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CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

Group of Experts on
Protected Areas and Ecological Networks

3rd meeting
19 – 20 September 2011
Council of Europe, Strasbourg,
Room 6

Report

Secretariat Memorandum
prepared by the Directorate of Democratic Governance,
Culture and Diversity

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On 19 and 20 September 2011, the Group of Experts on Protected Areas and Ecological Networks held its 2nd meeting in Strasbourg.

Following its conclusions, the Standing Committee is invited to:

- Take note of the present report;
- To examine and, if appropriate, officially nominate as candidate Emerald sites, the sites from the Draft List of proposed Emerald Candidate Sites (proposed ASCIs);
- To examine and, if appropriate, adopt the following draft recommendations:
  - Draft Recommendation on the status of candidate Emerald sites and guidelines on the criteria for their adoption;
  - Draft Recommendation on the European 2020 targets on Protected Areas;
- To examine and, if appropriate, adopt the revised Annex I of Resolution 6 (1998) of the Bern Convention;
- To express its appreciation to the European Environment Agency and the European Topic Centre for Biological Diversity for their continuous support and cooperation in the setting-up of the Emerald Network;
- To encourage the EEA and the ETC/BD to consider the inclusion of biodiversity as a priority topic for its work in the EU neighbourhood area, in the light of the progress made within the Emerald Network setting-up in Central and Eastern Europe and the South Caucasus.

1. Opening of the meeting

Mrs. Maka Tsereteli, Chairperson of the Group of Experts, opened the meeting and welcomed the participants (listed in Appendix I). She wished them a very successful and fruitful meeting.

2. Adoption of the agenda

Document for adoption
T-PVS/PA (2011) 01 – Draft Agenda

The agenda was adopted by the Group of Experts. Mr Eladio Fernàndez Galiano, Head of the Biological Diversity Unit at the Council of Europe introduced the context for the meeting, reminding the importance of the Aichi targets for the future work of the Convention, which adopted at the 10th CoP of the CBD in Japan. He further presented the reform process currently taking place at the Council of Europe and its impact on the Bern Convention activities and Secretariat.

3. Introduction by the Secretariat and decisions of the 30th meeting of the Standing Committee of the Bern Convention – Protection of natural habitats (Ms Iva Obretenova)

Documents for information
T-PVS/PA (2010) 15 - Extract from the decisions of the 30th Standing Committee meeting
T-PVS/PA (2011) 7 – Information document on the Emerald Network
T-PVS/PA (2010) 11 - Report of the 2nd meeting of the Group of Experts on Protected Areas and Ecological Networks, September 2010, Strasbourg

The Secretariat briefly presented the decisions of the 29th meeting of the Standing Committee of the Bern Convention concerning the work of this Group of Experts. The Committee acknowledged the results achieved on the setting-up of the Emerald Network in Central and Eastern Europe, Switzerland, Norway and the West Balkans. The Emerald Network Calendar 2011-2020 has been endorsed, as well as the Criteria for assessing the national lists of proposed ASCIs at biogeographical level and procedure for examining and approving Emerald candidate sites. On the demand of the Group of Experts, The Committee also adopted the new Information form for habitats and species to be added to the Bern Convention Resolutions No 4 (1996) and No 6 (1998), as well as agreed with the decision of the Group to translate Annex I of Resolution No 4 (1996) on threatened habitats requiring special conservation measures into the EUNIS habitats classification.

4. Update on ongoing projects on Phase I of the Emerald Network setting-up

Documents for information
T-PVS/PA (2011) 5 – State of Progress of the EU/CoE Joint Programme on the setting-up of the Emerald Network in 7 ENPI countries
T-PVS/PA (2011) 3 – Extract from the Emerald Network Joint Programme follow-up proposal

2011 is the final implementation year of the Joint Programme for 7 ENPI countries (Armenia, Azerbaijan, Belarus, Georgia, Moldova, Russian Federation and Ukraine) and work at national level is speeding up in order to ensure the successful achievement of all individual countries' project objectives. Mr. Marc Roekaerts, noted that behind the quantitative data on number of proposed sites and country coverage, all countries are currently debating and considering how to go beyond their nationally designated protected areas in order to include other hotspots for threatened species and habitats into their proposals for Emerald sites. The final data delivery from the 7 countries is expected in November 2011.

The document T-PVS/PA (2011) 3 is a summary of the full JP follow-up project proposal, which the Secretariat presented to the European Commission DG DevCo (financing the current proposal) in May 2011, during a negotiation meeting. The future work in the 7 ENPI countries will focus on Phase II of the Emerald constitution process. The need for keeping the momentum for the Network in the countries as well as keeping motivated the human capacity gained during the first project has been stressed. The regional approach used in the current JP has shown its merits and successes and the future work plans are also based on such an approach. More information on the current negotiations is expected during the first half of 2012.

When it comes to the involvement of the ETC/BD in the assessment of the sufficiency of the site proposals from the 7 ENPI countries, the Secretariat informed the Group of Experts that biodiversity is still not a priority in EEA budget targeting these countries. Therefore, the involvement of ETC/BD is still to be decided for the years to come. Hence, the support from national delegates has been requested, in particular from countries members of the EU and EEA, in lobbying in favour of the inclusion of biodiversity in the agency priorities for the Central and Eastern Europe region, from 2013 onwards.

Several national delegations informed the group on the current status of the setting-up of the Emerald Network in their countries.

- The delegate from Ukraine informed that its country is currently trying to identify the possibility to go beyond their national protected areas. However, he underlined that they do not have nor the financial resources or the legislative opportunities to identify sites outside the nationally designated areas.
- The delegate from Norway informed that from an initial list of about 1200 protected areas, only 300 are already evaluated for joining the Emerald network. The first evaluation of sites is concentrating on sites with a formal designation as PAs, while they consider proposing sites with other types of protection regime in the future. The technical Seminar on the setting-up of Emerald in Norway was successful and a similar seminar could be organised next year in order to help the national team to achieve their objective of submitting their database by end 2012.
- The delegate from Moldova underlined that the national team is doing an extensive field work in 2011, in order to complete the ecological data on species and habitats in the country in general and within the proposed Emerald sites in particular. The country is also proposing 70 species to be included as new to the BC Resolution no 6 (1998). A visibility brochure on the Emerald Network is currently under preparation in Moldova and should be available by end November.
- The delegate from Switzerland informed the Group that taking into account that the country has finalised their first site proposals in 2009, they would need to see a quick progress in the evaluation and adoption of their proposals. Because of the political structure of the country, they need to involve all actors in the constitution process, in particular the Swiss Cantons. She informed that in their work on the sites identification, they are taking into account not only the Bern Convention priority habitats and species lists, but also their national lists. In addition, they are using the newly adopted Aichi biodiversity targets to motivate the work of the local actors, but also to inform the large public on the need to set up the Emerald Network.

On the process of the Emerald Network implementation in Norway and Switzerland, the Secretariat has taken into account the demands expressed by both countries during their Technical Emerald Seminars. A second technical Seminar in Norway was foreseen in the Programme of Activities of the Bern Convention for 2012, while a first biogeographical Seminar for Switzerland in 20112 is anticipated.

Mrs Dominique Richard, Director of the ETC/BD informed that EEA has an obligation to respond on the demand by the EEA member countries. The Topic Centre could therefore consider

organising a first Emerald biogeographical Seminar for Switzerland in 2012. In addition, Ms Richard underlined that within one week a meeting of the national focal points of the EEA is taking place. During a session dedicated to the West Balkan countries, national delegations from EU member states should stress the need for continuing cooperation with the West Balkan countries on the Emerald Network setting-up.

In this relation, the delegate from France insisted that the Group of Experts' task is the implementation of the Emerald Network is also to facilitate the work of the Secretariat and countries currently working on the setting-up. She proposed that all national delegates identify their national EEA focal point and get in contact with them to explain the needs of the ENPI countries.

The Chair of the Bern Convention Standing Committee also commented on the need for lobbying the EEA to continue supporting the setting-up of the Emerald Network, in particular in Eastern Europe and the South Caucasus. He further echoed what has been said by the other delegates in ralation to the Aichi targets - work on protected areas in the EU is not over now the Natura 2000 network coverage represents 17% of terrestrial land, but on the contrary, real efforts should start on the management of the Natura 2000 sites.

Documents for information
T-PVS/PA (2011) 6 –Draft List of Proposed Emerald sites (proposed ASCIs)

Mr Marc Roekaerts presented the list of sites proposed to become Emerald candidate sites after an official nomination by the Standing Committee. Such a nomination is expected to occur this year for the first time. He clarified that the minimum criteria for sites proposed to be officially nominated is not clearly defined yet. There is a need for a better definition of what should be the protection status of the "official candidate sites". He then made few proposals for minimum criteria for proposed sites to be officially nominated: i.e. total area coverage provided and presence of at least one species and/or one habitat from the Bern Conventions Resolutions.

The delegate from the Russian Federation reminded that the six criteria for the designation of ASCIs listed in Recommendation 16 from (1989) should be taken into account for the formulation of the minimum criteria. The delegate from Switzerland supported the proposal to include a protection status for the officially nominated 'candidate Emerald sites', insisting that this status should be a strong one if one wants to keep the quality of the sites intact during their sufficiency evaluation and formal designation.

The Secretariat made a proposal to prepare a Draft Recommendation of the Standing Committee on the criteria for nomination of site proposals as official candidate Emerald sites and their status. The proposal will take into account the comments made during the meeting and will then be circulated electronically to the members of the Group for further comments. The draft recommendation will then be sent for possible adoption by the Standing Committee together with the Draft list of proposed sites.

