UNDP/GEF Danube Regional Project

Strengthening the Implementation Capacities for Nutrient Reduction and Transboundary Cooperation in the Danube River Basin

Inventory of Protected Areas (Natural Habitats) in the Danube River Basin

Project Component 1.4: Integrated Land Use Assessment and Inventory of Protected Areas

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Abbreviations

CORINE	Coordination of information on the environment
DIN	Deutsche Industrie Norm
DRB	Danube River Basin
DRP	UNDP/GEF Danube Regional Project
ECO EG	Ecological Expert Group of the ICDPR
EGM	EuroGlobalMap
EU	European Union
GEF	Global Environment Facility
GIS	Geographical Information Systems
ICPDR	International Commission for the Protection of the Danube River
IUCN	World Conservation Union (International Union for the Conservation of Nature)
IRS 1C	Indian Remote Sensing Satellite
pSCIs	proposed Sites of Community Interests
SPAs	Special Protected Areas
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WCMC	World Conservation Monitoring Centre
WFD	EU Water Framework Directive
WiFS	Wide Field Sensor
WWF	Worldwide Fund for Nature

Country abbreviations:

Austria	AT
Bosnia-Herzegovina	BA
Bulgaria	BG
Croatia	HR
Czech Republic	CR
Germany	DE
Hungary	HU
Moldova	MD
Romania	RO
Serbia & Montenegro	S-M
Slovakia	SK
Slovenia	SI
Ukraine	UA

Executive Summary

The Ecological Expert Group of the International Commission for the Protection of the Danube River (ICPDR) has been charged with preparing a river basin-wide Inventory of Protected Areas designated for the protection of water-related habitats and species. This Inventory of Protected Areas is required under Article 6, Annex IV and Annex VI of the EU Water Framework Directive.

This report, together with a GIS output, maps and a database, has been prepared as part of this task.

The Inventory of Protected Areas at present comprises a total of 237 protected areas from 11 countries in the Danube River Basin. However, the data is unavailable or incomplete for several DRB countries. Consequently, the Inventory will need to be updated on a stepwise basis in the coming years as and when more data is available.

Chapter 1:
Aims and activities

The EU Water Framework Directive (WFD) requires, as part of its river basin management approach, that an inventory of nature protection areas (in the form of a map) be carried out on a river basin level. One of the primary responsibilities of the Ecological Expert Group (ECO EG) of the International Commission for the Protection of the Danube River (ICPDR) is to prepare such an inventory and to ensure that it is prepared according to the provisions of WFD Article 6 and Annex IV, 1(v) related to habitats and species protection areas in line with the WFD time frame.

This report summarises work undertaken to prepare the Inventory of Protected Areas within the frame of the UNDP/GEF Danube Regional Project (DRP), Output 1.4: *Integrated Land Use Assessment and Inventory of Protected Areas*. The aim of this element of Output 1.4 was to ensure the completion of the Inventory and its presentation in a map for use by ECO EG and for use in meeting the other DRP objectives.

A Danube River Basin (DRB) protected area inventory database was also to be compiled based on national inventories and taking into account the existing land use data. A detailed methodology for the inventory of protected areas was to be finalised following the input received during the ECO EG meeting on September 9 and 10, 2002. Detailed discussions and decisions about the methodology and approach for conducting the inventory were held during previous ECO EG meetings. The September 2002 meeting provided input on questions related to what kind of protected areas to include in the inventory, how to homogenise country specific information on protected areas etc.

Commitments were made by national representatives to the ECO EG to provide data which was analysed at the ECO EG meeting. As of September 2, 2002, ten of the thirteen DRB countries had provided the initial data and efforts to ensure the full set of data needed were undertaken. The core data set that was provided by the national representatives of the ECO EG was to be analysed to determine whether it was compliant with the agreed methodology and standardised reporting format (see data requirements and steps as per the 4th ECO EG meeting Report, Feb. 25-26th, 2002 as well as the steps as laid out in the ECO EG Work plan). The project team was to identify gaps and weaknesses and coordinate with ECO EG members to fill them and then to harmonise the data set to the attainable degree. An assessment was then to be made whether updated EU Natura 2000 software expected to be available in October 2002 would be utilised.

