



# Living Lakes Eastern Europe Network

Final Documentation



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## Greetings of Dr. Volker Wachendörfer, Department of Environmental Research and Nature Conservation of the German Federal Environment Foundation



The German Federal Environment Foundation (Deutsche Bundesstiftung Umwelt, DBU) is one of Europe's largest foundations, established according to civil law in 1990 as a non-profit organisation. The goal of the foundation is to promote innovative projects in the field of environmental protection with particular focus on small and medium sized enterprises. The promotional activities include environmental technology and communication as well as environmental research and - last not least - nature conservation.

Although prioritising projects in Germany, international challenges concerning environmental problems and nature conservation have been considered since the beginning. For some years now DBU is active in Central and Eastern Europe (CEE) with a continuously increasing number of projects. With its multinational scholarship programme the DBU created a very effective platform for the exchange of know-how. Numerous projects have been promoted in the fields of environmental awareness and competence building. Another focus lies on nature conservation as a fundamental challenge in the prospering EU. The new EU countries in CEE have fascinating assets of cultural and natural heritage with a high biodiversity. To protect these natural landscapes, comprehensible management concepts are required, based on the participation of all main stakeholders including "users" as well as "conservationists".

One of the most prominent projects in this context is "Living Lakes Eastern Europe Network" managed by the Global Nature Fund (GNF). Particularly lakes and wetlands are exposed to serious impacts. Besides pollution and eutrophication demands for diverse uses exist, such as fishery, tourism, recreation, water sports etc. The shorelines of many natural lakes in Europe have been changed negatively during the last decades - especially reedbeds as amphibic transition zones were reduced in an extraordinary extent. So the initiative of the GNF to expand the Living Lakes Network to several lakes in CEE was seen as important and seminal approach. As a result, the advisory board of the DBU decided to support this project for more than two years.

The results presented in this booklet show that the GNF and his partners from Estonia, Lithuania, Poland, Hungary and Germany succeeded in developing concepts for the divergent problems at the different lakes. Management tools have been acquired and competence networks could be created. We hope, that the positive results of the GNF project will contribute considerably to a sustainable management of lakes, lakeshores and natural landscapes anywhere in CEE, Europe and worldwide. It was a pleasure for the DBU to promote the project – thanks a lot to all who had hand in the exceedingly positive results.

## Global Nature Fund and Living Lakes

### Description

The coordinator of the network is Global Nature Fund (GNF), an international non-governmental and non-profit organisation, based in Germany. A principal task of GNF is to further and promote sustainable development objectives at the international level. GNF's approach is to support NGOs worldwide and cooperate with all relevant stakeholders involved in water and nature conservation issues. The role of GNF in the Eastern European Network is to facilitate the project and to organise specific seminars, excursions and the final conference.

### Living Lakes

In 1998, GNF launched Living Lakes, a worldwide lake partnership now comprising of more than 55 organisations and institutions from 45 lake regions striving for the protection and sustainable development of lakes and wetlands. The overall intent of Living Lakes is to prepare the ground for an on-going and sustainable international dialogue and cooperation between private and public stakeholders involved in water issues. The Lake Network supports campaigns and activities with financial support from international conservation programmes. GNF cooperates closely with international organisations, such as the secretariats of the UN Convention on Migratory Species (UNEP/CMS) and the "Ramsar Convention" on the conservation of wetlands.

Partners of Living Lakes from the business sector are Unilever, Daimler and the German airline Lufthansa. Furthermore, Living Lakes is also supported by the Swiss corporation Sika, Ziemann, Osram, T-Mobile, Ethikbank and GLS-Gemeinschaftsbank.

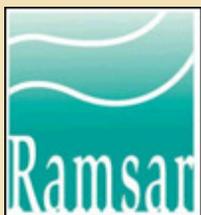
### Living Lakes Partner Lakes



- Member & Candidate Lakes
- Associate Members
- Honorary Member

## LAKES AND WETLANDS IN EASTERN EUROPE

### Eastern European Lakes and the Ramsar Convention



During the 1960s, far sighted environmentalists prepared the first modern multilateral environmental agreement, now known as the “Ramsar Convention” or more formally the Convention on Wetlands, signed in the Iranian town of Ramsar at the shores of the Caspian lake (often regarded as an inland sea), on 3 February 1971.

At the end of 2007, this global agreement had 157 contracting parties who have designated 1,702 “Ramsar Sites” (Wetlands of International Importance), totalling 153 million hectares, or nearly the size of Mongolia. This intergovernmental treaty provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.

#### *What are “wetlands”?*

The Ramsar Convention promotes a pragmatic and inclusive approach. Over its years of existence, it has developed a long-term vision for the future of wetlands, taking political realities and constraints into account, when approaching wetlands essentially as “water-related ecosystems”. The recent Millennium Ecosystem Assessment, undertaken by an impressive number of specialists across the globe at the turn of the century, concluded that these water-related ecosystems deliver a wide range of services which contribute to our well-being, such as fish and fibre, biodiversity, water supply, water purification, climate regulation, flood regulation, coastal protection, recreational opportunities, and increasingly tourism. Since the term “wetlands” was coined in the 1960s, it is most commonly referred to as covering marshes, fens, peatlands, natural or artificial water bodies, with permanent or temporary water, with water that is static (lakes) or flowing (rivers), fresh, brackish (coastal lagoons, estuaries) or salt, including near shore marine waters. Unfortunately, many scientists unnecessarily still restrict their thinking only to the narrow part of wetland ecosystems commonly described as marshes (with emergent aquatic vegetation) or small ponds (as opposed to larger lakes). But most water of the hydrological cycle runs through rivers with their floodplains and lakes from the mountains to the sea. River and lake wetland ecosystems are badly under-represented in the Ramsar List, although Ramsar Handbook 6 on “river basin management” ([http://www.ramsar.org/lib/lib\\_handbooks2006\\_e.htm](http://www.ramsar.org/lib/lib_handbooks2006_e.htm)) focuses on the need to integrate wetland conservation with river basin planning.

## *Lakes in Eastern Europe*

In Eastern Europe, lakes are particularly numerous in the drainage basins of the Baltic, White and Barents Seas, notably in the Baltic States, Finland and the European part of the Russian Federation, with many lakes in the regions of Murmansk, Karelia, Leningrad, Volgograd and others. Europe's largest lakes Ladoga (1,839,000 hectares) and Onega (960,000 hectares) are found here. Further south, in the drainage basin of the Black Sea, important reservoir lakes exist along the Danube, Prut, Dnieper and Don rivers. Their functions for biodiversity support remain still little analyzed in many cases. Outside of the main river floodplains, the Austrian and Hungarian steppe lakes Neusiedl/Fertő and Balaton are amongst the largest and most widely known. The Mediterranean drainage basin in South-eastern Europe has mostly a karst geology allowing for few surface water bodies. But the ecological and socio-economic functions of lakes Skadar/Shkodra, Ohrid, Prespa and Dojran in Albania, Greece, Macedonia and Montenegro are therefore of an even greater importance. Further east, a number of lakes exist in the, sometimes arid or closed drainage catchments of Anatolia: Burdur, Egridir, Beysehir and Tuz to name a few Turkish lakes. Not to forget the large lakes in the basins draining to the Caspian Sea and Persian Gulf further east: Van, Urmia and Sevan have played important roles in the development of human societies and cultures along their shores. In our modern times, large reservoir lakes were also created in this part of Eastern Europe, notably along the rivers Euphrates, Tigris, Araks and Kura flowing through Turkey, Armenia, Azerbaijan and Kalmykia in the Russian Federation. Their environmental impact still largely needs to be assessed.

This enumeration is only intended to evoke the diversity of Eastern European lakes and provides in no ways an exhaustive overview. Some of these lakes have been listed under the Ramsar Convention, in whole or only partly, many others fulfil the Ramsar criteria, but are still missing from the List. A remarkable example is Lake Sevan Ramsar Site (N° 620), including the entire lake (124,200 ha), additional wetlands close to its shores, inflowing rivers and the entire mountainous water catchment area of the lake, covering together a surface of 489,100 ha, or roughly 16 % of Armenia's land surface.

## *Water management of Eastern European lakes*

Water management of Eastern European lakes is probably the biggest challenge to assure a sustainable future for these ecosystems, both in terms of quantity (over-abstraction, mostly for irrigation) and quality (industrial point-source pollution, diffuse pollution and eutrophication from urban and agricultural runoffs). It is important to approach the environmental problems of these lakes from the water catchment (drainage) basin perspective, and to correctly analyse incoming and outgoing water flows, above and under ground, as a baseline for management measures. Through water evaporation, lakes influence the local climate favourably, either by increasing the air humidity during dry and hot summer periods, or by

reducing the cooling of the air during cold winter spells. Both buffering effects are particularly important in closed or arid basins, as they often occur in continental climates in Eastern Europe.

## ***Functions of lakes in Eastern Europe***

While addressing fundamental hydrological problems of these lakes in their water catchment basins, we should not forget to account also for other important services the lakes may contribute to our well-being. Often they serve as water retention basins during flood events, or as water storage areas during drought periods. Their primary producers (plankton) and aquatic vegetation purify the water and capture sediments, nutrients and polluting agents. Many of the Eastern European lakes are important areas for leisure and commercial fisheries, for outdoor recreation and tourist activities. With the opening up of Eastern Europe to Western visitors, nature and bird watching tourists arrive in increasing numbers to discover the specific lake biodiversity and are a rapidly growing local economic factor. Many wild species became rare and threatened in Western Europe during the 20<sup>th</sup> century, such the Otter, Sea-eagle or Osprey, but are still regular hosts at Eastern European lakes. These ecosystems often support large gatherings of migrating and wintering geese, ducks and cranes, as well as providing a refuge for less visible, but nevertheless threatened, amphibians, dragon- and butterflies, rare marsh plants, etc.

## ***Ramsar and Living Lakes in Eastern Europe***

Eastern Europe is arguably among the world regions most rich in lakes. Thus, there is a great potential for the Living Lakes partnership to explore and test new methods of conservation and sustainable management of their resources. Analyses of their ecosystem services, how to account and how to pay for them could provide most useful demonstration cases and show other lake communities the way forward. In addition, many Eastern European lakes, or their water catchments, are shared between several countries. Transboundary cooperation, around a shared lake, and throughout the shared water catchment, is therefore a must. Again, also here, management case studies elaborated through Living Lakes partners, in cooperation with the relevant authorities and stakeholders, can provide useful guidance to others.

The Ramsar Secretariat is looking with great expectations to the outcomes of the work of the Living Lakes partnership and similar organisations. To this end, we signed a Memorandum of Cooperation with the Global Nature Fund in 2004. And the development of a regional partnership and action programme for Living Lakes in Eastern Europe is a promising tool to implement our cooperative agreement in this region.

⇒ Visit [http://www.ramsar.org/profile/profile\\_index.htm](http://www.ramsar.org/profile/profile_index.htm) for lists of Ramsar sites in Eastern European countries or <http://www.wetlands.org/RSDB/Default.htm> for detailed information on each Ramsar site.

## Lakes in Estonia

### Introduction

In Estonia there are 2,804 lakes of which 1,559 are natural. The two biggest lakes are Lake Peipsi (3,555 km<sup>2</sup>, catchment area 47,800 km<sup>2</sup>) and Lake Võrtsjärv (270 km<sup>2</sup>, catchment area 3,374 km<sup>2</sup>), the rest of them are small lakes. Lake Peipsi is the largest transboundary water body and the fourth largest lake in Europe. 44 % of Lake Peipsi belongs to the Republic of Estonia, 56 % to the Russian Federation. Lake Võrtsjärv is the largest lake within the boundaries of Estonia. Both lakes are shallow – Lake Peipsi with a mean depth of 7.1 meter and maximum depth of 15.3 meter and Lake Võrtsjärv, which has a mean depth of 2.8 meter and maximum depth of six meter. There are also many small water bodies (approx. 20,000), which are not considered as lakes. In addition there are many wetlands of which 11 are of international importance.

### Biodiversity

Estonia is a small country with a very diverse landscape. Most important biotopes are forests (they form approx. 48 % of the Estonian surface area), grasslands (including many half-natural communities such as coastal, water meadows and wooded meadows) and mires. Compared to areas with similar latitude and similar size, Estonia has the largest diversity in the world - over 300 bird species, approx. 75 fish, 5 reptile, 11 amphibian and 65 mammal species have been identified. 1,450 tracheophyte, 550 moss, and 2,500 algae species were recorded. In addition, there can be found many species (e.g. Flying squirrel, *Pteromys volans*) and landscape types (e.g. mires) that are rare in other countries in Europe.



A typical coast village of Lake Peipsi under flood



Canal in the Emajõgi Great Mire

## Drinking water reserves

In Estonia the main drinking water source is groundwater, except for Tallinn, where most of the drinking water comes from Lake Ülemiste, and Narva, where only surface water is being used. The estimated natural storage of groundwater until 2005 was according to Geological Survey of Estonia 560 million m<sup>3</sup> per year. Affirmed consuming storage in January 2004 was 182 million m<sup>3</sup> per year. Based on main groundwater layers there are 15 segregated groundwater bodies. Most of the groundwater complexes and layers are in good condition with one exception: the East-Viru oil shale basin, where the quality of Ordovician's groundwater is bad because of elevated concentration of sulphates, minerals and dangerous substances (foremost because of carbonic acids). Generally the use of groundwater has decreased because of overall diminished manufacturing activities and changes in technology. Rising prices also have influenced people to use less water and at the same time to use it more efficiently. Groundwater is also used in households and in manufactories (e.g. in oil shale mining/manufacture). A big part of groundwater is being pumped out to drain mines and quarries.

## Nature protection reserves in Estonia

Protection status	Area (km <sup>2</sup> )
575 Natura 2000 sites in 2006 (16% of country area)	6,970
66 SPAs - Special Protection areas	12,368
509 SACs - Special Areas on Conservation 3 Salty wetlands (FFH 1310), 181 Standing water bodies (FFH 3110-3160), 225 Fens (FFH 7110 – 7160), 160 Marshes (FFH 7210 – 7230)	10,590
5 National parks (Lahemaa, Karula, Soomaa, Vilsandi and Matsalu)	Altogether
129 Nature reserves	5,531 (dry
149 Landscape protection areas	land), 874
906 Other reserves and reserves with protection status to be revised	(water area)
Areas with temporary restrictions (dry land/water area)	1,309/5,074
11 Ramsar sites (14 sites are on the waiting list)	2,183
National Parks Matsalu	486
Soomaa	372
Emajõe Suursoo landscape protection area	326
Alam-Pedja	260
Vilsandi	241
Landscape protection area of Hiiumaa islets and Käina bay	177
Muraka	124
Endla Nature Reserve	81
Nigula wildlife reserve	47
Puhtu-Laelatu-Nehatu wetland complex	46
Laidevahe nature reserve	24

- ⇒ Visit [http://www.ramsar.org/profile/profiles\\_estonia.htm](http://www.ramsar.org/profile/profiles_estonia.htm) for a more detailed list of Ramsar sites in Estonia or <http://www.wetlands.org/RSDB/Default.htm> for detailed information on Estonian Ramsar sites.
- ⇒ Visit <http://www.envir.ee> (Estonian Ministry of the Environment) or <http://www.keskkonnainfo.ee/english> (Estonian Environment Information Center) for more information on environment in Estonia.

### **Living Lakes Network Partner at Lake Võrtsjärv in Estonia**

The Living Lakes Partner organisations at Lake Võrtsjärv are ELF (Estonian Fund for Nature) in cooperation with the Lake Võrtsjärv Foundation ([www.vortsjarv.ee](http://www.vortsjarv.ee)) and the Institute of Agricultural and Environmental Sciences of the Estonian University of Life Sciences. ELF is a non-profit organisation founded in 1991 and has established the Soomaa and Karula national parks. ELF has also created comprehensive inventories of valuable habitats and participates in designing the Natura 2000 network of protected areas in Estonia. The Lake Võrtsjärv Foundation was established in 2000. Its aim is to conserve the rich natural diversity in



Estonia through raising the awareness of the public as well as protecting Lake Võrtsjärv as a sensitive water-body.

### **Living Lakes Network Partner at Lake Peipsi in Estonia**

Peipsi Center for Transboundary Cooperation (CTC, [www.ctc.ee](http://www.ctc.ee)) originally started as the "Lake Peipsi Project" in 1993 with a primary focus on research on environmental issues. The original focus of the project was later expanded in order to include social aspects and foster local and public participation. Eventually, the narrowly focused project developed into a broadly focused NGO with different programs targeting the entire Lake Peipsi watershed area. Peipsi CTC has developed a profound expertise in working with other non-profit organisations as well as local authorities and the business sector and supporting cross-border cooperation in border regions of Europe, Caucasus and Central Asia. Joint projects are being implemented in the field of water management, community development, public participation and cross-border cooperation.



**Peipsi  
Center for  
Transboundary  
Cooperation**

Peipsi CTC organises capacity building events and training for various stakeholder groups on environmental education, fundraising, project management and public relations. CTC also initiates public dialogue and community events, such as roundtables and local environmental activities.

## Lakes in Hungary

### Water in Hungary

Almost all of the water reserves of Hungarian rivers (96 %) come from abroad, flowing into the Carpathian Basin, so that Hungary is a transit country: water reserves quantity and quality predominantly depend on interventions in neighbouring countries. The entire territory of the country (93,000 km<sup>2</sup>) belongs to the Danube river basin, with the most important tributaries of the Danube, Tisza and the Drava. The most extended and shallowest lakes of Central Europe are found in Hungary, such as Lake Balaton, Lake Velence and Lake Fertő (in German: Neusiedlersee), a transboundary lake between Austria and Hungary. Hungary has thermal water resources in almost 80 % of the territory of the country. They are only used to a limited degree as potable water. In the case of thermal water use, the hazard of secondary environmental pollution (disposal of used water with high saliferous content) should not be left out of consideration. On the other hand, there are great opportunities in the utilisation of geothermic energy without water extraction by way of heat pumps. The industry and the energy sector, particularly for cooling in power plants require some 70 % of water abstraction. Agriculture uses some 18 % of water abstraction (fishponds, to lesser extent irrigation) and the rest (12 %) is used as drinking water.

### Nature Protection in Hungary

Today, 10 % of the country's territory is protected as natural area, 12 % of which is under strict protection. Approximately 21 % of Hungary is part of the European Union's Natura 2000 network. Hungary makes up most of the Pannonian Biogeographic region and as a result of the geographical isolation of the Carpathian Basin, there are a number of endemic species. 695 plant species, 965 animal species and 35 mushroom species are protected by national law.



Rosalia longicorn (*Rosalia alpina*)



Large pink (*Dianthus superbus*)

As a consequence of economic restructuring and environmental policy measures, the state of the environment in Hungary is improving (e.g. air pollutant emissions is decreasing and the water quality of Lake Balaton is improving). Considerable progress has been made towards the establishment of wastewater treatment and waste management to comply with EU requirements. By 2013, further developments are needed in the fields of waste water, drinking water and waste management, recultivation, implementation of the Water Framework Directive, nature preservation, renewable energy resources, energy efficiency, sustainable consumption and production and also at environmental protection. At the same time, a number of problems must be rectified in the fields of surface water quality, waterbase protection and environmental health (e.g. the treatment of chemicals).

The Lake Balaton region contains many protected species including the Black stork (*Ciconia nigra*), Black woodpecker (*Dryocopus martius*) and Eurasian otter (*Lutra lutra*). There are 41 indigenous species of fish living in Lake Balaton and its tributaries. Some 250 bird species can be found there, 27 of which, such as Spoonbill (*Platalea leucorodia*) or Long-eared owl (*Asio otus*) are strictly protected. The basis of species protection is rarity and threat, in addition to subjective aesthetic considerations. While all species of amphibians, reptiles and birds, some 70 % of the mammal species, almost 40 % of fish species are protected, the proportion of protected invertebrate species is hardly over 1 %.