5. Progress towards the setting-up of the Emerald Network: Entering Phase II

Document for information
T-PVS/PA (2011) 1 –Minutes of the First Preparatory Biogeographical Seminar for 6 West Balkan countries

The Secretariat reminded the participants that the developments in the Balkan region is of particular importance, as the group of 6 countries is the first one to initiate the Phase II of the network constitution process. The first preparatory biogeographical Seminar in Paris (January 2011) was mostly preparatory and set the ground for the main seminar to be held in November 2011 where the real evaluation of site proposals by the 6 countries will take place. In Paris, the methodology to be used for the scientific assessment of the candidate Emerald sites was presented and targeted countries were provided with an individual timetable setting clear milestones for the forthcoming work.

Mrs Dominique Richard presented more in details the methodology of the biogeographical seminars used for Natura 2000 and which will be used for Emerald too. Before concluding, she stressed that the main conclusion from the Seminar, was that the national site proposals have to be complete and exempt of technical errors in order for the biogeographical evaluation can be properly initiated. Answering a question of the delegate from Croatia, Ms Richard informed that in the case of the evaluation of the sufficiency of site proposals for bird species, the IBA approach will also be used for the Emerald network. In order to keep the Natura and Emerald network consistent, the ETC/BD is planning to start its evaluation by looking into species, using information provided from Birdlife on the IBA. One of the difficulties will be that the IBA lists in the Balkan region are still under preparation.

The delegate from Albania warned the Group of Experts that the lack of financial resources can jeopardize the efforts made by some of the Balkan countries in revising their 2008 database ahead of the November 2011 biogeographical Seminar. The same issues met at national level have been expressed by other delegations from the region.

The delegate from the Barcelona Convention informed the audience about the Action Plan for the Mediterranean and expressed the will and possibility of the Convention to support the work of the Mediterranean countries to work on the designation of marine protected areas. Ms Dominique Richard invited the delegate form the Convention to attend the West Balkans biogeographcial Seminar in November to contribute to the meeting.

The Secretariat informed the Group on the forth technical coordination meeting between the Council of Europe and the European Environment Agency, which took place in Paris, 16-17 June 2011. These meetings take place each year and are aimed at facilitating the joint work on the Emerald Network setting-up by both organisations, as well as to foster their cooperation. The result of the meeting was very positive and plans for the future evaluation of Emerald sites proposals have been made.

The question on how transboundary issues will be dealt with, in particular for Switzerland and Norway has been raised. Ms Richard informed that evaluating sites for a country when its neighbour countries have already been evaluated is a new situation for the ETC/BD too. They will certainly look into the data from surrounding countries as well. It is important to note that the biogeographical seminars are designed to be participative seminars and in this sense, the participation of neighbouring countries in the biogeographcial Seminars for Switzerland and Norway could be discussed.

Document for information
T-PVS/PA (2011) 11 – Harmonisation between the lists of species targeted by Resolution No6 (1998) of the Bern Convention, Annex I of the Birds Directive and Annex II of the Habitats Directive

Mrs Dominique Richard presented the current status of the different steps undertaken in view of completing the harmonisation of the Emerald and the Natura 2000 Networks. Aside from the decision to use the IBA approach for the Emerald sites evaluation, the Bern Convention Secretariat in coordination with the European Union, asked the ETC/BD to prepare a comparison between the Bern Convention lists of habitats and species requiring special conservation measures and the EU Habitats and Birds Directives lists of threatened species and habitats.

Ms Richard presented the results from the first comparison exercise between the lists of species. She pointed out some of the difficulties encountered when preparing this comparison and asked for the support and comments from the national delegates in particular on the taxonomic issues met. A new Annex I of the resolution No 6 (1998), taking into account the changes necessary to ensure the full compatibility between the two Networks is planned to be presented to the Standing Committee for adoption. The Secretariat informed that the same exercise is supposed to be completed for the lists of habitats in 2012, but is subject to the presence of sufficient human resources and time at the ETC/BD.

Answering a question, Ms Richard and the Secretariat explained that this exercise is necessary for several reasons, but most of all because the Natura 2000 sites for EU countries are their contribution to the Emerald Network. The necessity of having coherent lists was further pointed out as necessary by the 6 West Balkan countries, during the preparatory biogeographical Seminar in Paris. In addition, when the revised Annex I of Res 6 will be presented to the Standing Committee, the appropriateness of annotating the new list could be proposed by Contracting Parties. The possibility of using regionalised lists was also mentioned by the Russian Delegate.

As a conclusion to this session, the adoption by the EU of a new Natura 2000 standard data form was presented. A new Natura 2000 software is also expected to be made available in the near future. Mr Roekaerts presented some of the features of the new form and explained that not all new fields are relevant for the Emerald Network. The Secretariat ensured the group it will follow the developments in this respect and look for an agreement with the European Union in order for both Networks to continue using the same software and data form.

The delegate from Iceland reminded that the newly adopted European biogeographical regions map will have to be updated to include the marine areas. The Group decided that work on this matter should be developed in 2012 and a proposal made to the Group at its next meeting.

Document for Information
Resolution No 4 (1996) and revised annex I on endangered natural habitats types, using the EUNIS habitats classification

Mr Marc Roekaerts briefly presented the work plan endorsed at the 2010 meeting of the Group of Experts in relation to the recent translation of Resolution No 4 in EUNIS habitats classification. He further explained that the national Emerald teams from the 7 EPNI countries are using the new resolution since one year and no major problems have been encountered. The same goes for the Swiss and Norwegian teams.

In addition he made a communication on a forthcoming EEA Seminar on "The future of EUNIS" where he will represent the Bern Convention, the Emerald network and the European Diploma interests. Ms Dominique Richard completed this information by explaining that when EUNIS has been launched, there was no real system in place for the governance of EUNIS classification. Therefore, the main objective of the Seminar will be to discuss how the governance of the classification should be organised (i.e. how the work on new habitat proposals will be organised; who is going to be responsible for their evaluation, etc.).

Document for information
T-PVS/PA (2011) 8 –First draft Interpretation Manual of the Emerald Network Habitats, following the new version of resolution No 4 (1996)

Mr Roekaerts presented the very first draft of the new Interpretation manual of Resolution 4 (1996). The work on the first draft has been done in cooperation with the ETC/BD. It is based on EUNIS definitions, complemented with former Palaearctic definitions. National experts on habitats are expected to provide the Secretariat and the ETC/BD with comments and suggestions on the first draft version. The ETC/BD is currently trying to find resources to work on a new version of the Manual next year. The Group decided on a deadline for comments from national delegates – 1st of February 2012.

A joint work is currently being done by the 7 ENPI countries on identifying new species and habitats to be added to Bern Convention lists. This objective is to facilitate the process and to decrease the number of features to be proposed. The criteria for the selection of species and habitats are included in the information form to be filed in for each feature. When proposing a new species or habitat, the countries are supposed to explain which criteria are used for the proposal.

Document for information
T-PVS/PA (2010) 8rev – Calendar for the implementation of the Emerald Network of Areas of Special Conservation Interest (2011-2020)

The Secretariat proposed that every year the Group of Experts reviews the state of play of the Emerald Network Calendar implementation and made a short presentation on what was achieved during the first year of its performing.

As a conclusion of the first day of the meeting, a video presentation of the Joint Programme for the setting-up of the Emerald Network in the 7 ENPI countries has been presented. The national delegates appreciated the efforts of the Secretariat in making the work on the setting-up of the Network more visible and several delegations asked the permission to sue the material at national level, for dissemination purposes as well as as an example on what could be developed at national level. The Secretariat reminded that the video is still in its draft version and updates on proposed Emerald sites by the countries will be updated as soon as the final project results are available. The video will also be presented at a dedicated visibility event during the Bern Convention Standing Committee meeting end of November 2011.

6. Information on recent European meetings and initiatives of interest for the Group

During the second meeting day, the Secretariat informed the Group on other related Council of Europe Group of Experts. In particular, the Group of Experts on Invasive Alien Species has been discussing the Guidelines for Protected Areas and IAS. The main focus of this document is the impact of biological invasions on PAs and how the management of these areas should adapt and include IAS prevention in its management plans. Mr Andrea Monaco stressed that the document presented to the Group is just a first draft and second improved draft version is going to be prepared next year. He thanked the participants for their contribution in terms of short reports sent ahead of this meeting. He finally informed the delegates from this experts' group will receive a link to an on-line questionnaire in the coming month. They will thus be able to contribute to their work on the second draft version of the guidelines.

The Secretariat explained that the Group of Experts on Biodiversity and Climate Change will meet in the beginning of October 2011 to discuss in particular the issue of marine biodiversity. Examples on how marine PAs can address climate change will also be touched upon. More information on the results of the meeting will be provided to the Group of Experts in 2012. A communication was also made on the recent Conference organised by the Council of Europe in Cyprus, on illegal Killing of Birds. One of the conclusions from the meeting was that the killing could sometimes take place event in protected areas. On the issue of European Island Biological Diversity, the Secretariat reminded that the Group has met in June 2011. This was the last meeting of the Group and the main outcome to be presented to the Standing Committee for adoption is the Charter on the Conservation and Sustainable Use of Biological Diversity in European Islands.

