

Kiskunság Biosphere Reserve Management Plan



Kecskemét
2017.

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Introduction

Based on the 2013 report and UNESCO's recommendations, it has become obvious that the Kiskunság BR lacks an important and effective management tool, namely a dedicated biosphere reserve management plan since its establishment in 1979. While there are other management plans in effect for the BR, and in many ways they are in line with the BR management efforts, they do not cover the whole area (parts of the transitional zone are missing), and definitely their focus is different to some extent. The advantage of the situation is, however, that harmonization with these different management documents could be achieved, and the overlapping themes and tasks gain even more importance. The results of the document elaboration process and the major conclusion are that the sustainable development approach and stakeholder involvement are the greatest challenges in the BR, and definitely something to reinforce in the period of 2015–2025, and the planned management actions try to address these issues.

1. UNESCO MAB Programme

1.1. UNESCO Man and Biosphere Programme

Launched in 1971, UNESCO's Man and the Biosphere Program (MAB) is an Intergovernmental Scientific Program that aims to establish a scientific basis for the improvement of relationships between people and their environment. The MAB Program develops the basis within the natural and social sciences for the rational and sustainable use and conservation of the resources of the biosphere and for the improvement of the overall relationship between people and their environment. It predicts the consequences of today's actions on tomorrow's world and thereby increases people's ability to efficiently manage natural resources for the well-being of both human populations and the environment.

By focusing on sites internationally recognized within the World Network of Biosphere Reserves, the MAB Program strives to:

- identify and assess the changes in the biosphere resulting from human and natural activities and the effects of these changes on humans and the environment, in particular in the context of climate change;
- study and compare the dynamic interrelationships between natural/near-natural ecosystems and socio-economic processes, in particular in the context of accelerated loss of biological and cultural diversity with unexpected consequences that impact the ability of ecosystems to continue to provide services critical for human well-being;
- ensure basic human welfare and a liveable environment in the context of rapid urbanization and energy consumption as drivers of environmental change;
- promote the exchange and transfer of knowledge on environmental problems and solutions, and to foster environmental education for sustainable development.

