i) Directions of the National Parks
 - (ii) Institute of Ecology and Botany of the Hungarian Academy of Science
 - (iii) Hungarian National Nature History Museum
 - (iv) Dept. Zoology and Evolution of the Debrecen University.
 During this work data basis and UTM grid maps of Habitat Directive spp. has been compiled, and also the Natura 2000 territories of each species have been outlined.
- 2003: A „Steering Committee” has been formed to revise the proposals of the institutions mentioned and to finalise the delimitation of the Natura 2000 territories of each species.

Debrecen, the 3th September 2003.

Compiled by: Prof. Zoltan S. Varga (D.Sc.)
Chairman of the NATURA 2000 Steering Committee

Appendix I: Suggestions of Invertebrate species and Candidate Invertebrate species of the Annexes II and IV of Natura 2000 (Hungary, provisoric list)

Gastropoda	Annex	Indication	Natura 2000 habitats, suggested location
<i>Theodoxus prevostianus</i>	II	relict. endem.	Bükk Mts.: Kácsfürdő springs
<i>Theodoxus transversalis</i>	II	relict. endem.	Rába river
<i>Theodoxus danubialis</i>	IV	catchment of Danube	
<i>Sadleriana pannonica</i>	II	relict. endem.	Lizina-springs, Sebesvíz-valley.
<i>Fagotia esperi</i>	IV	catchment of Danube	
<i>Fagotia acicularis</i>	IV	catchment of Danube	
<i>Paladilhia hungarica</i>	IV	relict. endem.	Mecsek Mts: Abaligeti-cave
<i>Valvata naticina</i>	IV	stenotopic	
<i>Pomatias rivulare</i>	IV	stenotopic	
<i>Hygromia kovacsi</i>	II	relict. endem.	Gallery forests of Körös-rivers
<i>Bielzia coerulans</i>	IV	Carpathian endem.	
<i>Helix lutescens</i>	IV	stenotopic	
<i>Spelaeodiscus triarius</i>	IV	stenotopic	
Specialist: A. Varga (Mátra Museum)			
Annellida, Hirudinea			
<i>Hirudo medicinalis</i>	V		
<i>Cystobranchus fasciatus</i>	IV	stenotopic	
<i>Placobdella costata</i>	IV	stenotopic	
<i>Trochaeta bykowskii</i>	?	stenotopic	
Specialist: P. Juhász (VITUKI)			
Arthropoda, Crustacea			
<i>Scapholeberis erinaceus</i>	II	very localised	Bátorliget (scientific reserve!)
<i>Protonotaria hungarica</i>	II	relict. endem.	Abaligeti cave
<i>Austropotamobius torrentium</i>	IV	rare, in decrease, localised	
<i>Astacus astacus</i>	IV	rare, in decrease	
Specialist: L. Forró (Nat. Museum Budapest)			
Insecta, Ephemeroptera			
<i>Neophemera maxima</i>	II	very rare	Rába river (Körmend, Sárvár)
<i>Eurylophella carelica</i>	II	very localised, stenotopic	Órség: Kerka, Sztgyörgyv., Zala
<i>Palingenia longicauda</i>	IV	Tisza-valley	
<i>Prosepiptoma foliaceum</i>	IV	very rare	
<i>Isonychia ignota</i>	IV	stenoecious, localised, stenotopic	Rába
<i>Ephoron virgo</i>	IV	stenoecious, localised, stenotopic	Rába, Felső-Tisza
Specialist: T. Kovács, Mátra Museum			
Insecta, Odonata			
<i>Cordulegaster heros</i>	II	illyrian-E-alpine	Órség
<i>Ophiogomphus cecilia</i>	II	threatened	(upper Tisza valley)
<i>Stylurus flavipes</i>	II	threatened	(upper Tisza valley)
<i>Leucorrhinia pectoralis</i>	II	threatened	(Bereg-lowland)
<i>Leucorrhinia caudalis</i>	II	threatened	(Bereg-lowland)
<i>Aeshna viridis</i>	IV	threatened	(Hortobágy, Bereg-lowland)
<i>Lestes macrostigma</i>	IV	small saline lakes	
<i>Onychogomphus forcipatus</i>	IV	in decrease	

(ssp.?)

Specialist: A. Ambrus (TIK)

Insecta, Orthoptera

<i>Isophya costata</i>	II	relict. endem.	Kistompapuszta (Körös-Maros NP.)
<i>Pholidoptera litoralis</i>	II	balcánic-dacian	Mályvád (Körös-Maros NP)
<i>Paracaloptenus caloptenoides</i>	II	balcanic-pannonian	Bükk Mts: Derda-kaszálók Aggtelek karst: Lókosár
<i>Pararcyptera microptera</i>	II	steppe relict	Tokaj: Kopasz-hill
<i>Leptophyes discoidalis</i>	IV	balcánic-dacian	
<i>Isophya modesta</i>	IV	steppe relict	
<i>Isophya modestior</i>	IV	illyrian, subend..	
<i>Isophya stysi</i>	IV	dacian faunal element	
<i>Poecilimon fussi</i>	IV	steppe relict	
<i>Poecilimon intermedius</i>	IV	steppe relict	
<i>Poecilimon schmidtii</i>	IV	steppe relict	
<i>Pholidoptera transsylvanica</i>	IV	dacian faunal element	
<i>Saga pedo</i>	IV	steppe relict	
<i>Odontopodisma rubripes</i>	IV	dacian faunal element	
<i>Stenobothrus eurasius</i>	IV	steppe relict	

Specialist: I. Rácz (DU Zoo)

Insecta, Coleoptera

<i>Carabus hungaricus</i>	II	steppe relict	Budai hills: Odvashegy, Apajpsz., Hajdubagos
<i>Carabus zawadzkyi</i>	II	Carpathian endem.	Zemplén Mts: Istvánkút
<i>Carabus hampei ormayi</i>	II	dacian faunal element, endemic subsp.	Kaszonyi-hill, Tarpai-forest
<i>Duvalius gebhardti</i>	II	endemic	Bükk: Kecske-cave
<i>Duvalius hungaricus</i>	II	endemic	Aggtelek karst
<i>Poecilus kekesensis</i>	II	endemic	saline marshes of HNP
<i>Macronychus quadrituberculatus</i>	II	localised, stenotopic, vanishing	Mosoni-Danube, Rába, Bódva, Túr
<i>Potamophilus acuminatus</i>	II	vanishing	Rába, Felső-Tisza
<i>Pilemia tigrina</i>	II	balcanic	Kistompapuszta (Körös-Maros NP.)
<i>Osmoderma eremita</i>	II	vanishing, very rare	
<i>Buprestis splendens</i>	II	very rare	kivétel, Mo-n nincs élőhelye
<i>Cerambyx cerdo</i>	II	European, in decrease	in Hungary: IV , delimitation! protected species
<i>Cucujus cinnabarinus</i>	II	European, in decrease	in Hungary: IV , delimitation! protected species
<i>Dytiscus latissimus</i>	II	European, in decrease	in Hungary: IV , delimitation! protected species
<i>Graphoderus bilineatus</i>	II	European, in decrease	in Hungary: IV , delimitation! protected species
<i>Lucanus cervus</i>	II	European, in decrease	in Hungary: IV , delimitation! protected species
<i>Morimus funereus</i>	II	Southern European, in decrease	in Hungary: IV , delimitation! protected species
<i>Rosalia alpina</i>	II	European, in decrease	in Hungary: IV , delimitation! protected species
<i>Carabus montivagus blandus</i>	IV	subendemic subspecies	
<i>Carabus scabriusculus</i>	IV	steppe relict	
<i>Carabus variolosus</i>	IV	Carpathian-E-balcanic	
<i>Carabus nodulosus</i>	IV	illyrian-E-alpine	

<i>Carabus marginalis</i>	V	commercial collecting	
<i>Carabus scheidleri</i>	V	commercial collecting	
<i>Scarites terricola</i>	IV	sandy and saline steppes	
<i>Chlaenius decipiens</i>	IV	saline marshes	
<i>Pterostichus cylindricus</i>	IV	steppe relict	
<i>Abax schueppeli</i>	IV	Carpathian endem.	
<i>Zabrus spinipes</i>	IV	steppe relict	
<i>Osimus ammophilus</i>	IV	sandy steppes	
<i>Gnorimus octopunctatus</i>	IV	localised, stenotopic, rare	
<i>Lethrus apterus</i>	IV	steppe relict	
<i>Glaresis rufa</i>	V	commercial collecting	
<i>Netocia hungarica</i>	V	commercial collecting	
<i>Kianthobia ariasi</i>	IV	SE-European	
<i>Anthaxia hungarica</i>	IV	SE-European	
<i>Agrilus guerini</i>	IV	gallery forest, willow marsh	
<i>Acmaeoderella mimonti</i>	IV	Ponto-Caspian	
<i>Eurythyrea aurata</i>	IV	gallery forests	
<i>Mylabris pannonica</i>	IV	Pannonian endem.	
<i>Mylabris tenera</i>	IV	Pannonian endem.	
<i>Stenoria analis</i>	IV	steppe relict	
<i>Herpes porcellus</i>	IV	steppe relict	
<i>Macrosiagon tricuspidatum</i>	IV	steppe relict	
<i>Cryphaeus cornutus</i>	IV	Ponto-Mediterran.	
<i>Probaticus subrugosus</i>	IV	loess-steppe relict	
<i>Chrysolina morio</i>	IV	steppe relict	
<i>Akimerus schaefferi</i>	IV	very localised, stenotopic	
<i>Cortodera holosericea</i>	IV	very localised, stenotopic	
<i>Hesperophanes pallidus</i>	IV	very localised, stenotopic	
<i>Ropalopus insubricus</i>	IV	very localised, stenotopic	
<i>Clytus tropicus</i>	IV	very rare	
<i>Purpuricenus globulicollis</i>	IV	very rare	
Specialists: O. Merkl, Gy. Szél (Nat. Museum, Budapest), Kovács T. (Mátra Museum)			
<i>Neuropteroidea</i>			
<i>Mantispa perla</i>	IV	D-European, rare	candidate species for BC
<i>Libelloides macaronius</i>	IV	D-European	candidate species for BC
Specialist: Gy. Sziráki (Nat. Museum, Budapest)			
Hymenoptera			
<i>Megarhyssa citraria</i>	IV		candidate species for BC
<i>Batazonellus lacerticida</i>	IV		candidate species for BC
<i>Sphex ruficinctus</i>	IV		candidate species for BC
<i>Parnopes grandior</i>	IV		candidate species for BC
<i>Stylbum cyanurum</i>	IV		candidate species for BC
<i>Bombus fragrans</i>	IV		candidate species for BC
<i>Bombus laesus mocsaryi</i>	IV		candidate species for BC
Trichoptera			
<i>Platyphylax frauenfeldi</i>	II	very rare	Dráva river in com. Somogy
<i>Chaetopteryx schmidi</i>	II	illyrian sp., endemic	Mecsek springs
<i>mecsekensis</i>		subspecies	
<i>Helicopsyche bacescui</i>	II	endemic in the	Somogyudvarhely

<i>Ceraclea nigronevosa</i>	II	Carpathian basin very localised, stenotopic	Mosoni Danube
<i>Melampophylax nepos</i>	II	very localised, stenotopic	Bükk Mts: Sebesvíz-valley
Specialists: S. Nógrádi Á. Uherkovich (JP Museum, Pécs)			
Lepidoptera			
<i>Catopta thrips</i> (R)	II	steppe relict	Körös-Maros NP: Pitvarosi puszta, Mátra Mts: Sárhegy
<i>Phyllometra culminaria</i> (R)	II	steppe relict	Vértes Mts: Csákberény, Csákvár: Öreghegy (hill)
<i>Chondrosoma fiduciarium</i> (R)	II	steppe relict	Budai hills: Tétényi-plateau, Ásotthalom
<i>Lignyoptera fumidaria</i> (R)	II	steppe relict	Vértes-Mts: Gánti plateau, Budai-hills: Huszzonnégyökrös-hegy
<i>Plebejus sephirus</i> (V)	II	steppe relict	Bócsa, Tokaj, Szentendrei-szg., Fóti- Somlyó
<i>Euxoa vitta vitta</i> (R)	II	the nominotypic ssp. pannonian endemic	Budai-hills: Odvashegy, Nagyszénás, Vértes Mts: Csákvár: Öreghegy
<i>Gortyna borelii lunata</i> (V)	II	threatened	Körös-Maros NP: Fás-puszta, Borsodi-Mezőség (lowland)
<i>Asteroscopus syriacus</i> (V)	II	ponto-mediterranean	Balaton-upland: Dörgicsei-plateau
<i>Cucullia formosa</i> (R)	II	ponto-mediterranean	Villányi-Mts : Szársomlyó
<i>Cucullia mixta lorica</i> (R)	II	steppe relict	Vértes Mts: Csákberény, Csákvár: Öreghegy
<i>Arytrura musculus</i> (V)	II	preglacial marshland relict	Bátorliget reserve, Balaton-upland: Káli-basin, Kis-Balaton
<i>Eriogaster catax</i>	II	complicated life-cycle, rare	Balaton-upland: Széki-forest, Vértes Mts: Fáni-valley
<i>Coenonympha oedippus</i>	II	marshland relict	Ócsa (unical site in Hungary)
<i>Euphydryas (Eurodryas) aurinia</i>	II	localised, stenotopic on marshy meadows	Őrség prot. landscape area: Szóce, Magyarszombatfa, Apátistvánfalva
<i>Euphydryas (Hypodryas) maturna</i>	II	localised, stenotopic hardwood gallery forests	Sajólád, Sebes-foki-forest (Körös- Maros NP)
<i>Lycaena dispar</i>	II	on marshy meadows	in Hungary: IV , delimitation! protected species
<i>Maculinea teleius</i>	II	on marshy meadows	in Hungary: IV , delimitation! protected species
<i>Maculinea nausithous</i>	II	on marshy meadows	Őrség prot. landscape area, Szóce
<i>Glyphipteryx loricatella</i>	IV	endemic species	Budai hills: Hármashatárhegy
<i>Schizostege decussata</i>	IV	SE-European	Vértes Mts.
<i>Pieris ergane</i>	IV	SE-European	Vértes Mts. Csákvár: Hosszúhegy, Szár, Litér
<i>Colias myrmidone</i>	IV	ponto-caspian steppe relict	very rare, in decrease!
<i>Colias chrysotheme</i>	IV	ponto-caspian steppe relict	localised, stenotopic, mostly on dolomite
<i>Cupido osiris</i>	IV	xeromontane species	localised, stenotopic, mostly on dolomite
<i>Maculineaalconalcon</i>	IV	threatened	Peszér, Őrség
<i>Maculinea rebeli xerophila</i> (P)	IV	threatened	Nagyszénás, Márkó, Bükk-fenns.
<i>Arícia artaxerxes issekutzi</i>	IV	endemic subspecies	Bükk Mts, Aggtelek and Slovakian karst
<i>Apatura metis</i>	IV	willow gallery forests	Danube-valley: Gemenc, Bába