7. The Aichi targets on protected areas and EU 2020 Strategy on biodiversity

Document for discussion
T-PVS/PA (2011) 4 – Possible European 2020 Targets in the field of Protected Areas

The Bern Convention Bureau decided that the CBD Strategic Plan for the post-2010 period should be examined, in view of possibly setting European Targets for 2020 on issues of special concern for the Convention. In order not to put additional burden on Contracting Parties, the regional targets for the Bern Convention should be drawn taking into account the work and contribution by other instruments including the EU Biodiversity Strategy. The Bureau instructed the Secretariat to elaborate a short document analysing each of the Aichi targets and sub-targets and identifying those to

which the Bern Convention can contribute, associating to this exercise the relevant Groups of Experts (IAS, Protected Areas and Ecological Networks).

The Secretariat presented the document proposing possible European targets for the Bern Convention contribution to the achievement in particular of the Aichi Target 11 on protected areas. The targets included in the document are fully taking into account the Emerald Network Calendar 2020 and its objectives.

Several delegations insisted that the EU targets included in the document will be more coherent if presented in the preamble of the document. The delegate from Switzerland stated that the implementation of the Emerald Network could contribute to more than one of the CDB targets and asked for a more ambitious document. The delegate from Croatia warned that attention should be paid to wording, in particular when it comes to the requirements for the management of the future Emerald sites (i.e. use of management only instead of management plans). The delegate from the Barcelona Convention insisted that the designation of marine areas should be a priority target. The Chair of the Bern Convention explained that the 17% target of the CBD is a last minute compromise, although science requests that somewhere between 15 and 29 percent of total terrestrial area should be protected. However, in addition to the total coverage, it is much more important to think about the management of the sites. According to a recent study, from the existing around 10000 protected areas in 100 countries, only 20% are really protected according to the way they were supposed to be.

The delegate from Switzerland stressed that the setting-up of the Emerald Network has higher standards that the quantitative ones present in the Aichi targets. Other delegations confirmed that for the EU Directives, the major objective is the conservation ones and each Member States contributes to it within its own possibilities. Several delegations agreed that the most important thing is to ensure all countries contribute to the full of their possibilities and designate as much as possible sites for the conservation of species and habitats of European importance. The Group agreed that a European Network of protected areas goes beyond any quantifiable objectives and is an element of nature and ecosystems' protection. Some delegations requested that the developments of both PEEN and the European Diploma are also included in the future Bern Convention targets 2022.

In conclusion, delegates agreed that the major aim of the Bern Convention in relation to species and habitats conservation and protected areas is the finalisation of the Emerald Network setting-up and its operational viability. In addition to this major aim, the Bern Convention should also seek ways to mobilise its expertise and instruments in order to support the achievement of the Aichi targets. The ETC/BD and EEA are going to publish a report on protected areas, summarising all efforts made at both national and European levels. A chapter within this report is going to inform on the recent policy context and will address several of the Aichi targets. One chapter will be devoted to marine areas.

8. Other initiatives of interest for the Pan-European Ecological Network

On behalf of the Dg Environment, the current developments on the EU Green Infrastructure initiative (part of the recently adopted EU biodiversity Strategy 2020) were presented by the Secretariat, using a presentation provided by the European Commission. The final outcomes of the Working Group on Green Infrastructure are expected to be made available by the end of the year and a Communication on Green Infrastructure should be issued by the European Commission in 2012.

The project manager of the BPAN project (Protected areas network in the Barents Euro-Arctic Region) presented the main objective of their recently launched project – establish a representative and effectively managed network of protected areas that has a high probability of maintaining the dynamic biodiversity of the Barents Euro-Arctic Region. The work of the 4 neighbouring countries in the Barents region, recognised as particularly important for the regional implementation of the CBD Aichi targets, will be organised around different programme elements: from direct actions for planning, selecting, and establishing the protected areas, through stakeholder participation and benefit sharing, to assessment and monitoring of their efficiency.

Ms Dominique Richard from the ETC/BD presented to the Group of Experts the objectives of the new Natura 2000 biogeographical process, to be launched by the European Commission with the main objective of accompanying the operational management of the Network. The aim is to facilitate discussion between Member States, experts, stakeholders, and the European Commission on the measures needed to ensure favourable conservation status of targeted species and habitats, with a specific focus on the contribution of the Natura 2000 network. The process will be providing an EU added value - facilitating and enhancing the work of national authorities in managing the Network. A pilot phase will be organised for the Boreal biogeographic region, while during the current pre-scoping phase the EA/ETC-BD is actively working towards identifying species and habitat types considered to be a priority for discussion at a seminar, using existing data from the biogeographical region and the Article 17 reporting process. In conclusion, Ms Richard explained that currently a consultation phase to agree on which criteria to use in order to decide on the species and habitat types is taking place.

9. Future priorities of PEEN: challenges and opportunities

The Secretariat introduced the point by explaining that this is the third meeting of the Group since it is dealing with the Emerald Network and PEBLDS/PEEN at the same time. The Group requested at its last meeting to be given the possibility to discuss the future strategic development of the PEEN. A contract has been concluded with the ECNC to propose some options to be further discussed by the Group.

Mr Hervé Léthier, member of the editorial committee of the study "PEEN: taking stock", published in 2007 under the aegis of the Council of Europe presented its main conclusions, as well as his personal ideas on the future perspective for the future of PEEN. The expert first reminded the Group that the Network is above all a genuine framework for strategic cooperation and a useful tool for international cooperation, providing all European countries with a single and flexible monitoring and coordination mechanism. He further presented his vision for the future development of the PEEN, organised in one target, two objectives and three streams. He insisted strongly on the need for addressing in priority environmental fragmentation in Europe (species and natural habitats). In this sense, he underlined the need for « moving towards linkages », aiming to preserve and strengthen the existing linkages of landscape at Pan-European level and to establish new ones where necessary. He concluded by explaining that the ideas and tools he presented should be seen as a road map, showing the right track to follow in the fight for halting biodiversity loss. Mr Léthier's ideas can be consulted in Appendix II of this report.

Mr Lawrence Jones-Walters, reminded the delegates on the concept of ecological networks - maintaining and strengthening the functioning of ecosystems as a means of facilitating the conservation of species and habitats. The Secretariat commissioned the ECNC expert to prepare a working document for the Group of Experts, taking stock of the achievements on the setting-up of Ecological networks in Europe and to present some options for their future development. The Emerald and Natura 2000 Networks are a real driver for more action on landscape defragmentation in Europe and the ideas behind both Networks appear as still very fresh today. The expert insisted also on the new momentum the EU Green Infrastructure initiative and the new world and EU level targets are creating today. In conclusion he underlined that the development of ecological networks at national level, with the collaboration of all relevant stakeholders, is of great relevance for more progress on PEEN. He further linked the work on ecological networks with the emerging debate on wilderness. All ideas and options presented by Dr Jones-Walters can be consulted in the working document prepared for the meeting of the Group of Experts, Appendix III to this report.

Mr Nikolai Sobolev, expert from the Russian Federation, presented the main findings of a recent Conference organised by the Institute of Geography of the Russian Academy of Science: "Geographic basis of the Ecological Networks establishment in Russia and the Eastern Europe". He presented a point of view from the 'East' on the development of PEEN in the future. Their main expectation

therefore is linked to the geographical scope of the PEEN - to include the entire territory of Russia and Central Asia. However, it should be noted that the Pan-European conservation priorities are not identical to the ones established in the East of the European Continent. One of the solutions the experts have been considering is the regional adaptation of the lists of species and habitat types of European importance or adaptation of the criteria for evaluation of the national proposals for Emerald sites to the local specificities. Mr Sobolev concluded by underlying the need for setting-up of lists of rare and endangered natural ecosystems, as well as providing legal provisions for full economic assessments of ecosystem services.

The delegates unanimously stressed the importance of the work of the Council of Europe during the last decades on biodiversity protection and ecological networks in Europe as well as the influence and visibility of its results at a pan-European level. The need for a viable platform for all national activities on the setting-up of the PEEN was insisted upon. The Bern Convention was recognised as an instrument for the regional implementation of the CBD 2020 targets. The need for the development of functional indicators on the efficiency of ecological networks has been mentioned, also for providing more information on the precise value and impact of fragmentation. Another proposal for future work was linked to the information provided by the ETC/BD on the new biogeographic process at EU level. The fragmentation map in Europe and the nine biogeographical regions should be used in combination. The threatened species and habits of the Bern Convention do not answer in the same way to fragmentation. Regrouping these species and habitats into fragmentation affected groups could be of great use for the development of concrete guidelines on management of the different elements of ecological networks in Europe. The impact of ecosystem services on the social and economic development of Europe should be rightly used as a way to motivate national authorities to continue their efforts in setting-up the PEEN.

In conclusion, the Secretariat informed that next year time will be allocated again for discussions and strategic thinking about PEEN, taking into account the proposals made during the session. In particular, the proposal for the preparation of short position paper by the Group of Experts to the Bern Convention Standing Committee on the future of PEEN, concentrating on 3 to 5 actions (ecosystem services, defragmentation, sustainability of Protected Areas) to be undertaken by Contracting Parties, could be developed.

10. Future work of the Group of Experts

Document for adoption
T-PVS/PA (2010) 3 - Draft programme of activities and budget for 2012-2013

The Secretariat presented the work programme and explained that following the decision by the Council of Europe to start adopting a biannual budget covering a biannual programme of activities, the Bern Convention will also switch to this model. The amendments that intervened according to the decisions taken during the first day of the meeting of the Group of Experts have been reminded: two additional a technical Seminar for the setting-up of the Emerald Network in Norway and a first biogeogpraphical Seminar for Switzerland.