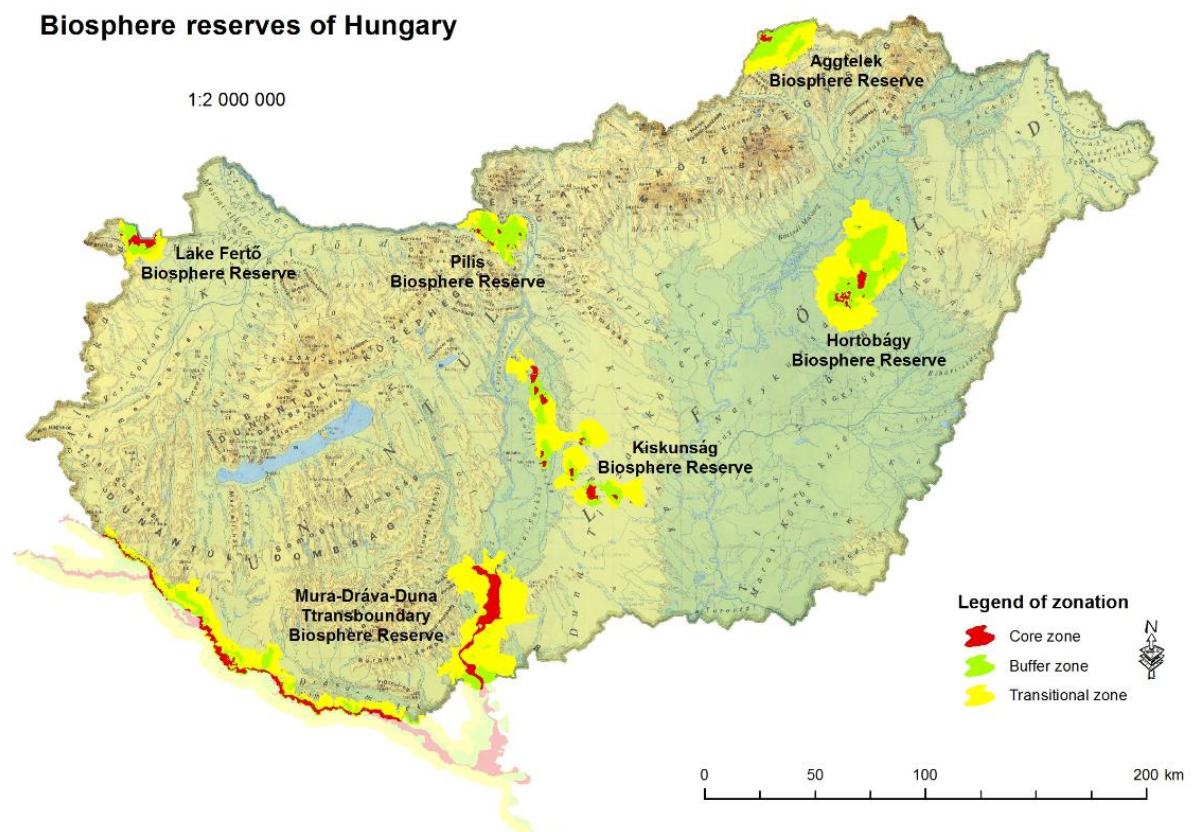
1.2. Biosphere reserves in Hungary

Hungary as a UNESCO member state joined the MAB program in the 1970s as one of the first countries. Five biosphere reserves were designated by the UNESCO until 1980, whereby the emphasis of the original nomination was to place international focus on the protection and scientific research of ecosystems that have a high natural value partly due to the extensive, long-lasting interactions between man and nature, in other words "Man and the Biosphere". The sixth biosphere reserve (Mura-Drava-Danube Biosphere Reserve) was established in 2012.

Date of designation:

Aggtelek Biosphere Reserve	1979
Lake Fertő Biosphere Reserve	1979
Hortobágy Biosphere Reserve	1979
Kiskunság Biosphere Reserve	1979
Pilis Biosphere Reserve	1980
<i>Mura-Drava-Danube Transboundary Biosphere Reserve</i>	2012

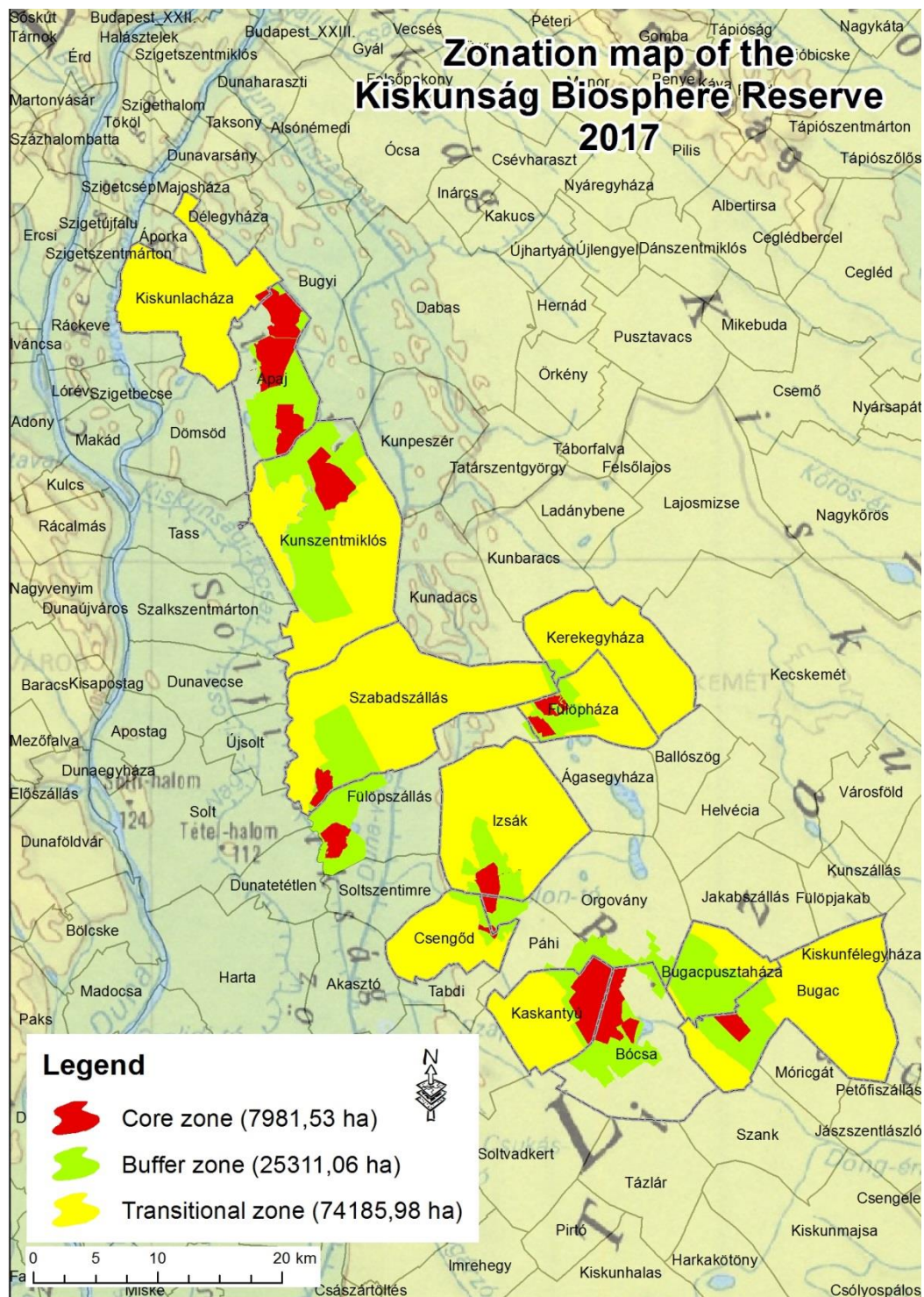
The “first generation” biosphere reserves were established with the main objective to protect the natural values of the protected areas and with a lower level of interaction with local communities than is general nowadays in new biosphere reserves situated outside the legally protected areas. Following the Madrid Action Plan and Seville Strategy of the UNESCO it has been a challenge to review the management, but this revision has led to the establishment of a new zonation system, assignment of new functions to certain zones and a renewal and increase of interactions between biosphere reserves and local people. Strengthening the involvement of local communities and other stakeholders is an essential role of biosphere reserves.