The inventory of protected areas was then to be produced in the form of a layer within the ICPDR GIS system according to the existing guidelines provided by the ICPDR GIS Expert Sub-Group. In this context, a process for integrating/transferring the map layer into the ICPDR GIS framework was to be clarified. In addition discussions were to be held with the DRP team to ensure the linkage of the data base and information from the project with the overall information management of the project.

According to the 4th ECO EG meeting Report:

> "These maps for the inventory of protected areas should be based on the sub-units defined by the countries and follow the definitions for mapping and GIS of the GIS ESG. Sites of international importance, as for example, Ramsar sites, National Parks, IBAs, World Heritage Sites etc. could be included as a very first step into the inventory since their data is available immediately. EU

> Member States, Austria and Germany, will select suitable areas out of their nominated Natura 2000 lists. All other countries - the non-EU Countries - are asked to select their sites on the basis of their national nature conservation legislation. The IUCN-WCMC *List of Protected Areas* 1993 can form an important basis for this task. Wetlands International is currently updating the world wide wetland inventory. The wetland inventory conducted in the frame of the UNDP/GEF Danube Pollution Reduction Programme by WWF, *Evaluation of Wetlands and Floodplain Areas in the DRB* (May 1999) is a good basis for building the inventory."

The draft maps have been discussed and reviewed with the DRP project team as well as the relevant ICPDR Expert Groups before finalisation.

As the nature protection areas inventory is a primary objective of the ECO EG and is also required for developing the DRB Management Plan (the primary task of the ICPDR River Basin Management Expert Group), close cooperation with both Expert Groups is required. Supporting appropriate land use (particularly related to wetland protection and rehabilitation) is also related to the activities of the ECO EG.

Chapter 2:
GIS-Data and Cartography

For editing the GIS data and map of the Inventory of Protected Areas the following basic points were relevant:

- Geometrical structure and content of base data;
- Quality of the different country data; and
- Output data.

2.1 Geometrical structure and content of Base data

The geometrical structure of the data corresponds to the CORINE-LandCover data (Lambert Azimutal Projection). The planned use of the EuroGlobalMap (EGM) dataset could not be realised, because it was not yet available. On the basis of the given geo-referencing information the processed inventory data can still be converted into the EGM data in a future step.

The following information is integrated in the base data set:

- Satellite images (IRS 1C, WiFS) ;
- River network;
- State boundaries;
- Capital cities;
- Border of Danube River Basin; and
- Annotations.

2.2 Quality of the different country data

The quality of spatial data provided also varied from country to country. The following types of data were received from national authorities:

- Detailed GIS data (e.g. from DE, SK);
- Digital data, but only raster data (scanned maps) of single protected areas (e.g. from CR);
- Digital data, but only raster data (scanned maps) with national overview maps of protected areas (e.g. from RO); and
- Analog maps of very different scales with very different information.

Detailed information about the different country data is listed in Chapter 3.

2.3 Output data

In general if digital spatial data are prepared, there are theoretically no scale limitations. But due to the very different and partly poor quality of the data of protected areas, the result can best be displayed at a scale of a DIN A0 map, i.e. a scale of up to 1:1.5 million. For more detailed scales the inaccuracy will be too large.

A reduction of the DIN A0 map to a DIN A3 overview map can be carried out by reducing the base data and display limitations for protected areas. Small areas would then be displayed only with point symbols and only very large areas would be displayed in the same way as in the DIN A0 map.

Chapter 3:
Thematic data and database

The preliminary Inventory of Protected Areas serves as an overview document for the ICPDR, describing and visualising a core list of protected areas within the DRB. The database and map should, in the future, be further developed to meet the requirements of the Register and Map of protected areas within the framework of the WFD.