Since the end of the 1970s Hungary has become a party to all relevant international conventions on nature conservation: the Ramsar Convention on Wetlands of International Importance, especially as Waterfowl Habitat (1979), the Bonn Convention on the Conservation of Migratory Species of Wild animals (1983), the Bern Convention on the Conservation of European Wildlife and Natural Habitats (1989), the Rio Convention on Biological Diversity (1994) amongst others.



Kis-Balaton – a Ramsar site



Landscape of the Tihany peninsula

## Ramsar sites in Hungary

Name	Area in ha
Lake Balaton	59,800
Hortobágy	23,918
Felső-Tisza (Upper Tisza)	22,311
Gemenc	16,873
Kis-Balaton	14,745
Upper Kiskunság alkaline steppes	13,632
Rába valley (Rába-völgy)	10,961
Lake Fertő	8,432
Pusztaszer	5,000
Bodrogzug	3,782
Lake Kolon at Izsák	2,962
Biharugra Fishponds	2,791
Mártély Landscape Protection Area	2,232
Ipoly valley	2,227
Baradla Cave System and related wetlands	2,075
Lakes by Tata	1,633
Rétszilas Fishponds Nature Conservation Area	1,508
Béda-Karapanca	1,150
Ócsa Turjános	1,078
Velence and Dinnyés Nature Conservation Area	965
Csongrád-bokrosi Sóstó sodic-alkaline pans	770
Lake Fehér at Kardoskút	492
Pacsmag Fishponds Nature Conservation Area	485
Nyirkai-Hany	460
Szaporca, Ó-Dráva meder	257
All	207,176

⇒ Visit [http://www.ramsar.org/profile/profiles\\_hungary.htm](http://www.ramsar.org/profile/profiles_hungary.htm) for a more detailed list of Ramsar sites in Hungary or <http://www.wetlands.org/RSDB/Default.htm> for detailed information on Hungarian Ramsar sites.

## Wetlands and Lakes in Hungary

*Kis-Balaton*, originally a part of Lake Balaton but now an independent water body is a large wetland habitat unique in Europe, giving way to significant research conducted by international nature conservationists. Its wonderful world of birds was already famous during the last century; and has survived despite the draining of the marsh which began in 1922. In addition to 250 species of birds identified so far, several other rare animals and plants can be found. Some examples include the Northern vole, Dogfish, Pond loach and some rare species of dragonflies.

*Lake Hévíz* is located near to the western end of Lake Balaton. With an area of 4.8 ha, it is the largest thermal lake in the world. The flow of water is very strong

and the lake is believed to be completely replenished each day. The waters are reputed to have curative effects, and there is a thriving health tourism industry in the area. The fauna and flora in the lake are unique due to the temperature and chemical composition of the water, which is slightly radioactive and contains reduced sulfuric compounds, as well as oxygen in solution. Several species can be found only in this lake. Bacteria are the dominant life form in the lake; it is possible that this is a cause of the supposed curative effect.

*Lake Tisza*, also known as *Kisköre Reservoir* (in Hungarian: *Kiskörei-víztározó*), is the largest artificial lake in Hungary. As part of the ongoing Tisza river flood control project, its construction started in 1973 and was completed in the 1990s, covering a surface of 127 km<sup>2</sup>. It is a popular tourist destination and has gained ecological importance due to a diversity of birds, plants and animals.

*Lake Fertő* (in German: *Neusiedlersee*) is the second largest steppe lake in Central Europe, straddling the Austrian–Hungarian border. The lake covers 315 km<sup>2</sup>, has a drainage basin of about 1,120 km<sup>2</sup> and is 1.8 m deep. Most of the lake is surrounded by reeds which serve as a habitat for wildlife making the lake an important resting place for migratory birds and are harvested in winter as soon as the ice is solid enough. This serves a double purpose, one ecological (removal of the bulk of organic matter that would otherwise decay in the lake) and one economic (the reed is sold for various purposes, mostly related to construction and housing). Several plans for dams and other intrusive construction works which would have destroyed the lake and its biotopes were discussed during the first half of the 20th century but, luckily, came to nothing. In 2001, the national parks in Austria and Fertő-Hanság in Hungary were together accepted as a World Heritage Site.

Other important lakes in Hungary are *Lake Velence* and *Lake Vadkert*, which are famous and popular tourist destinations and *Lake Szelid*, an unusual salt lake formed from an old branch of the Danube.



Witness mountains (basalt and volcanic hills)



Recreation and tourism is important at Hungarian lakes

## *Living Lakes Network Partner at Lake Balaton in Hungary*

The Lake Balaton Development Coordination Agency (LBDCA) and the Lake Balaton Development Council (LBDC) are the main responsible organisations for managing the development of the Lake Balaton Recreational Area, representing the interests of the development organisations, regional institutes, governments and civil organizations in the area. The LBDCA signed a Memorandum of Cooperation with the organisations described below in January 2007. The aim of this Memorandum was to establish partnerships between national and international partners to collaborate in tourism and environmental protection through joint projects such as the Living Lakes Eastern Europe Network project.



The LBDCA ([www.balatonregion.hu](http://www.balatonregion.hu)) is a non-profit company and was established in January 2000. It performs professional and operative duties promoting the development of the Lake Balaton Recreational Area as well as contributing to the implementation of the Lake Balaton Region Strategic Development Programme. The main fields of work include: water quality improvement, tourism development, strengthening public security and the support of infrastructure developments.



The LBDC is a territorial development council created by the Law of Regional Development, and was established to tackle issues specific to the Lake Balaton Recreational Area. The Council is entitled to distribute government financing and to enter agreements in portfolios concerned with financing development projects.



The Balaton National Park Directorate was established in 1997 to safeguard the natural and cultural-historical treasures of the Balaton Uplands. The Directorate carries out tasks related to state research on nature conservation and the maintenance and restoration of habitats. It operates monitoring and information systems, contributes to other information and control systems and created tourist paths, educational paths and demonstration areas for environmental protection.



The Balaton Limnological Institute has been considered one of the main centers for limnological research in Hungary for 80 years, providing important contributions to research in limnology, and making Lake Balaton one of the best-investigated lakes. The Institute gives scientific background to the preservation of the lake.



The Association of Civil Organizations of Lake Balaton represents the interests of the civil groups, mainly NGOs, operating in the Balaton region. 27 civil groups represent more than 10.000 active volunteers striving for the preservation of the Lake Balaton environment and protection of the natural beauty of the lake.

## Lakes in Poland

Poland lies in the European zone poor in terms of lakes. There are only 7,081 lakes with a surface exceeding one hectare. Their total surface is 281,377 ha, i.e. approximately 0.9 % of the total surface of the country. Most common are smaller lakes of one to five hectares in size - in total 3,112 representing 44 % of all water bodies.

The largest concentrations of lakes are in the North of the country – in the Pojezierze (in English: lakeland area) Mazurskie, Pomorskie and Wielkopolskie. Pojezierze Pomorskie is the largest one covering 11 % of the country. Clear water in these lakes offers the opportunity for water sports and angling. The afforestation ratio of 36 % considerably exceeds the average for Poland, with a few large forest complexes of Bory Tucholskie, Bory Piławskie, Puszcza Drawska and Puszcza Gorzowska. Almost 28 % of the lakelands are large, natural landscapes, predestining the areas for leisure and recreation. The Polish lakes are small but rather deep, the deepest is Hańcza (113 m). The depth of approximately 70 lakes exceeds 40 m. Most of the Polish lakes origin from the Quaternary glaciations. There are also some other types of lakes: mountainous, coastal, lakes of karstic origin (Pojezierze Łęczyńsko-Włodawskie in Southeast Poland), and man-made fish ponds and dam reservoirs.

## Protection of lakes

The protection of lakes is manifold. There are regulations concerning the protection of water quality in general, and in case of drinking water reserves entrance is strictly regulated. For the sake of people and fauna, there are noise-free zones with a ban on engine boats. Fishing and hunting is restricted by a licensing system and on some lakes used for commercial fishing, sport fishing is not allowed. Legal nature protection includes five national parks located in the lakelands: Wigierski, Wielkopolski, Borów Tucholskich, Drawieński and Poleski. Numerous landscape parks, nature reserves, landscape protection zones and nature monuments are also found there.



Removing of excessive vegetation on the islands where the Common terns used to breed



Reed cutting without supervision by ornithologists is a danger for bird nests

## *Ramsar sites in Poland*

<b>Name</b>	<b>Area in ha</b>
Biebrzanaki National Park	59,233
Slowinski National Park	32,744
Wigry National Park	15,085
Poleski National Park	9,762
Warta River Mouth National Park	7,956
Narew River National Park	7,350
Milicz Fishponds Nature Reserve	5,324
Druzno Lake Nature Reserve	3,068
Lake of Seven Islands Nature Reserve	1,618
Luknajno Lake Nature Reserve	1,189
Swidwie Lake Nature Reserve	891
Karas Lake Nature Reserve	815
Subalpine peatbogs in Karkonosze Mountains	40
<b>Total</b>	<b>145,075</b>

⇒ Visit [http://www.ramsar.org/profile/profiles\\_poland.htm](http://www.ramsar.org/profile/profiles_poland.htm) for a more detailed list of Ramsar sites in Poland or <http://www.wetlands.org/RSDB/Default.htm> for detailed information on Polish Ramsar sites.

## *Use of lakes*

Most of the lakes in Poland are economically used which causes threats and pressures. Tourism is most developed in the largest and interconnected lakes. Intensive use causes increasing degradation of lakes and their flora and fauna. Only 3.2 % of the lakes are classified under 1<sup>st</sup> water quality category (drinking water), mainly located in the Mazurian Lakeland (L. Hańcza, L. Leliskie). The use of lake water for drinking is rare, however some dams have been built to collect river water for consumption such as Goczałkowice dam on Wisła River, providing 3.4 million people with drinking water.

Despite some investments in waste water treatment plants, the pollution accumulated over the years in stagnating lake water and still active non-point sources including tourists, farming, aerial inflow, which are responsible for the low water quality. Leisure, water sports, recreational houses located on lakeshores, to some extent transportation and industries cause disturbance to the fauna and influence habitats.

Southern Poland is poor in natural lakes (mainly a handful of small mountainous lakes) and in consequence most of the artificial water bodies are located there. These are dam reservoirs, claimed to serve multiple purposes (flood prevention, recreation, hydropower, water retention and many others which are often in conflict) and fish ponds. The Milicz Ponds (ponds located in the Barycz River catchment) are the largest pond system in Poland and in Europe. The area is

most important for Ferruginous duck, Greylag goose, Marsh harrier, Red necked grebe and Whooper swan in Poland. Ponds located in the upper Wisła river host almost the entire Polish population of the Night heron.

Due to the low density of water bodies, pressures from both the people and birds on the individual lakes in Southern Poland are higher than in the lakelands.

### *Living Lakes Network Partner at the Milicz Ponds in Poland*

The PTPP "pro Natura" ([www.pronatura.org.pl](http://www.pronatura.org.pl)) was created as a non-profit, non-governmental organisation in 1990, with the main goal of nature and biodiversity conservation in Poland. The organisation's work includes practical conservation measures and plans, scientific research and dissemination of knowledge, education, regional sustainable development and capacity building. Within the framework of the "Programme of Sustainable Development of the Barycz Valley" the organisation cooperates with national landscape parks, provincial administrations, companies, municipalities and other non-governmental organisations. Two examples from the manifold project portfolio are a 10-year programme for conservation of White stork in Poland (including improvement of nests – 8,000 platforms - and habitats) as well as the management of fish pond habitats (reed beds and islands) in cooperation with the state fish farm "Stawy Milickie", which has improved habitats and prevented the destruction of nests of at least 50 bird species such as Whiskered tern and Bittern.



The Milicz ponds developed over ages and resemble natural lakes



Shallow water during the fish harvesting makes life of fish eating birds much easier

## Lakes in Lithuania

### *Lakes in Lithuania*

Lithuania's landscape was shaped by the glaciers of the last Ice Age, resulting in a terrain with alternating moderate lowlands and highlands. Natural and semi-natural ecosystems (forests, wetlands, meadows, water bodies and sand) cover approximately one-third of Lithuania. More than 50 % of the country's surface is used for agriculture. Lithuania contains rich wetland resources. Mires and bogs of all types cover about 5 % of the whole country, comprising almost virgin natural areas that have never been used for agriculture or forestry. The Lithuanian landscape is punctuated with more than 2,800 natural lakes that are larger than 0.5 ha. Lake Drūkšiai with a surface area of 44.8 km<sup>2</sup> is the biggest lake and is situated at the border to Belarus. All 6,000 lakes encompass 950 km<sup>2</sup> or 1.5 % of the territory of Lithuania. Most lakes are situated in the Baltic highlands that run from the border with Poland along the border with Belarus to Latvia. Additionally, there are 400 man-made wetlands larger than 5 ha, and over 10,000 smaller ponds and reservoirs. Lithuania also has a wide network of rivers. Up to 760 rivers longer than ten kilometers are found in the country. Among the numerous rivers and streams there are many unregulated or moderately modified rivers with naturally flooded land. The total length of the unregulated natural rivers and streams is 17,000 km.

### *Protected areas in Lithuania*

In developing a system of protected areas Lithuania has chosen an integrated way for the last fifty years. However, many authors date the history of protected areas (PAs) to the ancient pagan times when the Holy Woods were proclaimed. The system of PAs today covers the protection of natural and cultural heritage, animate and inanimate nature as well as complexes of unique and typical landscape (from natural to urban ones).



Rivulet rich in salmon



Aerial view of Labanoras

The biological diversity directly depends upon the diversity of inanimate nature (relief, hydrographical network, characteristics of the soil), whereas cultural heritage depends upon the natural landscape. The system of PAs of Lithuania is characterized as being diverse, representative, integral, sufficient, coherent, and flexible. According to the “Law on Protected Areas” the system of PAs in Lithuania consists of the following categories:

- Areas of conservative protection priority (strict nature and culture reserves, reserves and objects of heritage);
- Integrated PAs (state parks – national and regional parks, areas of biosphere monitoring – biosphere reserves and biosphere polygons);
- Areas of ecological protection priority (zones of ecological protection);
- Areas of restorable protection priority (recuperative and genetic territories).

An area needs to be declared as nationally protected before it can be nominated as site of international importance, i.e. areas protected under the World Heritage Convention, NATURA 2000 network, Ramsar convention etc.

Today the most beautiful and valuable areas of Lithuania with regard to nature and culture have the status of PAs. 12 % of the country’s area is covered by 5 national and 30 regional parks, 254 reserves, 2 cultural and 3 nature reserves and 1 biosphere reserve, as well as over 400 features of nature heritage. All natural protected areas, and other ecologically important or more or less natural areas are connected by a system of landscape conservation ecological compensation zones known as Nature Frame. Presently, the establishment of a network of protected areas important at EU scale, NATURA 2000, is continued.

Most preserved areas were originally established when all the land belonged to the State. Since the independency in 1991, Lithuania’s nature faces two major challenges: The privatisation and re-privatisation of land as well as economic pressure may transform fallow and preserved land into productive land. And secondly, because of Moscow’s emphasis on increasing production and Lithuania’s isolation serious environmental problems as well as technological backwardness and political apathy now exist.

Since 2004 EU Structural Funds became available for Lithuania. It was decided to put an emphasis on planning activities as basis for further management activities. 20 management plans for National and Regional Parks and 10 for Reserves were developed. Different nature management activities, such as mowing, shrubbery cleaning, habitat restoration, etc. were organized in “NATURA 2000” sites (in 20 PAs) as well as the installation of visual information system components and minimal facilities for visitors in 13 national and regional parks were built. At the moment more than 300 places to stay (campsites, rest places, etc.) and over 200 nature trails and eco-tourism routes are installed. 9 visitor centres are reconstructed, built or are under construction. 8 violated areas (with disused quarries, abandoned buildings etc.) were rehabilitated. Many actions in territory (e.g. wetland) cleaning are launched as well. Also certain resources were allocated for the monitoring issues while purchasing tools required, creating methodologies, etc.

## *Ramsar sites in Lithuania*

<b>Name</b>	<b>Area in ha</b>
Čepkeliai	10,590
Kamanos	5,195
Viešvilė	3,216
Žuvintas	7,500
Nemunas Delta	23,950
All	50,451

⇒ Visit [http://www.ramsar.org/profile/profiles\\_lithuania.htm](http://www.ramsar.org/profile/profiles_lithuania.htm) for a more detailed list of Ramsar sites in Lithuania or <http://www.wetlands.org/RSDB/Default.htm> for detailed information on Lithuanian Ramsar sites.

The Government of Lithuania has identified wetland biodiversity as a top priority for conservation action in its National Biodiversity Strategy and Action Plan. This is stressed in the general action plans “Protection of Wetland Ecosystems” and “Protection of species”. The action plan for the protection of wetland ecosystems aims to conserve wetland areas, ban new exploitation of wetlands, restore excavated peat lands and damaged wetlands. Actions include the improvement of the legal framework, institutional strengthening, territorial planning/design, research and monitoring, information, training and education. Wetlands and their biodiversity protection have high priority in the National Environmental Protection Strategy. Today many important wetlands in Lithuania are at least partly protected. However, most key wetlands lack detailed habitat and biological community information.

## *Living Lakes Network Partner at Labanoras Regional Park in Lithuania*

The Lithuanian partners are the Administration of the Labanoras Regional Park ([www.labanoroparkas.lt](http://www.labanoroparkas.lt)) and ENOS (European Nature Conservation and Ornithology Station), a national NGO. 10 staff members of the park administration are managing the biggest regional park of Lithuania since its formation in 1992. Labanoras Forest being one of the largest in Lithuania contains an array of numerous lakes and concentrations of raised bogs and lakeside marshes. The natural beauty as well as cultural and historic sites of interest attract many tourists. Therefore the park administration is trying to improve visitor management besides their daily maintenance of the park. ENOS supports the park administration in supervising and assisting the permanent staff with voluntarily work.

### EUROPEAN ENVIRONMENTAL LEGISLATION AND POLICIES RELEVANT FOR THE PROTECTION OF LAKES AND WETLANDS

There is no standardised EU regulation regarding the responsibilities for the conservation of lakes and wetlands and also not for nature protection. These vary across the countries within the EU. All political levels normally have to assume certain responsibilities:

- The local level (city or municipality) is often the landowner. In most countries they are responsible for land use or development plans, as well as waste water treatment.
- At the regional or federal level, in most countries responsibilities for nature and environmental conservation have been transferred to regional authorities, with a few exceptions. The countries are responsible for the designation of protected areas.
- The national level is the contracting party for the EU to transpose European Directives into national law, as well responsible for implementing obligations from international conventions. The national level is responsible for the designation of National Parks, and various international protection categories such as UNESCO World Heritage Sites, MAN Biosphere Reserves and RAMSAR wetlands.

In most EU countries there are independent water authorities, divided into catchment areas, whose responsibilities for ground water, flowing and still waters also have to be taken into account. The EU Water Framework Directive is the most important and extensive legal framework in the European Union related to water and water bodies.

#### The European Water Framework Directive (WFD)

*"Water is not a commercial product like any other but rather a heritage which must be protected, defended and treated as such."*

Water is indispensable for human survival and development. It is essential for human life and it is needed for many industrial activities and processes. Adequate quantities of sufficient quality have to be available in the wilderness to sustain wildlife, plants and unique ecosystems. Too much water can cause loss of life and serious damage through flooding, as happens in the European Union nearly every year. Too little water is equally devastating, like the droughts that are occurring more and more often. All these events are expected to become more frequent and extreme according to predictions on the impacts of climate change. Maintaining a sustainable balance between all these aspects is the aim of the Water Framework Directive (WFD), adopted in 2000, which lays the foundation for a modern, holistic and ambitious water policy for the European Union.