2. The Kiskunság Biosphere Reserve

The Kiskunság Biosphere Reserve is situated on the Hungarian Great Plain, between the Danube and Tisza Rivers.

2.1. LOCATION MAP



2.2. LEGAL STATUS

The designation and protection of biosphere reserves has been integrated into the Hungarian law. In Hungary, the minister responsible for nature conservation can classify an area as a biosphere reserve (Act LIII. of 1996 on Nature Conservation). The law also provides that areas with high nature values within the biosphere reserves must be designated as core areas, and in addition, core areas are strictly protected. While core zones and buffer zones are designated by law (7/2007. (III. 22.) KvVM ministerial decree), municipal area of municipalities voluntarily joining the Forum for the Kiskunság Biosphere, form the transitional zones.

The relevant national park directorate (Kiskunság National Park Directorate) is responsible for the management tasks of the biosphere reserve, and nature conservation authoritative tasks are carried out by the regional nature conservation authority.

The main responsible organisation of the MAB program in Hungary is the MAB National Committee, which holds its meetings once or twice a year. The Committee consists of 24 members, including the representatives of the Ministry of Agriculture (which is responsible for technical supervision of the MAB Programme), and the Hungarian UNESCO National Commission, academic researchers, organic farmers, tourism entrepreneur, ecotourism expert, NGO representative, leaders and managers of each biosphere reserve as well. The required management activities of the biosphere reserves are carried out by the related national park directorates by involving the local stakeholders.

2.3. MAIN ASSETS AND CHARACTERISTICS OF THE BR

One of Hungary's most characteristic geological area is the Danube-Tisza Interfluvial region where the Biosphere Reserve is located. The Biosphere Reserve area can be sorted into the following three types of landscapes:

1. The Danube-Valley alkaline plains and sodic pans on the area formally flooded by the Danube River.

This is the second largest alkaline plain of Hungary. The formal Danube flood plain is lowland; it lies 90-100 meters above the sea level. Salinisation accelerated after the area had been drained. On these saline territories took shape the so-called alkaline steppes. Alkaline grasslands, pastures, salt and loess ridges form the geological surface and the landscape. Its vegetation counts mainly halophilic or salt tolerating species, like the pygmy iris and green-winged orchid. An outstanding value of the fauna is the great bustard, which has its strongest population here. Other typical species are the red-footed falcon, the stone-curlew, the black-tailed godwit and the common redshank. Significant area restoration has been completed at the time of the natural rehabilitation

of the former fish ponds. During this process permanent and temporary waters have been created. These places provide habitat for several nesting and migrating birds as well as for amphibians. The traditional animal husbandry plays a crucial role in the maintaining of native grasslands. Tourists can visit the gene bank farm of the ancient Hungarian domestic animals at Apajpuszta, where grey cattle, racka and cigája sheep and mangalica pigs are bred. Another attraction for tourists is the Local History Museum in Kunszentmiklós, where folklore and natural values of the puszta are displayed.