3.1 Limitations to the data

The DRB can be divided into four groups of countries:

- EU Member States (DE and AT);
- First-wave Accession Countries (CR, SK, HU and SI);
- Second-wave Accession Countries (BG, RO and, potentially, HR); and
- Other countries (BA, S-M, UA and MD).

Article 6, Annex IV and Annex VI of the WFD requires EU Member States to ensure the establishment of a Register (or registers) of water-related Natura 2000 areas by the end of 2004. Since the establishment of the European Natura 2000 network has been delayed, and is likely to be further delayed because of the accession to the EU of ten more countries by the year 2004, it is obvious that this inventory can only be fully elaborated after further work. The Inventory of Protected Areas and associated map will therefore have to be recompiled for the ICPDR reporting needs for 2004 to show designated or at least preliminarily nominated water-related Natura 2000 sites in all EU Countries and, for other countries in the DRB, those areas which have been designated under national legislation.

According to the decisions of the ECO EG, DRB countries were asked to select proposed protected areas for the Inventory of Protected Areas in such a way as complements the future Natura 2000 network. To this end, a core data set (related to the Natura2000/Emerald and Ramsar inventories) was compiled by the ECO EG during 2003. Data collection focused on the following protected area types:

- (Preliminary) Natura 2000 Sites (pSCIs and SPAs)
- National Parks (IUCN Category II sites)
- Biosphere Reserves (UNESCO Man and Biosphere)
- Ramsar Sites (Wetlands of international importance)
- Other important “water-related” national protected areas.

The next important point is to review the data according to whether the protected areas included are of “basin-wide” importance. It will be necessary to develop an appropriate method for this step for the DRB. Subsequently the title of the map may have to change from “Inventory of Protected Areas” to something more specific such as “Relevant Protected Areas for the Future Inventory of Areas Designated for the Protection of Habitats or Species for WFD Purposes within the DRB”.

3.2 Status of national data

The following list describes in more detail the provided data country by country. It was possible for all country co-ordinators to submit the needed data in three formats (Word, Excel, Access). Most of the countries used the Excel format, only a few entered the data directly in the easy-to-use Access data form. Other countries sent only copied information from Ramsar Information Sheets without any sub-selection of the required core data set for the inventory. A total of 237 sites were submitted to the consultant from 11 countries. According to international evidence, for SI and UA some 7 areas could still be added. Concerning land cover description information for only some 10 per cent of all protected areas was provided. Even though gaps were evident about 70% of the all data fields in the inventory could be filled in. The inventory will be available as an Access2000 database and will be re-arranged for DANUBIS as an internal working document of the ECO EG.

Germany (84 sites): The only country providing the full list of water-related EU Natura2000 areas; a robust method was developed in Baden-Württemberg and Bavaria to sub-select water-related areas. **Quality of geometric data:** Very detailed GIS-data (Shape-File-format, may be used in large-scale maps up to 1:100.000)

Austria (18 sites): The list includes protected areas of national and international importance, all of them nominated as Natura 2000: National Parks, Biosphere Reserves and Ramsar sites. A special methodology to define the water-related Natura 2000 areas is under preparation and will be ready in February 2004. **Quality of geometric data:** No official data of Austrian authorities were used, only internet-available data. Can be used only in overview maps up to scale of 1:1mio.

Czech Republic (8 sites): The list includes the most important protected areas and Ramsar sites. The final coverage for Natura 2000 areas will be available in May 2004. **Quality of geometric data:** The data were sent as .jpg-file, i.e. Raster-data with a limited resolution. Accuracy up to 1:1mio. During quality proofing of the data it was realized that in some cases there were large differences between the reported area size in the database and the size of the area in the map (areas CR2, CR3, CR4). Due to missing information this problem could not be clarified in this phase of the project.