## EU Water policy – A brief overview

The Water Framework Directive ([http://ec.europa.eu/environment/water/water-framework/info/intro\\_en.htm](http://ec.europa.eu/environment/water/water-framework/info/intro_en.htm)) establishes a legal framework to guarantee sufficient quantities of good quality water across Europe. The key aims are:

- to expand water protection to all waters: inland and coastal surface waters and groundwater
- to achieve "good status" for all waters by 2015
- to base water management on river basins
- to combine emission limit values with environmental quality standards
- to ensure that water prices provide adequate incentives for water users to use water resources efficiently
- to involve citizens more closely
- to streamline legislation.

The Directive also identified two areas where more specific legislation was needed: groundwater (Article 17) and priority substances (Chemicals of EU-wide concern which cause pollution of surface waters, Article 16). The new Groundwater Directive (Directive 2006/118/EC) was adopted in 2006 by the European Parliament and the Council, whereas the proposal for a Directive on Priority Substances is still under negotiation.

## WFD: Timetable for implementation

The Water Framework Directive sets out clear deadlines for each of the requirements which add up to an ambitious overall timetable:

Year	Issue	Article
2000	Directive entered into force	25
2003	Transposition in national legislation	23
	Identification of River Basin Districts and Authorities	3
2004	Characterisation of river basin: pressures, impacts and economic analysis	5
2006	Establishment of monitoring network	8
	Start public consultation (at the latest)	14
2008	Present draft river basin management plan	13
2009	Finalise river basin management plan including programme of measures	11, 13
2010	Introduce pricing policies	9
2012	Make operational programmes of measures	11
2015	Meet environmental objectives	4
	First management cycle ends	
	Second river basin management plan & first flood risk management plan.	
2021	Second management cycle ends	4 & 13
2027	Third management cycle ends	4 & 13
	Final deadline for meeting objectives	

In March 2007, the European Commission published “Towards sustainable water management in the European Union”, the second report on the implementation of the EU Water Framework Directive. The main results of the report are: the actual percentage of water bodies meeting all the WFD objectives is low, in some Member States as low as 1 %. High “at risk” numbers are clearly associated with densely populated areas and regions of intensive, often unsustainable, water use. Furthermore, the WFD comprehensively considers all pressures and impacts on water for the first time at Community level, including problems caused by structural degradation of ecosystems and impacts on biological parameters. Many Member States have addressed this challenge by using “worst case” estimates to assess the health of aquatic ecosystems and of the biodiversity-related indicators.

Moreover, EU water policy addressed some important pressures, like pollution by domestic waste water discharges, nutrients from agriculture, industrial emissions and discharges of hazardous substances well before the WFD. Aggregated analysis of the impacts of those pressures clearly reveals differences in the level of implementation of this legislation (which in some Member States is very low). Where adequate investment has been made over the last 10 to 30 years, these problems have been largely resolved. For the ten Member States that joined in 2004 and the two that joined in 2007 (together EU-12), full implementation of the investment-heavy regulations for point source control is subject to transitional periods, which in most cases run until 2015.

### ***Pollution from municipal wastewater - current implementation***

The European Community adopted Directive 91/271/EEC on urban waste water treatment in order to regulate discharges of municipal wastewater from larger villages, towns and cities. The Directive explicitly specifies the kind of treatment to be provided.

In the EU-15, significant amounts of wastewater are still not being treated adequately before discharge into surface waters. As the status on 1 January 2003 shows, only 81 % implementation of the Directive has been reported by the Member States. The main gaps are the lack of (appropriate) treatment and the lack of designation of “sensitive areas” where more stringent treatment is needed to protect vulnerable lakes, coastal and marine waters from nutrient pollution. The Commission challenges some of the reported levels of implementation provided by the Member States. Consequently, the Commission has taken decisive legal action against several Member States in recent years.

The EU has spent a considerable amount of Community funds (mainly Cohesion Funds) on co-financing wastewater treatment plants in the Member States. For example, 9 billion Euro were allocated to four of the EU-15 Member States and 5.6 billion for the EU-10 in the period 2000-2006. For the new EU-12 Member States, it is estimated that approximately 35 billion Euro will be needed over the next 10 years to comply with the Directive.

### ***Pollution from nitrates in agriculture – current implementation***

Diffuse pollution of agricultural origin is a major threat for EU water. The third report on implementation of the Nitrates Directive confirms the significant contribution from agriculture to nitrate pollution of groundwater and surface water and to eutrophication. Progress has been made in the recent years in implementing this Directive, although implementation is still incomplete and further work is required. Designation of nitrates vulnerable zones, which increased from 35.5 % of EU-15 territory in 1999 up to the 44 % in 2003, needs to be completed, in particular in Southern European Member States. Action programmes need to be improved with regard to quality and completeness of the measures, including adoption of reinforced actions if it is evident that the objectives of the Directive are not achieved.

### ***Legal transposition – A negative picture***

Few EU-15 Member States transposed the Water Framework Directive into their national legislation by the required deadline, i.e. by December 2003. The Commission launched eleven infringement cases and the European Court of Justice ruled against five Member States for not communicating transposition of the WFD. In addition, the Court clarified a number of issues regarding transposition. For EU-12, the deadline for notifying their national legislation was their day of accession, which was kept by all of them.

The quality of legal transposition is poor. On the basis of a preliminary assessment, the Commission identified 19 Member States with serious shortcomings as regards Article 4, 9 or 14. Most other Member States fail to transpose the WFD in full conformity. The Commission will address these negative findings with highest priority.

### ***Administrative arrangements (Article 3) – An encouraging start***

After transposition, the next important step was to set up river basin districts and to designate competent authorities (under Article 3). Most Member States reported to the Commission on time. For delayed reporting, the Commission launched nine infringement procedures of which all, except one, have been successfully resolved by now.

Although most of the administrative arrangements appear capable of ensuring proper implementation, actual performance will only become evident in practice over the coming years. It is, however, often unclear how the coordination arrangements between different authorities within the Member States are functioning.

Most Member States, which are part of an international river basin district have put in place the necessary agreements and coordination arrangements. In some cases, however, this process is still ongoing or there is clear scope for improving the international coordination arrangements. More conclusions on the assessment of the Article 3 reports can be found in the Commission Staff Working Document.

### ***Environmental and economic analysis (Article 5) – Great diversity and some major gaps***

The first WFD analysis includes a comprehensive environmental assessment of all impacts from human activities and an economic analysis of water uses and cost-recovery levels. Most Member States were submitting reports in time. The Commission is pursuing infringement procedures against two Member States that only submitted first (incomplete) reports with considerable delay.

In general, most Member States put considerable effort into this first analysis, producing an information base that did not previously exist at EU level. However, the quality of the reports and the level of detail vary considerably.

Several Member States produced a good or satisfactory report. However, in all cases, data gaps need to be filled in order to provide a solid basis for the 2009 river basin management plans. Some reports clearly do not meet the minimum requirements of the Directive. Economic analysis is the main weakness. This concerns in particular the proper identification of water services and uses, and the assessment of the level of cost-recovery. These findings are explained in more detail in the Commission Staff Working Document.

### ***Recommendations to Member States – Time to act until 2009***

Member States have to complete the first river basin management plans by the end of 2009, and they have to put a water pricing policy in place in 2010. Learning from experience with implementation to date, there is still ample time to improve the situation and close gaps on data. Moreover, the obligation to inform and consult the public when preparing the management plans will require more transparency and justification on what measures are necessary and cost-effective, and what exemptions can be justified. The Commission therefore urges the Member States to focus especially on the following three areas:

#### ***a) Overcoming the current shortcomings.***

*To reach this objective, Member States are encouraged to:*

- fully implement other relevant EU legislation, in particular on urban wastewater and nitrates;
- put in place all the economic instruments required by the Directive (pricing, recovery of costs of water services, environment and resource costs, and the polluter pays principle). Full exploitation of these economic instruments will contribute to truly sustainable water management;
- put in place a comprehensive national ecological assessment and classification system as the basis for implementing the Directive and meeting its “good ecological status” objective. The deficiencies of the current intercalibration exercise must be remedied as soon as possible. Only complete, robust and reliable ecological assessment will generate faith in the WFD and ensure its credibility;

- improve the methodologies and approaches on some key issues (such as designation of heavily modified water bodies, criteria for assessing risk or addressing groundwater quantitative status) and enhance comparability between the Member States, in particular in international river basins;
- considerably reduce the existing data gaps and shortcomings of the Article 5 analysis as part of the preparation of the river basin management plans.

*b) Integrating sustainable water management into other policy areas.*

*To reach this objective, Member States are encouraged to:*

- make sure that infrastructure and sustainable human development projects, which could cause deterioration of the aquatic environment, undergo an appropriate environmental impact assessment. In this respect, full transposition and appropriate, transparent and coordinated application of Article 4.7 is crucial;
- ensure the allocation of the appropriate funding. To reach this objective, it is important to make the best use of the potential of national funds and EU financing instruments, such as the Common Agricultural Policy and the Cohesion Policy. So far, the national allocations of these funds for improvements in the water field are insufficient to cover all needs as identified in the findings of the environmental analysis under the WFD.

*c) Making the best use of public participation.*

- Public participation should be seen as an opportunity. The ongoing work on voluntary reporting and the Water Information System for Europe will assist in informing the public in a transparent way.

The European Commission underlines the importance to address climate change in water management. Climate change impacts, including increased flooding and droughts, could enhance the risk of non-attainment of the objectives of the WFD. The increased risk of extreme events is partly addressed by the proposal for a Directive on floods. In addition to mitigation and adaptation policies included in the European Climate Change Programme and in the planned Green Paper on Adaptation to Climate Change, the Commission will encourage full use to be made of existing possibilities for including climate change into river basin management plans, and will encourage further integration of climate change, mitigation and adaptation strategies, into the implementation of EU water policy.

The Commission and the European Environment Agency are committed to developing an ambitious Water Information System for Europe (WISE) by 2010. WISE will serve as the focus for wider efforts to modernise and streamline the collection and dissemination of information for European water policy. It is an integral part of wider initiatives such as the Shared Environmental Information System (SEIS) and INSPIRE.

### Role of NGOs regarding the implementation of the WFD

The WFD names two main reasons for an extension of public participation. The first is that the decisions on the most appropriate measures to achieve the objectives in the river basin management plan will involve balancing the interests of various groups. The second reason concerns enforceability through transparency in the establishment of objectives, the imposition of measures, and the reporting of standards.

By December 2009, the member states need to fulfil the next important milestone: the river basin management plans. These plans will bring further real improvements for the whole water system in the form of programmes of measures, which must be operational by 2012 and deliver the environmental objectives of the Directive by 2015. The WFD requires information and consultation when river basin management plans are established: draft river basin management plan must be opened for consultation in the beginning of 2008, and the background documentation on which the decisions are based must be made accessible.

The WFD CIS paper on public participation stresses that “the involvement of stakeholders in the gathering and the communication of the results to a wider public is as important as the technical elaboration of the (Article 5) analysis itself”.

NGOs should use the opportunity to analyse whether the management plans and especially the measures are ambitious enough to reach the goals. Are the management plans based on a proper identification of water services and uses and assessment of the level of cost-recovery? Will economic instruments required by the Directive (= adequate pricing of water use, recovery of costs of water services, environment and resource costs, and the polluter pays principle) be put in place? Has climate change been addressed with adequate measures on adaptation but also mitigation?

In May 2004, the World Wide Fund for Nature (WWF) carried out a survey on the level and quality of public participation within the Water Framework Directive. Nine Pilot River Basins (PRBs) were analysed on the basis of the definition of the “Public Participation” in the WFD Guidance Document, which distinguishes participatory practices as information, public consultation and active involvement tools. The ‘snapshot’ obtained from WWF’s survey reveals that the level of public participation is generally very poor – within the implementation of WFD in the Pilot River Basins and also within the “real” WFD implementation. Hence, Member States will have to significantly increase efforts on public participation to put into practice the recommendation of the PRB Outcome Report.

WWF identified the following main constraints:

- *Lack of knowledge and expertise.*

The actual meaning of public participation and what needs to be done about it is still poorly understood, despite the existence of the WFD CIS “Public Participation” Guidance Document. In some PRBs, good will is hampered by lack of expertise to set-up and run an efficient public partici-

pation process. In particular, it is still necessary to stress that information is not consultation nor active involvement of stakeholders.

- *Non-prioritisation of public participation by the competent authorities*

Both in the PRBs and in the 'real' WFD implementation, competent authorities are catching up with WFD implementation deadlines. They prefer to concentrate their efforts in producing fast 'results' instead of getting to proper conclusions and outcomes by involving stakeholders, which is seen as requiring too much time and know-how, which they are not willing to 'invest'. This is a mistake as results without stakeholders' buy-in will not be achievable on the ground.

- *Lack of resources by environmental NGOs.*

Due to their very limited resources, environmental NGOs have to prioritise the fields where they can work. Thus, if a PRB testing exercise has been seen as not working properly or has been too virtual or not resulting in direct decisions, some NGOs have been obliged to focus on other activities where their lobbying work is seen as more 'effective'.

WWF considers that the involvement of stakeholders should have been a key ingredient of the WFD CIS PRB testing exercise and regrets that an opportunity was missed to gain expertise on public participation, under the theoretically favourable conditions of the Pilot River Basins. This is made worse by the fact that the testing was on WFD obligations regarding the Article 5 analyses, i.e. the basis for WFD implementation. Many States and pilot basins have therefore missed a golden opportunity to develop workable public participation techniques to ensure successful delivery of the WFD requirements.

There is no current analysis of the level and quality of public participation available, but some evidence underlines that the situation has not been improved yet. Therefore NGOs should insist and request background information and structures for participation as well as the necessary resources to allow NGOs an active participation.

## SUSTAINABLE FISHERIES

### EU Legislation on Inland Fisheries

Since the two latest EU enlargements the importance of the inland fisheries sector at EU level has significantly increased. Although inland fishery is not considered in the scope of conservation measures of the Common Fishery Policy, EU financial support to the sector has been granted under the framework of the Financial Instrument for Fisheries Guidance (FIFG), and will again be granted under the **European Fisheries Fund (EFF)**<sup>1</sup>. This is justified as part of the structural funds basic purposes by the need to support socio-economic cohesion of different areas in the Community. Up to now there is no special European legislation on inland fisheries, but the council regulation 1198/2006<sup>2</sup> establishes the EFF and defines the framework for Community support for the sustainable development of the fisheries sector, fisheries areas and inland fishing.

On the basis of the EFF, each Member State adopted a **National Strategic Plan** which includes among other objectives the sustainable development of the aquaculture sector, sustainable development of the processing and marketing of fisheries and aquaculture products, sustainable development of inland fishing and sustainable development of fisheries areas, including the criteria for targeting the priority areas. Operational Programmes of the Member States (Duration 2007 – 2013) include measures to obtain the objectives and are financially supported by the European Commission. Operational Programmes need to be consistent with the principles of the common fisheries policy and the national strategic plan in order to achieve, in particular, a stable and enduring balance between fishing capacity and fishing opportunities as well as indicators to measure progress in relation to the baseline situation and the effectiveness of the specific targets set for each priority aspect.

**Chapter II of the EFF** refers to aquaculture, inland fishing, processing and marketing of fishery and aquaculture products. Article 38 defines measures intended to protect and develop aquatic fauna and flora:

1. The EFF may support measures of common interest intended to protect and develop aquatic fauna and flora while enhancing the aquatic environment.
2. These measures shall relate to:
  - (a) the construction or installation of static or movable facilities intended to protect and develop aquatic fauna and flora, **or**
  - (b) the rehabilitation of inland waters, including spawning grounds and migration routes for migratory species, **or**
  - (c) the protection and enhancement of the environment in the framework of NATURA 2000 where its areas directly concern fishing activities, excluding operational costs.

<sup>1</sup>[http://ec.europa.eu/fisheries/cfp/structural\\_measures/arrangements\\_2007\\_2013\\_en.htm](http://ec.europa.eu/fisheries/cfp/structural_measures/arrangements_2007_2013_en.htm)

<sup>2</sup><http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=oj:l:2006:223:0001:0044:en:pdf>

## Fact sheet: Sustainable fishery at the network's lakes

Lake	Vörtsjärv	Peipsi	Balaton	Milicz Ponds	Constance
Watershed / lake size in km <sup>2</sup>	33,740 / 270	47,800 / 3.555	5,775 / 594	5,5345 (Barycz River) / 70 (Ponds)	11,487 / 536
<b>Fisheries today</b>					
Total size of area of fishing	270 km <sup>2</sup>	2,500 km <sup>2</sup>	594 km <sup>2</sup>	Approx. 100 km <sup>2</sup>	535 km <sup>2</sup> (whole lake less few shallow parts)
Total size of area where fishing is restricted	500 ha	340 km <sup>2</sup> (band of one km from the shore) and the whole southern part (Lake Pihkva: 708 km <sup>2</sup> )	Fishing for pike perch is restricted during the spawning period.	On approx. 60 % of fish ponds there are conservation restrictions, which imply limit on the amount of fish produced.	Data not available
Traditional forms of fishery	Passive fishing gears – gill nets and fyke nets	<ul style="list-style-type: none"> <li>• Netting</li> <li>• Trapnet</li> <li>• Danish stain</li> <li>• Fishing-rod and reel (sports fishermen)</li> </ul>	<ul style="list-style-type: none"> <li>• Great-net fishery</li> <li>• Gill-net fishery (Mounted-net fishery)</li> <li>• Halting-net fishery</li> <li>• Selective fishery method</li> </ul>	Pond aquaculture dating back at least 700 years, based on raising Carp fish.	Netting
Number of professional fishermen	52	95 fishing permits (to be used by 495 persons)	Data not available	Approx. 180 - 200	164, mainly with stationary or mobile fish commercialisation
Species and quantities fished per year (Bream = <i>Abramis spec.</i> ; Carp = <i>Cyprinus carpio</i> ; Carp bream = <i>Abramis brama</i> ;	In total 235 tons: <ul style="list-style-type: none"> <li>• Pike 34 %</li> <li>• Bream 30 %</li> <li>• Pikeperch 19 %</li> <li>• Perch 9 %</li> <li>• Eel 9 %</li> </ul>	In total 2,300 tons : <ul style="list-style-type: none"> <li>• Pikeperch 47 %</li> <li>• Perch 21 %</li> <li>• Carp bream: 14 %</li> <li>• Roach (<i>Rutilus rutilus</i>) 9 %</li> <li>• Pike 4 %</li> <li>• Lake smelt 4 % (<i>Osmerus eperlanus</i>)</li> </ul>	In total 540 tons: <ul style="list-style-type: none"> <li>• Silver carp 64 % (<i>Hypophthalmichthys molitrix</i>)</li> <li>• Bream 34 %</li> <li>• Carp 1 %</li> <li>• Cat fish, Pike perch, Pike</li> </ul>	In total 4,000 tons: <ul style="list-style-type: none"> <li>• Carp 90 %</li> <li>• Pike, Catfish, White amur or Grass carp (<i>Ctenopharyngodon idella</i>), Silver carp, Big-head carp (<i>Hypophthalmichthys nobilis</i>)</li> </ul>	In total 617 tons (2006; average of the last ten years: 1,021: The vertical exchange of water due to seasonal differences of the water temperature of the surface layer is weakened by increasingly warmer winter and spring temperatures. This reduces the

# 3 Sustainable Fisheries

Lake	Vörtsjärv	Peipsi	Balaton	Milicz Ponds	Constance
Cat fish = <i>Silurus glanis</i> ; Perch = <i>Perca fluviatilis</i> ; Pike = <i>Esox lucius</i> ; Pikeperch = <i>Stizostedion lucioperca</i> )		<ul style="list-style-type: none"> <li>Burbot (<i>Lota lota</i>) 1 %</li> <li>Lavaret (<i>Coregonus lavaretus maraenoides</i>) and Orfe (<i>Leuciscus idus</i>)</li> </ul>			<p>enrichment of lower water layers with oxygen and thus the abundance of fish. The influence of lower phosphate contents of the lake water on lower fish abundance is not confirmed so far.)</p> <ul style="list-style-type: none"> <li>Common whitefish 52 % (<i>Coregonus lavaretus</i>)</li> <li>Perch 28 %</li> <li>Carp bream 9 %</li> <li>Others 3 %</li> </ul>
<b>Contribution to regional economy</b>					
Which kind and number of manufacturing enterprises related to fishery do exist?	Eel farm for culturing of class-eels before the stocking (partly)	Approx. 15 fishing and processing companies and one dedicated to crayfish breeding	Lake Balaton Fishing Company (fishery and breeding; with 17 permanent employees and more seasonal employees)	Almost none: fish breeding is either done by the fishermen or fry is imported from outside of the area, fish processing is restricted to small scale smoking.	Almost none, as fish is sold directly by fishermen, who sometimes smoke it before.
<b>Commerce</b>	Private fishermen sell their catch to mediator or directly to the local market.	The main export species are pike perch and pike. Export is going to all over Europe and North America. A small share is sold on internal markets.  Total quantity of freshwater fish (excl. trout and salmon) that is exported from Estonia is approx.	The preliminary target is the regulation of the number of species and the secondary target is commerce in local and national market (increase income from fish-products).	Most fish is sold fresh or alive to the markets in SW Poland (Expansion to other markets hindered by lack of transportation facilities for fish). The production process is aimed at sale of carp at Christmas. This complicates whole-year merchandise. The Carp Days festival in Oc-	Commerce mainly via professional fishermen on local markets, in fishmongers and direct selling to restaurants.