<i>Melitaea punica kovacsi</i>	IV	ponto-mediterranean sp., endemic subsp.	semi-dry grasslands and steppe swards with <i>Cirsium pannonicum</i>
<i>Erannis ankeraria</i>	IV	ponto-mediterranean	in xerothermic white oak scrub forests.
<i>Arctia festiva</i>	IV	ponto-caspian	in Central Europe vanishing
<i>Rhyparioides flavidus</i> <i>metelkanus</i>	IV	threatened	Kiskunság NP: Ócsa, Örgovány
<i>Chersotis f. fimbriola</i> , <i>Ch. fimbriola baloghi</i>	IV	two endemic subspecies	Budai-hills: Odvas-hill, rocky sward on dolomite, Aggtelek karst.: rocky sward on limestone.
<i>Saragossa porosa kenderesensis</i> (V)	IV	endemic subsp., saline grasslands	Kiskunság NP: Apaj-puszta, Hortobágy NP: Nagyiván
<i>Polymixis rufocincta isolata</i> (R)	IV	ponto-mediterranean sp., endemic subsp..	Villányi-Mts : Szársomlyó
<i>Thecophora fovea</i> (R)	IV	ponto-mediterranean,	in xerothermic white oak scrub forests.
<i>Pyrrhia purpurina</i> (R)	IV	ponto-mediterranean	Vértes Mts: Csákvár: Öreg-hill, Balaton-upland: Csopak

Specialists: L. Peregovits, L.
Ronkay (Nat. Museum,
Budapest),
Z. Varga (DU Zool.)

Compiled: Z. Varga

Appendix II

Habitats of the Habitat Directive Orthoptera in Hungary

- Humid/mesic meadows & scrubland:
Isophya stysi, *Odontopodisma rubripes*
- Mesic/semi-dry meadows & scrubland:
Isophya stysi, *Pholidoptera transsylvanica*
- Dry grassland, loess: *Isophya costata*
rupicolous: *Paracaloptenus caloptenoides*

Important areas of the Habitat Directive Orthoptera in Hungary

- Bereg lowland (NE Hungary): *Isophya stysi*, *Pholidoptera transsylvanica*,
Odontopodisma rubripes
- Aggtelek karst (N Hungary): *Isophya stysi*, *Pholidoptera transsylvanica*,
Paracaloptenus caloptenoides
- Zemplén Mts (NE Hungary): *Isophya stysi*, *Pholidoptera transsylvanica*

Habitat Directive Lepidoptera species in Hungary

Species	Biogeogr. type	Habitat	Conservat. status
<i>Catopta thrips</i>	Ponto-Pannonian	Steppe (<i>Artemisia</i>)	Threatened, >
<i>Glyphipteryx loricatella</i>	Endemic	White oak scrub forest	Threatened
<i>Phyllometra culminaria</i>	Ponto-Pannonian	Steppe (dolomit, <i>Stipa</i>)	Threatened, >
<i>Chondrosoma fiduciarium</i>	Ponto-Pannonian	Steppe (<i>Asteraceae</i>)	Threatened, >
<i>Lignyopectera fumidaria</i>	Ponto-Pannonian	Steppe (dolomit)	Threatened, >
<i>Erannis ankeraria</i>	Ponto-Mediterran.	White oak scrub forest	Vulnerable, ≡
<i>Eriogaster catax</i>	Ponto-Mediterran.	Scrub, forest edge	Threatened, >
<i>Leptidia morsei major</i>	S-Continental	Broadleaved forest	Threatened, > >
<i>Colias myrmidone</i>	Ponto-Caspian	Forest-steppe, f. edge	Threatened, > >
<i>Lycaena dispar rutila</i>	„Siberian”	Humid/mesic meadow	Vulnerable, ≡
<i>Maculinea nausithous</i>	S-Continental	Humid/marshy meadow	Vulnerable, ≡
<i>Maculinea teleius</i>	S-Continental	Humid/marshy meadow	Vulnerable, ≡
[<i>Plebejus sephirus</i>	Ponto-Pannonian	Steppe (loess, sand)	Vulnerable, ≡]
<i>Euphydryas aurinia</i>	Polycentric	Humid/mesic meadows	Vulnerable, ≡
<i>Euphydryas maturna</i>	S-Continental	Gallery +mix.oak forests	Threatened, >
<i>Coenonympha oedippus</i>	S-Continental	Marshy meadows	Threatened, > >
<i>Catopta thrips</i>	Ponto-Pannonian	Steppe (<i>Artemisia</i>)	Threatened, >
<i>Glyphipteryx loricatella</i>	Endemic	White oak scrub forest	Threatened
<i>Phyllometra culminaria</i>	Ponto-Pannonian	Steppe (dolomit, <i>Stipa</i>)	Threatened, >
<i>Chondrosoma fiduciarium</i>	Ponto-Pannonian	Steppe (<i>Asteraceae</i>)	Threatened, >
<i>Lignyopectera fumidaria</i>	Ponto-Pannonian	Steppe (dolomit)	Threatened, >
<i>Erannis ankeraria</i>	Ponto-Mediterran.	White oak scrub forest	Vulnerable, ≡
<i>Eriogaster catax</i>	Ponto-Mediterran.	Scrub, forest edge	Threatened, >
<i>Leptidia morsei major</i>	S-Continental	Broadleaved forest	Threatened, > >
<i>Colias myrmidone</i>	Ponto-Caspian	Forest-steppe, f. edge	Threatened, > >

Most important habitat types of the Habitat Directive Lepidoptera in Hungary:**Edaphic, rupicolous & lowland steppe swards**

Dolomite & limestone	Sandy grasslands
<i>Phyllometra culminaria</i>	<i>Chondrosoma fiduciaria</i>
<i>Lignyoptera fumidaria</i>	[<i>Plebejus sephirus</i>
<i>Chondrosoma fiduciaria</i>	<i>Arctia festiva</i>
<i>Cucullia mixta</i>	<i>Cucullia balsamitae</i>
<i>Cucullia formosa</i>	<i>Conisania leineri</i>
<i>Polymixis r. isolata</i>	<i>Hadena silenae</i>
[<i>Chersotis fimbriola</i>	<i>Euxoa segnilis</i>]
<i>Euxoa vitta</i> (etc.)]	

White oak scrub forests

Erannis ankeraria, [*Ennomos quercarius*,
Phalera bucephaloides, *Rileyana fovea*, etc.]

Continental forests, skirts & scrublands

Eriogaster catax, *Euphydryas maturna*
Lopinga achine

Marshy & gallery forests

Apatura metis, *Euphydryas maturna*
Arytrura musculus

Loess grasslands	Alkaline swards & meadows
<i>Catopta thrips</i>	<i>Gortyna borelii lunata</i>
[<i>Plebejus sephirus</i>	[<i>Narraga tessularia kasyi</i>
<i>Euxoa hastifera</i>]	<i>Saragossa porosa kenderes</i> .
<i>Hadula dianthi hungarica</i>	
+ many „Microlepidoptera”!]	

Xerothermic mixed oak forests

[*Paraboarmia viertlii*,] *Dioszeghyana schmidtii*,
Asteroscopus s. decipulae

Transitional forest-steppe habitats

Leptidia morsei, *Colias myrmidone*

Marshlands, marshy & wet meadows

Maculinea nausithous, *M. teleius*, *Lycaena dispar*
Rhyparioides f. metelkanus,

10. IRELAND / IRLANDE

Progress in the conservation of BCIs in Ireland, 2000-2003

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Attention has moved on from trying to find populations of BCIs to how to survey known populations. The methodology required to establish whether a given species is present on a site can be very different from that required to establish the area occupied by that species, the size of its population or how that population varies through time. These are all parameters about which information can be needed if site management is to accommodate a BCI. Although basic information on BCIs was brought together in van Helsdingen *et al* (1996) and more comprehensive data have been marshalled for some of them in the form of Action Plans, these sources do not discuss survey methodology, or provide detail of recommended survey methods, or identify appropriate management methods.

Faced with the limitations of the existing, published material we have sought to investigate survey methodology for the BCIs occurring in Ireland as a matter of priority, focussing on the species that appeared to be most in need of further development in standardised survey procedures. Since there seemed to be a dearth of information on many aspects of the *Vertigo* species involved (*V. angustior*, *V. geyeri* and *V. moulinsiana*), a workshop was organised to bring together European *Vertigo* specialists who, it was hoped, would be able to provide answers to a range of questions, not only questions related to survey. This resulted in publication of a review of *Vertigo* conservation biology (Speight *et al*, 2003), incorporating a review of survey methods. This review points to serious deficiencies in existing survey methods, indicating on the one hand a requirement for survey procedures tailored to each of the species and on the other the general lack of reliable population estimation. Developing non-destructive *Vertigo* population survey procedures that will provide a basis for comparisons between sites or between times - particularly in the all-too-frequent situation that the same species may occupy different habitats on different sites - is clearly a challenge for both malacologists and conservation agencies alike.

The second focus for attention during this period was *Margaritifera margaritifera*. It was found necessary to partition survey of this large bivalve into stages, related to both its life history, its ecology and its conservation status. A standardised, 2 stage approach to survey of the adult mussels has now been finalised, with the collaboration of our Finnish colleague, Dr.I.Valovirta. The development of this survey methodology involved a series of trials by non-malacologist nature conservation management personnel, whose feed-back was invaluable. Essentially, Stage 1 is presence-absence survey aimed at adult mussels and employs different technique from the more exacting Stage 2 survey, whose objective is population estimation of adult mussels. The only available techniques for investigating young mussels are destructive and require specialist survey, to be carried out only by specified individuals. This we identify as Stage 3 survey. Stage 4 survey is then full management effectiveness monitoring, involving surveillance of not only adult and juvenile mussels but also parameters of their environment and the management itself. Perhaps needless to say, our attempts to develop a full management effectiveness monitoring survey procedure are still in their infancy. The product of our survey methodology standardisation work so far are due to be published shortly.

Our efforts to identify and standardise survey methodology for a limited number of BCIs have demonstrated how little usable information is published in this arena and also how much remains to be done. The Vertigo Workshop also demonstrated that similar problems are probably being encountered in every European State attempting to discharge its responsibilities in respect of BCI conservation. Since there is need for appropriate survey methodology to be available in every State in which each

BCI occurs, there is considerable potential for waste of resources in duplication of work aimed at developing these survey methodologies. The same is true in relation to updating of information sheets bringing together the data necessary to provide a basis for conservation of each BCI. Given the limited resources available for work on BCIs it would be highly desirable if an initiative could be put in place at the international level, to co-ordinate both development of BCI survey methodologies and the updating of BCI information sheets, so that efficiency in use of available resources can be maximised.

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11. LATVIA / LETTONIE

Protection of Bern Convention invertebrates in Latvia

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Introduction

Approximate number of known invertebrates in Latvia is 15.000 and forecast could be 20.000 thousands. Currently, Latvia still possesses high invertebrate diversity characteristic for the biogeographical region. Nevertheless biological diversity is threatened by the consequences of steady growth of economy. The most significant current pressures to nature are: an expanding of intensive farming; sharp increase in forest logging, steady increase of building and recreation.

The conservation of nature has developed dynamically during the last 10-15 years in Latvia, particularly during the last three years.

Overview of Bern Convention invertebrates in Latvia

All of the convention species are under the protection in Latvia (Annex 1).

Legal protection of invertebrates in Latvia

Bern Convention of 1979 is in force in Latvia since 1996.

Latvian legislation acts "On Lists of specially protected and limitedly exploitable specially protected species (2000)" and "Establishment, protection and management of micro-reserves (2001)" are efficient instrument in species protection.

Red Data Book of Latvia has been started to compile basing in 1991 and issued only in 1998. Book includes 131 invertebrate species. Simplified IUCN categories (Extinct, Endangered, Vulnerable, Rare and Undetermined species) for selection of species have been used. Book has no legal force and thus cannot be used as efficient instrument in species protection, and does not correspond to the newest knowledge about invertebrates.

A work for the preparation of a new version of the Lists of Endangered Species (Latvian Red List) is in progress.

Institutional framework

Department of Nature Conservation of the Ministry of Environment of the Republic of Latvia is decision-making institution in nature conservation. Establishment Nature Conservation Agency was a grate step towards strengthening nature conservation. Agency implements the legislation connected to nature conservation. The research of protected invertebrates is concentrated in the University of Latvia and associated Institute of Biology. A role of NGOs (Latvian Fund for Nature, Entomological Society of Latvia, Society of Latvian Malacologists and associated specialists from other institutions) in the conservation of invertebrates has significantly increased.