On areas with a similar geological origin with the alkaline lowlands but at lower elevations sodic pans and alkaline marshes have evolved. Prior to major river regulations the Danube river watered these areas every year, but nowadays the only source of water is the precipitation. These temporary pans dry out by the end of the summer. The high salt content of these wetlands allowed the evolution of a microflora and -fauna unique in Central Europe, which forms the base of the so-called sodic breeding bird community. The typical species of this community are the avocet, the black-winged stilt and the Kentish plover. The saline marshes give home to the great bittern, the greylag goose and the marsh harrier as well as several species of reed-dwelling passerines. The ponds in spring and in autumn host as roosts and feeding grounds thousands of migrating waterbirds as well. The lakes are surrounded by alkaline grasslands. Grazing has taken place on the various types of sodic grasslands for centuries, but some of them are mown. Hungarian grey cattle, Hungarian pied cattle, and flocks of sheep are at home here. Extensive animal husbandry has not changed the species richness on sodic grasslands, and has contributed to maintaining biodiversity.

2. The Danube–Tisza interfluvial sand dunes formed by the wind, grasslands on sand remnant forests

The largest and the most diverse territory of the biosphere reserve consists of sand puszta, sand dune forests, alkaline puszta and remnant parts of the formal sodic pans, marshes, fens, fen-meadows and wet grasslands. The diverse surfaces of the sand dunes are rich in lime, and give home to valuable vegetation. Typical species is the hairy flax, sand saffron, yellow dwarf iris, red helleborine, long-lasting pink and the wolf peas (*Astragalus dasyanthus*). The insect world is very rich in special species like the predatory bush cricket and other grasshopper species. The most famous part, Bugac, is internationally well known as it has been a tourist destination already since the 1930's. Here stands a museum, which has connecting open-air buildings and shows the traditions of the life of the shepherds. The animal husbandry traditions on the puszta serve the maintenance of the gene-bank of the ancient domestic breeds as well as the needs of tourism.

3. Parallel with the line of intersection of the Danube-Tisza Interfluve and the Danube-valley—within a few kilometres of width, but over a length of 130 kilometres—there is a system of marshland and bogs. The northern part of this is known as Turjánvidék, the southern as Órjeg.

In the postglacial branch of Danube—which was a lake with open surface—is today a marsh, a reed country with willow marshes and tussock meadows (like the Kolon-tó). The area is surrounded by fen and gallery forests, fen meadows, swamp meadows and on the western side by sand dunes. On our way from the north towards the south we can see a continuous reedbed. Its greatest value is the nesting spoonbill population and all other heron species found in Hungary. Beside the rich birdlife we can

also find rare fish species like the dogfish and the mud-fish, among the reptiles the European pond terrapin, the grass snake and the dice snake, or with luck we can glance the European otter. Rare species of the flora is the white water-lily and the greater bladderwort. In the southern part of the area on the swamp meadows we can find nine species of orchids. The most common species are the military orchid and the loose-flowered orchid. The remnant oak-ash-elm gallery forests recall the ancient landscape of the Danube-Tisza Interfluvium region. Within the Biosphere Reserve a Bird Monitoring and Ringing Observatory has been operated by the local bird protection society. This place provides a good opportunity to visitors (more than 1000 people/year) to learn not only about scientific research but the general questions of nature conservation as well.

On these areas the main task of the Biosphere Reserve is to protect and preserve the most typical features of the landscape with its important natural treasures, geographical formations, waters, flora and fauna, as well as to conduct scientific research. At the same time the biosphere reserve has been playing the role to maintain the typical lifestyle of the scattered farmsteads, the traditional animal husbandry of the puszta, and to preserve the ancient Hungarian domestic animal breeding by maintaining gene bank herds.

2.4. ZONATION

In 2014–15 a new zonation was introduced. The new zonation follows the recommendations of the MAB International Coordinating Council for Biosphere Reserves, which met in Jönköping 2014. The main concept was to enlarge the area of the buffer zones, and involves new areas into the transitional zone for connecting the disjunct areas of the biosphere reserve in order to unite the different clusters into one entity to fulfil the criteria of the Statutory Framework. Consultation with the mayors of the nine municipalities about new zonation of the biosphere reserve had started and a Forum for the Kiskunság Biosphere Reserve was established in 2016. The following ten municipalities signed an agreement on a voluntary basis to the forum so far: Bugac, Bugacpusztaháza, Csengőd, Fülöpháza, Izsák, Kaskantyú, Kerekegyháza, Kiskunlacháza, Kunszentmiklós, Szabadszállás. The entire area of the signatory municipalities belong now to the biosphere reserve. The shape and size of the core zones and the buffer zones has not been changed and the new areas belong now to the transition zone. The following municipalities have not joined the forum as yet: Apaj, Bócsa, Fülöpszállás, Orgovány, Páhi. They are represented in the KBR by core zone or buffer zone areas.