11. Election of the Chair and Vice Chair of the Group of Experts

Mr Jacques Stein, current Vice-Chairperson of the Group of Experts has been elected as a new Chair of the Group unanimously. Mr Tore Opdahl, has been elected as the new Vice-Chair of the Group, again unanimously. Ms Tsereteli congratulated both the new Chair and the new Vice-Chair for their election and wished them very successful and fruitful meetings in the future.

The Secretariat also thanked Ms Tsereteli for her excellent chairmanship of the Group of Experts during the last 4 years, as well as for her kind cooperation.

12. Any other business

No other points were raised.

13. Closing

The Chairperson thanked the participants for their active participation, the Secretariat for the organisation of the meeting and the interpreters for their excellent work. She also expressed her satisfaction with the successful meeting and wished the members of the Group a safe journey back home.

Appendix I: List of participants

Group of Experts on Protected Areas and Ecological Networks
Groupe d'experts zones protégées et réseaux écologiques

Strasbourg, 19-20 September 2011
Room 6/salle 6

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Appendix II

Overview of Mr Léthier's presentation on the future of the Pan-European Ecological Network

Target	To stop the fragmentation of the environment in Europe (species and natural habitats)	
Objectives	To prevent from new fragmentation (planning) To reduce the existing fragmentation (restoration)	
Streams	Decision	To adopt clear measurable political objectives and take appropriate decisions for stopping the fragmentation spiral, at all levels (international, national and local)
		To build up and implement a strategic vision in order to stop and reduce it
		To protect strictly the existing key non fragmented large areas of landscape and biodiversity interest
	Knowledge	To assess the synergistic impacts of policies, programmes and projects on the fragmentation of the environment in Europe
		To develop functional ecology research works and improve knowledge on the degree and effects of fragmentation on goods and ecological services
		To improve the technologies, methods and predictive models for the determination of the degree, effects and tendencies in landscape and biodiversity fragmentation taking into account the adaptation to the CC and the specific issue of the invasive species of crucial ecological importance for the environment in Europe
		To start a defragmentation program of field activities including removal and dismantlement of existing infrastructures that contribute to fragmentation of environment
	Governance	To set up a Pan-European science-policy platform on landscape and biodiversity that would assist and advise the governments in determining priorities for action, favouring the long term conservation of environment in the region
		To strengthen the cooperation between all relevant international organizations and reduce the fragmentation of the international institutional landscape
		To work further on reducing fragmentation in international environmental law

Appendix III

THE FUTURE OF ECOLOGICAL NETWORKS IN EUROPE: A DISCUSSION PAPER

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Summary

Changes in the patterns of land use and management have impacted more than any other factor on the serious decline in richness and abundance of Europe's biodiversity. Issues include the intensification of agriculture and forestry and a consequent decline in traditional agricultural and forest management on which many habitats depend and, more recently, the large-scale abandonment of land. Further problems have been caused by the spread of urbanization and industrialization and the fragmentation of habitats by infrastructure. The associated improvement to drainage systems, the loss of wetlands and the modification of rivers and watercourses have created further impacts. There is also a growing pressure from public access to the countryside for the purposes of tourism, access and recreation. Finally, climate change and its impacts on biodiversity have gained much recent political, media and scientific interest.

The direct impact of these changes has been a reduction in the functioning and functionality of ecosystems. So, not only are they losing their value for wildlife and nature conservation, but they are also producing fewer of the essential elements on which many people, in rural areas in particular, have come to rely. These so called ecosystem 'goods and services' include basic items such as food, water, wood, building materials and fuel. At a more sophisticated level ecosystems can provide, for instance, natural waste management systems in the form of wetlands, which absorb and neutralize pollution and flood plain grasslands and woodlands that reduce the risk of flooding to towns and cities by alleviating the threat of extreme weather events (that appear to be one of the consequences of climate change).

It is understood that size, shape and connectivity are all factors that contribute to ecosystem functioning and functionality and, all over Europe, habitats and ecosystems are becoming smaller, more fragmented and their isolation from other areas is increasing. Habitat isolation and loss prevent natural species from reaching migration and dispersal destinations, forces them to live in habitats that may not be large enough for them to maintain viable populations, reduces or removes the potential for them to achieve genetic change, and prevents them from responding to the consequences and impacts of climate change (that is likely to force many species to migrate to new habitats). These issues affect terrestrial, aquatic and marine ecosystems.

A combination of scientific research and theory, and a realization that the protection and management of special sites on their own would not secure the long-term future for biodiversity, has therefore resulted in a gradual reconsideration of the strategic policy and practice of nature conservation. In essence ecological networks provide a framework for reversing the effects described above. Not only is it based on scientific theory and evidence, but it is also a highly effective concept in terms of its communicability. It has successfully bridged the science-policy interface and has been the basis of a paradigm shift in our consideration of nature protection and management in Europe.

Ecological networks from pan-European, other regional, national and local levels, therefore make a major contribution to the overall effort to protect, maintain and enhance biodiversity; the concept has gained significant political support over the last decade and a half. A platform now exists for: increased integration of ecological networks into the cross-sectoral policy agenda; research into their contribution to ecosystem services and mitigation and adaption for climate change; and an increase in the availability of information about practical delivery. This paper provides a brief overview of the ecological concepts, policy and research developments; it then covers a number of key areas and issues that may contribute to the future development and implementation of ecological networks in Europe.

The conclusion sets out some key points for discussion which are repeated here for ease of reference:

- It could be argued that green infrastructure is a natural evolution of the ecological networks concept. The relationship between ecological networks and green infrastructure (and the extent to which it builds on the concepts and legacy that it could inherit from the ecological networks

approach) therefore needs to be clearly articulated - including in relation to implementation, socio-economic aspects and stakeholder participation.

- The argument for maintaining, restoring and creating ecological networks in order to provide adaptation to climate change can be enhanced through linking it to green infrastructure.

- The synergies with the development of the wilderness debate should also be explored.

- Following the development of the PEEN the elaboration of national level networks is a pressing need and a high priority in the route to implementation. There is a clear need to develop the potential of national-regional ecological networks through funded programmes and projects.

- There is potential for biodiversity related initiatives such as ecological network implementation to provide a platform for civil society engagement and to build its capacity through applying a participative approach to the delivery of projects and programmes; project funding is increasingly being tied to the development of capacity in civil society (particularly in Eastern and South Eastern Europe). All of which provides an opportunity for biodiversity policy-makers and practitioners; but which also sets up a challenge to which they must now respond.

- Linking ecological networks to spatial planning at different geographical scales can be seen as a key to effective delivery in the future and could provide a useful framework within which values and specific ecosystem services could be attributed to aspects of the ecological network. However, in spite of the logic of this approach there are presently no instruments or guidance to drive this integration/ approach.

- CBD Conference of the Parties in Nagoya (Japan) in October 2010; and green infrastructure has emerged as a priority within the Communication from the European Commission (2011). These frameworks could be exploited.

- The current review of, for example, the EU Common Agricultural Policy presents an opportunity for new measures to be introduced that will benefit connectivity in agricultural landscapes.

- Resilient ecosystems are more resistant to IAS – thus the benefits of healthy ecological networks are significant particularly when poorly maintained or degraded networks can provide vehicles for the movement of IAS.

1. Background: the ecological networks concept

The concept of ecological networks is not new; the model has developed over the past 35-40 years (beginning in the 1970s and 1980s in countries where a strong land use planning tradition had created the institutional environment for allocating functions at the landscape scale) in the context of increasingly fragmented European landscapes. The concept is the translation of ecological knowledge on fragmentation processes in the landscapes of Europe and its consequences for populations of natural species.

Natural areas, whether protected or not, often represent isolated islands, of varying size but often too small, in the midst of intensive agriculture, built development or transport and energy infrastructure. Habitat isolation and loss prevent natural species from reaching migration and dispersal destinations, force them to live in habitats that may not be large enough for them to maintain viable populations, reduce or remove the potential for them to achieve genetic change, and prevent them from responding to the consequences and impacts of climate change (which is likely to force many species to migrate to new habitats).

Ecological networks' main goal was conserving biodiversity by maintaining and strengthening the integrity of ecological and environmental processes; and to counter the above effects by linking fragmented ecosystems with each other in order to promote exchange between populations of species and to enable the migration and spread of species. As a conservation approach, ecological networks are characterized by two generic objectives, namely (1) maintaining the functioning of ecosystems as a means of facilitating the conservation of species and habitats, and (2) promoting the sustainable use of natural resources in order to reduce the impacts of human activities on biodiversity and/or to increase the biodiversity value of man-managed landscapes (Bennett & Wit, 2001).

Ecological networks are based around the idea of core areas, ecological corridors, buffer zones and restoration areas. They are designed and managed in such a way as to preserve biological diversity and to maintain or restore ecosystem services through the interconnectivity of its physical elements within the landscape. They should also allow for the sustainable use of natural resources and the maintenance of existing social and institutional structures (loosely based on: UNEP, 2003). The ecological networks concept makes a major contribution to the overall effort to protect, maintain and enhance biodiversity; the concept has gained significant political support over the last decade and a half and has been accepted in many European countries.