Inventories and research

Emerald project (2001-2003). New data were collected about invertebrates mostly in particularly protected nature territories in Latvia. That allowed to integrate invertebrates in the management plans of territories and to promote to develop a species protection plans. Currently, no research of the Bern convention species is provided. An evaluation of species status has been done just for few species, e.g. Hermit Beetle.

Monitoring

Invertebrates for the first time are included in the National Biodiversity Monitoring Programme. Invertebrates are incorporated into the Habitat and species monitoring subprograms. Stream invertebrates are included in the River habitat and species monitoring sub-programme, lake, marine,

forest, bog, grassland and coastal invertebrates in the corresponding sub-programmes. Sub-programme of monitoring of invasive animal species includes also invertebrates.

Species action plans

Pearl Mussel is still a single invertebrate species with management plan what has been prepared in 1999 and now is under implementation. For other species there are no initiated species action plan. Species are actively included in the protection plans for protected territories, but it does not replace a need for these plans to include localities outside these territories.

References

National Environmental Monitoring Programme. Monitoring of Biological Diversity (Short version). Riga, Ministry of Environmental Protection and regional development, 2002, 59 pp.

Red Data Book of Latvia. Rare and Threatened Species of Plants and Animals. Vol. 4. Invertebrates. Riga, Institute of Biology, University of Latvia, 1998.

http://www.varam.gov.lv/vad/English/SpeciesHabitatsProj/PearlMussel_Summary.html

Annex 1

Status of Latvian invertebrates protected under the Bern Convention in Latvia

<i>Taxon</i>	Bern	RDB	Reg. 2000	Comments
Mollusca				
<i>Margaritifera margaritifera</i>	III	1	1	Critically endangered
Annelida				
<i>Hirudo medicinalis</i>	III	4	1	Vulnerable, rare
Crustacea				
<i>Astacus astacus</i>	III	3	2	Common, exploitable species
Odonata				
<i>Aeshna viridis</i>	II	3	1	Vulnerable, rare
<i>Gomphus flavipes</i>	II	1	1	No recent records
<i>Leucorrhinia albifrons</i>	II		1	Vulnerable, rather common
<i>Leucorrhinia caudalis</i>	II		1	Vulnerable, rather common
<i>Leucorrhinia pectoralis</i>	II		1	Vulnerable, rather common
<i>Ophiogomphus cecilia</i>	II	3	1	Vulnerable, scattered, rather rare
Coleoptera				
<i>Boros schneideri</i>				Discovered in 2002 in one locality
<i>Cerambyx cerdo</i>	II	1	1	Probably extinct
<i>Cucujus cinnaberinus</i>	II	1	1	Very rare, one locality
<i>Dytiscus latissimus</i>	II	3	1	Rare, insufficiently known.
<i>Graphoderus bilineatus</i>	II		1	Vulnerable, rather common
<i>Lucanus cervus</i>	III	1	1	Probably extinct
<i>Osmoderma eremita</i>	II	1	1	Vulnerable, scattered
Lepidoptera				
<i>Coenonympha hero</i>	II		1	Vulnerable, scattered
<i>Euphydryas aurinia</i>	II		1	Vulnerable, scattered
<i>Hypodryas maturna</i>	II		1	Vulnerable, scattered
<i>Lopinga achine</i>	II		1	Vulnerable, scattered
<i>Lycaena dispar</i>	II		1	Rare, scattered distribution
<i>Maculinea arion</i>	II		1	Rare, scattered distribution
<i>Maculinea teleius</i>	II	3	1	Critically endangered, one locality
Parnassius apollo	II		1	No proof on presence in Latvia
<i>Parnassius mnemosyne</i>	II	1	1	Vulnerable, scattered
<i>Proserpinus proserpina</i>	II		1	Immigrated accidentally

Explanations

Bern convention – Convention on the Conservation of European Wildlife and Natural Habitats, Bern, 19.09.1979. Annexes II and III.

RDB of Latvia - Red Data Book of Latvia. Rare and Threatened Species of Plants and Animals. Vol. 4. Invertebrates. Riga, Institute of Biology, University of Latvia, 1998. Categories: O - Extinct, 1 - Endangered, 2 - Vulnerable, 3 – Rare, 4 - Undetermined species.

Regulation of CM of 2000 – regulation of the Cabinet of Ministers of Republic of Latvia on Lists of Specially Protected and Limitedly Exploitable Specially Protected Species (Nr. 396/14.11.2000). Annex 1 - Specially Protected Species, Annex 2 - Limitedly Exploitable Specially Protected Species.

12. LITHUANIA / LITUANIE

Invertebrates of Red Data book of Lithuania and data on invertebrate species included in Bern Convention and Habitats Directive documents

by Povilas Ivinskis and Mindaugas Dagys

The diversity of Lithuanian insects is comprised of about 25,000 species.

In Lithuania, a number of systematic types of invertebrates have been inventoried, i.e. molluscs, a part of insects, including the main orders *Odonata*, *Trichoptera*, *Coleoptera*, *Lepidoptera*, *Hymenoptera* and *Diptera* researched 85–95%. The data about *Lepidoptera* and *Diptera* are being accumulated in the database.

136 invertebrate species are included in the Lithuanian Red Data Book. The most of them belong to insects – 121 species, to Crustacea – 7, Aranei – 4, Mollusca – 3, and Hirudinea – 1 species.

Six species belong to *extinct* category, 2 – to *endangered*, 10 – to *vulnerable*, 85 – to *rare*, and 30 – to *indeterminate* category.

Thirteen insect species, and one each species of Crustacea and Hirudinea included in the Lithuanian Red Data Book are listed in the Bern Convention annexes.

During a project devoted to the Natura 2000, methods for identification of protected areas for species included in the EU Habitats directive have been developed, and current distribution of these species has been investigated.

Fourteen species of insects and five species of molluscs, listed in the Annex II of the EU Habitats directive, are found in Lithuania – in strict nature reserves, and small populations of some of them are found in six entomological reserves.

Almost 150 mollusc species occur in Lithuania but only five of them are listed in Bern Convention documents and only three are included in the Red Data Book of Lithuania.

Annex II of the EU Habitats directive lists four molluscs of *Vertigo* genus. Their protection requires preserving wet meadows on shores of lakes and riversides. These molluscs are found only in specific habitats using special methods to search the ground vegetation cover and to inspect lowest parts of plants. Data on all molluscs of this gender are scarce.

An abundant population of *Vertigo moulinsiana* Dupuy is met on the shores of small rivers in the area of Meteliai and Obelija Lakes. This is one of the biggest species of this family, found on the lower part stems of plants growing in wet areas.

Vertigo genesii Gredler is found on the shores of Meteliai and Obelija Lakes, in damp meadows and the ground vegetation cover.

Vertigo angustior Jeff. is found in the area of Adutiskis, the Meteliai Regional park near Obelija, at Luodis Lake in the region of Moletai, the Zuvintas reserve and the Verkiai Regional park.

Vertigo geyeri Lindh is found at Meteliai and Obelija Lakes.

Unio crassus Retzius is widely spread in Lithuanian rivers and streams. The most important part of the population is found in the Nemunelis and Zeimena rivers, watercourses in the regions of Svencioniai and Taurage.

The order of beetles covers half of the Lithuanian insect species listed in the Annex II of the directive. Regarding the order of butterflies, five species of butterflies are found, and five species represent the order *Odonata*.

Odonata

Sixty-three species of Odonata are known in Lithuania. Five of them are listed in Bern Convention and six are included in the Lithuanian Red Data Book.

Aeschna viridis Evers. is found in 10 places near small lakes and fenlands. Rare.

Leucorrhinia albifrons Burm. is widely distributed near stagnant or almost stagnant waters. In some places common in others only solitary individuals found.

Leucorrhinia caudalis Charp. has been found in seven localities near stagnant or almost stagnant waters. In some places common in others only solitary individuals found. Two localities are in protected areas.

Leucorrhinia pectoralis Charp. occurs in the Zuvintas reserve, the Curonian Spit, Ventes Ragas, the Verkiai Regional park. This species is mainly found at small lakes of mesotrophic and eutrophic type, shallow canals overgrown with reeds and sedges.

Ophiogomphus cecilia (Fourcroy) were found in the Labanoras and Verkiai regional parks, the Dukstyna entomological reserve. The biggest populations were found in the centre of Vilnius near the Neris River, and in some places near the biggest Lithuanian river Nemunas. Larvae are found in rivers and rivulets with a sandy bottom.

Coleoptera

More than 3,000 species of beetles are known in Lithuania and only 29 are included in the Red Data Book of Lithuania.

A part of the beetles included in the Annex II reflect the Atlantic period when climate in Lithuania was warmer. *Cerambyx cerdo* L. is related to mature oak woods. However, throughout the period of beetle research in Lithuania, only few beetles of this species were found, the last time in the Dubrava forest near Kaunas in 1988. We cannot say that this species is seriously threatened as it has never been more abundant compared to the present situation.

Lucanus cervus L. is probably extinct in Lithuania. The total registered number throughout the research history was only 10 individuals. For the development of this species, mature oak woods in sunny places are necessary. As reported, the last individual was found two decades ago. Practically, the most suitable habitation places are the Kaunas' oak-grove, the valley of the Nevezis River near Kaunas, the valley of the Jesia River extending from Garliava to Kaunas, slopes of the Nemunas River near Alytus. This species inhabits century-old oak-trees.

Boros schneideri Panz. is found in pine woods in south-eastern and south-western Lithuania, the Cepkeliai and Viesvile reserves. This species is trophically related to withered pine-trees, found under a 30–50 year old tree bark. The most abundant Lithuanian population is found in the Labanoras Regional park, in Dzūkija National park and in Druskininkai. This species is possibly widely distributed, though rarely noticed due to its bioecological features. Sanitary felling of woods has an impact on its population.

Cucujus cinnaberinus Scop. is one of the rarest species of beetles, and only a few individuals were found in Lithuania. Only three places where this species has been found are known, including the Cepkeliai reserve. Data on the biology is not available in Lithuania.

Osmoderma eremita Scop. trophically is related to decaying oaks and other deciduous trees. As a rule, it is found by accident. Within the last years it was observed in many areas – near the Kaunas oak-grove, Gervenupis (a suburb of Kaunas), the Dukstu oak-grove near Vilnius, the Verkiai Regional park, Vidzgiris and Punia forest near Alytus, Kruonis and others.

Dytiscus latissimus L. is related to clean watercourses. It is found in the Neris River, a number of watercourses in south-western Lithuania. In all cases these were solitary individuals.

Graphoderus bilineatus Deg. is also related to clean watercourses, but we have less data about it. It is found in the Dukstyna entomological reserve, some small dystrophic lakes near Trakai.

Protected areas for the above two species have not been identified, but both of them have been found in the areas already protected.

Lepidoptera

Almost 2,300 Lepidoptera species are known in Lithuania, and 54 of them are included in the Red Data Book of Lithuania.

Coenonympha hero L. is widely distributed. In some places common in others only solitary individuals occur. Protected in Kamanos and Zuvintas reserves.

Euphydryas aurinia Rott. is found in many regions of Lithuania, in the outskirts of woods, forest meadows, but everywhere not abundant. It was more abundant in the Pagramantis Regional park, the area near Trakai, shores of Kretuonykstis Lake in the region of Svencionys.

Hypodryas maturna L. is found in a number of regions, including a very abundant population in the Adutiskis forest. In other areas it is rare, only solitary individuals or caterpillar nests were found.

Lycaena dispar Hw. is found all over the country, though not abundant everywhere. It inhabits damp riverside meadows, lakesides. It was found in many protected areas: the reserves of Cepkeliai, Zuvintas, Viesvile, the regional parks of Aukstadvaris and Pagramantis, in the entomological reserve of Dukstyna and numerous other places. Trophically it is related to sorrels thriving in humid areas.

Maculinea teleius Bergstr. is the most abundant species included in the Annex II that forms closed and sometimes abundant populations in the regions of Taurage, Kedainiai, Kretinga and Kaunas. It is a regular species in the Pagramantis Regional Park, formerly the entomological reserve of Pavejuonys, near Labunava, in the region of Kedainiai, in improved riversides, humid meadows, though only in places where *Sanguisorba officinalis* grows. Its protection should be related to protection of its nutrition plant and ants living in meadows. Though this species is widely spread in Lithuania and abundant in some areas its protection requires particular attention, as its habitats – riversides, shores of irrigation canals as well as other areas where *Sanguisorba officinalis* grows – are vulnerable, in particular if the above areas are mowed too early when the caterpillars stay in the raceme of the plant.

The species of invertebrates included in the Annex II of the Habitats Directive have been inventoried in detail; their main sites have been identified. All collection and bibliography data of the state archives have been collected. During the field research the main attention was focused on the already known populations of species included in the Annex II, as well as on searching for new sites. Based on the research carried out, the following sites were identified: 6 sites of *Maculinea teleius*, 2 - *Lycaena dispar*, 3 - *Hypodryas maturna*, 4- species of *Hypodryas aurinia* butterflies, *Opohiogomphus cecilia* - 3, *Leucorhinia caudalis* -1, *Boros schneideri* - 2, *Osmoderma eremita* - 1, *Vertigo angustior*, *Vertigo moulinsiana* and *Vertigo genesii* - 5, *Unio crassus* - 6 (Table 1).