2.4.1. Core zone

The role of the core area is to protect biological diversity, monitoring minimally disturbed ecosystems, and undertaking non-destructive research and other low-impact uses (such as education). In addition to its conservation function, the core area contributes to a range of ecosystem services. Employment opportunities can also complement conservation goals (e.g. environmental education, research, environmental rehabilitation and conservation measures, recreation and eco-tourism).

Area: 8,342 ha

Basically the core zone includes natural and semi-natural systems (dry and wet grasslands, wetlands and forests) with minimal human impact. The entire core zone is part of the Kiskunság National Park. These are strictly protected areas, and are parts of the EU Natura 2000 ecological network as well. Many parts of the core area are designated both as Special Protection Areas (under the Birds Directive) and as Special Areas of Conservation (under the Habitats Directive). Some parts of the core and the buffer zones are wetlands of international importance listed by the Ramsar Convention since 1979. There are no settlements inside the zone. The whole core zone is state-owned.

2.4.2. Buffer zone

The buffer zone surrounds or adjoins the core areas, and is used for cooperative activities compatible with sound ecological practices, including environmental education, recreation, ecotourism, and applied and basic research. They also have an important connectivity function in a larger spatial context as they connect biodiversity components within core areas with those in transition areas.

Area: 33,650 ha

The entire zone is part of the Natura 2000 ecological network. It includes grassland, salt affected wetlands, sodic pans and forests. Inside the zone human activity is allowed. The buffer zone is to mitigate the outer impacts affecting the core zone. Some parts of the buffer zones are wetlands of international importance listed by the Ramsar Convention since 1979.

The Kiskunság National Park offers many recreational events: photo-tours, geo-tours, bird-watching events, study trails etc.

In the buffer zone there is a very good cooperation with the “Szomor ecological farm”, the qualified local products made from gray cattle and buffaloes are very famous and popular.

2.4.3. Transitional Zone

Transition area with a central function in sustainable development which may contain a variety of agricultural activities, settlements and other uses and in which local communities, management agencies, scientists, non-governmental organizations, cultural groups, companies and other stakeholders work together to manage and sustainably develop the area's resources.

Area: 74.185 ha

The transition zone mainly includes man-made landscapes, such as villages, towns, scattered farms, agricultural areas, arable lands, areas of touristic importance, etc. Similarly to other areas of the Kiskunság Region, scattered farms are characteristic settlement types in the transitional zone, whose historical roots go back to centuries. In their original form, scattered farms developed as a settlement form for agriculture—first with animal husbandry

and, later, cultivation through plant production. The scattered farms themselves represent special values together with the traditional farming activities including the farming methods maintaining the genome of the native Hungarian domestic animals. The milieu of the scattered farms does not only make the landscape unique but has a significant role in the conservation of the natural values, the functioning of the economy and the retention of the local community as well. The development processes are still under the limited control environmental authorities and the authorities responsible for regional and local developments, and national monuments. The local population of the settlements in the zone is involved in the conservational and development issues. The area is more and more popular for visitors, especially during the vegetation season.

Transitional zones are those areas of the municipalities involved in the Forum for the Kiskunság Biosphere that are not designated as core zones or buffer zones. Communication between nature conservation management and the municipalities of the forum and raising awareness for eco-friendly farming practices and the sustainable use of agricultural land among inhabitants and farmers of the transition zone are equally important tasks of the forum.

Regular events are held annually in the region, in the area of the biosphere reserve to involve and motivate the local population, for example: Shepherd Festival at Bugacpuszta, Hungarian Sheepdog Event, Local Product Celebration.

2.5. MAIN STAKEHOLDERS AND OWNERSHIP IN THE REGION

This section gives an insight into the ownership structure of the KBR and its transitional zone. Also the main, most relevant stakeholders are described and listed.

2.5.1. Inhabitants and settlements

The population density of 63.1 inhabitants/km² in Bács-Kiskun county is relatively low (by comparison: Hungary's average is 108.5 inhabitants/km²). The biosphere reserve's core area is not inhabited by anyone and the population of the buffer zones is also very low, a few shepherds and farmers live in scattered farmhouses (max: 500 people). The total population of local municipalities located in the KBR: 51 862 people (based on the previous national census), of which about 99% lives within the transitional zone. The two largest municipalities are Kunszentmiklós and Szabadszállás.