# 3 Sustainable Fisheries

Lake	Vörtsjärv	Peipsi	Balaton	Milicz Ponds	Constance
		5,700 t (in 2005). Exact export quantity from Lake Peipsi is not known, but Lake Peipsi and Lake Vörtsjärv are the main sources.		tober serves the purpose of expanding the season.	
Additional Comments	Lake Vörtsjärv and lower reaches of its tributaries are home for 31 fish species, including few protected species, such as Asp ( <i>Aspius aspius</i> ), Wels ( <i>Silurus glanis</i> ), Spined loach ( <i>Cobitis taenia</i> ), Bullhead ( <i>Cottus gobio</i> ) and Mud loach ( <i>Misgurnus fossilis</i> ).	In the remote past (70-150 years ago), when the hydrobiological condition of Lake Peipsi was much better than it is nowadays, total annual fish catches exceeded at times 25,000 tons.  The total biomass of fish in Lake Peipsi is rather similar to that of lake Vörtsjärv (accordingly 166 kg/ha and 180 kg/ha) but fish production in Lake Peipsi (148 kg/ha,year) is up to 1.5 times higher than in Lake Vörtsjärv (93 kg/ha,year). The same proportion characterises annual yield, accordingly 22 kg/ha and 12 kg/ha.	The main aim of the Lake Balaton Fishing Company is the regulation of the amount of the fish species in the lake.	Amount of the fish varied over years, presently there is a limit set on the State Fish Farms “Stawy Milickie” (SFF) of 2.000 tons due to the nature conservation requirements, while the private farms can produce fish without limits (there is no quota on fish).  The project aims in diversification of the fish trade pattern towards selling of processed fish inside the region (to visitors) – hence combined with development of soft tourism options.	As far as sustainability is concerned, fishing on Lake Constance belongs to the most progressive in Europe. It must be said, however, that there are questions and aspects which have not been sufficiently considered or investigated up to now. There was even a stock with species from other lakes or distant regions of the world. For this reason genetically deviant or non-native species (like the zander and the rainbow trout) can be found in the lake.

## Case Study 1 - Sustainable Fishery at Milicz Ponds

### *Objectives of the project and first preparations*

In the field of fisheries, the main objective is the conversion of the current fishery methods towards more environmentally friendly fishery practices. Detailed aims included the definition of criteria and preparation of the application for agri-environmental schemes for the ponds in the Milicz area and the development of an operational programme to improve bird habitats and bird observation conditions. A further aim was the implementation of model improvement of bird habitat and habitat management as well as training of fish farm managers and workers.

To make the created operational programme effective, an arrangement has been made to include its concepts into legal conservation tools, such as conservation plans of national Nature Reserves presently under development or management plans for Natura 2000 areas, the preparation of which should start soon. An appropriate agreement has been made with conservation authorities and with the team preparing the conservation plan for the Milicz Ponds Reserve. A working group with members of PTPP “pro Natura” (PN) and State Fish Farms (SFF) was created and an information exchange platform with meetings and workshops supplemented its work with knowledge of experts and practitioners.

The four year operational plan for bird habitat improvement is based on a shared assumption that the existence and continuity of fish farming is necessary for sustaining natural values. Only when this condition is fulfilled, different management options and detailed aims may be considered.

### *Investigation and analysis of the situation*

First step in the preparation of the operational plan was investigation of the prerequisites. Needs assessment of the SFF revealed deficiencies in water management issues, KHV-virus spreading among fish, total depletion of equipment, and some other problematic areas such as lack of a marketing strategy and capacity or lack of infrastructure for the processing of fish. Parallel investigation of the habitats of birds, amphibians, reptiles, selected mammals and invertebrates was carried out and results were elaborated using computerised data base supported by GIS technology. All the information were compiled and analysed in order to prioritise the needs of nature and fisheries, define points of conflicts and identify areas of uncertainty where need for further research occurs (for example: conflicts with Otter and Beaver, detailed requirements of Ferruginous duck). Some more detailed study included expertise of financial losses of SFF caused by birds eating fish and fish fodder. Traps for water birds e.g. setting aside a pond for water storage were indicated. Emptying such a pond in the middle of the breeding season would destroy broods of rare birds. Similarly filling an empty pond in spring may kill young ground nesting birds.

## *Pond management, project funding and marketing of fish*

Problems and solutions were discussed at the meetings between conservation experts and fishermen. It was agreed on urgent tasks such as valorisation of ponds with regard to nature and fish production in order to set up a decision making management platform. The *promotion and IT workshop* for fishers resulted in drafting the structure for the data base for the management of ponds based on and integrated with the nature base prepared for the Barycz Valley GIS. The workshop also contributed to prepare the promotion and capacity building plan. Some of the conflicts were solved without need for investments by simply agreeing on bird-friendly management rules. It was agreed that water level in selected ponds should not be manipulated between March, 1<sup>st</sup> and July, 31<sup>st</sup> and maximal daily water level fluctuations should not exceed 2 cm in any pond except those agreed earlier and managed appropriately. Methods to prevent destruction of nests during reed cutting were agreed upon.

Analysis of available financial sources identified among others: EU subsidies for development of inland fisheries, compensations for losses caused by legal restrictions in Natura 2000 areas, grants for environmental management, help for small business enterprises, governmental support systems and foundations supporting environmental and development projects. The SFF having its special organisational status is not eligible for receiving credits. Tasks which require investment were grouped into clusters responding to possible financial support. The PN-SFF working group prepared and submitted several proposals including revitalisation of habitats, improvement of water management infrastructure and compensations for losses caused by birds. Some were accepted, others are still in the revision process by possible sponsors.

One of the drawbacks of the fisheries in Barycz Valley (and generally in Poland) is a traditional marketing pattern where Carp is sold for Christmas Eve. This problem was addressed by proposing diversification of services offered by the SFF in synergy with the development of tourism and whole year selling of fresh and processed fish.



Water is released from the pond to bring fish down to the harvesting point



Netting prevents fish sticking in the mud.

Most of the work concerning creation of the regional brand for fish and tourism has been carried out by partner organisations within the separate activities financed by the EU Leader+ scheme and by the GEF (Global Environment Facility: A worldwide funding scheme for projects and programmes that aim to protect the global environment).

Ideas for agri-environmental schemes for fish farms have been prepared in cooperation with the ministries of Agriculture and of Environment in 2005 and 2006. The main role in designing and implementing this nation-wide scheme played OTOP – the Polish Society for the Protection of Birds (BirdLife partner). PTPP "pro Natura" invited parties from the Barycz Valley (nature scientists and fishermen) and provided own staff to actively participate in the process. The schemes have been prepared, broadly consulted and handed over to the ministries. OTOP coordinated final consultations. However implementation of the schemes was not enforced by the Ministry of Agriculture. Proposed solutions were partially mirrored in fish farm support scheme.

### *Implementation of measures*

The implementation of first measures was financed jointly by DBU and GEF. These measures were: reed cutting under strict supervision of ornithologists and clearance of the excessive vegetation on islands situated in the fish ponds which lost their open character required by the birds using them for breeding. These measures brought back the Black Headed Gulls and Common Terns to their traditional colonies. The other action prevented destruction of almost 500 nests among them such of rare species as Whiskered Tern, Bittern, Red-necked Grebe and Whooper Swan.

The job diversification and implementation of innovative ideas is advancing slowly as it is very challenging to change long established patterns. The commercial angling site is being developed and tourism infrastructure is agreed upon. In order to build capacity workshops were organised on site and the manager of Ruda Sultowska fish pond complex participated in the training at Lake Constance.

### *Partners in the planning process*

- Management and specialists of the SFF (head, deputy, specialists in: water management, ichthyologists)
- University experts from Wrocław and Kraków (ornithologists, botanists, specialist in biology of otter)
- Representatives of the conservation authorities (Nature Conservator, Landscape Parks)
- Partner NGOs

### *Implementation partners*

- Specialists in biology from University and freelancers – collection of data and valorisation of ponds, supervision of habitat management
- SFF – habitat management
- Convicts participating In Black Sheep Project,
- Volunteers,
- Contracted specialists (GIS and data base, water engineering design).

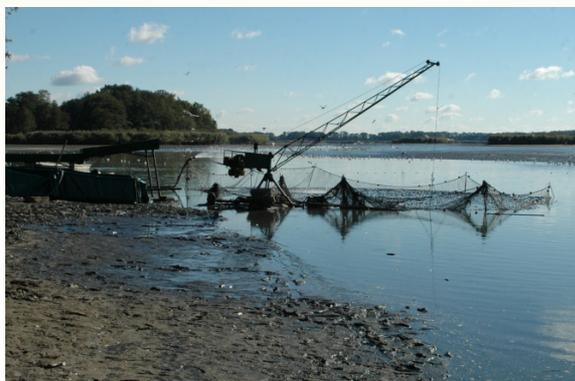
### *Challenges faced during implementation*

The main challenge was working with numerous institutions having their own priorities and goals. The Ministry of Agriculture approach was a simple payment system so it was reluctant in implementing ideas of the conservation sector. Unstable statutory situation of SFF affects their cooperation and planning abilities.

The partner NGO which was responsible for the installation of the bird watching infrastructure could not find contractors to build observation towers, as due to economic differences many workers had emigrated to work in other EU countries. Weather in the winter period caused delay in clearing of the islands which could not be continued in spring, as from March 1<sup>st</sup> any such manipulation is not allowed due to the protection of birds breeding in the reserve.

### *Finance: Challenges and opportunities*

The project was realised in a situation where the fish farms went through a 15 year period of provisional and unfavourable status. The legal framework made investments difficult and the infrastructure and equipment which was already obsolete at the start of the project became practically unusable. Additionally, an exotic virus disease decimated the fish harvest. External support was the only hope to keep the fish farms alive and prevent collapse.



Most of the work is done by hand with support of only simple equipment.



Due to the water scarcity some fish farms do not empty their ponds for harvesting.

In the long run the fish farms should follow the traditional business mode of the past years. The competitiveness of the SFF is restricted in comparison with farms located outside protected areas, thus compensation payments are necessary. The region works out a marketing strategy which should reduce the handicap of circumstances. New marketing mechanisms comprise: year around selling (mainly on site), processing of fish, promotion of the fish as raised in an environment-friendly manner and synergies thanks to common promotion of the region and its additional services.

### *Evaluation of the preliminary results*

The intended objectives of the project have been achieved.

- 1) Supporting schemes for fisheries have been put in place, even though in different form than intended. The schemes contain stimulation measures for environmentally friendly practices.
- 2) Cooperation with SFF was intensified through the establishment of the working group PTPP "pro Natura"—SFF, which helps to increase the understanding of the mutual interests and goals.
- 3) Priorities for improvement of bird habitats have been identified and confronted with SFF needs assessment. For selected priorities a concept has been drafted with realistic work plan and in some cases even application for funding.
- 4) Model habitat management proved to be effective – bird nests of 18 species have been saved from cutting during reed management, eleven of these species were rare or of EU concern. Newly created habitats on the islands have been accepted by birds. Clearing of islands from excessive bush and tree cover resulted in immediate formation of a Black headed gull colony, however, when Common terns appeared and showed interest in the place, the gulls left the island. Scaring of birds was attributed to leaving cut branches on the island's edge. Due to weather conditions in early spring, it was settled in winter.

### *Sustainability of the project*

The fish ponds are most often situated in local land depressions where valuable habitats once occurred. A study carried out in Poland shows a significantly higher amount of ponds located in meadows than in arable land or forest. Intensive fish growing (up to 3,5 t fish/ha) does not leave any space for nature and contributes to water pollution. However when managed properly, fish ponds may become important habitats themselves.

In case of SFF there is an agreement with the nature conservation authorities that the total production should not exceed 2,000 tons per year, i.e. average yield would be below 400 kg/ha of water. Such production pattern allows nature friendly management of habitats like the creation or sustaining of islands, shallow areas, reed beds and other vegetation. The project identified several priorities in habitat management and designed concrete actions to address these priorities. It contributed to the management/conservation plans for areas of Natura 2000 sites and

national reserves (protected also as Ramsar site). Understanding of interactions between nature and fishery among stakeholders increased.

As to the social aspect, there is a threat of reducing the number of employees and of pressure on recreational use of water resources. This aspect is addressed in the promotional strategy, the goals of which were set up at the vision of Bird Paradise reserve. Consequently the opening of the reserve for visitors would proceed towards quiet, tranquil nature sightseeing rather than more intense forms of leisure or sports which should be directed towards less fragile areas by means of zoning. The interest of the fishermen in promoting tourism is restricted by their precaution for this field unfamiliar to them. However there is a breakthrough in the approach and some changes like providing smoked fish or opening angling sites are visible.

Once the fish farms reach economic stability, some of the support will no longer be necessary. However due to some restrictions, environmental services of the SFF should be compensated. The project identified possible ways of financing these activities of fishery related to environment, and drafted a promotion strategy of the SFF to sell such services via branding or servicing visitors.

### *Lessons learnt by PTPP “pro Natura”*

Win-win situations are attractive for partners, however the priorities remain different and their decisions or practice may change overtime. Polish legislation has a lot of drawbacks – for instance it is a subject to permanent change. In the time when ideas for PN programme for Barycz Valley were first drafted, the Landscape Park Management Plan would be superior to local administration decision. Presently, the situation has been reversed. Therefore - additionally to securing environmentally advantageous legal decisions and nature friendly social and economic atmosphere - it is crucial for NGOs to constantly guard the agreed state of affairs.



Fish is sorted by species and size before transported to storage ponds.



Carp fry must grow for two years until fish is ready for the market.

## SUSTAINABLE TOURISM DEVELOPMENT

### EU legislation relevant for tourism

Although the EC has no direct tourism competence, European policies in a number of areas have a considerable and even growing impact on tourism. Moreover, a number of actions relating to sport are supported through EU programmes, including in the fields of education, vocational training, youth, culture, consumers and regional policy. The renewed EU Sustainable Development Strategy (SDS) identifies seven key challenges for sustainable tourism development: climate change & clean energy; sustainable transport; sustainable consumption & production; conservation & management of natural resources; public health; social inclusion, demography & migration; global poverty & sustainable development challenges.

But up to now there is no concrete European Directive or regulation regarding tourism, but only principles and recommendations. The EU Tourism Sustainability Group underlines that “Effective spatial and land use planning and development control is considered to be absolutely crucial in ensuring that new tourism development is of a scale and type in keeping with the needs of the local community and environment. Spatial and land use plans should be aligned to the sustainable tourism strategy. The process can be backed up by requirements for environmental impact assessment (or wider sustainability assessment) of proposed projects.” Furthermore, all European legislation regarding air quality (including transport), noise, waste, waste water, water, nature and biodiversity, public health, consumer’s protection and rights and others is relevant.

The new Bathing Water Directive (2006/7/EC)<sup>1</sup> was adopted 15<sup>th</sup> February 2006 after a long process which required a final conciliation agreement between Council and Parliament. During discussions in the European Parliament and Council, the main issue for debate was the severity of the health standards that bathing sites must attain to comply with the directive. The new Directive lays down provisions for more sophisticated monitoring and classification of bathing water. It also provides for extensive public information and participation in line with the Århus Convention as well as for comprehensive and modern management measures. The Directive requires Member States to draw up a management plan for each site to minimise risks to bathers, based on an assessment of the sources of contamination that are likely to affect it. Users of the site should be actively involved in developing the management plan. Where bathing sites have a history of poor water quality, preventive measures should be taken to close the bathing area when such conditions are forecast. If the quality standards are not respected, remedial measures must be taken. Information on a bathing site’s quality classification, the results of water quality monitoring, the site’s management plan and other relevant information is to be made readily available to the public, both through displays at the site and through the media and internet.

<sup>1</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:064:0037:0051:EN:PDF>

## Fact sheet: Tourism development at the network's lakes

Lake	Vörtsjärv	Peipsi	Balaton	Milicz Ponds	Constance
Watershed size/ lake size in km <sup>2</sup>	3,374 / 270	47,800 / 3.555	5,775 / 594	55,345 (Barycz River) / 70 (Ponds)	11,487 / 536
Number of day-tourists per year	Approx. 50,000 – 100,000	Data not available	Data not available	Data not available	Up to 27 million
Number of tourists and overnight stays per year	Approx. 50,000	Data not available	<ul style="list-style-type: none"> <li>Number of tourists at the commercial quarters: 1,174,162 (2006)</li> <li>Number of tourists at private quarters: 287,506 (2006)</li> </ul>	Approx. 16,000 tourists stay overnight (on average 3.4 nights/person)	Approx. 30 million overnight stays, 54 % of which in hotels, approx. 30 % on camping sites.
Origin of tourists	80 % national, 20 % from the Netherlands, Germany, Switzerland, Finland, Latvia, Lithuania, Sweden, Poland	Data not available	60 % national, 40 % international	92 % national	In Germany up to 90 %, in Austria up to 11 % and in Switzerland up to 43 % are national tourists.
Arrival of tourists "by means of transportation"	98% by cars and auto-caravans, 1 % buses and 1 % bicycles	Data not available	66 % by car, 12 % by caravans, 13 % by buses, 4 % by train, 2 % by plane	Mainly by car. Train and bus play a minor role.	85 % by car, 10 % by bus or train, 5 % by plane
Main season:	May-September	May-August/September	end of June– August	Spring/summer, autumn	July – Mid September
Percentage of package deals, individual trips, etc.	100% individual trips	Data not available, but the majority of visits are individual trips. No package deals available	Data not available	Data not available	<ul style="list-style-type: none"> <li>90 % individual trips</li> <li>Increasing bicycle and nature tourism</li> <li>Very few package deals</li> </ul>
Commercial offers	Mostly individual trips, commercial offers by Lake Vörtsjärv Foundation (see case study 3)	Mostly individual trips; 1-day bus-tours are rare	Data not available	Data not available. Very few commercialised offers.	No big tour operators. Individual accommodations are commercialized mainly by the joint tourism promotion agency.