The biggest problem is to ensure the protection of species listed in the Annex II of the Habitats Directive, to preserve their habitats untouched. It is very important to harmonise effective legislation to ensure the preservation of rare species. One of the protection issues of rare species that regularly comes up is the disagreement between forest management and protection of xylophage beetles. In particular, it is urgent for *Lucanus cervus*, *Osmoderma eremita*, *Cerambyx cerdo* cases. Sanitary felling of wood harms the species *Boros schneideri* and *Cucujus cinnaberinus* very much, and these are not abundant. In Lithuania, these species of beetles are found in young and not fully matured forests. Other species of beetles (*Lucanus cervus*, *Osmoderma eremita*) are mainly observed in old parks in Vilnius and Kaunas. The status of these beetles causes concern, although living conditions in the mentioned areas have improved in recent years because rotten cavities in oaks were stopped to be filled in with cement. Protection problems arise in relation to the majority of the beetle species listed in the Annexe II of the Habitats Directive because of their dispersed distribution, accidental encounters, and difficulty in identifications of sites with higher densities of such populations. Besides, forest management regulations are not favourable for the protection of these beetles. Dead dry oaks and other trees are removed from the forests, and thus rare xylophage species cannot strengthen their position. For some species with disperse distribution, the criteria of biodiversity was used to identify the sites indicating the areas in which few species of animals and plants listed in the Annex are found (Table 2). The reserves ensure adequate protection though natural succession, i.e. overgrowing of meadows, extinction of raised bogs and open fields, has an impact on many species of rare insects.

Table 1. Proposed sites for Natura 2000 species in Lithuania

Species	Number of sites	Area in ha
<i>Vertigo angustior</i>	3	4,856
<i>Vertigo genesii</i>	1	1,193
<i>Vertigo moulinsiana</i>	1	1,193
<i>Unio crassus</i>	6	2,700
<i>Leucorhinia caudalis</i>	1	9,509
<i>Ophiogomphus cecilia</i>	1	11,192
<i>Cucujus cinnaberinus</i>	1	3,092
<i>Boros schneideri</i>	2	336
<i>Osmoderma eremita</i>	1	892
<i>Euphydryas aurinia</i>	4	11,278
<i>Euphydryas maturna</i>	3	12,294
<i>Lycaena dispar</i>	2	169
<i>Maculinea teleius</i>	6	12,911

Table 2. Natura 2000 species in protected territories in Lithuania

Species		Strict Rezerve					Others
		Ž	Č	V	G	K	
Odonata	<i>Aeshna viridis</i>	+					
	<i>Leucorrhinia albifrons</i>			+			
	<i>Leucorrhinia caudalis</i>						
	<i>Leucorrhinia pectoralis</i>	+					
	<i>Ophiogomphus cecilia</i>			+	+		
Coleoptera	<i>Boros schneideri</i>		+	+	+		
	<i>Cerambyx cerdo</i>		+				
	<i>Cucujus cinnaberinus</i>		+				
	<i>Dytiscus latissimus</i>	+					
	<i>Graphoderus bilineatus</i>						D
	<i>Lucanus cervus</i>						
	<i>Osmoderma eremita</i>						
	<i>Oxyporus mannerheimii</i>						
Lepidoptera	<i>Coenonympha hero</i>	+					
	<i>Euphydryas aurinia</i>				+	+	
	<i>Euphydryas maturna</i>	+				+	
	<i>Lopinga achine</i>	+					
	<i>Lycaena dispar</i>	+		+	+		
	<i>Maculinea arion</i>		+				
	<i>Maculinea teleius</i>			+			
	<i>Parnassius mnemosyne</i>						
	<i>Proserpinus proserpina</i>						

Mollusca	<i>Helix pomatia</i>						
	<i>Unio crassus</i>				+		
	<i>Vertigo angustior</i>	+					
	<i>Vertigo genesii</i>						M
	<i>Vertigo geyerii</i>						M
	<i>Vertigo moulinsiana</i>						M
Annelida	<i>Hirudo medicinalis</i>						
Crustacea	<i>Astacus astacus</i>						

Strict Reserves:

Ž – Žuvintas

Č – Čepkeliai

V – Viešvilė

G - Girutiškis

K – Kamanos

D – Dukstyna entomological reserve

M – Meteliai regional park

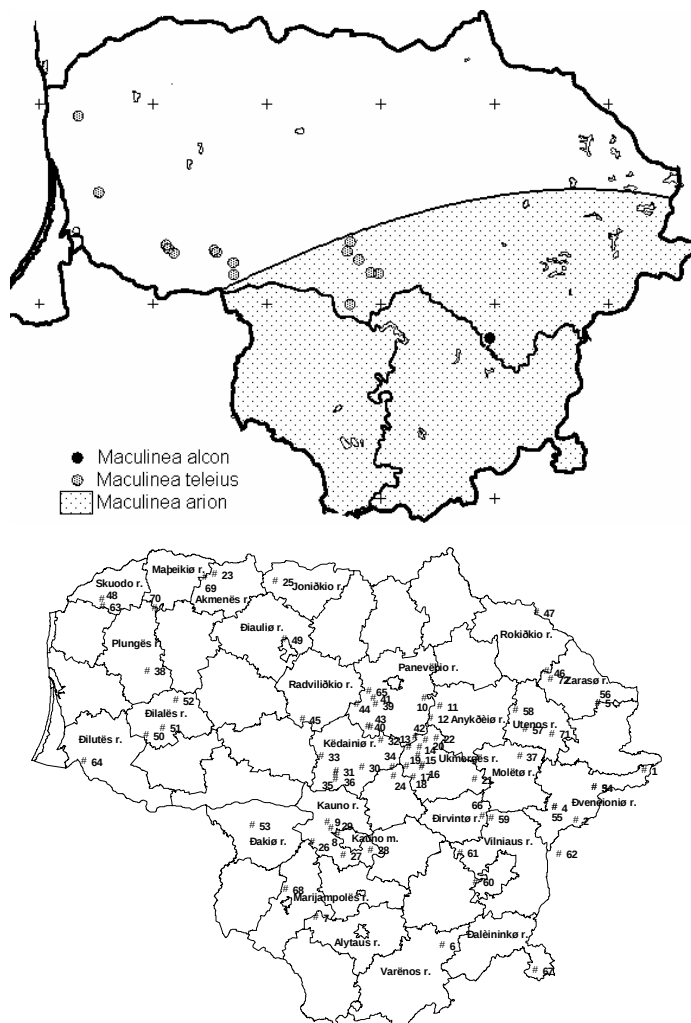
Figure 1. Distribution of *Maculinea* sp. in Lithuania.**Figure 2. Distribution of *Coenonympha hero* in Lithuania.**



Figure 3. Distribution of *Euphydryas aurinia* in Lithuania.



Figure 4. Distribution of *Euphydryas maturna* in Lithuania.



Figure 5. Distribution of *Lopinga achine* in Lithuania.



Figure 6. Distribution of *Lycaena dispar* in Lithuania.



Figure 7. Distribution of *Maculinea arion* in Lithuania.

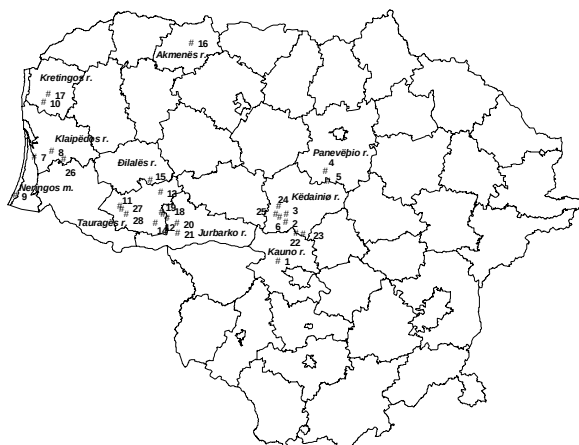


Figure 8. Distribution of *Maculinea teleius* in Lithuania.

13. THE NETHERLANDS / PAYS-BAS

The present state of the BCI's in the Netherlands

Reported by P. J. van Helsdingen
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Introduction

The Netherlands is a lowland country and first of all a country of wetlands, water bodies and larger rivers. The fauna is poor by nature, because the variation in available natural habitats is scanty. The submountainous, mountainous, and alpine regions are completely lacking, while limestone grasslands are rare and restricted to the southern tip of the country. The rivers Rhine and Meuse flow through the Pleistocene diluvial deposits in the East and South of the country. They have created a delta plain towards the North Sea, breaking through the belt of coastal sand dunes in the West.

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. This leads to a shortage of water in the wetlands during the drier periods of the year, forcing management to choose between 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) is a serious and persistent problem. A heavy toll is also paid because of housing development and the construction of new transport infrastructures.

There are continuous efforts to improve upon the situation. The dehydration is recognized by all as a major problem. Polder administrations, which are responsible for the water management in the polders, have democratic councils with some nature-aware representatives since a number of years, but the effects are not visible yet. 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. In 2002 acquisition came to a complete stop because of financial problems of the government. 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.

The Fauna and Flora Act aims at the protection of animals and their biotopes. The list of protected species mainly follows the Appendices of the Habitats Directive, which essentially is a copy of the Bern Convention Annexes. Only three species (*Vertigo angustior*, *Vertigo moulinsiana* and *Callimorpha quadripunctaria*) from the Habitats Directive have not been accepted in the Fauna and Flora Act although they are indigenous species. The Fauna and Flora Act lists 46 species of Invertebrates 21 of which also occur on the Bern Convention Annexes. Three species of the Bern Convention occurring in the Netherlands have not found their way to the Habitats Directive (*Astacus astacus*, *Coenonympha hero*, *Euphydryas aurinia*), while one (*Helix pomatia*) was put on Appendix 5 (regulating exploitation). Quite a number of species (24) are protected in the Netherlands by the Fauna and Flora Act while not listed on any of the Appendices of the Habitats Directive or the Annexes of the Bern Convention. These species are of national interest and concern Lepidoptera (20) and ants

(Hymenoptera: Formicidae) (4). One further species (*Unio crassus*) is protected by the Fauna and Flora Act because it is listed in the Habitats Directive but not in the Bern Convention. This deviation from the Habitats Directive – 27 species protected by the Fauna and Flora Act but not through the Habitats Directive and three species from the Habitats Directive not included in the Fauna and Flora Act – is quite confusing and unpractical, and not explained.

ODONATA

Aeshna viridis

National status: Vulnerable. The species is protected by national law (Fauna and Flora Act).

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 is 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:

- 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).
- Nederlandse Vereniging voor Libellenstudie, 2002. De Nederlandse libellen (Odonata). – Nederlandse Fauna 4, 440 pp. European Invertebrate Survey - Netherlands (Leiden).

Coenagrion mercuriale

National status: Extinct.

Distribution: occurred locally in small rivers and streams 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:

- 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).
- Nederlandse Vereniging voor Libellenstudie, 2002. De Nederlandse libellen (Odonata). – Nederlandse Fauna 4, 440 pp. European Invertebrate Survey - Netherlands (Leiden).

Gomphus flavipes
(*Stylurus flavipes*)

National status: Vulnerable. The species is protected by national law (Fauna and Flora Act).

Distribution: The species had 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. From 1996 onwards a rapid re-colonisation took place along the river Rhine basin. The habitat offered by the river is considered sub-optimal but is locally improving.

Reasons for decline: Eutrophication? Pollution of Rhine river basin and other larger rivers?

Conservation measures taken: none.

Conservation measures proposed: none.

Main bibliography:

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).

Nederlandse Vereniging voor Libellenstudie, 2002. De Nederlandse libellen (Odonata). – Nederlandse Fauna 4, 440 pp. European Invertebrate Survey - Netherlands (Leiden).

Leucorrhinia albifrons

National status: Extinct? The species is nevertheless protected by national law (Fauna and Flora Act).

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:

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).

Nederlandse Vereniging voor Libellenstudie, 2002. De Nederlandse libellen (Odonata). – Nederlandse Fauna 4, 440 pp. European Invertebrate Survey - Netherlands (Leiden).

Leucorrhinia caudalis

National status: Extinct. The species is protected by national law (Fauna and Flora Act).

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:

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).

Nederlandse Vereniging voor Libellenstudie, 2002. De Nederlandse libellen (Odonata). – Nederlandse Fauna 4, 440 pp. European Invertebrate Survey - Netherlands (Leiden).

Leucorrhinia pectoralis

National status: Endangered. The species is protected by national law (Fauna and Flora Act).

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:

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).

Nederlandse Vereniging voor Libellenstudie, 2002. De Nederlandse libellen (Odonata). – Nederlandse Fauna 4, 440 pp. European Invertebrate Survey - Netherlands (Leiden).

Ophiogomphus cecilia

National status: Critically endangered. The species is protected by national law (Fauna and Flora Act).

Distribution: has disappeared before 1950; last published record from 1936. For many years considered to have become extinct. Rediscovered in 1995, seen again in 1996 and 2000 in the Province of Limburg, which indicate the existence of a viable population.

Reasons for threat: eutrophication; canalization of brooks.

Conservation measures taken: none.

Main bibliography:

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).

Nederlandse Vereniging voor Libellenstudie, 2002. De Nederlandse libellen (Odonata). – Nederlandse Fauna 4, 440 pp. European Invertebrate Survey - Netherlands (Leiden).

Oxygastra curtisii

National status: Rare. The species is protected by national law (Fauna and Flora Act).

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:

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).

Nederlandse Vereniging voor Libellenstudie, 2002. De Nederlandse libellen (Odonata). – Nederlandse Fauna 4, 440 pp. European Invertebrate Survey - Netherlands (Leiden).

Sympecma paedisca

(*Sympecma braueri*)

National status: Vulnerable. The species is protected by national law (Fauna and Flora Act).

Distribution: oligo- and mesotrophic fens in the eastern part of the country. The species has strongly declined since the seventies. Recently (1990-1998) the species has been observed in a number of localities in the northeastern part of the country, where it seems well-established.

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:

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).

Nederlandse Vereniging voor Libellenstudie, 2002. De Nederlandse libellen (Odonata). – Nederlandse Fauna 4, 440 pp. European Invertebrate Survey - Netherlands (Leiden).

COLEOPTERA

Cerambyx cerdo

National status: Critically endangered or Extinct. The species is protected by national law (Fauna and Flora Act).

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: Possibly Extinct. The species is protected by national law (Fauna and Flora Act).

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

Reasons for decline: most likely unfavourable changes in water quality.

Conservation measures taken: general improvement 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. The species is protected by national law (Fauna and Flora Act).