2.5.2. Cooperation with local governments

Local governments are the key stakeholders and cooperation partners in the BR management. Since they have the power to define the long term development strategies and short term actions, it is mutually important to share information and knowledge to make informed decisions. The Forum for the Kiskunság Biosphere, formed in 2016 serves to tighten the information exchange between local municipalities and the regional nature conservation body, the Kiskunság National Park Directorate. The forum has two meetings

annually according to the plans. Awareness raising for eco-friendly farming practices, grant applications in cooperation in the field of eco-tourism, environmental education, habitat management, etc. publications to promote ecological values of Kiskunság, maintenance of traditional fruit varieties are among the planned activities of the forum.

2.5.3. Authorities

The most important regional authority is the Government Office of Csongrád County. It is responsible for all environmental and nature conservation issues of the whole region. Building authorities have a great responsibility to issue building permits that are in line with national, county and local regulations. These regulations safeguard that landscape values are not compromised and light pollution is minimized (two important approaches in the open landscape). On the other hand, alternatives have been negotiated that will hopefully lead to a comprehensive compensation and cooperation system in the long run.

2.5.4. NGOs

More than 3300 NGO's were registered in the region in different topics. The most active NGO's are in nature conservation and folk tradition:

- Kiskunsági Madárvédelmi Egyesület (Kiskunság Bird Conservation Association): their programmes are of high professional quality, and in line with the KNPD's principles, also well filling the service gaps within the region
- Bács-Kiskun county chapter of MME / Bird Life Hungary (particularly the bird-watching programmes are popular; they have a strong international network capital)
- Futóhomok Természetvédelmi Egyesület (Shifting Sand Nature Conservation Association) (nature conservation, environmental protection, education)
- Puszta Hangja Egyesület (Voice of the Puszta) (folk tradition and cultural association)
- Útkereső Egyesület (Finding Your Way Society) (Nature conservation, environmental protection, helping for local people)
- Sporthorgász Egyesületek Bács-Kiskun Megyei Szövetsége (Association of the Anglers Associations of Bács-Kiskun County)

The geographical scope of their activities is not restricted to one settlement, even exceeds the BR area.

2.5.5. Education, universities

Environmental education, and education for sustainable development, forms an integral part of the strategy to be implemented in biosphere reserves. Within the region there are two higher education facilities: University of Szeged and the Kecskemét College, but the BR has a very good connection with the following universities and research centers from other parts of the country: University of Debrecen, Corvinus University (Budapest), Eötvös Lóránd University (Budapest), Institute of Ecology and Botany of the Hungarian Academy of Sciences (Vácrátót), University of West Hungary (Sopron), Móra Ferenc Museum (Szeged), Mátra

Museum (Gyöngyös), Hungarian Natural History Museum, Institute for Soil and Agricultural Chemistry of the Hungarian Academy of Sciences, Hungarian Hydrological Society.

The BR offers education opportunities not only for university students in the form of professional field visits, internships, but for primary and secondary level schoolchildren as well. These include thematic competitions, summer camps, living heritage education programmes, so-called “forest schools”.

2.5.6. Businesses, Tourism

Mainly in the transitional zone there are a number of different—mostly agricultural—firms of different sizes. Noteworthy are two fish farms (Apaj fishponds and Akasztó fishponds) and some other agricultural limited liability companies are involved in meat cattle or sheep breeding and crop or hay cultivation (e.g. Néma Birtok Kft, Puszta 2013 Kft, T-faktor Kft, Nasztej Kft, Apaj Puszta Kft, Charolais Farm Kft, Bugac Puszta Kft) There are some small farms dealing with organic production in the transitional zone (e.g. Rendek ökotanya, Gál tanya, Szűcs tanya).

Horse riding and ecotourism are one of the most important activities of the area. It is organised by private tourist companies and small family businesses (e.g. Bugacpuszta Kft, Gedeon tanya, Somodi tanya, Vincze Lovarda).

2.5.7 Public involvement

A fine example for the involvement of volunteers and local people is the Vadonleső (“Nature-watcher”) Programme. This Internet based programme collects distribution data about carefully selected 16 (plant and animal) species of Hungary (e.g. hedgehog, bog turtle, moles, squirrels, snowdrop), which are common and more or less easily detectable, but need protection or endangered for some reason. The programme works since 2009, using GoogleMap based interface, in on-line mode. The program is very popular, in the region of the biosphere reserves (mainly in touristically popular regions) as well.

Small lakes and drains are the last refuges of the European pond terrapin in this area. This is the only turtle which is native in Hungary. Escape or release of invasive alien turtle species derived from America cause serious problem to this species. Report of observation of the pond terrapin individuals means very important data for nature conservation point of view.