All ecological networks share common conservation objectives and operational features, as well as a characteristic spatial architecture. This architecture is a derivation of spatial relationships and processes that are key to biodiversity conservation, particularly the distribution of local species populations, arrangement of habitats, geographical processes and human activities. Specific functions are allocated to different areas depending on their respective ecological value and natural-resource potential (Bennett, 2004). These functions are reflected in a coherent system of ecological network elements (Figure 1):

- **Core areas**, where the conservation of biodiversity takes primary importance, even if the area is not legally protected. The primary objective of core areas is to ensure the conservation of a representative array of characteristic habitats and species populations.

- **Corridors**, which serve to conserve vital ecological or environmental interactions by maintaining connectivity between the core areas where necessary. These linkages may be of three broad kinds:
  - *linear corridors* in the form of landscape elements such as hedges, shelterbelts, woods and rivers or infrastructure such as tunnels and ecoducts that allow species to traverse an obstacle;
  - '*stepping stones*', that is, an array of small patches of habitat that individuals use during movement for shelter, feeding, resting and other ecological functions;
  - *landscape corridors* are various forms of interlinked landscape matrices, usually in the form of extensively managed landscapes, that retain sufficient natural elements to allow individuals to survive during movement between habitat patches

- **Buffer zones**, which insulate areas where biodiversity conservation is the primary objective from potentially damaging external influences, and particularly those caused by inappropriate forms of land use. This function therefore permits in principle a range of sustainable human activities.

- **Restoration areas** are those where the degraded functions of an ecosystem can be restored, especially in cases where habitat fragmentation disables normal functioning of ecosystems or endangers the local populations. These areas are important because they can improve ecologic connectivity and functionality of the system. This concept includes development or redevelopment of biodiversity values.

- **Sustainable use areas**, which may surround the network and where opportunities are exploited within the landscape mosaic for the sustainable use of natural resources together with the maintenance of most ecosystem services.

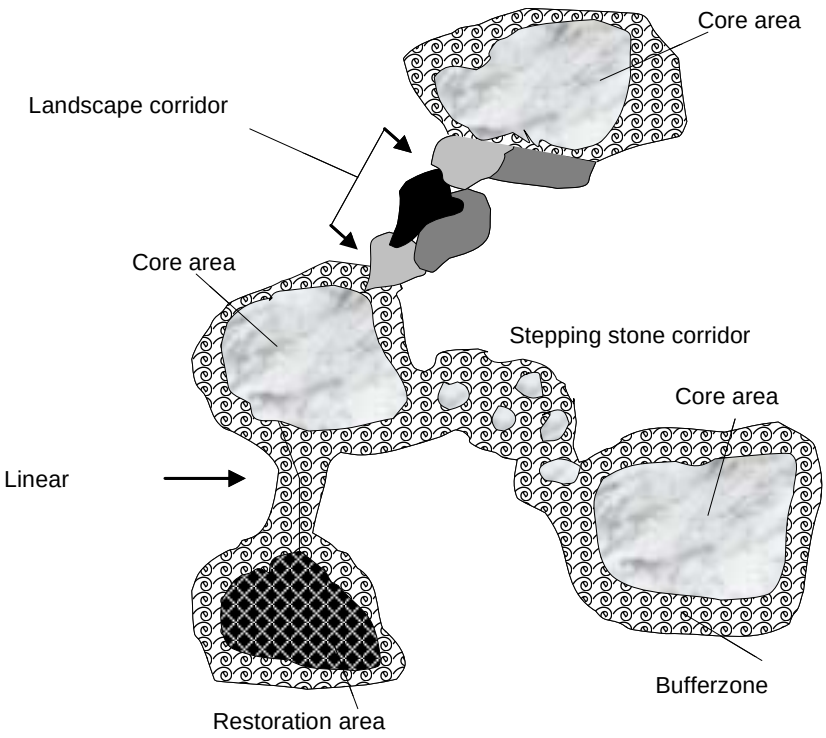

Figure 1: The ecological network model (Source: Bouwma *et al*., 2002).

The ecological network model can be applied at various scales. Many ecological networks encompass a geographical region, such as a watershed, a mountain range or a biome, e.g. temperate broad-leaf forest. On the other hand, if it is a part of government policy or planning, it can be national, regional (e.g. county or province), or even transboundary between neighbouring countries. Thus, at present it is possible to find examples of the ecological network model being used as a strategic approach to biodiversity conservation at the supra-continental scale, all the way down to detailed conservation plans at the local (e.g. municipal) level.

2. Ecological networks in international frameworks and statute

The 'Convention on the conservation of European wildlife and natural habitats', better known as the 'Bern Convention', is a binding international legal instrument adopted by the Council of Europe in 1979 to foster the conservation and sustainable use of biological diversity in the European Continent. The Emerald Network is an ecological network set up by the Council of Europe as part of its work in the framework of the Bern Convention (CoE, 2009). This means that the Emerald Network is to be set up in each Contracting Party and observer state to the Bern Convention. In 2009, these included 27 EU member states, 20 other European countries, 4 African States and the European Community (CoE, 2010a). Article 4 of the Bern Convention is the most relevant article, as it states that Contracting Parties 'shall take appropriate and necessary legislative and administrative measures to ensure the conservation of the habitats of the wild flora and fauna species, especially those specified in Appendices I and II, and the conservation of endangered natural habitats' (CoE, 2010b).

The creation of the Emerald Network of areas of special conservation interest was agreed by the Standing Committee of the Bern Convention in 1989, through the adoption of Recommendation No. 16 (1989) on the Areas of Special Conservation Interest (ACSI). The Recommendation advocates Contracting Parties to take, either by legislation or otherwise, steps to designate areas of special conservation interest to ensure that necessary and appropriate conservation measures are taken for each area situated within their territory or under their responsibility (CoE, 2010d). All EU nature

conservation legislation therefore results from the obligations of the EU as contracting party to the Bern Convention and the consequent implementation of the 1979 EC Birds Directive and the 1992 EC Habitats Directive provided for the establishment of a representative system of legally protected areas throughout the EU, known as Natura 2000. These directives further strengthened existing protected site series at national level, or stimulated countries to define lists of protected sites (where they did not already exist).

In addition, at the third Ministerial Conference 'Environment for Europe' in 1995 Ministers of Environment of European countries launched the Pan-European Biological and Landscape Diversity Strategy (PEBLDS) aiming to strengthen environment and biodiversity conservation policies in Europe. The Ministers called 'for the promotion of nature protection, both inside and outside protected areas, by implementing the European Ecological Network, a physical network of core areas and other appropriate measures, linked by corridors and supported by buffer zones, thus facilitating the dispersal and migration of species'. Thus, the setting up of a Pan-European Ecological Network (PEEN) covering Eurasia was one of the key steps taken under PEBLDS and it has been developed on the basis of national, regional and transregional ecological networks and initiatives throughout Europe (CoE, 2010a). In this context it was agreed that due to its political importance, its geographic extent and it's biological and landscape diversity the Emerald Network, (together with Natura 2000 – see below), will constitute the main component of the PEEN (CoE, 2010c).

The concept of ecological networks is therefore implicit in a variety of international conventions (Ramsar convention, Bern Convention), European agreements (Habitats and Birds Directives) and related policy implementation (Natura 2000 and Emerald Networks). It has become operational in national and European strategies (Jongman *et al*, 2004). Thus, the development of a European Ecological Network forms one of the priorities and activities of European nature conservation under the Pan-European Biological and Landscape Diversity Strategy (PEBLDS) which was endorsed by 54 European countries in Sofia, in 1995. In PEBLDS, the aims of the Pan-European Ecological Network are to set out in order to ensure that (see also Rientjes and Roumelioti, 2003):

- A full range of ecosystems, habitats, species and landscapes of European importance are conserved;
- Habitats are large enough to guarantee key species a favourable conservation status;
- There are sufficient opportunities for dispersal and migration of species;
- Damaged parts of the key environmental systems are restored;
- The key environmental systems are buffered from threats.

At the moment of its endorsement, the Council of Europe (CoE) together with ECNC-European Centre for Nature Conservation received a political mandate to coordinate the establishment of the Pan-European Ecological Network (PEEN) and later, together, to lead on the Kyiv target on this issue.

The 2003 Kyiv Resolution on Biodiversity, endorsed at the Fifth 'Environment for Europe' Ministerial Conference, set 2006 as a target date for preparing indicative maps for all regions of Europe. It was envisaged that PEEN should be based on existing initiatives and European directives, its backbone being Natura 2000 (comprising Special Protection Areas under the Birds Directive and Special Areas of Conservation under the Habitats Directive) and the Emerald Network. Article 10 of the 1995 Habitats Directive, specifically relates to land-use planning, the development of policies and the exploration of possibilities for improving ecological coherence between sites designated under the directive, and provides further strong direction for EU Member States.

The Sixth Ministerial Conference "Environment for Europe" in Belgrade, Serbia (10-12 October 2007) represented a watershed for the development of a Pan-European Ecological Network. At the conference ministers received a report from the Council of Europe, Committee of Experts for the development of the Pan-European Ecological Network: "The Pan-European Ecological Network: taking stock" (Bonnin *et al.*, 2007) which provided information on the progress of work in the constitution of PEEN as a follow up to the previous Ministerial Conferences (mentioned above). As

such (together with Jones-Walters, L. 2007; and Jongman, et al, 2011) it is a comprehensive digest of available information; including an elaboration of progress in implementation, the history of the political process, the scientific and legal background and a reflection on the future for Ecological Network implementation in Europe.