Distribution: precise distribution unknown, but there are a few traditional sites in the fenland belt in the Netherlands.

Reasons for decline: most likely unfavourable changes in water quality.

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 now. A new occurrence in the region of Twenthe, Province of Overijssel, was recently discovered. The species is protected by national law (Fauna and Flora Act).

Distribution: in larger forested 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 (latest record 1946). The species is protected by national law (Fauna and Flora Act).

Distribution:

Reasons for decline: hollow trees insufficiently available.

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. The species is nevertheless protected by national law (Fauna and Flora Act).

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. The species is protected by national law (Fauna and Flora Act).

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. The species is protected by national law (Fauna and Flora Act).

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. The species is protected by national law (Fauna and Flora Act).

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. The species is protected by national law (Fauna and Flora Act).

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. The species is protected by national law (Fauna and Flora Act).

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.

MOLLUSCA

Helix pomatia

National status: vulnerable. The species is protected by national law (Fauna and Flora Act).

Distribution: Southern part of the country and dune area on calcium-rich soils.

Reasons for decline: no decline observed.

Conservation measures taken:

Other conservation measures proposed: none.

Main bibliography:

Bruyne, R.H. de, H. Wallbrink & A.W. Gmelig Meyling, 2003. Bedreigde en verdwenen land- en zoetwater-mollusken in Nederland (Mollusca), 88 pp. – European Invertebrate Survey – Netherlands (Leiden).

Margaritifera auricularia

National status: extinct.

Distribution: fossil remains (about 1900 years old) have been found in the province Zuid-Holland.

Reasons for decline: unknown.

Conservation measures taken: none.

Other conservation measures proposed: none.

Main bibliography:

Gittenberger, E., A.W. Janssen, W.J. Kuijper, J.G.J. Kuiper, T. Meijer, G. van der Velde & J.N. de Vries, 1998. De Nederlandse zoetwatermollusken. – Nederlandse Fauna 2, 287 pp. – European Invertebrate Survey – Netherlands (Leiden).

CRUSTACEA

Astacus astacus

National status: Nearly extinct. The species is protected by national law (Fauna and Flora Act).

Distribution: Only one small population in a small stream on the southern margin of the Veluwe, Province of Guelre.

Reasons for decline: improper management of suitable streams in the past.

Conservation measures taken: none.

Other conservation measures proposed: none.

Main bibliography:

HIRUDINEA

Hirudo mecidinalis

National status: Rare.

Distribution: Few sites left.

Reasons for decline: Natural populations have disappeared while artificial populations (remnants of breeding stations for medical purposes) are strongly in decline.

Conservation measures taken:

Other conservation measures proposed: none.

Main bibliography:

Felix, R. & G. van der Velde, 2000. Voelt de medicinale bloedzuiger *Hirudo medicinalis* zich wel zo lekker in Nederland (Hirudinea)? – Nederlandse Faunistische Mededelingen 12: 1-10.

14. NORWAY / NORVEGE

Protection and management of invertebrates in Norway. Status 2003

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The Bern convention with its appendices is by far the most important instrument in the work with legal protection of invertebrates in Norway. All protection initiatives are directly linked to the species list in the appendices

There are 10 invertebrates occurring in Norway that 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 protected according to the Nature Conservation Act and all the invertebrates listed in the Bern Convention Appendix II are included in the Red List, except for a diving beetle, *Dytiscus latissimus*.

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 leech, *Hirudo medicinalis*, is also protected, and it is included in the National Red List as a rare species. At present, there are nearly 40 localities of the leech in Norway

With the exception of local studies of the noble crawfish and the pearl mussel, none of the other Bern Convention species are monitored in a permanent survey at the moment. Most of them are, however, suggested for future monitoring in a national plan.

A national species data bank is planned to begin its activities this autumn. This will be an important institution in the conservation work of invertebrates.

15. POLAND / POLOGNE

Inventory, monitoring, threat assessment and conservation measures for invertebrates in Poland

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1. Inventory and monitoring

Inventories of the fauna of Poland, carried out in the last decades, have shown that in our country it should be not less than 40,000 species belonging to the Metazoa. Among them the insects constitute about 70% and when we add all the Arthropoda (arachnids and crustaceans) these groups make as much as 90% (Andrzejewski, Weigle 1993, Razowski 1990-1991, 1997). National parks belong to the best known areas in Poland in respect of their faunas. The careful inventory has shown that these areas are particularly rich in species (Pawłowski 2003). For example, the Białowieża Primeval Forest which covers in Poland ca 27,000 ha hosts more than 10,000 species of Metazoa (Gutowski, Jaroszewicz 2001), while in the Pieniny National Park in the area of less than 2,500 ha collected were more than 7,000 species (Witkowski ed. msc)

These inventories are in fact the form of a “paper collection” of species, based on the careful examination of museum and private collections, notes and published materials, indicating the occurrence of a given species in an investigated area. Therefore the fauna of species based on such an inventory is usually much richer than the fauna occurring in fact in the investigated area, and richer than it is indicated by the results of field monitoring which is regularly carried out in Poland for some group of invertebrates (Buszko 1997, Kosibowicz, Dobrowolski 2003, Hilbricht-Ilkowska 2003)

In Poland, as well as in other countries, the scope of inventory and monitoring work is limited for lack of biologists specializing in some groups of fauna. Therefore the compilation of the lists of species for these groups is often based on old and not verified identifications of species; as a result the species composition is only a rough estimate (Razowski 1990-1991, 1997).

The inventory of invertebrate fauna most often consist in the assessment of the range (ranges) and number of localities of particular species in a given area in Poland. It includes the identification of points (**localities**) in the geographical grid of squares (Buszko 1997), identification of the occurrence of species in a geographical or administrative unit (Witkowski ed. msc), or traditionally, the identification of a town, village or other distinctive place or area, situated nearest to a locality.

To assess species distribution and threat on the basis on point localities within the geographical grid, one may use three methods (Głowaciński 2001): to sum all squares with points, to determine a “contour” range indicated by peripheral localities, to sum all squares within the range.

2. Assessment of threat

An analysis of the endangerment of invertebrate species in Poland resulted in the interdisciplinary reports such as the Red Lists (Głowaciński 2002) and Red Data Books (Głowaciński 2001). The Red Lists analyze threats to the investigated systematic groups as a whole and, on the basis of IUCN criteria (2000), indicate species representing particular categories of threat. The Red Data Book deals with species belonging to the higher categories of threat (EX, CR, E and VU), as indicated in the Red List. In the last five year period in Poland work on both the Red Lists and the Red Data Books was carried out. The Red List was already published (Głowaciński 2002), while the Red data Book of Invertebrates is still in preparation.

In the frame of the Red List of threatened animals in Poland (Głowaciński 2002) the following group of invertebrates were described: among molluscs *Bivalvia*, *Gastropoda terrestria* and *Gastropoda aquatica*, among insects *Diptera*, within the hymenopteran - *Symphyta*, *Hymenoptera parasitica*, *Chrysididae*, *Pompilidae*, *Vespoidea*, *Formicidae*, *Sphecidae* and *Apoidea*. In addition, in the List presented were the following group of insects: *Trichoptera*, *Lepidoptera*, *Coleoptera*,

Hemiptera, *Orthoptera*, *Plecoptera*, *Odonata*, and *Ephemeroptera*. The other investigated group was *Arachnida* with lists for *Araneae*, *Opiliones* and *Pseudoscorpionida*. Other invertebrates included *Malacostraca* and *Hirudinea*.

Finally the lists according to the threat category included 2618 species (tab. 1).

Table 1. Summary list of threatened species of invertebrates in Poland (Głowaciński 2002)

Animal group	Categories of threat							Sum
	EX in Poland	CR	EN	VU	NT	LC	DD	
Mollusca	1	17	8	36	48	1	18	129
<i>Arthropoda</i> including:	196	135	350	533	240	304	719	2477
Insekta	196	133	258	393	228	304	661	2174
<i>Arachnida</i>	---	---	90	138	---	---	58	286
<i>Crustacea</i>	---	2	2	2	12	---	---	18
<i>Annelida</i>	---	---	---	1	4	1	6	12
Total	197	152	358	570	292	306	743	2618

Conclusions based on the lists were as follows (Głowaciński 2002):

1. The compilation of the lists has shown that in Poland are significant gaps in the knowledge of species composition of some group of invertebrates, as well as in the knowledge of their threat.
2. The authors preparing the lists were aware of a significant imbalance in the knowledge of particular groups of invertebrates and among the species within the group. Hence, in spite of the use of unified criteria, the results of threat assessment for particular groups are not equivalent.
3. Assuming that the number of Metazoa species in Poland is as high as 40,000, to the Red List were included ca. 7% of the species that are known from Poland. Among them, insects are the richest group including ca. 7.7% of the insect fauna of Poland. So their threat in general seems to be proportional to the threat of the other groups, particularly the vertebrate fauna.
4. In light of the data collected, among the most threatened groups of invertebrate species in Poland are: bivalves, of which as much as 40% of the species are included to the most threatened group (between VU and EX), land snails (37%), water snails (28%) orthopterans (28%), ephemeropterans (27%) and wild bees (22%).
5. Taking into account losses in the fauna, the most threatened groups are caddis-flies (4.8%), wild bees (3.8%) and moths and butterflies (0.4%).
6. An analysis of threats to beetles included also the assessment of threat to particular communities or habitats (table 2).

Table 2. Analysis of the threat of beetle community (or its habitat) based on the threat of eco-groups among beetles

Community or habitat	Number of species							
	EX	CR	EN	VU	NT	LC	DD	Sum
Water	10	11	10	19	9	7	11	77
Bogs and marshes	1	3	13	18	4	1	2	42
Saline	2	4	20	3	---	2	---	31
Xerothermic	36	15	48	28	20	16	65	228
Mesophile meadows	1	---	5	7	---	8	12	33
Segetal and pastures	23	12	5	4	10	8	13	75
Caves and synanthropic	3	2	5	---	1	---	7	18
Primeval forests	62	31	50	44	18	40	152	397
High montane	6	6	4	12	13	20	12	73

Table 2 shows that the most threatened beetle communities are those living in primeval forests and xerothermic habitats. Taking into account the abundance of beetle communities of caves, salines and peat bogs, beetles connected with such habitats seem to be also highly threatened.

3. Conservation measures

In Poland the basic form of conservation of invertebrates is conservation of their habitats in national parks, nature reserves, landscape parks and other protected areas (Głowaciński 2002). In addition, our legal system, amended in 2001, provides for strict conservation of species. Protected invertebrate species are enumerated in the Decree of the Minister of Environment (Rozporządzenie Ministra Środowiska 2001) dated on September 26th 2001 (table 3).

Table 3. List of the invertebrate taxons living in wild in Poland (including potentially migrating species) which are strictly protected in our country (Rozporządzenie Ministra Środowiska 2001)

Polish Name	Latin name
PIJAWKI	HIRUDINEA
pijawka lekarska	Hirudo medicinalis
PAJĘCZAKI	ARACHNIDA
PAJĄKI	ARANEIDA
tygrzyk paskowany	Argiope bruennichi
gryzielowate - wszystkie gatunki	Atypidae - all species
poskocz krasny	Eresus niger
**	Bathypantes eumenis
**	Leptyhyphantes pulcher
skakun	Phylaeus chrysops
OWADY	INSECTA
WAŻKI	ODONATA
żagnica północna	Aeschna coerulea
żagnica zielona	Aeschna viridis
łątka turzycowa	Coenagrion ornatum
iglica mała	Nehalennia speciosa
miedziopierś górską	Somatochlora alpestris
trzepla zielona	Ophiogomphus cecilia
gadziogłówka żółtonoga	Stylurus flavipes
straszka północna	Sympecma braueri
załotka białoczelna	Leucorrhinia albifrons
załotka spłaszczona	Leucorrhinia caudalis
załotka większa	Leucorrhinia pectoralis
MODLISZKI	MANTODEA
modliszka zwyczajna	Mantis religiosa
PROSTOSKRZYDŁE	ORTHOPTERA
stepówka	Gampsocleis glabra
CHRZĄSZCZE	COLEOPTERA
bogatek wspaniały	Buprestis splendens
tęczniki - wszystkie gatunki	Calosoma sp.- all
biegacze - wszystkie gatunki	Carabus sp.- all
kozióróg dębosz	Cerambyx cerdo
kozióróg bukowiec	Cerambyx scopolii
borodziej próchnik	Ergates faber
sichrawa karpaczka	Gaurotes excellens
zgrzypik twardokrywka	Lamia textor
**	Leioderus kollari
zmorsznik	Leptura thoracica
**	Pseudogaurotina excellens
purpurówka Kaehlera	Purpuricenus kaehleri

nadobnica alpejska
 łucznik
 gracz
 zgniotek cynobrowy
 zgniotek szkarłatny
 pływak szerokobrzegi
 **
 **
 **
 **
 **
 wynurt
 ciólek matowy
 jelonek rogacz
 pachnica dębowa
 orszoł
 bycznik
 MOTYLE
 **
 powszelatek armorykański
 barczatka kataks
 czerwонецzyk nieparek
 czerwонецzyk fioletek
 modraszek alkon
 modraszek arion
 modraszek nausitos
 modraszek telejus
 modraszek eroides
 modraszek gniady
 modraszek baton
 modraszek orion
 wstęgówka bagienka
 **
 dostojka akwilonaris
 dostojka eunomia
 przeplatka aurinia
 przeplatka maturna
 pasyn lucylla
 paż żeglarz
 niepylak apollo
 niepylak mnemosyna
 **
 szlaczkoń torfowiec
 skalnik bryzeida
 strzepotek hero
 strzepotek edypus
 górówka sudecka
 osadnik wielkooki
 skalnik driada
 mszarnik jutta
 postojak wiesiołkowiec
 BŁONKOSKRZYDŁE
 trzmiele - wszystkie gatunki
 ŚLIMAKI
 ślimak tatrzański
 ślimak Rossmasslera