3. Management Concept

3.1. VISION OF THE MANAGEMENT CONCEPT

The vision of the BR is to find the synergy between biodiversity and sustainable development in order that local people and the unique flora and fauna can coexist in the next century. In order to achieve this, the BR shall 'protect, promote and propagate':

Protect biodiversity and natural resources

Restore and maintain the ecological integrity of the region by providing residents, businesses, and others with resources and information to actively manage or steward their lands in a sustainable way and ensure connectivity between protected areas.

Promote sustainable development

Catalyse ideas and initiatives for a cross-section of economic sectors by integrating sustainability concepts into business practices to enhance profitability and corporate responsibility.

Propagate sustainability through education

Enhance local environmental awareness and skills through learning opportunities for all ages, focused on our natural and cultural resources, as well as sustainability issues, and enable public participation in conservation and sustainable development activities.

3.2. MAIN OBJECTIVES OF THE KISKUNSÁG BIOSPHERE RESERVE

3.2.1. Conservation

3.2.1.1. Core zone

The core zone is strictly protected area by law, so the main objective of the zone is the long-term protection of the environment and biological diversity. Uses or activities in the core zone are biological inventories, long-term biological monitoring, conservation management practices, controlled hunting and limited agricultural (grazing) and forestry activities, wildlife watching.

3.2.1.2. Buffer zone

The main objectives of the buffer zone are:

- To reduce as much as possible the negative impact of surrounding human activities to core areas by protecting the ecological functions of the territory.

- To maintain the ecological connectivity between the core zone and the transitional zone with the goal of maintaining the chance for regular migration or dispersion of species, as well as the necessary genetic exchange.
- To maintain grasslands and to prevent the natural expansion of reed, extensive grazing by traditional animal breeds and mowing are also common practice.
- Only activities compatible with the conservation objectives can take place in these zones.

These areas are used extensively by different agricultural activities (grazing, mowing), and forestry in accordance with the conservation management strategy, controlled hunting, research, environmental education, as well as some tourism (hiking, wildlife viewing) but where needed, spatial, temporal and technological restrictions apply. There are habitat restoration projects in this zone as well.

3.2.1.3. Transitional zone

The main objectives for this zone are

- To promote environmentally friendly agriculture and forestry to protect the natural values of the zone.
- To promote the cooperation and multi-purpose use of the land of local communities.
- To provide areas for sustainable development.

In contrast to the biosphere reserve's core areas and buffer zones, they are largely privately owned. The most extensive form of use are agriculture and forestry.

3.2.2. Sustainable development

3.2.2. 1. Core zone

Since it is a dedicated reserve area that is strictly protected, sustainable development is not a relevant issue.

3.2.2.2. Buffer zone

The main objectives for this zone are

- To maintain the traditional land use practices, especially common grazing.
- To decrease the ratio of hay cutting on high natural value grasslands.
- To increase the cooperation with farm owners and tenants of state owned pastures in the field of the adaptive management of the grasslands.

3.2.2.3. Transitional zone

The main objectives for this zone are

- To promote environmentally friendly and sustainable use of agricultural land and forests via the scheme of the High Nature Value Areas.
- Cooperation with the local communities to develop the market for local agricultural products (meat and dairy products, fruit and vegetable products, bakery products).

- Cooperation with the local communities to develop the “Biosphere Reserve Product” brand.
- To increase the interest of local people to apply traditional agricultural methods.

The main activity in the transitional zone is agriculture. The more modern arable and grassland farming practices are also appropriate here.

3.2.3. Research and education

3.2.3.1. Research

The research is very important from the point of view of conservation as well. It gives the background for the proper management of the area.

Main objectives are:

- Development of interdisciplinary and innovative research tools for biosphere reserves is encouraged in order to improve tools for adaptive management of these territories.
- Participation in national and local environmental monitoring programmes.
- Continuing the long-term scientific monitoring programme, as it constitutes for adaptive management.

3.2.3.2. Education

Environmental education, and education for sustainable development, form an integral part of the strategy to be implemented in biosphere reserves.

Main objectives for environmental education are to:

- Respect natural and cultural heritage.
- Favour responsible relationships with the environment and, through knowledge acquisition, better land management.
- Create citizens who are aware of their responsibilities to future generations.

3.2.3.2.1. Core zone:

It is the site of strictly scientific research, but this way it is possible to involve university and college students for internship programmes.