# 4 Sustainable Tourism

Lake	Vörtsjärv	Peipsi	Balaton	Milicz Ponds	Constance
<b>Structures in tourism</b>					
Accommodation types (number of beds per establishment or in total in brackets)	<ul style="list-style-type: none"> <li>In total approx. 500 beds</li> <li>10 little and medium hotels (up to 50)</li> <li>2 – 3 bigger hotels (with 50 to 100)</li> <li>Camping sites (places for tents, caravans)</li> </ul>	<ul style="list-style-type: none"> <li>In total 50 companies (approx. 1,200)</li> <li>9 camps (up to 25 beds), 1 camp (up to 150)</li> <li>27 little and medium hotels (up to 50)</li> <li>3 bigger hotels (up to 100 beds)</li> <li>2 hotel complexes (100 – 500 beds)</li> <li>10 bed &amp; breakfast and guest apartments</li> </ul>	<ul style="list-style-type: none"> <li>In total 85,191 beds</li> <li>78 camp sites (28,015)</li> <li>199 boarding houses (6,639)</li> <li>147 bungalows (8,232)</li> <li>13 youth hostels (6,024)</li> <li>28 tourist hostels (1,681)</li> <li>192 hotels (34,600)</li> <li>11 wellness hotels (4,942)</li> </ul>	<ul style="list-style-type: none"> <li>In total 50 accommodation facilities (1,900)</li> <li>3 camps (in total 764)</li> <li>7 hotels</li> <li>youth hostels, guest rooms (B&amp;B), pensions, agro-tourism farms (facilities), hunting lodges, camping sites</li> </ul>	<ul style="list-style-type: none"> <li>Mainly small and medium size hotels (in total approx. 6,000)</li> <li>43 campsites.</li> </ul>
Ownership of hotels	Hotels and camps mostly owned by national companies	Hotels and camps exclusively owned by national companies	Data not available	Hotels and other accommodation facilities owned by national companies/private persons.	Tourism infrastructure mainly owned by national companies
Number of restaurants	2	3 large restaurants; many small ones	3,357	Approx. 50	Data not available for all bordering countries
Kind and number of leisure infrastructure	<ul style="list-style-type: none"> <li>2 hiking trails,</li> <li>7 public recreational areas,</li> <li>1 sailing boat,</li> <li>8 churches,</li> <li>5 museums,</li> <li>2 observation towers</li> <li>Manors and parks</li> <li>Plus many offers from private entrepreneurs</li> </ul>	20 paths; 12 museums; 62 manors; 2 monasteries (Raja, Kuremäe); 2 crazy golf courses ; boat trips; tracks for bikes; volleyball, badminton, petanque etc. in almost every company offering accommodation	<ul style="list-style-type: none"> <li>22 ports and &gt;60 marinas</li> <li>1 ferry between</li> <li>70 establishments for horse tourism</li> <li>22 spa and wellness hotels</li> <li>269 churches</li> <li>41 museums</li> <li>2 theatres</li> </ul>	<ul style="list-style-type: none"> <li>7 horse campsites</li> <li>4 bathing areas</li> <li>14 commercial angling sites</li> <li>Nature interpretation, bicycle and horse riding trails, kayak trail</li> <li>An observation tower, 3 bird watching hides are under construction</li> </ul>	<ul style="list-style-type: none"> <li>Approx. 50 swimming pools and hot springs (Germany)</li> <li>27 golf courses and numerous leisure parks</li> <li>10 main attractive tourism sites (e.g. Island of Mainau, cable railway, Zeppelin museum, , historic crannog village)</li> </ul>

# 4 Sustainable Tourism

Lake	Vörtsjärv	Peipsi	Balaton	Milicz Ponds	Constance
<b>Contribution to regional economy</b>					
Number of direct employment (fulltime, partly)	Approx. 50 jobs directly related to tourism	Approx. 125 full time jobs plus 60 seasonal jobs	4,429	About 50-200 persons in accommodation business and 50-200 in restaurants.	<ul style="list-style-type: none"> <li>• Share of tourism in Gross National Product is approx. 4,75 %.</li> <li>• Approx. 15,000 full time jobs</li> </ul>
Other sectors involved / how (agriculture, fishery, construction, etc.)	<ul style="list-style-type: none"> <li>• Fishery – products from local fishermen</li> <li>• Berry farm, specialised in forest berry growing</li> </ul>	Some companies cultivate vegetables, apples and berries, some companies offer fishery (on their own pond). The western part of Lake Peipsi is famous for its onions and smoked fishes, which are sold to the visitors as well.	<ul style="list-style-type: none"> <li>• 1,845 entrepreneurs within the industry</li> <li>• 2,707 entrepreneurs in the building industry</li> <li>• 1,269 entrepreneurs within the agriculture</li> <li>• 4,437 entrepreneurs in real-estate business</li> </ul>	<ul style="list-style-type: none"> <li>• Forestry – hunting lodges (used also by other users) mainly provided by State Forestry,</li> <li>• Agriculture – agro-tourism farms (facilities), horse trail infrastructure</li> <li>• Fishery – angling sites</li> </ul>	<ul style="list-style-type: none"> <li>• Agriculture (numerous projects /activities to promote regional gastronomy and specially organic food)</li> <li>• Fisheries (Lake Constance fish is successfully promoted within the tourism sector)</li> </ul>
Training / formation - possibilities for local employees	Nature education and ecosystem trainings and project based trainings at Lake Vörtsjärv Centre; seminars and info lessons. Trainings are offered also by county tourism offices.	Peipsi CTC (and other NGOs) organizes project based training courses and workshops in the field of nature tourism. Vocational Education Centre in Tartu offers full-time training - accommodation and catering; tourism - and shorter courses on different topics, incl. e.g. development of tourism products.	During the implementation of Lake Balaton Partnership Programme the LBDCA organized 36 trainings for the employees in the tourist sector.	<ul style="list-style-type: none"> <li>• Training workshops for agro-tourism providers,</li> <li>• Programme to develop thematic villages and village revitalisation is in progress</li> <li>• Carp Days– annual cluster of events since 2006, in 2007: 17 different events and 14 restaurants participated</li> </ul>	<p>Training possibilities offered by German, Austrian and Swiss Hotel Federations, International Lake Constance Tourism Promotion GmbH, tourism highschool of Ravensburg.</p> <p>Lake Constance Foundation organizes training workshops within special projects such as BodenseeClick (environmentally friendly mobility)</p>

# 4 Sustainable Tourism

Lake	Vörtsjärv	Peipsi	Balaton	Milicz Ponds	Constance
Additional comments	<p>Main direction is to develop quality products for individual tourists and couples, not big groups</p> <p>There are no official tourism statistics available about Lake Vörtsjärv region. All these figures and data relay on approximate numbers and other information given by some local entrepreneurs in the region.</p>	<p>In those 33 local governments the most common type of accommodation is bed-and-breakfast, majority of companies are family-businesses.</p> <p>Data for Estonian part of Lake Peipsi</p>			<p>Tourism planning and promotion of an international region like Lake Constance region is difficult because of differences regarding the current situation, importance of tourism, objectives, legislation etc. Since more than 10 years, Lake Constance Tourism Promotion tries hard to elaborate a common tourism strategy and destination profile. During decades, Lake Constance was known as destination for health treatments and for senior people. Since 10 years, through the promotion of nature and bicycle tourism the destination tries to become a more active and attractive profile for families and younger tourists.</p>

## Case Study 2 – Sustainable tourism development at Lake Peipsi

### *What was implemented*

To promote sustainable tourism development in the Lake Peipsi region, Peipsi CTC's activities were concentrated on the development of sustainable tourism schemes and activities such as the elaboration of nature tourism guidelines, compilation of the training programme for tourist guides and entrepreneurs to be used by different nature trainers and for the organisation of the training courses. The new information and study material in English was published, a multimedia programme about the area of River Emajõgi that joins Lake Võrtsjärv and Lake Peipsi.

### *Nature tourism guidelines*

The nature tourism guidelines (85 pages) were designed to advance balanced and environmentally friendly tourism entrepreneurship. They are providing comprehensive information and guidance in topics such as nature interpretation (a method of providing emotional and intellectual access to nature to the persons who can't "read" nature), cooperation between the public and the private sector from the point of view of a nature tourism entrepreneur, eco-labelling and nature tourism. The guidelines are also providing a good overview on how to promote and market nature related services. Additionally, some special places and regions are described in the form of small articles to provide best practice overview, e.g. development aspects of Lake Võrtsjärv, the recreational activities and cooperation with tourism entrepreneurs of the State Forest Management Centre and the nature restoration camps of the Estonian Nature Fund.

### *Training programme*

The curriculum of the training programme for tourism entrepreneurs and guides was based on the results of the assessment of entrepreneurs training needs in four Estonian counties (Ida-Virumaa, Jõgevamaa, Tartumaa, Valgamaa). The survey questionnaire was compiled by Tartu Business Advisory Services. The assessment gave accurate information on the shortcomings of nature tourism entrepreneurs and what they are expecting in order to be more active both in nature protection and its own development.

The training was divided into three two-day modules. The time schedule and modules were drawn up with the concrete aim to provide all participants an opportunity to set up cooperation networks among themselves should this be necessary. The first module of training was carried out at the end of April 2006, second and third modules in May 2006 (in total 6 days).

The participants in the training sessions obtained new knowledge with regard to the essential features of nature-related tourism products, nature interpretation, goals of nature tourism and also the development of nature tourism products, effective marketing and quality labels. Since the problems of the small-scale entre-

preneurs often consist in lack of information and cooperation opportunities, a section was dedicated to cooperation and networking among entrepreneurs.

To provide practical value for the participants the training included a trip to Kauksi nature centre of the State Forest Management Centre, where specialists introduced different possibilities and methods for nature interpretation to the tourism entrepreneurs and provided some practical advice how to cooperate and set up active holiday services with the help of state institutions. In addition, the training also comprised group work and video training.

In the second phase, which took place in the Emajõe Suursoo Centre (Emajõe Great Mire reserve), the focus was on the promotion of the protected areas of the Peipsi region and the system of nature conservation and recreation areas of the State Forest Management Centre. Additionally, an overview on the natural and cultural values of the region was given. At the end of May, the tourism entrepreneurs were taken to a study trip - places of interest on the shores of Lake Peipsi within Põlva County were introduced.

### *Multi-media programme “Bird’s Eye View of the Emajõgi River”*

The programme is the extension of the book (in Estonian and English) published in 2005 that provides to both specialists and visitors attractive information on nature and species in the relevant area. The programme includes an educational programme and quiz about river Emajõgi and its wildlife. As part of the Living Lakes Eastern Europe project the English version of the programme was prepared for distribution to a wider audience and drawing more attention to diverse nature issues and habitats in the Lake Peipsi and Võrtsjärv regions. The multi-media programme is also providing an excellent opportunity to exchange experience in producing interactive promotional materials with other similar regions and lakes.



Participants of the training programme at a visitor centre



Guide of the training programme.

The multimedia programme is primarily meant for schools, nature schools and visiting centres in nature protection areas, but it also offers a lot to discover for everybody who is interested in nature. The value of the programme to nature tourism entrepreneurs consists of two components: first to get information on what to present in the respective areas and secondly how to present and interpret all that to visitors. The feedback from nature guides, entrepreneurs and teachers revealed a comprehensive use of the programme due to its visual and audio material that can be easily used by different stakeholders.

### *Partners in the planning and implementation process*

The nature tourism guidelines and training programme were prepared in close cooperation with the South-Estonian Tourism Foundation and the Estonia Tourism Development Centre. The South-Estonian Tourism Foundation was the implementation partner of the training as well. The knowledge of many different experts, including local and foreign specialists, was used during the compilation of the guidelines. Training programme and multi-media programme development was also discussed with entrepreneurs and local environmental departments of the Ministry of Environment. Advice was also given by tourism development organisations.

### *Analysis of cost effectiveness*

The training for tourism guides and entrepreneurs was considered very useful. The same curriculum will be used for organizing new training sessions. Due to the support of different donors such as the Estonian Nature Investment Agency, the costs for the 6-day training package (including materials, accommodation and catering) could be limited to 310 € per person in 2006. During the next training sessions the programme will be modified according to the needs of the potential participants and regional/local features. Thus the price of the training will differ as well.



CD-Cover  
„Bird's Eye View  
of Emajõgi River“

## ***Evaluation of the preliminary results***

All the activities were implemented according to the plans and positive feedback was received. The feedback about the guidelines as well as multimedia programme was very good. Both materials have been highly appreciated by users. Project results were disseminated through Peipsi CTC website and mailing lists.

## ***Why this model can be said to be particularly sustainable***

The training of the entrepreneurs in the field of nature tourism contributes to raise the awareness about the possibilities of sustainable tourism. The formation of the network of local tourism entrepreneurs interested in nature tourism helps to create better opportunities for the tourism development of the entire region. As a result of the training several participants decided to cooperate in the future when receiving tourists and in developing holiday packages.

## ***Lessons learnt by NGO's***

Entrepreneurs are getting more and more aware of the possibilities of nature tourism, the interest in sustainable tourism activities has increased. Thus it is very important to emphasise the restrictions and limits of using the nature for tourism purposes. There is a demand for network promoters and organizers of trainings in the field of nature tourism, and the third sector is both appreciated and even expected to support these activities.

## Case Study 3 - Lake Võrtsjärv Information Centre

### *Recreation in the Lake Võrtsjärv Region*

Despite having good preconditions for recreation industry, the Lake Võrtsjärv region has attracted relatively little attention as a tourist destination. In future, the tourism potential around Lake Võrtsjärv shall be sustainably exploited taking into consideration the natural and cultural heritage of the region and motivating and guiding the actions of local people in using effectively local resources to develop tourism products and marketing.

There are several aims have been defined for 2010:

- All marketing activities of the region are based on the existing official Lake Võrtsjärv Tourism Strategy.
- At least three innovative tourism products (e.g. interesting activities, places or objects to see and explore as well as accommodation etc.) will be introduced in the region.
- Access to the lake will be improved. Instead of big harbours, small disembarkment possibilities such as landing stages are foreseen in order to protect the lakeshore's environment.
- Measures for water quality improvement and reconstruction of lake shores will be implemented. Being mainly a measure of nature protection they will contribute to the tourism attractiveness of Lake Võrtsjärv as well.
- The recreational image of the Lake Võrtsjärv region will be improved. Lake Võrtsjärv will be known in Baltic Sea region and in Europe.
- Lake Võrtsjärv region manages to obtain new investment possibilities of ca 100 million Crones (approx. 6 million Euro).
- At least 50 -100 new recreational complexes will be established in the region
- Local people involved in recreational businesses will have a broader knowledge in sustainable tourism related practices and qualifications (e.g. knowledge of sustainable use of natural resources, craft competence, servicing).
- At least 5 new companies and 20 entrepreneurs begin to operate
- A network of tourism enterprises and proper infrastructure facilities will be created (hotels, motels, catering, museums, parking, harbours, internet connection, access roads etc)
- A tight connection with tourism businesses from the European Union and corresponding lake management centres will be established
- The number of the visitors of the region grows by 10 times (from 5,000 in 2005 to 50,000).
- Unemployment in the region decreases through essential contribution from the tourism sector.

## *The Lake Võrtsjärv Visitor Centre*

The Lake Võrtsjärv Visitor Centre is the place where any kind of information about the region is concentrated, available and distributed. In collaboration with all seven local municipalities around Lake Võrtsjärv a lake museum was established in the Lake Võrtsjärv Visitor Centre on the basis of the knowledge of the existing staff of the Estonian University of Life Sciences, Võrtsjärv Limnological Centre, Educational Centre of Inland Waters (ECIV). It shall help to reach the above mentioned aims.

Main goal of the centre is to provide training possibilities, advice and information to interested regional groups, visitors, and possible investors/entrepreneurs from outside. Being also an educational institution, the accent is put on themes related to lakes and their surroundings such as living organisms, water quality, overall status, perspectives of improving the status of lakes and training of people in environmentally friendly behaviour. Special attention will be paid to active practical learning about the lake and its inhabitants.

A main focus of the Visitor Centre is information about fishery and fish species living in the lake now and in former eras of earth history. In the aquariums of the lake museum with a total volume of 10 m<sup>3</sup> over 20 fish species are presented such as Eel, Pike, Bream, White bream, Roach, Pikeperch, Perch etc. Specially designed river aquariums mainly exhibit fish species living in rivers and brooks, like dace, riffle minnow and brook lamprey. An exhibition about primeval fish species from the Ordovician, Silurian and Devonian ages was presented in the Lake Museum from January 2007 – April 2008. The 17 full-size models of the primeval fish have been prepared and presented by Elga Mark-Kurik and showed the evolution of fish during the Paleozoic era as well as fish fossils.

Besides a collection of old harpoons and other fish gear is presented.



The Visitor Centre seen from the lakeside



Lecture in the Visitor Centre

## *A traditional trawling sailboat*

Not a single traditional trawling sailboat (“kale” in Estonian) was left on Lake Võrtsjärv. They all have been destroyed or used while making St. John’s Night bonfires. In 2005 a new old-styled sailboat called “Paula” was built during a Phare CBC project. The Phare CBC Programme of the European Union supports the new Eastern European EU members. Local fishermen were involved to contribute their knowledge of historic trawling sailboats and wooden oar boats to the construction of “Paula”. The Sailing boat is now an important part of the exhibition of traditional life of coastal people at Lake Võrtsjärv (<http://www.vortsjarv.ee/?id=238&lang=eng>) and suites well in marketing the region’s tourism products.

## *Analysis of cost effectiveness*

The costs for the improvement of visitor management at Lake Võrtsjärv are fully effective. The visitor centre together with the traditional sailing boat helped to raise the number of visitors in the region to 6,000 per year. Two new tourism enterprises started to operate, hiring five employees. Total costs for the equipment of the visitor centre have been 35,000 Euro. Assuming a constant number of visitors in the forthcoming ten years, that is an investment of approximately 60 cent per visitor.

## *Evaluation of the preliminary results*

The information centre at Lake Võrtsjärv opened the doors in May 2006. Since then daily statistics about the visitors have been realized. From May to December 2006, 2,550 visitors were recorded and from January until October 2007, 3,500 persons visited Lake Võrtsjärv Visitor Centre. The traditional sailing boat “Paula” is an important detail in marketing the lake museum and visitor centre: 3,581 persons sailed in “kale” boat within 2006 and 2007. Project results were disseminated through Lake Võrtsjärv website and mailing list. Several articles were issued in local and national media. English version of the website is under construction.



Traditional sailing boat “Paula”



Cruise in June 2006

## *Why this model can said to be particularly sustainable*

The project links promotion of tourism activities with awareness rising for the value of nature of Lake Võrtsjärv. Especially the network of local shareholders and partners and their continuing and follow-up activities will develop the region. The creation of those new opportunities will improve the recreational image of the region. The major part of the project is made up by nature education activities and introduction of the ecological values of the lake and its surrounding, including animals and plants.

It is expected that public attention will increase in the next years for nature conservation as well as for alternative learning methods like outdoor lessons. Lake Võrtsjärv Information Centre together with scientists from Estonian University of Life Sciences will provide a good basis for such kind of activities.

## *Lessons learnt within this project*

Project participants were questioned during training courses as well as through a mailing list. These inquiries showed the need and demand for the third sector to operate on behalf of the region and to support people's initiative to act. Partnerships and cooperation between different groups and organisations were pointed out as very important elements for successful tourism structures. Encouraging especially the business sector to follow sustainable practices and to combine conservation with business is very promising. Local population and guests have to be informed and sensitized about nature conservation pointing out the long-term benefits for all groups of environmentally sound and socially acceptable tourism. A good infrastructure – including special tourism infrastructure - is the basis for the development of tourism. Last not least, decision makers have to be informed comprehensively about the project in order to get their support. One result is the discovery that the positive effects of tourism are often overestimated while at the same time possible negative aspects are overseen.



Visitors in the aquarium hall



Model of a allochthonous fish species, caught in Lake Võrtsjärv, probably originating from a fish farm

## MANAGEMENT OF PROTECTED AREAS

### EU legislation relevant for nature protection in lake & wetland regions

The Birds Directive which dates back to 1979 and the Habitats Directive from 1991 are the most important pillars of nature conservation and biodiversity protection.