Rosalia alpina
 Stenocorus meridianus
 Tragosoma depsarium
 Cucujus cinnaberinus
 Cucujus haematodes
 Dytiscus latissimus
 Graphoderus bilineatus
 Melandryidae
 Phryganophilus ruficollis
 Pytho kolwensis
 Rhysodes sulcatus
 Ceruchus chrysomelinus
 Dorcus parallelipedus
 Lucanus cervus
 Osmoderma eremita
 Trichius fasciatus
 Typhoeus typhoeus
 LEPIDOPTERA
 Catopta thrips
 Pyrgus armoricanus
 Eriogaster catax
 Lycaena dispar
 Lycaena helle
 Maculineaalcon
 Maculinea arion
 Maculinea nausithous
 Maculinea teleius
 Polyommatus eroides
 Polyommatus ripartii
 Pseudophilotes baton
 Scolitanides orion
 Catocala pacta
 Xylomoia strix
 Boloria aquilonaris
 Boloria eunomia
 Euphydryas aurinia
 Euphydryas maturna
 Neptis rivularis
 Iphiclides podalirius
 Parnassius apollo
 Parnassius mnemosyne
 Colias myrmidone
 Colias palaeno
 Chazara briseis
 Coenonympha hero
 Coenonympha oedippus
 Erebia sudetica
 Lopinga achine
 Minois dryas
 Oenis jutta
 Proserpinus proserpina
 HYMENOPTERA
 Bombus sp. –all species
 GASTROPODA
 Chilostoma cingulellum
 Chilostoma rossmaessleri

ślimak ostrokrawędzisty	<i>Helicigona lapicida</i>
ślimak żeberkowany	<i>Helicopsis striata</i>
ślimak żółtawy	<i>Helix lutescens</i>
ślimak winniczek - o średnicy muszli do 30 mm włącznie	<i>Helix pomatia</i>
ślimak Bąkowskiego	<i>Trichia bakowskii</i>
ślimak Bielza	<i>Trichia bielzi</i>
**	<i>Bythinella austriaca</i>
**	<i>Bythinella cylindrica</i>
**	<i>Bythinella metarubra</i>
**	<i>Bythinella micherdzinskii</i>
**	<i>Bythinella zyvionteki</i>
zawójka rzeczna	<i>Valvata naticina</i>
niepozorka ojcowiska	<i>Falniowskia neglectissima</i>
igliczek karpacki	<i>Acicula parcelineata</i>
blotniarka otulka	<i>Lymnaea glutinosa</i>
zatoczek gładki	<i>Gyraulus laevis</i>
poczwarówka pagórkowa	<i>Granaria frumentum</i>
poczwarówka pagoda	<i>Pagodulina pagodula</i>
poczwarówka górską	<i>Pupilla alpicola</i>
poczwarówka zębata	<i>Truncatellina claustralis</i>
poczwarówka zwężona	<i>Vertigo angustior</i>
poczwarówka jajowata	<i>Vertigo moulinsiana</i>
pomrowik mołdawski	<i>Deroceras moldavicum</i>
pomrów nakrapiany	<i>Tandonia rustica</i>
szklarka podziemna	<i>Oxychilus inopinatus</i>
świdrzyk łamliwy	<i>Balea perversa</i>
świdrzyk ozdobny	<i>Charpentieria ornata</i>
świdrzyk śląski	<i>Cochlodina costata</i>
świdrzyk siedmiogrodzki	<i>Vestia elata</i>
MALŻE	BIVALVIA
perloródka rzeczna	<i>Margaritifera margaritifera</i>
szczeżują spłaszczona	<i>Anodonta complanata</i>
szczeżują wielką	<i>Anodonta cygnea</i>
skójka gruboskorupowa	<i>Unio crassus</i>
skójka malarska	<i>Unio pictorum</i>
skójka zastrzona	<i>Unio tumidus</i>
groszkówkowate - wszystkie gatunki	Spheridae – all species

In addition, some forms of active protection of invertebrates have been introduced in our country.

Species included in recovery programs are indicated in Table 4.

Table 4. Species of invertebrates included in recovery programs in Poland (Witkowski msc)

LNo	Species name	Known wild localities	Place of recovery	Recovery period	Author of data
11.	<i>Margaritifera margaritifera</i>	Species extinct in Poland	Karkonosze N.P. and Lower Silesia	1965.	Dyduch-Falniowska 1992
22.	<i>Parnassius apollo</i> ssp. <i>frankenbergeri</i>	Tatry Mts, Pieniny Mts	Pieniny N.P.	1991-2003	Witkowski et al. 1997
33.	<i>Maculinea alcon</i>	Some localities in Poland, declining	Ojców N.P.	since 1991	Klasa, Woyciechowski 1991
44.	<i>Maculinea telejus</i>	Some localities in Poland, declining	Ojców N.P.	since 1991	Klasa, Woyciechowski 1991
55.	<i>Maculinea nausithous</i>	Some localities in Poland, declining	Ojców N.P.	since 1991	Klasa, Woyciechowski 1991
66.	<i>Minois dryas</i>	One locality near Krakow	Nature reserve 'Kajasówka'	Since 1973	Dąbrowski 1994, 1999
77.	<i>Zygaena carniolica</i>	Species declining in South Poland	Ojców N.P.	Since early 70.	Dąbrowski 1990, 1994

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16. SPAIN / ESPAGNE

Report on the progress towards the conservation of Invertebrates in Spain since 2000.

by Dr. M.A. Ramos. Museo Nacional de Ciencias Naturales (CSIC).

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1. Legal protection of invertebrates in Spain

The Ministry for the Environment (MMA) is responsible for nature conservation in Spain, although, as previously reported, many of its powers have been transferred by law to the 17 Autonomous Regional Governments, plus the 2 Autonomous Cities of Ceuta and Melilla. In relation to the Bern Convention, it is those powers that deal with species conservation and management that are particularly relevant. A National Committee of Fauna and Flora exists, with representatives from all regions, and the decisions of this Committee are legally binding at the national level [e.g. regarding species inclusion and category of protection given in the National Endangered Species List (NESL) (Royal Decree 439/90)].

However, the responsibility of converting these agreements into autonomic legislation lies with the regional authorities. In addition, the creation and implementation of recovery plans for species included in the "threatened with extinction" category, even though mandatory under Spanish law, is left to the regional governments. As a result, conservation measures and protection levels among regions are sometimes dissimilar. This can be very detrimental to the overall conservation of a species (see below *Margaritifera auricularia* as an example) and/or to its genetic variability. Additionally, it may be more difficult to coordinate strategies between regional governments and may lead, for example, to duplication of research projects, and to an inefficient management of resources..

Until 1996, the year in which *Margaritifera auricularia* was included in the National Endangered Species List (Order 20324 of 29 August 1996, under the "threatened with extinction" category), the only protection for invertebrates in Spain was afforded by the international conventions signed by Spain that later became legislation enacted into law. Since then, both a project launched to update the law and the increasing activity of the Scientific Societies dealing with invertebrates have promoted the inclusion of the following invertebrate species:

- Order 17307 of 9 July 1998:

- <i>Acrostira euphorbiae</i>	"threatened with extinction"
- <i>Halophiloscia canariensis</i>	"
- <i>Maioresus randoi</i>	"
- <i>Pimelia granulicollis</i>	"
- <i>Rhopalomesites euphorbiae</i>	"
- <i>Patella candei candei</i>	"
- <i>Palinurus echinatus</i>	"
- <i>Minidopsis polymorpha</i>	"
- <i>Spelonectes ondinae</i>	"
- <i>Theodoxus velascoi</i>	"

- Order 13807 of 9 June 1999:

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

- Order 5826 of 10 March 2000

* <i>Ophiogonophus cecilia</i>	"threatened with extinction"
* <i>Macromia splendens</i>	"
* <i>Lindenia tetraphylla</i>	"

- <i>Polyommatus golgus</i>	“
* <i>Buprestis splendens</i>	"Vulnerable"
* <i>Maculinea nausithous</i>	"
- <i>Chasmodon zonatus</i>	"
- <i>Carabus rufus</i>	"
* <i>Osmia eremita</i>	"sensitive to habitat alteration"
* <i>Cucujus cinnaberinus</i>	“
* <i>Limoniscus violaceus</i>	“
* <i>Oxigaster curtisii</i>	“
* <i>Baetica ustulata</i>	“
* <i>Lucanus cervus</i>	"special interest"
* <i>Rosalina alpina</i>	"
* <i>Apteromantis aptera</i>	"
* <i>Gomphus graslinii</i>	"
* <i>Coenonympha oedippus</i>	"
* <i>Eriogaster catax</i>	"
* <i>Graellsia isabellae</i>	"
* <i>Coenagrion mercuriale</i>	"
- <i>Doryctes forficatus</i>	"
- Order 21476 (MAM/2734/2002) of 21 October 2002	
- <i>Candelacypris aragonica</i>	"sensitive to habitat alteration"
* = Bern Convention Invertebrates	

Margaritifera margaritifera, whose approval for inclusion as "Vulnerable" by the National Commission of Flora and Fauna was announced in the 2000 Spanish report to the Bern Convention (T-PSV 2000 26) has, in the end, not been included.

The Spanish Malacological Society has recently published a review on the conservation status of 151 mollusc species with proposals to include them under the different categories of the National Endangered Species List.

Austropotamobius pallipes is the only invertebrate species in Spain for which regional governments (La Rioja and Navarra) have approved recovery plans. This species has been recently included in the National List as vulnerable. At the regional level some governments are publishing protection lists or "red" lists, although most of them do not include invertebrate species.

2. Bern Convention and Habitats Directive Invertebrates

With respect to the invertebrate species included in Directive 92/43/EEC (Habitats Directive), and the Bern Convention, the Dirección General de Conservación de la Naturaleza (Ministry for the Environment) initiated two research projects at the end of 1995, one with the collaboration of the Museo Nacional de Ciencias Naturales (hereafter MNCN) of the Spanish Research Council (CSIC) and the other with the Spanish Entomological Society. The objectives of these projects were: 1) to review and map species distribution areas with special emphasis on species from Annex II of the Habitats Directive, 2) to review population status, 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 of Annex II and V species, of the Habitats Directive.

It also emphasised the need for more surveys on *Margaritifera auricularia* and *Maculinea nausithous* to fulfil the recommendations of the Bern Convention Standing Committee [Nos. 22 (1991), 50 (1996) and 81 (2000)]...

As a result of these projects, two books were published in 2001 by the Dirección General de Protección de la Naturaleza (Ministry for the Environment), which included data-sheets and distribution maps for each of the species listed in both projects. These are:

- Galante, E. & Verdú, J.R. 2000. (eds.) *Los Artrópodos de la "Directiva Habitat" en España*. Organismo Autónomo de Parques Nacionales (Ministerio de Medio Ambiente), serie técnica. Madrid. 172 pp, 70 lám.
- Ramos, M. A., Bragado, D. & Fernández, J. 2001. (eds.) *Los invertebrados no insectos de la "Directiva Habitat" en España*. Organismo Autónomo de Parques Nacionales (Ministerio de Medio Ambiente), serie técnica. Madrid. 186 pp, 18 lám.

The most relevant advances in the knowledge of the Bern Convention Invertebrates include:

- ***Margaritifera auricularia*:**

Several projects at both national and regional levels have significantly increased our knowledge of the biology and distribution of this species²

Distribution:

- Canal Imperial de Aragón: A population, previously reported (T-PSV1996-33 and 1998-18; Araujo & Ramos, 1998) containing more than 2,000 adult specimens (Ramos & Araujo, 1996a, 1996b, 1998a). Most specimens have been labelled to enable annual monitoring of the population.
- Canal de Tauste (Aragón): To date, approximately 50 specimens of this population have been observed.
- Ebro River main course: Two populations have been found: one in Aragón (mid course of the river)-and another in Catalonia (lowest course of the river). Around 40 specimens in Aragón (Araujo pers. com.) and 300 in Catalonia (Generalitat pers. com.) have been observed to date.

Fossil (Araujo, R & Moreno, R. 1999), historical (Araujo & Ramos, 2000) and current (Araujo, R. & Ramos, M. A. 2000a, 2001) distribution of the species has been described.

Biology

- It can be said that the biology of this species is relatively well known, through studies carried out *in situ* in the Canal Imperial and in aquaria. There is also sufficient knowledge of the specie's reproductive strategy, and larval development -to formulate an action plan for its recovery: 1) Glochidium morphology, its encystment in the fish gills, and the metamorphosis process of its larvae have been described (Araujo & Ramos, 1998b, 2000b; Araujo, Cámara & Ramos, 2002), 2) Life cycle, reproductive period in the wild and sex distribution have also been studied (Araujo & Ramos, 1999, Araujo, Bragado & Ramos 2000; Grande, Araujo & Ramos 2001.), 3) Three fish species have shown to support glochidium encystment, and the metamorphosis and release of a large number of juveniles. Two fish species were sturgeons. It is worth noting that the native blenny fish, that also inhabits the Ebro river and is also threatened, released the highest amount of juveniles (Araujo, Bragado & Ramos 2001.). All these fish species could be useful in developing a recovery plan for *M. auricularia*, 4) Growing juveniles in captivity was observed up to 30 days (Araujo, Quirós & Ramos 2003.). (See Araujo & Ramos, 2001a for a summary)
- Molecular studies (DNA and allozymes) have demonstrated that the species still maintain enough genetic variability to allow species recovery. They have also demonstrated that both the *Margaritifera* spp. that inhabit the Iberian Peninsula (*Margaritifera auricularia* and *M. margaritifera*) are rather distant genetically between them (Machordom, Araujo, Erpenbeck & Ramos, 2003)
- **Ecological factors are being investigated to characterise the habitat of adults and juveniles.**

² Projects: 1) The previously mentioned project (1995-96), 2) a project between the Dirección General de Conservación de la Naturaleza (MAM)) and the CSIC (Museo Nacional de Ciencias Naturales –MNCN- plus Instituto Mediterráneo de Estudios Avanzados –IMEDEA-) (1999-2001), 3) a project between the Aragón Regional Government and CSIC (MNCN) (2001-2003) and 4) a Life project to Catalanian populations.