Several initiatives, funded by both the EU and by EU/CoE Member States, have therefore sought to create spatial presentations of European Ecological Networks. Notable examples include: the indicative map of the PEEN for Central and Eastern Europe (Bouwma, Jongman & Butovsky, 2002), which covered 12 countries: Estonia, Latvia, Lithuania, Poland, Czech Republic, Slovakia, Hungary, Romania, Moldova, Ukraine, Belarus, and the European part of Russia; the indicative map of PEEN for South-Eastern Europe (Biro, Bouwma & Grobelnik, 2006) covering 9 countries: Slovenia, Croatia, Bosnia- Herzegovina, Serbia-Montenegro, Republic of Macedonia, Albania, Bulgaria, Greece and Turkey; and finally the draft PEEN map for Western Europe (Jongman, Bouwma & van Doorn, 2006). The only area not presently covered by either the PEEN map for Central and Eastern Europe or the map for South-Eastern Europe and Turkey lies between the Black Sea and the Caspian Sea (the Caucasus).

Ecological network maps and strategies have also been established at country level and around trans-boundary sites and site complexes. The Natura 2000 site network is now well developed across the European Union member states and the Emerald network constitution process is making progress at a pan-European level, particularly in the Western Balkans, Central and Eastern Europe, South Caucasus, as well as Norway and Switzerland. Together with other networks of protected sites that stem from international, national or regional arrangements, they provide the basis for planning and joint action. At a regional and local level many planning authorities have applied the principles of ecological connectivity to spatial planning and strategies. Often the latter have included a significant level of stakeholder and public involvement and participation in the planning process.

Driven by a strong political desire, in part at European level (through reforms to Common Agricultural Policy and related policy instruments, such as the Rural Development Policy) and within a number of Member States, there has been a movement of agricultural and forestry subsidy into support for sustainable, environmentally sensitive land management. Many Member States have implemented fiscal and financial instruments targeted at land managers in the agriculture and forestry sectors, which are explicitly underpinned by the idea that it is important to make physical connections between habitats and to provide corridors for the movement of species in the wider countryside around special sites. They therefore promote the management and creation of linear features such as hedgerows, dry-stone walls, shelterbelts and riparian and aquatic habitats and 'stepping stone' habitats such as woodlands, grasslands, ponds and lakes. Other sectors such as transport, business and industry have been engaged in the process through the provision of guidance such as 'codes of good practice'.

3. The future of Ecological networks in Europe

Clearly, a significant amount of progress has been made. There is a trend towards taking account of ecological connectivity in policy instruments at all levels. The EU Water Framework Directive is a very good example of this, and whilst the European Spatial Development Perspective (1999) is based on an economic approach, it does consider the integration of economy across sectors, with sustainable development as a guiding principle and concern. "The Guiding Principles for Sustainable Spatial Development of the European Continent" (2002) mentions in the context of its principles the need to reduce environmental damage and to enhance and protect natural resources and natural heritage; and so links social, cultural and environmental sectors. Along with a number of other existing and developing policy and funding frameworks, it recognises the importance of bringing economic and social requirements into harmony with ecological and cultural functions through long-term, large-scale and balanced spatial development.

The achievements to date clearly provide a strong platform for future action. However, it is clear that some momentum in the process of the development and implementation of ecological

networks in Europe has been lost. The reasons for this include the current economic climate that prevails in Europe, in which governments are more reluctant to prioritise fund environmental initiatives when economic and social issues still require urgent attention in relation to spending cuts. The former has focussed countries on their internal financial and fiscal requirements and drawn attention and support away from multilateral environmental agreements such as PEBLDS and, as a consequence, the PEEN process. The arrival of 2010 and, for some EU Member States, the achievement of targets such as 'sufficiency' in relation to Natura 2000 designation has further slowed progress and commitment.

In spite of this opportunities clearly exist for the further development and implementation of ecological networks. The following sections explore the potential of a number of key areas, namely: green infrastructure; national and regional ecological networks; stakeholder participation and building the capacity of civil society; spatial planning and sectoral integration; costs, benefits and ecosystem services: climate change; emerging policy and policy reform; and areas for research.

3.1 Green Infrastructure

Whilst the term Green Infrastructure has in the past been used to describe natural, connected habitat within urban areas it has recently been launched as a new concept that is now included within the European Commission's EU 2020 European biodiversity headline target and 2050 vision, aimed at halting and reversing the loss of biodiversity across the EU territory of the member states and a response to the Aichi targets signed at the CBDs COP 10 (EC, 2011) .

It is likely that a common definition of green infrastructure will be developed in due course; at present however it is articulated and is an 'approach' that calls for the protection and restoration of ecosystems in so far as possible to strengthen their resilience and sustain the key services that they provide; whilst also achieving conservation objectives and enabling Member States to adapt to climate change. In terms of a working definition the European habitats Forum, a member of the European Commission working group on green infrastructure, has come up with the following: *Green infrastructure is a strategically planned and delivered network of high-quality green spaces and other environmental features. It should be designed and managed as a multifunctional resource capable of delivering a wide range of environmental and quality of life benefit local communities. Green infrastructure includes forests, rivers, coastal zones, parks, eco-corridors and other natural or semi-natural features which constitute key elements for the provision of ecosystem services.*

However it is finally interpreted, green infrastructure will clearly have some form of coherent ecological network at its core. It would therefore seem prudent to take into account the work that has been done at various geographical levels in order to define areas of existing and potential ecological connectivity. Below the level of ecological corridors that cross within and between countries, this includes the green and blue veining that makes up the patchwork quilt of traditionally managed multifunctional landscapes; and as such still remains at the heart of the description of ecological networks that is given above.

Perhaps the step that green infrastructure can take beyond what has already been achieved (with ecological networks) is to provide further context for informing the important decisions that need to be made in relation to the planning and management of the wider countryside outside of protected areas and other special sites. Thus, the consideration of issues such as ecosystem services, climate change adaptation and ecological resilience can be integrated within the new approach.

In many ways this would have been the desired future objective of any development of the ecological networks concept; and it could therefore be argued that green infrastructure is a natural evolution of ecological networks. Perhaps the key issue for debate is the extent to which it builds on the concepts and legacy that it could inherit from the ecological networks approach.

It is highly likely that, with or without green infrastructure, countries will continue to consider the development of national ecological networks particularly where they have large carnivores and herbivores and where the benefits of such an approach are clear.

3.2 National and Regional Ecological Networks

In June this year ECNC and the Macedonian Ecological Society (MES) presented the final results of the MAK-NEN project, concluding three years of work devoted to the development of a Macedonian Ecological Network (funded by the Dutch government). The presentation was held in Skopje and attended by numerous representatives of ministries, scientific and expert institutions representing sectors relevant to the implementation of the National Ecological Network in Macedonia, all of whom had been actively involved in the development of the final map.

Two of the main outputs of the project that were presented were the final MAK-NEN map, published in A1 format, and a Bear Corridor Management Plan. The Plan lists the 23 existing and potential bottlenecks for functioning of the ecological network identified on the map, elaborating the potential solutions and measures to be implemented by different stakeholders in order to ensure the full functionality of the network (Brajanoska *et al*, 2009). It provides compelling and plausible evidence for the need to provide effective spatial planning at national level for threatened and other wildlife.

As a result of the three-year stakeholder involvement process, the discussion that followed the presentations showed that the participants have a high level of understanding, acceptance, ownership and support of the ecological network concept. This indicates that MAK-NEN has a bright future in Macedonia and, whilst the Macedonian ecological network is not the first national level network to be developed, it clearly should not be the last. It is pertinent to profile it here because it provides a recent example of best practice; not least because it includes a high level of stakeholder participation (see 3.3, below).

Following the development of the PEEN the elaboration of national level networks is a pressing need and a high priority in the route to implementation. However, national ecological networks are unlikely to function effectively unless they cross national boundaries. Again, there are a number of particularly good examples of cross boundary and regional ecological networks (e.g. within the framework of the Alpine convention and in the Dinaric Arc, etc). In the context of the Western Balkans, and the Macedonian ecological network, there is a clear need to develop the potential of national-regional ecological networks through funded programmes and projects.

3.3 Stakeholder participation and building the capacity of civil society

Consensus development through stakeholder participation is a promising trend that takes into account the interactive character of the communication process. Stakeholder participation already has a successful track record in assisting in the management of (for example) Integrated Coastal Zone Management, Invasive Alien Species and species protection issues. It now needs to be applied to the practical implementation of ecological networks (and almost certainly green infrastructure). Indeed, guidance already exists for the implementation of ecological networks through stakeholder participation (Jones-Walters *et al.* 2009) and in relation to local biodiversity action planning (Jones-Walters *et al.* 2010).

The greatest problem remains the ‘top down’ organisational paradigm. Participation is a daunting prospect for those who are used to making policy and then implementing it through legislation, regulation or the power that comes with owning land. They have difficulty in dealing with a range of people and organisations that may previously have been seen as the cause of the problem rather than the solution. However, where stakeholder participation may fail to convince, the principle and political rhetoric of ‘civil society’ may be more persuasive. Civil society is considered to be a necessary condition for ensuring lively, strong and participatory democracy. In addition to being a key

to local involvement, participatory democracy also has to build collaboration among the institutions, professions and sectors that are capable of influencing the development of participation (Edwards, 2011).

There is clearly potential for biodiversity related initiatives such as ecological network implementation to provide a platform for civil society engagement and to build its capacity through applying a participative approach to the delivery of projects and programmes; particularly when such enterprises are associated with training in relevant skills (many of which are highly transferable). In this respect, it should also be noted that project funding is increasingly being tied to the development of capacity in civil society (particularly in Eastern and South Eastern Europe). All of which provides an opportunity for biodiversity policy-makers and practitioners; but which also sets up a challenge to which they must now respond.