Council Directive 79/409/EEC on the conservation of wild birds, commonly referred to as the **Birds Directive** is the EU's oldest piece of nature legislation and one of the most important, creating a comprehensive scheme of protection for all wild bird species naturally occurring in the Union. The Directive recognises that habitat loss and degradation are the most serious threats to the conservation of wild birds. It therefore places great emphasis on the protection of habitats for endangered as well as migratory species (listed in Annex I), especially through the establishment of a coherent network of Special Protection Areas (SPAs) comprising all the most suitable territories for these species. Since 1994 all SPAs form an integral part of the NATURA 2000 ecological network<sup>1</sup>.

The **Habitats Directive** is a Community legislative instrument in the field of nature conservation that establishes a common framework for the conservation of wild animal and plant species and natural habitats of Community importance; it provides for the creation of a network of special areas of conservation, called Natura 2000, to "maintain and restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest". Annex I lists today 231 European natural habitat types, including 71 priority habitats (i.e. habitat types in danger of disappearance and whose natural range mainly falls within the territory of the European Union). As regards the legal transposition of the directives and the implementation of Natura 2000 network, no transition periods were agreed.

Article 6 is a key part of the Habitats Directive. It sets out the framework for site conservation and protection, and includes proactive, preventive and procedural requirements (e.g. management plans). It is relevant to special protection areas under Directive 79/409/EEC as well as to sites based on Directive 92/43/EEC. The framework is a key means of achieving the principle of environmental integration and ultimately sustainable development.<sup>2</sup>

The Communication on Halting the Loss of Biodiversity to 2010 and Beyond<sup>3</sup> is to substantially strengthen the knowledge base for conservation and sustainable use of biodiversity, in the EU and globally.

<sup>1</sup> [http://ec.europa.eu/environment/nature/legislation/birdsdirective/index\\_en.htm](http://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm)

<sup>2</sup> [http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index\\_en.htm](http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm)

<sup>3</sup> [http://ec.europa.eu/environment/nature/biodiversity/comm2006/index\\_en.htm](http://ec.europa.eu/environment/nature/biodiversity/comm2006/index_en.htm)

## Fact sheet: Management of protected areas

Lake	Vörtsjärv	Peipsi	Balaton	Milicz Ponds	Lake Constance
Watershed / lake size in km <sup>2</sup>	3,374 / 270	47,800 / 3,555	5,775 / 594	55,345 (Barycz River) / 70 (Ponds)	11,487 / 536
Name of protected areas	Lake Vörtsjärv Protection Area (the whole lake)	Areas from Raadna to Kalmaküla, Peipsi, Lahepera, lake Lahepera, Emajõe-Suursoo (Emajõe Great Mire), delta of River Emajõgi and Piirissaar, Räpina polder, Lüübnitsa, Smolnitsa, Järvevälja, Värskä	Balaton Uplands National Park	Rezerwat Przyrody "Stawy Milickie" (national nature reserve, RAMSAR site) Park Krajobrazowy Doliny Baryczy (landscape park) Special Protection Area „Dolina Baryczy”	Nomination as Ramsar area of Wollmatinger Ried-Giehrenmoos-Gnadensee and Mindelsee in 1976 and Rhine delta in 1983. Ermatingen basin and Stein am Rhein in Switzerland are in planning stage, a date is not yet fixed.
Protection Status	Natura 2000 Special Protection Area (SPA) and Special Area for Conservation (SAC)	Natura 2000 - seven Special Areas for Conservation, four Special Protection Areas	2 Ramsar areas (Kis-Balaton and Balaton). 1 national park, 3 protected landscape areas, 27 nature conservation areas, and four SPA sites and 48 pSCI sites	RAMSAR site, Natura 2000 national reserves, species protection zones, landscape park, landscape protection zones, sites of ecological use, nature monuments, private reserves	Natura 2000 areas, nature protection areas
Total size of protected area in ha	<ul style="list-style-type: none"> <li>SPAs: 29,410 (Natura code EE0080571)</li> <li>PSCI: 28,110 (Natura code EE0080524)</li> </ul>	Approx. 104,165	<ul style="list-style-type: none"> <li>1,004,464</li> <li>57,019 protected area belong to the Balaton Uplands National Park</li> </ul>	<ul style="list-style-type: none"> <li>RAMSAR site = national reserve 5,325</li> <li>SPA 55,478</li> <li>Landscape Park 87,040</li> <li>SAC (planned) 85,570</li> </ul>	Approx. 37,000 in Germany and Austria.

# 5 Management of protected areas

Lake	Vörtsjärv	Peipsi	Balaton	Milicz Ponds	Lake Constance
Most important species	Asp ( <i>Aspius aspius</i> ), Bullhead ( <i>Cottus gobio</i> ), Loach ( <i>Cobitis taenia</i> ), Weatherfish ( <i>Misgurnus fossilis</i> ), Bittern ( <i>Botaurus stellaris</i> ), Marsh harrier ( <i>Circus aeruginosus</i> ), Spotted crake ( <i>Porzana porzana</i> ), Smew ( <i>Mergus albellus</i> ), Black tern ( <i>Chlidonias niger</i> ), Corncake ( <i>Crex crex</i> ), Bewick's swan ( <i>Cygnus bewickii</i> ), White-fronted geese ( <i>Anser albifrons</i> ), Northern shoveler ( <i>Anas clypeata</i> ), Tundra swan ( <i>Cygnus columbianus</i> )	Asp ( <i>Aspius aspius</i> ), Loach ( <i>Cobitis taenia</i> ), Bullhead ( <i>Cottus gobio</i> ), Weatherfish ( <i>Misgurnus fossilis</i> ), Whooper swan ( <i>Cygnus cygnus</i> ), Little gull ( <i>Larus minutus</i> ), Greater white-fronted goose ( <i>Anser albifrons</i> ), White-tailed eagle ( <i>Haliaeetus albicilla</i> ), Green toad ( <i>Bufo viridis</i> ), Marsh gentian ( <i>Gentiana pneumonanthe</i> ), Woolly pestilenceweed ( <i>Petasites spec.</i> ) and many others	Bird's-eye primrose ( <i>Primula farinosa</i> ), Summer snowflake ( <i>Leucojum aestivum</i> ), Crambe tataria, Early spider orchid ( <i>Ophrys sphegodes</i> ), <i>Himantoglossum adriaticum</i> , White-tailed sea-eagle ( <i>Haliaeetus albicilla</i> ), White stork ( <i>Ciconia ciconia</i> ), Squacco-heron ( <i>Ardeola ralloides</i> ), Big heron ( <i>Egretta alba</i> ), Common spoonbill ( <i>Platalea leucorodia</i> , Long-eared owl ( <i>Asio otus</i> )	Ferruginous duck ( <i>Aythya ferina</i> ), Marsh harrier ( <i>Circus aeruginosus</i> ), Black tern ( <i>Chlidonias niger</i> ), Corncake ( <i>Crex crex</i> ), Whooper swan ( <i>Cygnus cygnus</i> ), Greylag goose ( <i>Anser anser</i> ), Fire-bellied toad ( <i>Bombina bombina</i> ), White-tailed eagle ( <i>Haliaeetus albicilla</i> ), Bittern ( <i>Botaurus stellaris</i> ), Little bittern ( <i>Ixobrychus minutus</i> ), Longhorn beetle ( <i>Cerambyx cerdo</i> ), Hermit beetle ( <i>Osmoderma eremita</i> ), <i>Salvinia natans</i> , Fringed water-lily ( <i>Nymphoides peltata</i> ), Water chestnut ( <i>Trapa natans</i> ), ...	More than 350 bird species, e.g. Great Crested Grebe ( <i>Podiceps cristatus</i> ), Gadwall ( <i>Anas strepera</i> ), Red-crested pochard ( <i>Netta rufina</i> ), Pochard ( <i>Aythya ferina</i> ), Tufted duck ( <i>Aythya fuligula</i> ), and Coot ( <i>Fulica atra</i> ).  Plants like <i>Myosotis rehsteineri</i> (Endemic at Lake Constance) <i>Deschampsia littoralis</i> , Shoreweed ( <i>Littorella uniflora</i> ) and Creeping spearwort ( <i>Ranunculus reptans</i> ).
Existing types of habitat as listed in the Habitats directive	<ul style="list-style-type: none"> <li>6450 Northern boreal alluvial meadows</li> <li>6430 Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels</li> <li>7110 Active raised bogs</li> <li>8220 Silicicolous rocky slopes with chasmo-phytic vegetation</li> <li>9010 Western taiga</li> <li>91D0 Bog woodland</li> </ul>	<ul style="list-style-type: none"> <li>2120 Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes)</li> <li>2130 Fixed coastal dunes with herbaceous vegetation (grey dunes)</li> <li>2180 Wooded dunes of the Atlantic, Continental and Boreal region</li> <li>3130, 3140, 3150, 3160 Standing water habitats</li> <li>3260 Water courses of plain to montane levels with the <i>Ranunculus</i></li> </ul>	<ul style="list-style-type: none"> <li>3150 Natural eutrophic lakes with Magnopotamion or Hydrocharition – type vegetation</li> <li>6190 Rupicolous pannonic grassland (<i>Stipo – Festucetalia pallentis</i>)</li> <li>6240 Sub-Pannonic steppic grassland</li> <li>6510 Lowland hay meadows (<i>Allopecurus pratensis</i>, <i>Sanguisorba officinalis</i>)</li> <li>7140 Transition mires and quaking bogs</li> </ul>	<ul style="list-style-type: none"> <li>3150</li> <li>3260, 3270 Running water habitats</li> <li>6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates</li> <li>6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils</li> <li>6430 Hydrophilous tall herb fringe communities of plains and of the montane</li> <li>6440 Alluvial meadows</li> </ul>	<ul style="list-style-type: none"> <li>3130-3150 Standing water habitats</li> <li>3240, 3260, 3270 Running water habitats</li> <li>6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates</li> <li>6410, 6430</li> <li>6510 Lowland hay meadows</li> <li>7140 Transition mires and quaking bogs</li> <li>7210 Calcareous fens</li> </ul>

# 5 Management of protected areas

Lake	Vörtsjärv	Peipsi	Balaton	Milicz Ponds	Lake Constance
		<p>fluitantis and Callitricho-Batrachion vegetation</p> <ul style="list-style-type: none"> <li>• 6270 Fennoscandian lowland species-rich dry to mesic grasslands</li> <li>• 6450</li> <li>• 7110 Active raised bogs</li> <li>• 7140</li> <li>• 7230 Alkaline fens</li> <li>• 9010 Western Taïga</li> <li>• 9080 Fennoscandian deciduous swamp woods</li> <li>• 91D0 Bog woodland</li> </ul>	<ul style="list-style-type: none"> <li>• 7230 Alkaline fens</li> <li>• 91G0 Pannonic woods with Quercus petraea and Carpinus betulus</li> <li>• 91M0 Pannonian-Balkan turkey oak – sessile oak forests</li> </ul>	<p>of river valleys of the Cnidion dubii</p> <ul style="list-style-type: none"> <li>• 6510 Lowland hay meadows (Arrhenatherion elatioris)</li> <li>• 9170 Galio-Carpinetum oak-hornbeam forests</li> <li>• 91E0 Alluvial forests with Alnus glutinosa, Fraxinus excelsior and Salix ssp.</li> <li>• 91F0 Riparian mixed forests along the great rivers (Ulmenion minoris)</li> </ul>	<p>with Cladium mariscus and species of the Caricion davallianae</p> <ul style="list-style-type: none"> <li>• 7220 Petrifying springs with tufa formation (Cratoneurion)</li> <li>• 7230 Alkaline fens</li> <li>• 9110, 9130, 9150 Beech forests 9160, 9170 Oak-hornbeam forests</li> <li>• 9180 Tilio-Acerion forests of slopes, screes and ravines</li> <li>• 91E0</li> </ul>
Management					
Management plan for the protected area	Approval stadium	Some plans are in preparation, some of them in approval stadium. Only two are approved.	<p>There are some approved management plans, others are under preparation.</p> <p>23 out of 29 protected areas in the Balaton Uplands National park have management plans. The others are in preparation.</p>	<p>For nature reserve Stawy Milickie – in preparation</p> <p>For Natura 2000 SPA Dolina Baryczy – bid for preparation of the management plan soon to be announced</p>	For all protected areas management plans are in place, but many of them not sufficiently implemented. Management plans for Natura 2000 areas are in preparation
Monitoring System	Monitoring system is all-year round nationally financed only regarding hydrochemical and hydrobiological aspects. No monitoring regarding visitor management.	No monitoring regarding visitor management.	The Kis-Balaton area has a nature protection-monitoring system according to the legal regulation. The Balaton Uplands National Park belongs to the National Biomonitoring System.	Monitoring of birds and water quality, some long year studies in different aspects (e.g. amphibians)	Not all protected areas are monitored.

# 5 Management of protected areas

Lake	Võrtsjärv	Peipsi	Balaton	Milicz Ponds	Lake Constance
Management Authority for protected area	Estonian Ministry of Environment, National Nature Protection Centre and its offices in Viljandi, Tartu and Valga counties	Estonian Ministry of Environment, State Nature Conservation Centre and its offices in Valga, Jõgeva and Ida-Viru counties.	The Balaton National Park Directorate is an independent legal entity financed by state budget, independently managed, and operates under the direction of the Ministry of Environmental Protection and Water Conservancy.	<ul style="list-style-type: none"> <li>Ramsar Sites: Ministry of Environment</li> <li>Nature reserves and Landscape Parks: Governour of the Province</li> </ul>	Regional administrations are responsible. In Germany and Austria they signed contracts with environmental NGOs for the management of the most important protected areas.
Participation of stakeholder in the management of the protected area	Estonian Ministry of Environment, National Nature Protection Centre and its offices in Viljandi, Tartu and Valga counties	Estonian Ministry of Environment: State Nature Conservation Centre and its offices in Valga, Jõgeva and Ida-Viru counties, county environmental departments, Environmental Inspectorate.	There is a National Park Council which controls and supports the activities of the National Park Directorate. This council involves experts and stakeholders from different sectors.	There is an Advisory Council on Nature – a commission advising the Governour. Furthermore, there are direct activities of land owners, businesses, local institutions and NGOs.	Nature Parks and Natura 2000 sites do have Boards with representation of relevant stakeholders
<b>Visitor Management</b>					
Types of visitors coming to the protected area	Daytrips, campers, hobby fishermen, children camps and different reunions	Daytrips, campers, bird observers, hobby fishermen	Tourists, inhabitants	Inhabitants, workers, tourists, anglers, mushroom pickers, hunters	Mainly summer tourists and visitors interested in birds. Bicycle tourists increasing.
Existing accommodation types in or nearby protected areas	Approx. 15 camping sites and approx. 10 motels/tourism farms	Approx. 15 camping sites in protected areas.	Six houses/cottages for educational or research purposes in protected areas. 17 camp sites nearby protected areas.	In total, 50 accommodation places (hotels, camping sites mainly for tents, agri-tourism farms, hunting lodges, hostels, B&B rooms, motels)	All kind of accommodation types No accommodations in the core protected areas, but nearby the cities of Constance, Radolfzell, Friedrichshafen etc.
Existing infrastructures for visitors	Võrtsjärv Information Centre at Limnological Centre, ca 5 public recreational areas, 3	Hiking trails, observation towers, information centres	10 nature trails, 7 exhibition centres around the lake with in total 268.000 visitors	1 bird watching tower and 3 hides, 10 nature trails, 14 local museums, hiking,	All kind of infrastructures

# 5 Management of protected areas

Lake	Võrtsjärv	Peipsi	Balaton	Milicz Ponds	Lake Constance
	or 4 hiking trails. Some areas have signs.		(2006).	kayak, bicycle, horse trails with supporting infrastructure	
Guided excursions	Mostly organised through Lake Võrtsjärv Information Centre and Estonian University of Life Sciences (traditional kaleboat sailing trips, fishing camps etc)	Bird observations and other different guided nature tours can be ordered with the help of SNCC; ancient barge trips can be ordered from Emajõgi River Barge Society.	467 guided groups, 43 of which at forest school programmes in 2006.  In total about 17.000 participants	Relatively small number of guides	The environmental organisations NABU and BUND offer guided excursions ( <a href="http://www.birdinggermany.de/wollriedenglish.htm">http://www.birdinggermany.de/wollriedenglish.htm</a> ).
Existing measures for controlling visitor numbers/flow:	None	According to protection rules groups over 50 people have to (at least they should) co-ordinate their action with land-owners.	None	In the Nature Reserve an entry permit is required	Only in few restricted areas such as Wollmatinger Ried. Other areas do have visitor management, but no control systems
Monitoring system	None	None	The monitoring system is managed by the National Park Directorate and the Water Management Directorates.	No monitoring of visitor flow except for entries to the reserve	Yes, in areas managed by environmental NGOs
Contribution to regional economy					
What kind of economic structures are based on the protected area (entrance fees, guided tours, etc.)	Entrance fee to Lake Võrtsjärv Museum at Visitor Centre, guided tours on sailing boat	None	<ul style="list-style-type: none"> <li>Hiking tours for groups</li> <li>Nature trails</li> <li>Several events and services (visit of caves, boating) in the area of the National Park, which need permission from the National Park Directorate</li> <li>Entrance fees at the</li> </ul>	None regular, single guides	<ul style="list-style-type: none"> <li>Offers for nature tourism and bicycle tourism mainly</li> <li>Guided tours in the most important areas</li> <li>Entrance fee only symbolic</li> </ul>

# 5 Management of protected areas

Lake	Vörtsjärv	Peipsi	Balaton	Milicz Ponds	Lake Constance
			exhibition centres		
Jobs directly related to the protected area (rangers, officials, etc.)	Forest rangers, fishing inspector and scientists of the Limnological Centre	Forest warden/rangers	64 employees (11 nature conservation professionals, 19 rangers, rest are labourers and administrative staff) at the National Park Directorate (area > 11 million ha).	3 (rangers - Landscape Park staff)	Yes, but no data available
Problems	No existing visitor management	No existing visitor management	There are strict regulations related to visiting of protected area. This regulation somewhere limits the development of the settlements.	<ul style="list-style-type: none"> <li>• Tourism is in its initial stage of development, so a proper definition of the directions is crucial</li> <li>• The area becomes popular and growing pressure on building recreational houses is not sufficiently controlled by land use planning mechanisms</li> </ul>	<ul style="list-style-type: none"> <li>• No transboundary concept (management plans, monitoring, regulations for water sports and hunting)</li> <li>• Protected areas are too small and not connected (no buffer zones, no biotope corridors)</li> <li>• Impacts of climate change</li> </ul>

## Case Study 4 – Bringing together nature protection and tourism through a zoning concept

The objective of the project was to design spatial arrangements in tourism that are not harmful to nature. This sensible tourism approach will support the local economy and sustain natural resources such as nature to observe, landscape and tranquillity.

### *Gathering and processing of data*

The first large step was comprehensive field research as a basis for a nature inventory in one of the largest of the Polish Natura 2000 sites (Special Protection Area) Dolina Baryczy. Detailed information on the distribution of bird habitats was collected and some animal groups (amphibians, butterflies, beetles and bats) of high importance were mapped. Information was also collected on aspects such as habitat features, threats and existing and potential problems. The field research was done by a team of contracted specialists from academic and conservation bodies, local institutions and freelancers.

The mapped bird habitats and potential problems were digitalised into the GIS and MS Access data bases. The software has been designed especially for this purpose. The data base allows easy updating and analysis of the data, and the results may be obtained in the form of reports or transferred to the GIS where they may be presented as distribution maps. The thematic maps may contain information according to the choice of the user. Selection may be based on the choice of a single species, any group of species, geographical scope or any other option. The selected data may be summarised or evaluated (valorisation of the habitats based on different criteria).