Conservation status and threats

- A summary of the results to create a conservation strategy for this species include: 1) all populations seem to be fragmented, except the one in the Canal Imperial de Aragón, 2) all the observed specimens are very large, the smallest specimens are around 11 cm long, which raises questions concerning the current reproductive success of the species in natural conditions, 3) the aquarium specimens released all the larval stages, suggesting a high reproductive potential, 4) in the presence of suitable fish species, the glochidium parasitizes fish gills for metamorphosis and 5) juvenile cultivation and harvesting is feasible although more experimental research in the wild focused on obtaining greater survival rate of juveniles is needed.
- The Regional Government of Aragón is currently drafting a Recovery Plan for the species. In addition Aragón will submit a Life project to the EC for the 2004 round.
- In February 2003, approximately 100 specimens of the Canal Imperial de Aragón population died due to a water shortage caused by engineering works in the Canal. The NGO ANSAR reported it to the Council of Europe Secretariat who immediately asked the Ministry for the Environment to take the appropriate administrative measures and enact the necessary legislation to ensure the special protection of this species. The absence of an appropriate recovery plan for *M. auricularia*, which violates the provisions set down by Spanish Conservation Law, was the indirect cause of this sad event. Poorly coordinated work efforts among various administrations lead to the complete emptying of the Canal, which in addition to overnight frost caused the death of these specimens. The recovery plan should specifically include measures to avoid damaging populations of *M. auricularia* in Aragon. A similar recovery plan is needed for Catalanian populations.
- With the recent approval of the Nacional Hydrologic Plan, it is foreseen that the two Canals in Aragón (Canal Imperial and Canal de Tauste) where *M. auricularia* lives will be covered with an artificial, man-made, substrate. If this project is carried out it will extinguish both populations. These canals presently hold the largest population of the species known to date. In addition, because water flow and levels can be regulated, these canals allow easy monitoring of populations and facilitate experimental work on species reproductive strategy in natural conditions. These types of experimental studies are an essential part of a successful recovery plan for this species.
- The arrival of the “zebra mussel” (*Dreissena polymorpha*) to the Ebro river, downstream of Mequinensa dam (Ribarroja reservoir) and the fast invasive development of its populations, constitutes a new and serious threaten for *M. auricularia* populations. Several measures have been undertaken in Aragón and Catalonia to control the species dispersal, including research and public awareness. The Confederación Hidrográfica del Ebro has enacted legislation providing compulsory measures for the cleaning of all the boats that navigate across the reservoirs, in order to prevent a further artificial expansion of the species.

- ***Margaritifera margaritifera***

Recent surveys have expanded the species' distribution area to not only include Galicia (Bauer, 1986) but also Asturias, Zamora (Araujo & Ramos, 2001b) and the Águeda river basin (Velasco, Araujo, Bueno & Laguna, 2002), which is the southernmost known population of the species in Europe. The reproduction has been studied in Spanish populations (Grande, Araujo & Ramos, 2001).

A molecular analyses (allozymes and DNA) (Machordom, Erpenbergh, Araujo & Ramos, 2003) has been carried out including some Spanish populations, Irish³ specimens from the Nore and Dereen rivers and specimens from the Kola Peninsula, as well as sequences obtained from the GenBank for North American specimens. The genetic difference between *M. margaritifera* and *M. auricularia* was estimated around 10% for mitochondrial divergence and 44% for the nuclear one (studied through allozymes), differences in the same order or even superior than those found among other naids species. Among the *M. margaritifera* populations almost no genetic structure was found (the nuclear genetic distances were under 4% -Dnei< 0.04-, even if a null allele was found in homozigosis in the putative

³ Irish specimens were kindly provided for this study by M. Costello, M. Speight and F. Marnell on behalf of the Irish Natural Heritage. Kola peninsula specimens were collected with the help of V. Ziuganov. Collection of Spanish specimens was authorised by Aragón and Galicia Regions.

M. margaritifera durrovensis population analysed), and two very close cluster were found, based on mitochondrial sequences. These two clusters were defined by only two substitutions among the 1156 base pairs analysed, but these two substitutions were fixed with an apparently biogeographic distribution that could indicate a very recent divergence between two groups of populations (one including the Nore River and southernmost populations and the other the Dereen River a North Northwestern populations).

This species is declining in Spain as it is in many other countries around Europe due to the decrease in salmonid rivers that has occurred during this century. More in-depth surveys are needed in Spain to determine the real distribution and population status of the species. Nevertheless based on the current knowledge the Spanish Malacological Society has proposed to include *M. margaritifera* in the "threatened with extinction" category of the NESL.. The EU has approved a LiFE project presented by Castilla y León for the conservation of the species in the Sanabria Lake and nearby rivers, including the drafting of an action plan.

• **Unionidae species**

U. crassus was erroneously cited in the Duero river on the basis of a unique specimen (Araujo & Ramos, 2001c). Further studies including recently collected specimens suggest that these specimens probably belong to *U. pictorum* and that *U. crassus* seems to be only present in the Iberian part of some Atlantic rivers (Araujo, pers. com.).

A very preliminary study of some Spanish and Portuguese populations of unionids suggests that the taxonomic status of most of them is unclear and probably more complex than it was expected.

Unionids are as a whole a very threaten group worldwide. Studies are urgently needed to clarify the taxonomic and conservation status of the Iberian populations. Without a well founded taxonomical study, including molecular analyses, it will not possible to apply the adequate conservation measures. Until this information is available, the Spanish Malacological Society has recommended the inclusion in the NESL of *U. crassus*, *U. pictorum*, *Potomida littoralis*, *Anodonta cygnea* and *Anodonta anatina*.

Alien species

A major concern for freshwater ecosystems in Spain derives from the recent introduction of the invasive bivalve *Dreissena polymorpha* (Zebra mussel) in the Ebro river. The species was detected in the year 2000 and seems to be confined to the Ribarroja reservoir. The General Directorate for Nature Conservation carried out an early assessment of the situation and a proposal for action (MMA, 2001). A task force has been established with the participation of the Ministry of the Environment, Cataluña, Aragón and ENDESA (The company which runs the nuclear facility of Ascó). Research and monitoring has been undertaken as well as education and awareness. The most important practical measure has been the setting up of cleaning points for all the boats that go in or out of the reservoir. The emptying of the Ribarroja Reservoir to provoke a massive mortality of *Dreissena* is being considered although it has raised a hard discussion.

Other molluscs species

In the last years a vast amount of new genus and species of prosobranch hydrobiids are been discovered and described, some of them close to extinction. This rich fauna and the highly diverse habitats in which they live are seriously threatened by human activities. Urgent measures should be taken, especially at national and regional levels to preserve this biodiversity.

Insect species

In relation to insect species it is mandatory for each Autonomous Community to elaborate and to implement an Action Plan for the protection of the species listed in the "threatened with extinction" category of the NESL. No Action Plan has been approved to date

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17. SWEDEN / SUEDE

Report on progress in invertebrate conservation in Sweden 2000-2003

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In the year 2000, Sweden published its current Red List of Swedish species which included 2,337 invertebrate species, of which 1,023 were classified as threatened. The same year the species list of the Ordinance of Protection of Species was updated to include in total 25 protected invertebrate species, with a particular emphasis on the species listed on the Bern Convention Appendix 2-3.

In 2002, the Swedish Species Information Centre (SSIC) was commissioned by the Swedish Government to lead and conduct the Swedish Taxonomy Initiative (http://www.artdata.slu.se/Svenska_artprojektet_Eng.htm). The ambitious goal is to, within a 20 year period, chart and taxonomically describe every multicellular species, including some 34,000 invertebrate species. Furthermore, the majority of these species is to be portrayed in an estimated 130 volume Swedish Flora and Fauna Encyclopaedia. To that end, The Swedish Government has for the first three years of the project allocated ca. 4.5 millions € to the SSIC and a similar amount to the Natural History Museums. In addition, ca. 40 mill. € was allocated to the enforcement of general research on biodiversity for the same period of time.

Individual monitoring methodology for all Bern Convention invertebrate species included in Natura 2000 are currently being developed and the monitoring programme will be implemented with the start from 2004.

Action plans in place for invertebrates covered by the Bern Convention appendices include *Lopina achine*, *Osmoderma eremita*, *Margaritifera margaritifera* and *Astacus astacus*, and action plans for *Euphydrias maturna*, *Euphydrias aurania* and *Mellicta britomartis* are in the process to be implemented. In 2002 and 2003 the SSIC was commissioned by the Swedish Environmental Protection Agency (SEPA) to conduct a general analysis which Red List species are in particular need of species specific action plans. The resulting list includes 192 invertebrate species. SEPA has within the frames of the Swedish environmental objectives started the work to implement these action plans with the goal that all identified species will have functioning action plans in place at latest 2010.

18. SWITZERLAND / SUISSE

Rapport sur les progrès de la conservation des Invertébrés en Suisse depuis 2000

Depuis 1967, la politique fédérale en matière de Protection de la nature et du paysage a privilégié la protection des habitats plutôt que celle des espèces. Divers inventaires nationaux ont ainsi été lancés et sont pour la plupart aujourd'hui terminés.

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 phase terminale)

D'autre part afin d'apporter une contribution suisse au réseau écologique paneuropéen (REP) de la Stratégie paneuropéenne de la diversité biologique et paysagère et d'également répondre aux objectifs généraux de la Conception paysage suisse adoptée en 1997 par l'exécutif fédéral, la Confédération a lancé le projet de Réseau écologique national (REN) en 1999. Le but de ce projet, qui est actuellement en phase terminale, était d'encourager les cantons à intégrer la dynamique d'interconnexion des habitats des espèces de la flore et de la faune sauvage ainsi que la notion de réseau écologique dans leurs activités régionales de sauvegarde de la biodiversité et du paysage.

Comme les résultats de ces inventaires et projets ont une incidence sur les politiques de protection de la nature des différents cantons, ces derniers ont également 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, ne s'est pas encore généralisée.

Niveau légal

Protection des espèces

En Suisse, au niveau fédéral, la protection des espèces est prévue par trois lois et leurs ordonnances respectives d'application : les lois sur la chasse (une partie des mammifères et des oiseaux), la pêche (poissons et écrevisses) et la protection de la nature et du paysage (flore, reste de la faune vertébrée et faune invertébrée). La Loi fédérale sur la protection de la nature et du paysage (LPN, du 1^{er} juillet 1966) ainsi que les ordonnances qui lui sont associées viennent d'être révisées, ce qui a aussi impliqué la révision de la liste des espèces (vertébrées et invertébrées) strictement protégées au niveau fédéral. Sa nouvelle mouture est entrée en vigueur en août 2000. Toutes les espèces citées dans l'Annexe II de la Convention de Berne dont la présence en Suisse est prouvée y figurent. Cela sous-entend que la capture et/ou le trafic d'individus appartenant à ces espèces sont strictement interdits sur tout le territoire suisse, des dérogations pouvant toutefois être demandées dans le cadre d'études scientifiques. Il est à noter qu'un ouvrage reprenant l'ensemble des espèces animales concernées par cette loi a été publié en 2002 par Pro Natura en version allemande [Geschützte Tiere der Schweiz. E. Wermeille, W. Geiger & U. Tester. 2001. Ott Verlag Thun (ISBN 3-7225-6512-X)] et française [Les animaux protégés de Suisse. Des Invertébrés aux Mammifères. idem. Delachaux & Niestlé (ISBN 2-603-01185-5)].

Promotion de la biodiversité dans les agroécosystèmes et en forêt

L'agriculture et la sylviculture sont deux activités qui ont une profonde influence sur l'évolution de la flore et de la faune sauvages. A ce titre toute modification de la politique fédérale en la matière est susceptible d'avoir une incidence (positive ou négative) sur les populations des espèces indigènes.

En ce qui concerne l'agriculture, l'entrée en vigueur de l'ordonnance sur la compensation écologique (OCEco, 1993) et celle plus récente sur la promotion régionale de la qualité et de la mise en réseau des surfaces de compensation écologique dans l'agriculture (OQE, 2001) expriment clairement que le renforcement de la biodiversité dans le paysage agricole national est devenu un objectif important de cette politique. Après quelques années de pratique, ce changement de cap porte ses premiers fruits, du moins dans certaines régions, avec le renforcement des populations de nombreuses espèces parmi lesquelles ne se comptent pas que des banalités (*Carcharodus alceae*, *Lycaena dispar*, *Maculinea nausithous** par ex.).

En ce qui concerne la sylviculture, le nouveau projet de la loi fédérale, actuellement en consultation, prend également beaucoup mieux en compte le facteur biodiversité dans les mesures de gestion/exploitation proposées : la promotion des réserves forestières, celle de la diversification des essences indigènes « en station », celle du maintien d'un pourcentage d'arbres âgés ou sénescents ainsi que de bois mort sur pied ou au sol dans une part croissante du domaine forestier sont en effet susceptibles à terme d'améliorer le statut de nombreuses espèces.

Niveau pratique

Actualisation des Listes rouges nationales

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) lancé par le CSCF afin de tester si la stratégie définie dans ce document était applicable sur le terrain.

Le projet Odonata 2000 s'est parfaitement déroulé et s'est concrétisé en 2002 par la publication d'une nouvelle version de la Liste rouge des Odonates de Suisse et par la rédaction de fiches pratiques de protection pour les plus menacées d'entre elles. Ces fiches sont à la disposition sur le site internet du CSCF (cf. www.cscf.ch).