3.4 Spatial planning and sectoral integration

There is significant scope to explore and further strengthen the integration of ecological networks and its related concepts into sectoral policy; for instance spatial planning and economic and infrastructure development. At the same time, the increasing and complimentary demand among economic actors and civil society for influence in shaping the spatial environment (referred to in 3.3 above) has led to greater stakeholder involvement in the decision-making processes.

The primary function of spatial planning is to guide and govern decisions about land use, such as the design and location of built and other development (as opposed to land management). As a spatial concept, maps presenting ecological networks are easily accommodated by spatial planners into their strategic documents. Perhaps the elaborated concept of green infrastructure, with its inclusion of ecosystem services and other aspects, will provide an added impetus to such an accommodation.

Modern spatial planning is now defined by stakeholder participation; and there is growing evidence that spatial planning and ecological network programmes in some European countries have come together to increasingly actively seek the involvement of a wide range of stakeholders (namely, municipalities, regional political authorities, developers, investors, environmental and other NGOs, public utilities, business, education, religious organisations and individual citizens).

Linking ecological networks to spatial planning at different geographical scales can therefore be seen as a key to effective delivery in the future. This is not only because of the obvious functional relationship between ecological networks and other forms of land use and infrastructure but also because delivering the concept through the vehicle of spatial planning is one of the main mechanisms for sectoral integration.

The link to 3.3 above in terms of skill sets, guidance and incentives is clear.

3.5 Costs, benefits and ecosystem services

The failure of society to place a value on nature has resulted in the degradation of ecosystems, a consequent reduction in ecosystem services and has contributed to a significant decline in biodiversity. The lack of comprehensive methodologies for providing economic valuation for biodiversity and ecosystem services, the results of which can be easily communicated to policy and decision-makers, has hampered efforts to protect, maintain and enhance habitats and species.

There has therefore been much recent activity around demonstrating the financial value of natural assets, biodiversity and the ecosystem services that they provide; evidenced, for example, by The Economics of Ecosystems and Biodiversity (TEEB) process and specifically their recommendations within the TEEB for policy-makers document (TEEB, 2011). Ecological networks and green veining provide a range of services. These include (for example) shelter and the reduction of

erosion, pollination, adaptation to climate change, corridors for the movement of animals and to a lesser extent plants, recreational and cultural services.

It is certainly important to ensure that the full value of ecological networks is incorporated into policy appraisal and decision making mechanisms in order to increase the likelihood of the sustainable use of natural resources and the protection of the natural environment. Such an approach could be applied to existing networks but also to the creation of new networks.

Spatial planning could provide a useful framework within which values and specific ecosystem services could be attributed to aspects of the ecological network (and to green infrastructure) as part of a further policy and decision-making layer of a map-based approach. There is presently no detailed guidance available on how this approach might be implemented.

3.6 Climate change

As is clear from the 2005 Millennium Ecosystem Assessment (MA, 2005), climate change is impacting more and more on biodiversity, both worldwide and in Europe. Scientific results into the possible impact on climate change increasingly provide evidence of considerable consequences for habitats and species. Species migrations, extinctions and changes in populations, range and seasonal and reproductive behaviour are among the responses that have been recorded, and these are likely to continue apace as climate continues to change in decades to come. Climate change is also poised to significantly alter the supply of European ecosystem services over the next century. While it may result in the enhancement of some ecosystem services, a large portion will be negatively affected through the impact of drought, reduced soil fertility, fire, and other climate change-driven factors.

From a biodiversity perspective in Europe, the climate change issue is highly relevant because (and particularly relevant to ecological networks):

- the range of some species will increase or decrease, and both aspects will have impacts on a variety of ecosystems;
- due to these range shifts some species will find themselves at the end of their ecological range (e.g. mountain summits), and they face extinction at national, European or sometimes even global levels; and
- some species that migrate or shift their range during and between the seasons are increasingly finding themselves restrained in their movement due to insurmountable barriers such as urban areas, major roads and other infrastructure and high intensity agricultural land.

For those that are now forced to move further due to climate change the removal or absence of animal and plant ‘highways’ becomes a major issue. Ecological networks will therefore play a significant role in providing adaptation to the impacts of climate change by allowing animals to migrate to areas where they can find favourable conditions. Where they do not exist it is highly desirable to increase the connectivity of habitats through the restoration and creation of new ecological networks. New habitat creation, such as the widespread planting of forests, hedgerows and shelterbelts, can act to sequester carbon and creates soils, substrate and vegetation with the potential to retain carbon.

Ecological networks can provide physical measures for combating the effects of extreme weather: for example, more shade for farm animals through flood relief and by providing a ‘natural sponge’ to hold water. With higher connectivity, the existing habitat is better able to fulfil an adaptation function. Green infrastructure in towns and cities can provide shade and many other functions as well as connecting wildlife areas and connecting people to wildlife. In addition, certain elements of ecological networks, in particular buffer zones, could provide important functions in terms of providing increased resilience and adaptive capacity for vulnerable protected areas and habitats. The vulnerability is a function of the character, magnitude, and the rate of climate variation to which the system is exposed, its sensitivity and its adaptive capacity (Natural England, 2011).

It is quite possible that the argument for maintaining, restoring and creating ecological networks in order to provide adaptation to climate change can be enhanced through linking it to green infrastructure (in the sense of 3.1 above).

3.7 Invasive Alien Species

Invasive alien species (IAS) are having an increased impact, not only for biodiversity where they can push out and displace native species, but for social and economic reasons as well. This is partly due to the effects of climate change and also due to human activity.

Alarmed by the lack of implementation of provision on introduction of alien species (and also about some misguided re-introductions), the Standing Committee to the Bern Convention decided in 1992 to create a specialised group of experts; originally called the "Group of Experts on the legal aspects on introduction and re-introduction of wildlife species" and now called the "Group of Experts on Invasive Alien Species", it met for the first time in March 1993. The group collected and analysed different national laws dealing with invasive species and proposed work aimed at the harmonisation of national regulations on introduced species, particularly in the fields of definitions, territorial scope of regulation, listing of species whose introduction is undesirable, identification of authorities responsible for permits, conditions for issuing such permits and control involved. The group of experts meets every two years to check progress in implementation and propose new ideas (CoE, 2008).

During the early 2000's the energy of the Group of Experts was largely devoted to the preparation and negotiation of a fundamental text to promote and guide European activities on Invasive Alien Species: the European Strategy on Invasive Alien Species. This strategy, which was prepared by Mr Piero Genovesi and Ms Clare Shine, was discussed at the 11th meeting of the Group, held in Horta (Azores, Portugal) in 2002 and was negotiated soon after the adoption, by the 6th Conference of the Parties of the Convent ion on Biological Diversity (decision V1/23 of April 2002) of *Guiding Principles for the prevention, introduction and mitigation of impacts of alien species that threaten ecosystems, habitats or species*. The Strategy follows these guiding principles but goes further into the recommended actions. It promotes the development and implementation of co-ordinated measures and co-operative efforts throughout Europe to prevent or minimise adverse impacts of invasive alien species on Europe's biodiversity, as well as their consequences for the economy and human health and well-being. The Group is currently working on the development of Guidelines on IAS in Protected Areas. The paper is not yet finalized, but will certainly be available in 2012.

There is a strong argument that resilient ecosystems are more resistant to IAS – thus the benefits of ecological networks referred to in 3.6 significant in relation to this issue. Equally ecological networks (particularly if they are poorly maintained or degraded) can provide vehicles for the movement of IAS. The issue here is to produce a balanced argument for maintaining landscape features, including ecological corridors, in good condition through effective and targeted management.

3.8 Wilderness

The arrival of wilderness as a policy issue, following the passing of a European Parliament resolution in 2009, has increased the profile of the issue and provided a challenge for policy makers and practitioners. There is a need for a policy-relevant definition that can guide decision making in relation to the protection and management of wilderness areas , including their exploitation for economic benefit, and for information and data about the extent of existing wilderness and wild areas and the opportunities for its recreation (Jones-Walters and Civic, 2010).

The links to ecological networks, not least because of the roles of large herbivores and carnivores in the wilderness issue, are clear. Planning for either ecological networks or wilderness should take in to

consideration the needs of the other. The topicality of wilderness means that it is a potential opportunity to further the aims of the PEEN and regional and local ecological networks.

3.9 Emerging policy

The need to integrate the ecological network concept into the development of green infrastructure, which is emerging as a new and potentially influential policy instrument, has already been referred to in 3.1 above; similarly for spatial and other infrastructure planning. However, there is also a requirement for existing instruments (such as the EU Water Framework Directive) which offer the potential for strengthening ecological networks to be exploited to the full in their implementation. Furthermore the current review of, for example, the EU Common Agricultural Policy presents an opportunity for new measures to be introduced that will benefit connectivity in agricultural landscapes.

Again, the benefits of exploiting synergies with green infrastructure development are clear.

4. Conclusion and main points for discussion

The PEEN project was successful in reaching its goal to promote the idea of a pan-European vision of biodiversity conservation through a European ecological network (Jongman *et al*, 2011). Not only this, the translation of the PEEN principles into the development of national ecological networks has also made some progress. However, it is also clear that in the present economic situation countries are pursuing national priorities that are driven by social and economic factors, and that this is at the expense of the environment and international and cross boundary cooperation. European ecological corridors are not being developed and there is a clear issue around what institution or coordination mechanism should presently be responsible for driving this issue forwards.