At least 14 pairs of the Hoopoe, still breed in old trees along the pond shores



The White-tailed eagle feeds on fish and water birds

The developed GIS and Access data bases were made available for the conservation authorities and a training was provided in the use of these tools for the conservation authorities and PTPP "pro Natura" staff. So far updating of the information remains a task of PTPP "pro Natura" and the data is then transferred to the partners.

### *Valorisation and zoning*

A valorisation of habitats was done for the purpose of zoning and as a basis for decision-making in planning processes. In the first step, the valorisation criteria and procedures were designed. The valorisation is based on multiple criteria such as conservation status of the species and areas, relative abundance, fragility of the habitats and species on different forms of disturbance as well as existing and potential threats. Different ranks were given to these criteria and the various calculation procedures were tested in view of the scientific expectations of what the results should indicate. The final valorisation system obtained by these procedures seems complicated at the first glance but it brings simple and easy to interpret categories.

Similarly, the categories for tourism development zones were defined. The five zone categories range from strict limitations of access to areas of lowest level restrictions with only general recommendations. On the basis of the habitat valorisation and spatial features such as available transportation routes and accommodation and other tourism infrastructure, the zones were marked on the map of the region as a proposal for consultations of the local and regional authorities.

The project was carried out with the help of University experts from Wrocław and independent researchers, representatives of the conservation authorities (Nature Conservator, Landscape Parks) and partner NGOs. The technical work was done by specialists in biology from the University and freelancers (collection of data ,valorization of ponds and collection of environmental data, GIS and data base and training in GIS)

### *Challenges faced during the implementation*

The challenges concerned conceptual and social aspects. So far, there is not much work done on systematic valorisation of habitats in Poland and even in Europe. The project staff participated in the EuMon conference (conference on biodiversity monitoring in Europe) in Leipzig, where the experience of other parties showed that this project is still a pioneer approach. It is difficult to objectify the valorisation criteria. The system which was designed had to take into account many variables and at the same time give simple, applicative results. In the socio-political field there was a lack of a legal and institutional framework to automatically implement the results. The implementation should be based on incorporation of the zoning into different decision-making processes and will to some extent be based on the good will of its users.

## *Evaluation and sustainability of the project*

The intended objectives of the project have been achieved. The evaluation of habitats provided the basis for the zoning of tourism activities. The process of the negotiations to turn the results into a legal framework are part of the management plan. The structured information was passed to the conservation authorities and will be included into the future management plan irrespective of who will develop it. The GIS/data base tool produced in the project will remain as a durable good. Similarly training for the administration and NGO staff has the long term aspect. The future tasks like design of the management plan or monitoring of nature values are a responsibility of the government.

The protection of habitats and species by systematic avoidance of disturbance and trampling in the zoning area has a good perspective. The project is based on a good participation of stakeholders and society. The zoning has been discussed with stakeholders. Some parts of the reserves which beforehand had been inaccessible were opened for visitors. The local community has understood that reasonable arrangements are possible and may benefit them.

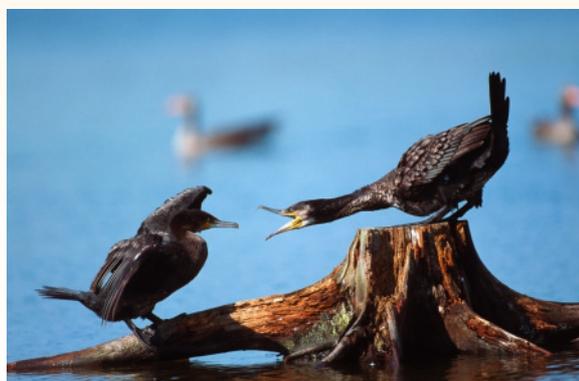
## *Lessons learnt by NGO's*

The common sense and practicability were the important factors. Scientific knowledge should be used to verify the assumptions and methods, however the concepts to be used in social environment should be simple and understandable. For example, the classification of value, fragility or threats to the area should contain 5-7 categories with distinguishable contents and borders.

The value of nature is not easy to understand to average persons. A communication strategy was focused not on convincing people of the intrinsic value of nature and its beauty (as it is felt by bird watchers as an example) but rather on showing the potential for the local economy by attracting nature tourists.



Over 20% of Greylag goose population in Poland breeds in the Barycz Valley



Skillful fish hunters – Cormorants cause conflicts with fisheries.

## SUSTAINABLE LAND USE PLANNING AND SUSTAINABILITY MANAGEMENT ON REGIONAL AND LOCAL LEVEL

### EU Legislation relevant for land use planning and sustainability management

#### *EU - Environmental Impact Assessment (EIA)*

The EIA Directive on Environmental Impact Assessment of the effects of projects on the environment ensures that environmental consequences of projects are identified and assessed before authorisation is given. The public can give its opinion and all results are taken into account in the authorisation procedure of the project. The public is informed of the decision afterwards. The EIA Directive outlines which project categories shall be made subject to an EIA, which procedure shall be followed and the content of the assessment. There are numerous guidance, studies and reports on the EIA available.

Related to the EIA, the Directive 2003/35/EC has been adopted in May 2003. This Directive intends to align the provisions on public participation in accordance with the Aarhus Convention on public participation in decision-making and access to justice in environmental matters.

Further information on

<http://www.ec.europa.eu/environment/eia/eia-legalcontext.htm>

#### *EU Directive of Strategic Environmental Assessment (SEA)*

The purpose of the SEA-Directive is to ensure that environmental consequences of certain plans and programmes are identified and assessed during their preparation and before their adoption. The public and environmental authorities can give their opinion and all results are integrated and taken into account in the course of the planning procedure. After the adoption of the plan or programme the public is informed about the decision and the way in which it was made. In the case of likely transboundary significant effects the affected Member State and its public are informed and have the possibility to make comments which are also integrated into the national decision making process.

SEA will contribute to more transparent planning by involving the public and by integrating environmental considerations. This will help to achieve the goal of sustainable development. The SEA needs to be applied to "plans and programmes" including those co-financed by the European Community, as well as any modifications to them:

- which are subject to preparation and/or adoption by an authority at national, regional or local level (e.g. land use plans, urbanisation plans)
- which are prepared by an authority for adoption, through a legislative procedure by Parliament or Government, and
- which are required by legislative, regulatory or administrative provisions.

As a matter of good practice, the environmental assessment of plans and programmes should influence the way the plans and programmes themselves are drawn up. The assessment shall be carried out during the preparation of a plan or programme and before its adoption or submission to the legislative procedure.

The environmental report is the central part of the environmental assessment required by the Directive. It also forms the main basis for monitoring the significant effects of the implementation of the plan or programme. The tasks of the report are to identify, describe and evaluate the likely significant effects on the environment of the plan or programme and its reasonable alternatives.. The studying of alternatives is an important element of the assessment and the Directive calls for a more comprehensive assessment of them than does the EIA Directive.

The SEA Directive requires consultation and public debate about the proposed plan or programme. The draft plan or programme and the environmental report have to be made available to the public (which is defined in Article 2(d) and paragraph 4). The SEA mentions explicitly the involvement of **relevant non-governmental organisations** as part of the public that is likely to be affected by, or has an interest in the decision making for a specific plan or programme subject to assessment. NGOs may differ in their field of interest. Some are, for example, more active on the national level, and some are more active on the regional or local level or on specific issues, such as nature or waste. In identifying relevant NGOs in accordance with Article 6(4), Member States may tailor the identification to the nature and contents of the plan or programme concerned and the interests of the NGOs. NGOs with purely local concerns would need to be identified even in the case of plans or programmes relating to distant localities, provided it was clear that their interests were affected by those plans or programmes.

Further information on:

[http://www.ec.europa.eu/environment/eia/pdf/030923\\_sea\\_guidance.pdf](http://www.ec.europa.eu/environment/eia/pdf/030923_sea_guidance.pdf)

## Fact sheet: Sustainable land use planning and sustainability management on regional and local level

Lake	Võrtsjärv	Peipsi	Balaton	Milicz Ponds	Lake Constance
Watershed size/ lake size in km <sup>2</sup>	3,374 / 270	47,800 / 3.555	5,775 / 594	55,345 (Barycz River) / 70 (Ponds)	11,487 / 536
Validation of the current land use plan at regional level	There is an intermediate planning by 7 local authorities bordering the lake which is united into one planning document, covering the regional and local level. It was approved in December 2001. There's no validation date, but it is suggested to review the plan every 3 to 5 years	County plans approved: in Tartu (1997), Jõgeva (1998), Ida-Viru (1998) and Põlva (2002).  No validation date, it is suggested to review the plan after every 3 to 5 years	Approved: The Hungarian parliament introduced the "Balaton Act", a regional development plan for the Lake Balaton Resort Area (LBRA), which is presently being revised.	Bordered by two provinces, the Barycz Valley area is included in two regional land use planning documents. The land use plan for the Dolnośląskie province has been passed in 2002 and revised in 2006, the land use plan for the Wielkopolskie province has been passed in 2000 for 20 years. A revision is mandatory due to Polish legislation approx. every four years.	Regional land use plans for each of the eight German counties of Lake Constance region as well as Vorarlberg (Austria)..
Validation of the current land use plan at local level	One land use plan for all 7 municipalities around the lake; Rõngu, Tarvastu and Viiratsi municipalities have extra plans which are valid until 2012	Approved: Illuka and Iisaku (1999), Pala and Rāpina (2006, valid until 2015).	Most of the local land-use plans were approved from 2002-2006. It is compulsory to revise the land-use plan every 5 years	There is no obligation to prepare a land use plan for the whole commune, but a "Study of pre-conditions and directions of the spatial development" must be prepared. Land use planning takes place only for areas/estates where investments or other changes are wanted and reflect the statements of the study.  In 21 of 40 communes less than 1% of the surface is covered by the valid land use plans. In contrast, few advanced communes reach even 100%.	Each municipality in Germany and in Austria does have a land use plan and urbanisation plan on local level approved by the municipality or city council. The regional administrations (counties) are responsible to check, if the local plans are in coherence with the regional land use plans.

# 6 Sustainable Land Use Planning

Lake	Võrtsjärv	Peipsi	Balaton	Milicz Ponds	Lake Constance
Administration responsible	County governments (Tartu, Viljandi, Valga)	County Governments (Tartu, Jõgeva, Põlva, Ida-Viru) and Local Governments	Regional land use planning and local authorities	Province Chief Executive Officer and Regional Assembly of the Province, and at local level mayor, executive officers and commune councils	Regional planning administrations and Local Authorities
Are sustainability aspects considered within the current land use plan?	<p>Evaluation of environmental impacts took place parallel to the compilation of the planning.</p> <ul style="list-style-type: none"> <li>Evaluation of existing environmental conditions and the documentation of restrictions</li> <li>A complex analysis of ecological, social and economic impacts</li> <li>Considering alternative planning solutions in conflictual regions</li> </ul>	<ul style="list-style-type: none"> <li>Responsible use of natural resources and protection of environment</li> <li>Forestalling environmental problems via control of effluvia's amount and their hazardousness and via decreasing energy consumption by awareness rising</li> <li>Creation of a green network</li> <li>Specify valuable landscapes</li> </ul>	<p>The plan contains a concept of measures and investments concerning the preservation of the resort's ecological conditions, improvement of the water quality and the sustainable development of tourism.</p>	<p>The land use plans for the provinces are quite general documents and often it is difficult to judge on the sustainability or declarativeness of particular aspects. The sustainable development is mentioned as a main goal, referred to as "harmonious and sustainable development of the whole province" and "active protection of the natural values and shaping of natural environment leading to the sustainable development".</p>	<ul style="list-style-type: none"> <li>Reduction of land use (compact cities)</li> <li>Increase of renewable energy</li> <li>Energy savings and improvement of energy efficiency</li> <li>Protection of water bodies</li> <li>Protection of natural values</li> <li>Reduction of (traffic) noise</li> <li>Improvement of air quality</li> </ul>
Does the land use plan include a concrete reference regarding protection of lake and lake shore?	<p>A number of concrete solutions to tackle negative environmental impacts is stated in the following fields:</p> <ol style="list-style-type: none"> <li>Construction of tourism infrastructure (11 solutions)</li> <li>Construction of roads, buildings, parking lot etc (12 solutions)</li> <li>Tourism develop-</li> </ol>	<p>Only via protected areas. In Pala borough: compile a project for hiking paths near Lake Peipsi, protection of shore slope and planted protective forests.</p>	<p>Lake shore rehabilitation plans were prepared for 2002-2005. These plans were prepared for the 43 lakeshore settlements in accordance with the Balaton Act and other legal regulations.</p> <p>It is compulsory for the lake shore settlements to develop green footpaths along the lake shore (to increase the green area at</p>	<ul style="list-style-type: none"> <li>In the Dolnośląskie plan, the "Protection of natural resources of BV" is among priorities, and among specific goals is the "Enlargement of the BV Landscape Park".</li> <li>At the local level only exceptionally, e.g. in Żmigród there is a regulation that no infrastructure is allowed inside 100 m zone along the ponds.</li> </ul>	<ul style="list-style-type: none"> <li>Regional Lake Shore Protection Baden-Württemberg: In order to protect the sensitive shallows, which make up about 17 % of the total lake surface, protected areas have been established in the Lake Constance shoreline plans. Legislation protects only the remaining natural shore line. More than 60 % of the total shore line is ur-</li> </ul>

# 6 Sustainable Land Use Planning

Lake	Vörtsjärv	Peipsi	Balaton	Milicz Ponds	Lake Constance
	ment (4 solutions) 4. Raising activities in entrepreneurship (fishing, agriculture, forestry) (9 solutions)		the lakeshore).		banized or heavily modified or used for recreational infrastructure (camping sites etc.). <ul style="list-style-type: none"> <li>• Switzerland and Austria do have similar legislation.</li> <li>• The Lake is an international water body (Commonwealth) and not protected. But the International Lake Constance Commission approved lake protection measures regarding boating, fishery and water quality. Additionally, Lake Constance is a drinking water reservoir with high standards on water quality.</li> </ul>
Does the land use plan include concrete and measurable aims?	Reinforcement of local development assumptions, creation of favourable conditions for investment in the region, creation of new jobs, improvement of the image of Vörtsjärv region, and the changing of the region into an attractive residential and recreational area.	Yes (e.g. creation of green network, to specify valuable landscapes)	<ul style="list-style-type: none"> <li>• 80% of the sewage is treated in treatment plants as at December 2005.</li> <li>• Creation of lake shore rehabilitation plans for the settlements by December 2002</li> <li>• Creation and improvement of new land use plans for each settlement</li> </ul>	No. At the local level in some communities there are concrete aims.	Standards based on European and national legislation (construction density, relation between urbanisation land and traffic infrastructures, heat insulation, etc.), but no measurable aims regarding sustainable land use
Does the land use plan include concrete criteria and standards?	National and European laws, several strict regulations/limitations of new building construction on	In national laws there are some standards and criteria (e.g. there are fixed accepted levels of outside	National and European laws but the instructions are more strict, e.g. regarding regula-	No.	Standards based on European and national legislation regarding construction density, energy consumption

# 6 Sustainable Land Use Planning

Lake	Vörtsjärv	Peipsi	Balaton	Milicz Ponds	Lake Constance
	the lake shore and the different zones of the recreational area.	noise for parks, industrial areas, etc.; in Heritage Conservation Act the memorials protection zone is 50 m)	tions/limitations of new building construction.		and energy efficiency in housing, traffic noise and air quality
Does the land use plan include concrete reference data /indicators?	No, however the related regulations contain deadlines for the aims (2015).	References from national laws.	No, however the related regulations contain deadlines for the aims and the responsible organisations.	Not at regional level. Local reference usually concerns development criteria (number and quality of housing), amount and quality standards for water and waste water, ratio of afforestation, etc.	Legally required reference data and indicators regarding housing density, construction (especially energy), traffic infrastructure, noise etc.
Is there a control instrument in place to control the fulfilment of criteria and standards?	No	No	The control is given through the fact that the ministries have to prepare a submission for implementation of the Balaton Act.	No	Local Authorities prepare their zoning plans for urbanisation with concrete criteria for construction. The Local authority is responsible for the control regarding the fulfilment of these requirements, but because of lack of personnel resources, very often the realisation of plans is not controlled.
Is there a monitoring system to control the effects of land use?	No	No (indirectly environmental monitoring system at country level)	No	No. Only 10% of the communities carry out any monitoring and one third plan to carry out monitoring in future.	No
Participation of stakeholders in land use planning?	Different specialists from local government, council of a rural municipality and its commissions, local community.	Different specialists from local government, council of a rural municipality and its commissions, local community.	There were several forums related to the elaboration and supervision of the Balaton Act with the participation of development	The regional plan has been developed after consultation of governmental institutions, local governments and neighbouring provinces and was exposed for	It is legally required to inform stakeholders and to offer the possibility to comment on a draft land use plan. Additionally, nearby all local au-

# 6 Sustainable Land Use Planning

Lake	Vörtsjärv	Peipsi	Balaton	Milicz Ponds	Lake Constance
			organisations, regional institutes, governments and civil organisations, municipalities, entrepreneurs, inhabitants etc. According to the legal regulations, one or two public forums took place in each settlement to present the plan to the above mentioned stakeholders.	public consideration, which was announced via local governments and press. A conference for administration, institutions, and NGOs has been arranged.  Regarding local plans, citizens are allowed to bring in remarks and requests to the projects of the land use plans that have to be considered. Nevertheless, NGOs and citizens merely use this possibility.	authorities realize voluntary measures for stakeholder participation.
Is there an environmental or sustainability management system in place?	No	No	No. Local government of Siófok and the LBDCA implemented EMAS, presently the official procedure is under way.	No	No. The EU-Directive on Strategic Environmental Assessment requires certain management elements (baseline review, definition of objectives, monitoring). SEA is required for all plans and programmes on local and regional level. Only few local authorities implemented the environmental management system (EMAS) for planning.
Feedback /Reporting to regional authorities	No	No	No	Obligation to report to the Statistic Office about water aspects.	Local land use plans and urbanisation plans need to be signed by regional planning authority.
Problems	Problems are mainly solved by detailed planning documents.	Many municipalities near Lake Peipsi are financially rather weak; more attention could be paid to the	Long procedure of approval of the land use plan for the Lake Balaton Region (Balaton Act) and for	One of the main drawbacks is that land use planning does not consider natural values. Most of the plans are prepared by com-	<ul style="list-style-type: none"> <li>Land consumption is still increasing and is one of the biggest environmental problems at Lake Con-</li> </ul>

# 6 Sustainable Land Use Planning

Lake	Vörtsjärv	Peipsi	Balaton	Milicz Ponds	Lake Constance
		planning issues.	the local settlements.	<p>panies without expertise in nature sciences. There is a requirement to prepare an eco-physiographic study for the plan but there is no formal obligation to involve specialists.</p> <p>There is an everlasting lack of citizen activity, and also the NGOs are not involved enough. On the other hand, information flow from the communes to citizens and stakeholders is usually insufficient, and in consequence conflicts arise when the investments start.</p>	<p>stance – together with urban sprawl because of traffic infrastructures.</p> <ul style="list-style-type: none"> <li>• No transboundary land use plan for Lake Constance region with measurable objectives and concrete measures to improve sustainable development.</li> <li>• No legally binding criteria and standards for all bordering countries.</li> </ul>
Additional Comments	There are numerous organisations which are responsible for the development of the lake region. Lake Vörtsjärv region belongs to three counties and seven local communities.	19 local governments do not have that kind of plan yet (is in approval stadium), in 2 boroughs the land use plan is outdated and only in 2 boroughs it is new.	There are numerous organisations which are responsible for the development of the region. Lake Balaton belongs to three statistical regions (NUTS 2) and three counties (NUTS 3).	<p>The information given at regional level covers the whole Barycz Valley, whereas the information at local level covers mainly the region of the Milicz Ponds.</p> <p>PTPP "pro Natura" prepared a workshop for the persons involved in land use planning processes in the Barycz Valley region. As a result of the workshop a working group has been established and publication of a manual for nature friendly LUP is in progress.</p>	Environmental management (EMAS, ISO 14.001) for strategic environmental aspects such as land use planning, traffic planning, energy planning etc. should be obligatory for all municipalities and regional administrations

## **Case Study 5 – Introduction of EMAS (Environmental Management and Auditing System) in the Lake Balaton region**

The objectives of this project were to raise awareness of sustainable development issues and to implement EMAS certification in regional and local authorities of the Lake Balaton region with special focus on all strategic aspects relevant for the regional development of the region. A structured sustainable environmental management of the Lake Balaton region through establishing environmental/sustainable management and establishing and using a uniform monitoring and information system will be an important instrument towards the protection of natural values and sustainable use of natural resources of the region.