La stratégie nationale de révision du statut liste rouge des espèces ne s'arrêtant pas aux Odonates d'autres groupes sont actuellement en travail :

- le projet de révision de la LR Orthoptères est en phase opérationnelle depuis 2002 et devrait se terminer en 2005. Il se déroule sur le même modèle que celui réalisé pour les Odonates et prévoit ainsi le rééchantillonnage de près de 750 km² déjà inventoriés par le passé et l'échantillonnage prospectif de plus de 500 autres ;
- un projet de révision / réalisation de LR des organismes aquatiques (éphémères, plécoptères, trichoptères, mollusques aquatiques) est également entré en phase opérationnelle en 2002 et devrait se terminer en 2006 ;
- un projet de réalisation d'une LR pour les Coléoptères saproxylophages (Lucanidae, Cerambycidae, Buprestidae, Scarabaeidae p.p.) est en phase préparatoire depuis 2002 et pourrait entrer en phase opérationnelle en fonction des résultats obtenus et des moyens à disposition.

Il est en outre planifié de lancer un projet de révision de la LR Rhopalocères dès que le projet Orthoptères sera terminé soit en 2005 ou en 2006.

En définitive, il est donc envisageable que d'ici 2010 le statut de la plupart des espèces d'invertébrés citées dans les annexes de la Convention de Berne et présentes en Suisse aura été revu ou déterminé et que des fiches pratiques de protection seront disponibles pour les plus menacées d'entre elles.

Programme national de conservation

En 1999 l'OFEFP a accepté de financer la phase préparatoire d'un « Programme national de conservation des espèces prioritaires de Papillons diurnes (Rhopalocera et Hesperidae) ». Ce soutien a permis aux initiateurs du projet de définir une liste d'espèces prioritaires pour lesquelles des programmes d'action devaient être rapidement mis sur pied.

La phase opérationnelle de ce programme a débuté en 2000 et devrait se terminer fin 2003. Elle a été réalisée avec l'accord et le soutien financier de la plupart des cantons suisses abritant l'une au moins des espèces suivantes : *Chazara briseis*, *Coenonympha tullia*, *Coenonympha oedippus**, *Iolana iolas*, *Lopinga achine**, *Lycaeides argyrognomon*, *Lycaena dispar**, *Maculinea alcon*, *M. teleius**, *Mellicta britomartis*, *M. deione*, *Pyrgus cirsii*, *P. onopordi*.

Réseau Emerald

Suite aux Résolutions et Recommandations prises dès 1989, le Comité Permanent des Parties Contractantes à la Convention de Berne lança en décembre 1998 le projet de "Réseau Emerald" et recommanda aux gouvernements de s'engager dans une procédure de choix de "zones d'intérêt spécial pour la conservation" (ZISC). En 2001 le CSCF était mandaté tant par le WWF suisse que par l'OFEFP afin de développer une stratégie devant permettre de les définir sur la base des données disponibles sur la flore et la faune indigène, oiseaux exceptés. Cette initiative avait aussi pour but de compléter/affiner le vaste réseau de 31 régions d'importance particulière pour l'avifaune (IBA) proposé en 2000 par l'Association suisse pour la protection des oiseaux et la Station ornithologique suisse. Une double approche a été adoptée pour répondre aux exigences du mandat : une approche « **habitats** », basée sur la liste des habitats prioritaires, selon la Résolution 4, 1996, du Comité permanent de la Convention de Berne et une approche « **espèces élargie** » comprenant non seulement les espèces prioritaires citées dans la Résolution 6, 1998, du Comité permanent de la Convention de Berne mais également un lot d'espèces particulièrement menacées proposées par les spécialistes impliqués. Le rapport préliminaire de cette étude vient d'être publié par l'OFEFP (Cahier de l'Environnement, No.347 (2003)). Une procédure, qui s'annonce assez longue, est aujourd'hui en cours pour choisir les ZISC définitives parmi les quelques 500 propositions faites, pour en définir les limites géographiques précises et pour parvenir à en entériner le statut.

Note complémentaire

L'expérience démontre que la présence d'espèces citées dans les annexes II et III de la Convention de Berne dans un site était et est encore un argument puissant pour appuyer la sauvegarde de son intégrité (mise sous protection et/ou prise de mesure de gestion/exploitation favorables). Un autre aspect qui justifie pleinement les efforts déployés pour les réaliser est qu'elles génèrent de nombreux projets, académiques ou non, visant à augmenter le niveau de connaissances sur la chorologie voire l'écologie des espèces concernées ou assurer la protection de leurs populations. L'exemple suivant est révélateur :

Un projet de recherche focalisé sur *Osmoderma eremita** vient de se terminer au laboratoire pour la protection de la nature et du paysage de l'Ecole polytechnique fédérale de Zürich. En plus d'une synthèse de l'ensemble des connaissances chorologiques disponibles pour l'espèce en Suisse, le mémoire qui en a résulté donne de précieux renseignements sur la manière de rechercher (et trouver) cette espèce extrêmement discrète et sur les mesures à prendre pour assurer le maintien des très rares stations connues encore occupées (1 seule au nord des Alpes par ex.). Ce travail, en mettant le doigt sur l'extrême précarité des populations suisses de l'espèce, a encouragé le CSCF à intégrer les Scarabaeidae xylobiontes dans son programme national sur les coléoptères saproxylophages et à réaliser un document vulgarisé (fiche de protection) axé sur les mesures à envisager pour assurer la préservation de la faune emblématique des vieux arbres tels *Cerambyx cerdo**, *C. miles*, *Scintillatrix rutilans* ou *Lucanus cervus** par ex.

19. TURKEY / TURQUIE

Report of Turkey for Conservation of Invertebrates

Invertebrates play a big role in the entire animal kingdom. They take place in food webs in terrestrial, freshwater and marine ecosystems. Sponges, cnidarians, worms, molluscs, arthropods and echinoderms are all invertebrates which play a vital role to balance the ecosystems.

Invertebrate fauna of Turkey is not much known due to lack of research and legislation. Expert analysis is needed on this matter. With respect to this issue, Ministry of Environment and Forestry co-operate with TUBITAK (Turkey Science and Technology Research Foundation) and universities about developing projects on protecting invertebrates.

Protection of biodiversity and habitats naturally leads to the protection of invertebrates. Taxonomic information about invertebrates in Turkey is improper. It is urgently needed that collecting data and preparing a database on invertebrates of Turkey.

Turkey ratified Ramsar, Bern and CITES Conventions. Invertebrates living in our protected areas (National Parks, Natural Reserves, Ramsar sites etc.) which are registered via these conventions should be overprotected.

In framework of GEJ-II "Biodiversity protection and Natural Resources Management Project" legislative framework is being prepared. And, public awareness and educational programs, seminars, are being prepared. There are 4 pilot areas (Camili, Sultansazluđı, İğneliada and Köprölü Kanyon) where these activities are all carried out, and now they will be implemented on the national level.

Nowadays, Ministry of Agriculture is working on minimising pesticide usage by supporting organic agriculture.

Also, a law on protection of animals is going to be launched in a very little time according to harmonising Turkey to EU acquis. Moreover, some invertebrate species can be protected in Turkey with Law of Fishery and Terrestrial Hunting Law.

Emerald Network Project, which was done in 2000 with financial assistance of the Council of Europe, will be taken into attention and re-evaluated about all invertebrate species considered.

20. UNITED KINGDOM / ROYAUME-UNI

UK Report

BERN Species

Eight invertebrate species listed in the Bern Appendices occur in the UK, one of which *Helix pomatia* is an ancient introduction and has, until now, had no specific conservation action targeted at it. Recent concerns about commercial collecting for human consumption have led to the proposal that *H. pomatia* be protected by legislation.

<i>Lucanus cervus</i>	www.jncc.gov.uk/protectedsites/sacselection/species.asp?FeatureIntCode=S1083
<i>Margaritifera margaritifera</i>	www.jncc.gov.uk/protectedsites/sacselection/species.asp?FeatureIntCode=S1029
<i>Austropotamobius pallipes</i>	www.jncc.gov.uk/protectedsites/sacselection/species.asp?FeatureIntCode=S1092
<i>Hirudo medicinalis</i>	www.ukbap.org.uk/asp/UKPlans.asp?UKListID=365
<i>Coenagrion mercuriale</i>	www.jncc.gov.uk/protectedsites/sacselection/species.asp?FeatureIntCode=S1044
<i>Eurodryas aurinia</i>	www.jncc.gov.uk/protectedsites/sacselection/species.asp?FeatureIntCode=S1065
<i>Lycaena dispar</i>	www.ukbap.org.uk/asp/UKPlans.asp?UKListID=429#5.7

Fourth Quinquennial Review of Schedules 5 & 8 of the Wildlife and Countryside Act, 1981

www.jncc.gov.uk/species/4qreview/default.htm

Every five years JNCC advises Government on which animals and plants should be legally protected by listing on Schedule 5 (animals) and Schedule 8 (plants) of the Wildlife and Countryside Act, 1981. In September 2002 JNCC recommended that three invertebrates should be added to Schedule 5:

Two burnet moths: *Zygaena lonicerae* subspecies *jocelynae* and *Zygaena loti* subspecies *scotica* should be given full protection which will prevent collection and sale of adults and early stages;

The Roman snail *Helix pomatia* should be given partial protection to prevent collection and sale; captive bred stocks would need sale licensing

UK Biodiversity Action Plan

www.ukbap.org.uk

Biodiversity: the UK Action Plan published in 1994 established the fundamental principles for future biodiversity conservation in the UK. These were:

Partnership - action involving the mutual co-operation of statutory, voluntary, academic and business sectors at both national and local levels.

Targets - the establishment of measurable outcomes that address the needs of species and habitat types of most concern to biodiversity conservation.

Policy Integration - recognise that shifts in policy are needed to reverse the decline in the UK biodiversity resource and to support sustainable development in all sectors of society.

Information - while sound science and knowledge should underpin decisions, recognise that new approaches are required to fill information gaps and understanding and to manage the information already available more efficiently.

Public Awareness- public understanding and action is needed to support the changes needed to maintain biodiversity.

A key element of the work under this programme has been the implementation of species and habitat action plans.

Species Action Plans have been prepared for 288 invertebrate species and 28 species statements prepared for those species about which little is currently known. A review of progress against targets was undertaken in 2002 (www.ukbap.org.uk/2002OnlineReport/2002Report.htm).

Translocation Policy Reviews

Three policy documents reviewing different aspects of biological translocations were published in 2003.

A Review of Non-native Species Policy prepared by the Department of the Environment, Food and Rural Affairs (DEFRA).

www.defra.gov.uk/wildlife-countryside/resprog/findings/non-native/execsummary.pdf

A Policy for Conservation Translocations of Species in Britain and *A Habitats Translocation Policy for Britain* prepared by the Joint Nature Conservation Committee.
www.jncc.gov.uk/species/translocations/species.htm &
www.jncc.gov.uk/species/translocations/habitat.htm

National Biodiversity Network (NBN)

www.nbn.org.uk

The National Biodiversity Network (NBN) continues to develop its key areas of activity, standard setting, linking and using data and information.

Four elements of the NBN are outlined here:

NBN Gateway

www.searchnbn.net

The NBN Gateway is a web site that shows how multiple sources of biodiversity information can be accessed and used over the Internet. The site now contains over 10 million species records, as well as various sources of habitat records and the boundaries of the protected sites in the UK. Currently, the main areas of functionality are:

- ten kilometre dot mapping;
- interactive mapping;
- show species recorded within protected sites;
- search across selected biodiversity web sites for relevant information.

Recorder 2002: a biological recording software package

www.nbn.org.uk/information/info.asp?Level1ID=1&Level2ID=1

Recorder 2002 is designed to be a flexible tool. It offers a complete system from data capture through to reports, along with excellent mapping facilities. It is also designed to work in partnership with a variety of other packages from spreadsheets for data entry, to GIS packages for spatial analysis. It is compatible with a number of the data capture tools used by the recording community and can therefore collate records coming from many different sources

Species Status Assessment Programme

www.jncc.gov.uk/species/Species_Status_Assessment/Default.htm

This is an umbrella programme designed to house all taxon conservation status assessment work – it provides a mechanism to appraise, approve and publish conservation status. The programme works through a number of taxon specific expert groups, membership of which is drawn from across the invertebrate conservation community. The programme:

- assigns Red List status to species based on the 2001 IUCN criteria
- determines species of conservation concern within the UK
- keeps track of international conservation status
- assigns native/non native status

The Biological Records Centre

www.brc.ac.uk

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). Seven invertebrate distribution atlases have been published in the last two years:

- Aculeate Hymenoptera (parts 3 & 4)
- Provisional atlas of British hoverflies (Diptera, Syrphidae)
- British spiders (Arachnida, Araneae), Volumes 1 & 2
- Provisional atlas of the British aquatic bugs (Hemiptera, Heteroptera)
- Provisional atlas of the Cantharoidea and Buprestoidea (Coleoptera) of Britain and Ireland

Butterfly Monitoring

bms.ceh.ac.uk

The Butterfly Monitoring Scheme (BMS) is co-funded by CEH and JNCC. It comprises over 120 sites where weekly transect counts of adult butterflies are made for 26 weeks per year. It was established in 1976 and has continued to develop in collaboration with NGO's and volunteers throughout the UK. The scheme aims to:

- provide information at regional and national levels on changes in the abundance of individual species of butterfly and to detect trends which may indicate changes in their status;
- provide a reliable long-term reference against which population changes of species studied on other sites or in other countries can be compared;
- monitor changes at individual sites and, by comparison with results elsewhere, to assess the impact of local factors such as habitat change caused by management;
- provide information on aspects of population ecology and phenology of individual species, both in relation to the effect of environmental changes (including climate change), and as a contribution to basic knowledge.

The BMS is keen to collaborate with schemes in other European countries to further develop butterfly monitoring at a European scale.

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