Developing ecological connectivity is one of the recommendations of the CBD Conference of the Parties in Nagoya (Japan) in October 2010; and green infrastructure has emerged as a priority within the Communication from the European Commission (2011): *Our life insurance, our natural capital: an EU biodiversity strategy to 2020*. Perhaps a solution lies within the implementation of these instruments; however this means that the relationship between ecological networks and green infrastructure needs to be articulated; including in relation to implementation, socio-economic aspects and stakeholder participation. Linked to this, there is also a need to realise in practice the existing and recognized potential for spatial planning to act as a mechanism for cross sectoral integration, communication and delivery of ecological networks.

The contribution of ecological networks to the provision of ecosystem services and mitigation and adaptation in relation to the effects of climate change are important areas for research and subsequent articulation into policy. Climate and global change will affect the patterns of many ecological and other relationships in the landscape, potentially leading to a level of complexity that may prove intractable and difficult to resolve. Research on changing population patterns in relation to landscape permeability should be directed towards the provision of essential knowledge needed for the limitation and promotion of irreversible damage, adaptation and mitigation measures.

Codifying the economic benefits of ecological networks and making them explicit through interdisciplinary research and integrated long-term research on the social, economic and ecological mechanisms and maintain biodiversity and the ecological services it provides is also a clear necessity.

Further work can be carried out in relation to the full translation of the protected area networks into functional ecological networks, both at the level of policy and practice; in addition information about how to create actual ecological networks, particularly where this has involved stakeholder and public participation needs to be researched and made widely available. Knowledge transfer is needed as well as new knowledge especially in relation to the impact of changing environmental and land use conditions on species and habitats in the wider countryside.

Leadership has already been mentioned in the context of who has responsibility for ecological networks at European, regional, national and local levels. Linked to this is the issue of communication; specifically to politicians and decision makers within key sectors (such as spatial planning, transport, industry, etc) but more widely to researchers, conservation practitioners and the interested public. Beyond this lies a requirement for active engagement with emerging policy agendas (which again requires a level of leadership and strategic direction).

Main points for discussion:

- It could be argued that green infrastructure is a natural evolution of the ecological networks concept. The relationship between ecological networks and green infrastructure (and the extent to which it builds on the concepts and legacy that it could inherit from the ecological networks approach) therefore needs to be clearly articulated - including in relation to implementation, socio-economic aspects and stakeholder participation.

- The argument for maintaining, restoring and creating ecological networks in order to provide adaptation to climate change can be enhanced through linking it to green infrastructure.

- The synergies with the development of the wilderness debate should also be explored.

- Following the development of the PEEN the elaboration of national level networks is a pressing need and a high priority in the route to implementation. There is a clear need to develop the potential of national-regional ecological networks through funded programmes and projects.

- There is potential for biodiversity related initiatives such as ecological network implementation to provide a platform for civil society engagement and to build its capacity through applying a participative approach to the delivery of projects and programmes; project funding is increasingly being tied to the development of capacity in civil society (particularly in Eastern and South Eastern Europe). All of which provides an opportunity for biodiversity policy-makers and practitioners; but which also sets up a challenge to which they must now respond.

- Linking ecological networks to spatial planning at different geographical scales can be seen as a key to effective delivery in the future and could provide a useful framework within which values and specific ecosystem services could be attributed to aspects of the ecological network. However, in spite of the logic of this approach there are presently no instruments or guidance to drive this integration/ approach.

- CBD Conference of the Parties in Nagoya (Japan) in October 2010; and green infrastructure has emerged as a priority within the Communication from the European Commission (2011). These frameworks could be exploited.

- The current review of, for example, the EU Common Agricultural Policy presents an opportunity for new measures to be introduced that will benefit connectivity in agricultural landscapes.

- Resilient ecosystems are more resistant to IAS – thus the benefits of healthy ecological networks are significant particularly when poorly maintained or degraded networks can provide vehicles for the movement of IAS.

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Appendix IV

Agenda

Monday, 19th September

09:30 – 10:00 Welcome and opening

1. **Opening of the meeting by the Chair (Ms Maka Tsereteli)**
2. **Adoption of the agenda**
3. **Introduction by the Secretariat and decisions of the 30th meeting of the Standing Committee of the Bern Convention – Protection of natural habitats (Ms Iva Obretenova)**

10:00 – 11:00 Progress in Phase I of the Emerald Network constitution process

4. **Update on ongoing projects on Phase I of the Emerald Network setting-up**

- State of progress of the Joint Council of Europe / European Union Programme for the setting-up of the Emerald Network in South Caucasus and in Central and Eastern Europe (Ms Iva Obretenova; Mr Marc Roekaerts, scientific consultant)
- Follow-up of the Joint Programme on the setting-up of the Emerald Network in 7 countries from Central and Eastern Europe and the South Caucasus (Ms Iva Obretenova)
- Brief reports and communications by national delegations on developments of the Emerald Network
- Presentation of sites to be proposed to the Bern Convention Standing Committee for adoption as « Official candidate sites » (Mr Marc Roekaerts)

Coffee break

11:30 – 12:45 Entering Phase II of the Emerald Network constitution process

5. **Progress towards the setting-up of the Emerald Network: Entering Phase II**

- Results of the First Preparatory Biogeographical Seminar for 6 West Balkan countries, Paris, 26-27 January 2011 (Ms Iva Obretenova; Ms Dominique Richard, EEA-ETC/BD, Marc Roekaerts, consultant)
- Results of the Emerald technical Seminars in Norway and Switzerland, September 2011 (Ms Iva Obretenova; Mr Marc Roekaerts, consultant)
- Conclusions of the forth technical coordination meeting between the Council of Europe and the European Environment Agency, Paris, 16-17 June 2011 (Ms Iva Obretenova, CoE; Ms Dominique Richard, EEA-ETC/BD, Mr Marc Roekaerts, consultant)
- Harmonising the Emerald and the Natura 2000 Networks: cooperation between the EU, CoE and ETC/BD (Ms Iva Obretenova; Mr Marc Roekaerts, consultant; Ms Dominique Richard, EEA-ETC/BD)

Discussion

Lunch break

14:15 – 17:00 The Emerald Network: entering Phase II (cont.)

- Status of the new version of Res. 4 (1996) (Mr Marc Roekaerts, consultant)
- EEA Seminar on "The future of EUNIS" (Mr Marc Roekaerts, consultant; Ms Dominique Richard, EEA-ETC/BD)
- Draft Interpretation manual Resolution 4 (Ms Dominique Richard, EEA-ETC/BD; Mr Marc Roekaerts, consultant)
- Status of proposed new species and habitats to be added to Bern Convention lists and Information Form for species and habitats (Mr Marc Roekaerts, consultant, Dominique Richard, ETC/BD)
- Follow-up of the Emerald Calendar 2020 (Ms Iva Obretenova)

Discussion

Coffee break during the session

17:00 – 17:15 Awareness and visibility

- The Emerald brochure and the video presentation of the Joint Council of Europe / European Union Programme for the setting-up of the Emerald Network in South Caucasus and in Central and Eastern Europe (Ms Iva Obretenova)

17:15 – 17:30 Closing of the first day

A dinner booking will be made in an Alsatian restaurant (at 8pm) to help those wishing to get together in the evening. More information will be given during the meeting.

Please note that this is not an invitation from the Council of Europe.

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Tuesday, 20th September

9:30 – 10:30 Ecological Networks and Protected Areas in other fora

6. Information on recent European meetings and initiatives of interest for the Group

- Work of other related Council of Europe Group of Experts of the Bern Convention:
  - Invasive Alien Species: Guidelines for Protected Areas and IAS (Mr Andrea Monaco)
  - Biodiversity and Climate Change (Ms Ivana d'Alessandro)
  - European Island Biological Diversity (Mr Eladio Fernandez-Galiano)

- Informal Meeting of EU Nature Directors, 7-10 June 2011 (Ms Ivana d'Alessandro)

7. The Aichi targets on protected areas and EU 2020 Strategy on biodiversity

- The Bern Convention contribution (Presentation by the Secretariat and discussion)

11:00 – 12:30 Implementing the Pan-European Ecological Network

8. Other initiatives of interest for the Pan-European Ecological Network

- Green Infrastructure initiative and EU 2020 Biodiversity Strategy (Mr Marco Fritz, European Commission - appologied, presentation by the Secretariat)
- Ardilla project: ecological connectivity of forests in Spain (Mr Ricardo Fraile, appologied)
- Barents Region Protected Areas Network, BPAN (Ms Anna Kuhmonen, Finnish Environment Institute)
- The new Natura 2000 biogeographical process (Ms Dominique Richard, EEA-ETC/BD)

Discussion

Lunch break

14:00 – 16:45 Tacking stock on the PEEN and future strategic development

9. Future priorities of PEEN: challenges and opportunities

- General conclusions of the study PEEN: taking stock, 2007 (Mr Hervé Léthier)
- Future strategic development of PEEN: options (Dr Lawrence Jones-Walters, ECNC)
- Conclusions of the Scientific Conference "Geographic basis of the Ecological Networks establishment in Russia and the Eastern Europe", the Russian Federation (Mr Nikolai Sobolev)

Discussion

Coffee break during the session

16:45 – 17:30 Next steps and future work

10. Future work of the Group of Experts
11. Election of the Chair and Vice Chair of the Group of Experts
12. Any other business
13. Closing