Slovakia (23 sites): The list includes a preliminary water-related SPA coverage plus Ramsar sites. The final coverage for Natura 2000 areas will be available in May 2004. **Quality of geometric data:** Detailed GIS-data (Shape-File-format, may be used in large-scale maps up to 1:100.000).

Hungary (26 sites): The database includes only Ramsar Sites with most being part of National Parks. The final coverage for Natura 2000 areas will be available in May 2004. **Quality of geometric data:** Basic information was a scanned map, accuracy up to 1:1mio)

Slovenia (0 sites): So far no data from Slovenia were provided. Unofficially there is one National Park and one Ramsar site within the Danube basin. The final coverage for Natura 2000 areas will be available in May 2004.

Croatia (12 sites): The inventory includes the most important areas protected under national law. The first stage of Natura 2000 coverage is under preparation. The final coverage for Natura2000/Bird

Protection Areas will be ready in 2007. Up to this time this inventory should be used. **Quality of geometric data:** Basic information was a scanned map, accuracy up to 1:1mio.

Romania (14 sites): The inventory is still incomplete for the Lower Danube section. The first stage of Natura 2000 coverage is under preparation. The final coverage for Natura 2000 areas will be ready in 2007. Up to this time the existing inventory should be used. **Quality of geometric data:** Basic information was jpg-overview map of the whole country. Accuracy not better than to 1:2.5mio.

Bulgaria (27 sites): This is a comprehensive inventory including all NPs, BRs and Ramsar Sites. The first stage of Natura 2000 coverage is under preparation. The final coverage for Natura 2000 areas will be ready in 2007. Up to this time the existing inventory should be used. **Quality of geometric data:** No geometrical data were received. The areas along the Danube river are very detailed, based on WWF-data (better than 1:100.000) the other data are very raw or unknown, not better than 1:2.5 mio.

Bosnia-Hercegovina (3 sites): Only three major protected areas were sub-selected by the consultant from an initial list with over 30 areas that includes very small Karst springs or Karst canyons. It is still necessary to review this list. **Quality of geometric data:** Scale up to 1:1mio.

Serbia and Montenegro (19 sites): A comprehensive list with all important protection areas and Ramsar sites was provided. Serbia hosts some of the most important lowland wetlands along the Danube, Sava and Tisa rivers. **Quality of geometric data:** Basic information was jpg-overview map of the whole country. Accuracy not better than to 1:2.5mio. In the area value of the database the buffer zones of the national parks were integrated. Due to this reason the buffer zones were displayed in the map too (only for Serbia-Montenegro data). As with the Czech data, there were problems with some areas where large differences between the reported area size in the database and the size of the area in the map occurred (areas SM10, SM16, SM19). Due to missing information this problem could not be clarified in this phase of the project.

Ukraine (0 sites): No information was officially provided. The data on Ramsar Sites was derived from WWF information (up to 1:1mio).

Moldova (3 sites): The three nominated sites are all closely related to the Prut river. **Quality of geometric data:** Different digital maps of the sites were received. Scale up to 1:1mio.

Chapter 4:
Further Steps

In general the data quality of the inventory can only be upgraded step by step over the next years. After the accession to the EU of CR, SK, HU and SI, a preliminary European list of Natura 2000 areas can be expected for the end of 2004. Based on that list, "water-related" Natura 2000 sites could be added to the inventory in Phase 2 of the UNDP/GEF Danube Regional Project.

Each Danube River Basin country should develop a strategy concerning the term "water-related". Presently Austria is elaborating a methodology reviewing other European approaches but also Hungary prepares such a method. The ECO EG has a co-ordination function for the DRB-wide inventory and at its next meeting the different approaches should be discussed.

For roof level ICPDR activities, including the preparation of the DRB Management Plan and Part B reports to the EU on WFD implementation, protected areas should be reviewed according to whether they meet the criterion of "basin wide importance". Agreement on this method should be a task for ECO EG. Such a method could be developed in the year 2004 for application in the six EU Member States. The criteria for "basin wide importance" should be applicable for all DRB countries.