The main challenges were increase awareness and involvement of local stakeholders and changing attitudes of policy makers, politicians and decision makers.

### ***Partners***

In order to achieve the objectives all local stakeholders were involved in the preliminary activities of creating the Lake Balaton Strategic Development Programme and its Plan. As part of implementing EMAS, the Lake Balaton Development Council, the Lake Balaton Development Coordination Agency (LBDCA) and the Municipality of Siófok were involved.

Although the initial vision was to achieve EMAS certification for the entire administrative region, it was deemed more plausible if the regional secretariat, LBDCA, and a major municipality in the region, Siófok, took the initiative as pilot areas for the region.

### ***Project Description***

The project has been developed within the frame of the European initiative Managing Urban Europe<sup>25</sup>. The objective is to implement an integrated environmental management system on the basis of EMAS and ISO 14.001 which can be extended geographically (to the whole urban area) and content-wise (to all sustainability aspects).

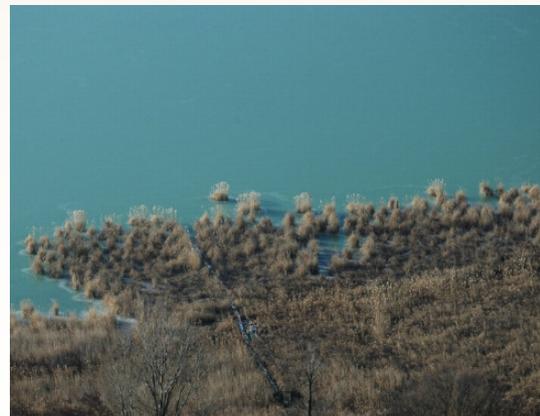
The process started with a Baseline Review to understand the current conditions in the Lake Balaton region. The review was based on sustainable development indicators. The environmental indicators considered climate, air quality, water quality, land use, ecology and nature conservation, communal infrastructure, transportation infrastructure and the built environment. The human resources indicators included population, education, employment and health. Finally, the institutional framework and economic resources fields of indicators were: industry, agriculture, services and tourism. Although the main aim of the project was to achieve EMAS certification, the long-term goal is to reach sustainable management of the region which requires a thorough understanding of the current sustainable development conditions.

The Strategic Development and Action Plans were then produced along the lines of the Lake Balaton Regional Strategy and Development Plan for 2007-2013. It was very important to ensure that the project activities were in line with the regional plans to receive the support of local policy makers, decision makers and politicians. These actors are most necessary when implementing an effective and sustainable management plan at any level. This parallel also ensures the long-term sustainability of the project, as well as possible replication throughout the region. Once these two documents were prepared, preparation for EMAS certification commenced.

EMAS certification is a useful tool to enhance and systemise management systems in organisations of all types. Additionally, EMAS is helpful to fulfil legal requirements regarding land use planning (e.g. Strategic Environmental Assessment) and legally required management (e.g. Air Quality Framework Directive, EU Water Framework Directive, Directive on Environmental Noise, Natura 2000). By beginning the process voluntarily, the Lake Balaton region is taking the lead in implementing the process both locally and nationally.

The initial step to EMAS certification is to understand how the national and EU regulations are applied and how they affect the process. Next, a local framework is developed to include the Baseline Review, Strategic Programme and Action Plan, as well as to determine the geographical and organisation extent that EMAS will cover. For this project, the secretariat of the territorial government, the LBDCA, and one of the largest municipalities, Siófok, took the initiative to spearhead the process in the region.

The EMAS Easy method was chosen as it is a simplified method, cost-effective and ideal for small organisations. The Easy method uses resource pooling, while facilitating adjustments and capacity building. A major feature is that it moves informal management cultures to certifiable management systems.



Two problems which shall be avoided in future through an environmental management system: Lake shore degradation (on the left) and damaged reedbeds (on the right)

EMAS Easy revolves around a simple cycle approach of PDCA (“Plan-Do-Check-Act”):

- Planning (Environmental policy, environmental aspects, legal requirements, objectives and targets)
- Development & Implementation (Resources & responsibilities, awareness & training, communication, EMS documentation, handling of documents)
- Controlling & Auditing (Follow with attention and measurement, evaluation of suitability/adequacy, prevention and correction, EMS internal audit)
- Adjustment (Management audit, external audit and reports, certification and registration)

Further information: <http://www.mue25.net>

### ***Preliminary Results***

Locally, we have experienced a decrease in energy use and the consumption of resources. As the system becomes more integrated and familiar, it is predicted that there will be further reductions. Awareness levels are also increased throughout the region and local stakeholders and companies are also adopting environmentally friendly activities. The level of awareness amongst local actors increased. As a result of the project, several municipalities have expressed their interest and requested that the LBDCA assist them in their implementation processes. The capacity of local companies to implement EMAS has increased. Further connections with international partners have also been established through the Living Lakes Eastern Europe Network, as well as other projects and dissemination activities.

### ***Sustainability***

Coordinated development is very necessary when dealing with a sensitive area such as Lake Balaton. EMAS is an effective tool in continuing this development by ensuring that activities are sustainable and environmentally appropriate. The long-term sustainability of this project and EMAS certification are ensured as the project was developed in line with local legislation, policies and strategic development plans. These plans also promote sustainable management, which will induce municipalities and organisations to adopt similar systems.

### ***Lessons Learnt***

As mentioned above, the viability of such a project is dependent on how applicable the activities are to the long-term plans of the local administration. In this case, the project was fitted to existing strategic plans. The general impression is, that it is difficult to convince political decision makers to implement voluntary instruments such as EMAS, especially in times of financial constraints. Direct cost savings as one argument is not enough and positive impacts of sound environmental management such as improvement of environmental quality and life quality for citizens will happen within the next years and not immediately. It would be very useful to

## 6 Sustainable Land Use Planning



offer more concrete incentives and advantages for public authorities with EMAS certification, especially for those which implemented EMAS for better management of all strategic aspects which are of great importance for the environment (e.g. land use planning). Regional Development Funds should include EMAS as a minimum requirement or at least privilege authorities with EMAS when funds will be allocated.

## OUTLOOK: LIVING LAKES EASTERN EUROPE 2008-2011

Thanks to the support of Deutsche Bundesstiftung Umwelt (German Federal Foundation for the Environment) it has been possible to start the Living Lakes Eastern Europe Network and – very important – to realize a number of first concrete activities and model projects.

The EU enlargement is one of the most important environmental challenges and entails the largest environmental programme of Europe, possibly worldwide. To achieve EU environmental standards in the new member states, not only investments are required, also necessary are encouragement of cooperation as well as intensive exchange of know-how. Another major challenge for the new EU member states and candidates is the development of a culture of dialogue and networking, which was not possible during decades of socialist or communist government. A long term strategy and engagement is needed, and this applies also for the Living Lakes Eastern Europe network.

During the last three years the Network has been predominantly concentrated on the aspects of land use planning, management of protected areas, tourism development and fisheries. Development is an ongoing process: on planning follows implementation, monitoring and sometimes modification. It will be very important for our partners and other NGOs to be active in those fields in the future.

The future activities of the *Lake Võrtsjärv Foundation* will concentrate mainly on the further development of sustainable tourism around the lake including: improvement of tourism infrastructure, nature education programmes, environmental capacity building amongst local entrepreneurs, implementation of a monitoring system and a better promotion of tourism offers with high environmental quality.

The *Peipsi Centre for Transboundary Cooperation* will focus on community development in the Peipsi region, based on the Peipsi regional development programme. This programme will be prepared in cooperation with the public, private and third sector and will be supported by the Estonian government. Peipsi CTC's priority is to support the preparation of the programme and to participate in the implementation. In addition to promoting the cooperation between different sectors in Estonia, it is important to foster the cooperation with Russia as well. Hence, the establishment of a Lake Peipsi Council is an important target. In the field of environmental awareness, cross-border nature education projects on wetland themes are planned as well as various small-scale environmental projects for young people and teachers. Several joint activities will be carried out in cooperation with partner organisations managing protected areas (e.g. exhibition and study programmes of Lake Peipsi).

An annual cross-border cooperation (CBC) summer school is organised in order to exchange experiences and knowledge about CBC and to offer a platform for the elaboration of new collaborative cross-border initiatives. During the last years, the development cooperation has become more important. Peipsi CTC has

gained a lot of expertise in the fields of water management and public participation. This experience has been transferred to countries such as Kazakhstan, Kyrgyzstan and Moldova, and further cooperation with these countries is envisioned.

The **Lake Balaton Development Coordination Agency** is responsible for the coordination and implementation of the Balaton Regional Development Strategy. Until 2013, the Lake Balaton Region aims to become a role model for a cultural landscape with high ecological and living standards in Central-Europe. In order to achieve this, the region needs to rethink the obsolete development strategy that concentrated on tourism development only. It is required to include quality of life and the environment as other aspects of regional development. The concrete targets comprise:

- To improve the competitiveness of enterprises in order to increase employment and to change seasonal employment into year-round jobs
- To improve the modernisation of enterprises and to increase tourism related incomes by spatial and temporal “spreading” of tourism within the region.
- To improve the quality of the tourism offers and to increase the profile as a nature-oriented tourism destination (i.e. horse and wine tourism, hiking and bicycle offers etc.)
- To improve the quality of the environment by the restoration of natural values, better access to the lake, restoration of natural vegetation around the lake (i.e. forest), improvement of sewage water treatment, especially in the southern part of the lake, improvement of water management and support and promotion of ecotourism offers.
- To improve territorial and social cohesion by increasing employment and development of the economy, particularly tourism in the hinterland communities.

Within the so called “Flag-Ship Programme”, ecotourism offers at the Kis-Balaton will be developed and promoted.

**Pro Natura** will continue its cooperation with State Fish Farms in order to implement nature-friendly fish farming and work out an organisational formula to merge the nature conservation goals and economic activity (growing fish, tourism management) into a comprehensive system benefiting both aspects. The nearest steps include

- request for the reorganisation of the State Fish Farms into stable, reliable institutions with one focus on conservation (one of the options is a Milicz Ponds National Park) and stimulating public discussion,
- common lobbying for the implementation of payments to fishers,
- revitalisation of the fish farms’ economic position deplored by decades of underinvestment and instability, by help in accessing funds,

- design and implementation of the SFF tourism and regional product offer,
- after designing (done) and securing funding (in progress), the direct conservation actions on the fish ponds will be implemented in order to improve habitats of numerous bird species of Community Interest (Bittern, Marsh harrier, Common tern, Ferruginous duck, Red-necked and Black-necked grebes, and other).

The work on designing a Natura 2000 conservation plan for the Barycz Valley site will be continued. The data and evaluation of habitats were handed over to the conservation authorities, and the Pro Natura team of experts will consult the authorities and the authors of the Management Plan.

Another target group is the local population. The farmers will receive further support for advice on agri-environmental schemes, and the promotion of the local products. For the providers of tourism services a promotion system on the internet will be developed and adjusted according to the feedback of the customers.

The successful Carp Days started in 2006 as annual cluster of events will be continued and further developed. Other events such as bicycle and horse rides will be organised and promoted.

The general environmental issues will be addressed by providing advice and contacts to experts, as well as study visits to the Pro Natura's organic farm in the lower Barycz Valley region. The nature work camps will be organised for volunteers, in cooperation with British organisations open for interested people from other Living Lakes areas. These actions will be performed in cooperation with other local NGOs.

### Future cooperation

The Living Lakes Eastern Europe Network will have two focuses in the coming three years:

- Geographical extension of the network involving lakes in Bulgaria, Rumania, Albania, Czech Republic, Slovakia etc.
- New working fields and pilot projects dealing with relevant environmental topics such as agriculture, renewable energy & climate change as well as environmental education and communication.

### Co-operation in the area of environmental education

Environmental education for children and young people but also for adults and - more and more important - seniors is one of the key activities for NGOs in Western and Eastern Europe. Times are changing and today our environmental education offers must compete with a countless number of information and communication opportunities. How can the attention of young people be caught and how can they be motivated to participate in tangible activities in the "real world"? And how to address senior people and which ways of involving them will be appropriate and successful? Consumers do play an important role and they have the power to

influence markets. But how to sensitise and convince them that environmental aspects are an important part of product quality and environmental friendly behaviour is a key for the quality of our environment and therefore for our quality of life? Which type of quality standards will be needed and how to organize quality control of environmental education?

### **Co-operation in the area of sustainable tourism**

The European tourism market is the most competitive in the world and almost all regions are trying to get into this market. And every region does have some attractive aspects to offer and promote. It should not be a central objective of NGOs to develop or to implement tourism offers, but key is their participation in planning and design as well as the support of environmentally friendly offers. NGOs do have access to people interested in environmental quality and can use their means of communication to promote sustainable tourism offers in Living Lakes regions. The NGOs involved in the Living Lakes network will continue with their capacity building activities for tourism actors, environmental impact assessment regarding tourism infrastructures and activities and management of protected areas, which are very often the main attraction of a tourism destination.

### **Co-operation in the area of sustainable agriculture**

Organic farming is an excellent opportunity – from an ecological as well as an economic point of view - for lake regions, but it requires a dynamic and continuous development. Solely Estonia shows a significant percentage of agricultural area in organic production (4,6%). In contrast, Hungary and Poland just show a small percentage of farmland being cultivated in an organic way (Hungary: 1,94%; Poland: 0,3%; all data referring to IFOAM 2005). With 9 % of the cultivated area, the international Lake Constance region has a high share of organic agriculture and can show a lot of successful but also problematic examples of promoting organic farming and marketing of organic products. During the next years, the partners will focus on sensitisation of private consumers and the identification and sensitisation of large scale consumers such as hospital kitchens, canteens, school kitchens etc. Other aspects are the improvement of logistics for organic products and the implementation of quality standards.

Gastronomy is an important element of the tourism product chain, and regional organic products should be promoted within tourism activities in order to create mutual benefits. Within Living Lakes Eastern Europe, model projects on this objective will be implemented.

### **Co-operation in the area of monitoring in lake regions**

NGOs can play an important role regarding the monitoring of the development of lake regions, including tourism development. Monitoring is an ongoing process which needs clear and meaningful indicators, concrete and, where possible, quantifiable objectives, regular recompilation of data and an objective analysis of the monitoring results with recommendations to correct critical tendencies.

So far, no region and also no lake region has sound monitoring systems for all relevant aspects of sustainable development in place. Within the next years a SWOT-Analysis of existing monitoring processes and structures will be realised. On the basis of the SWOT results, we will elaborate a framework for a sound monitoring system for the sustainable development of lake regions and promote the implementation. Monitoring results need to be regularly communicated to all stakeholders in the region in an appropriate way, which includes recommendations for concrete actions. It is important not only to refer to the problems but also communicate success stories regarding “our” lake and “our” region. Monitoring of effects of climate change but also results of climate protection activities is of special importance.

### **Networking between East and West**

The role of the Lake Constance Foundation in the network is to give input and provide expertise to the partners since the foundation has a long history of implementing relevant activities in nature conservation and sustainable development of lake regions. In the joint network, the Lake Constance Foundation is responsible for the transfer of lessons learned from specific model projects in the fields of eco-camping, environmental education programmes, ecological land use planning and environmentally sound agriculture with a focus on the use of organic and regional products in catering. The training courses organized by Lake Constance Foundation are destined for environmentalists, administrations, tourism entrepreneurs and institutions involved in the management of lakes and wetlands. The courses combine theoretic input with practical project approaches, where the participants do have the opportunity to discuss in detail all aspects of implementation with the project coordinators.

Lake Constance Foundation will provide this practical way of capacity building also during the next years. Networking between East and West is not a one-way street but a dialogue. German and Western European NGOs benefit from the constructive critical analysis of strategies, projects and results and they learn from the creative ideas and strategies of their colleagues in Eastern Europe.

### **The Living Lakes Perspective on Climate Change - How climate change will affect lakes and wetlands**

Historically, lakes were formed and disappeared. Temperatures were much lower during glacial periods and higher than now in interglacial periods. But these changes in climate were natural in origin. The situation today is different. “Evidence shows that climate change is occurring, and we cannot wait any longer to take action,” declared UN Secretary-General Kofi Annan in 2001. After the Stern Review publication in October 2006 and Al Gore and the IPCC receiving the Nobel Peace Prize in 2007, we must be aware of the fact that climate change is a man made phenomenon that will dramatically affect our lives.

Lakes and wetland ecosystems have important ecological functions comprising services for human beings, regulation of water regimes as well as providing habitat for flora and fauna. Furthermore, they are significant carbon sinks and will play an important role in climate change mitigation strategies such as sequestration of greenhouse gas emissions. Although lakes, wetland and peatlands cover only 6 % of the Earth's surface, they contain 35 % of carbon stored in terrestrial biomass on our planet. But climate change threatens lakes and wetlands, which are more vulnerable than any other type of ecosystems. According to an IPCC report, changes in climate will have dramatic impacts on regional water resources such as changes in rainfall and higher water temperatures. Significantly lower water levels are expected in summer, with severe consequences for the water quality, shore vegetation, fauna and also economic activities such as tourism and fisheries. This degradation of water bodies will most seriously affect disadvantaged people in poor countries. Therefore, the conservation and restoration of lakes and wetlands is even more crucial than ever.

We are aware of the problem and we know what to do. The costs of action are obviously much smaller than the costs of the climate change damages. Hence, the wise use, conservation, restoration and creation of wetlands and lake regions to mitigate and to adapt to climate change are of utmost importance. Water managers and decision makers must focus on integrated approaches for water management in order to properly respond to changing economic, environmental, social, and political realities. Current approaches to risk management in river and lake basin management are inadequate and do not address the uncertainties caused by climate change. The introduction of market-based climate change mitigation concepts for lakes and wetland, i.e. the integration in Clean Development Mechanism (CDM) and Voluntary Emission Reduction (VER) certificates is crucial.

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- DOEN Stichting (NL)
- EcoFund (PL)
- Environmental Partnership for Central Europe
- Eurosite Foundation 5000xZukunft (D)
- Global Environment Facility
- Global Nature Fund (D)
- Matra Fund (NL)
- National Fund for Environment and Water Management (PL)
- Provincial Fund for Environment and Water Management in Wroclaw (PL)
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- Unilever
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- Bagpipe Farm
- Jõesuu Guesthouse Ltd
- Estonian University of Life Sciences
- Kalasaare Ltd
- Kõrgemäe Tourism Farm
- Merts AM Ltd
- Rannaküla Stable Ltd
- Rannu Parish Government
- Tartu County Government
- Viljandi County Government
- Vaibla Camping Ltd
- Vanasauna Guesthouse Ltd
- Vehendi Ltd
- Waide hotell Ltd
- Wannero Ltd

### Lake Balaton – Hungary

- Association of Civil Organisations of Lake Balaton
- Balaton National Park Directorate
- Hungarian Academy of Sciences Balaton Limnological Research Institute
- Lake Balaton Development Council

### Lake Peipsi - Estonia

- Estonian Environmental Investment Centre
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