3.2.3.2.2. Buffer zone:

This is and should be the area of on-site education programmes in the future. A more subtle age and target group structure is to be elaborated. The selection of topics is already diverse, the depth and quality of these programmes have to be enhanced by more hands-on educational objects.

3.2.3.2.3. Transitional zone:

On-line education programmes and competitions have to be established for the primary and secondary school children, these should be carried on, and new themes are to be

introduced. The webpage content constantly needs supervision and up-dating. Educational programmes at community festivities have to be continued and increased.

3.3. SITUATION

The most natural parts of the region are protected as national park and as UNESCO-certified biosphere reserves as well. The designation of the areas as both national parks and biosphere reserves are not antagonistic concepts; it is a combination that opens up a great opportunity: In keeping with the Seville strategy, the national parks can serve as the core areas and buffer zones of biosphere reserves. They also serve as points of crystallisation for sustainable regional development that, functionally, extends far beyond the defined boundaries of any transition area and that includes economic uses, promotion of regional identity and education for sustainable development. A wide range of interactions with surrounding areas can take place, with the result that the biosphere reserve's socio-economic impacts reach far beyond its boundaries and, thus, can contribute to integrative management for the region. In short, within the core areas and buffer zones of a biosphere reserve designated as a national park, the biosphere reserve's protective functions receive special attention, while in the transition area and large areas around it a special focus is placed on people and the sustainable development of their region. These focuses are in keeping with the Seville strategy.

Some areas of the biosphere reserve are to promote extensive management of the meadows and arable land in the frame of an agricultural scheme. Most part of the buffer zone and the whole transition zone are within the agricultural program and designated as High Nature Value areas (HNV). HNVs are target areas of European Union's Agro-environmental Scheme: The BR partly connects to the Dunavölgyi-sík (104 049 ha) and Homokhátság (64 154 ha) HNV areas. The local farmers have the opportunity to apply for subsidies if they do their farming activities in a determined environment and nature friendly way (e.g. organic farming). The preparation of the new version of Agro-environmental Scheme in Hungary is in process. The Biosphere Reserve and the neighbouring areas give the opportunity to get 4 different types of payments to local farmers, and 2 of these support directly nature conservation purposes. These payments are:

1. *Measures targeting the sustainable use of agricultural land*
2. *Payments to farmers in areas with handicaps, other than mountain areas*
3. *Natura 2000 payments on agricultural areas*
4. *Agri- environmental payments*

The first two are connected with the sustainable use of agricultural land via supporting the traditional way of farming, including the maintenance of grasslands and indirectly supporting the transformation of the production structure to the one based on livestock.

As the second measure supports farming in areas with handicaps, these payments are available only on areas with special conditions. The generally poor quality of soil and the high natural value within the Biosphere Reserve definitely fulfils the criteria of these special conditions. The last two measures directly target nature conservation aims with special requirements and as a consequence the accesses to these payments are limited.

A long-running biomonitoring system is in place. Specialists for monitoring are available. There are two permanent stations for biological monitoring activity at the Sand Dune region of Bugac and Fülöpháza. These stations belong to Szeged University and the Institute of Ecology and Botany (Vácrátót).

A highly elaborated monitoring system called 'Hungarian Biodiversity Monitoring System' (HBMS) has been applied to the protected areas and Biosphere Reserves in Hungary. Most of the research and monitoring activities have been carried out by the guidelines of the HBMS.

Parallel with HBMS, local monitoring has been carried out by the staff of the national park on a variety of additional target species:

- Monitoring of rare and protected plant species
- Monitoring of rare and protected bird species
- Monitoring of endangered fish species.
- Monitoring of rare and protected amphibian and reptile species.
- Monitoring of rare mammal species.

Within the Biosphere Reserve a Bird Monitoring and Ringing Observatory has been operating at Kolon-tó. It was established by the Kiskunság Bird Protection Society together with the Directorate of the Kiskunság National Park 10 years ago. It has been producing long term data on breeding and migratory reed-dwelling bird populations.

There is only limited means of communication without a structural framework. Tourism products to be offered need to be developed further. The institutional framework is not sufficient at the moment, and a tourism management plan does not exist as yet. An external difficulty is that the domestic market is shrinking. A site specific and systematic research on carrying capacities, visitor pressures has not been carried out yet.

3.4. COOPERATION IN THE BIOSPHERE RESERVE

There are several levels of stakeholders related to the KBR issues, and it is pivotal that these levels are conscious of their role and responsibilities and that these levels communicate. Regular discussions, working-group meetings and informational get-togethers are held for

purposes of consultation with local districts, authorities, municipalities, associations and scientific establishments, etc.

The KNPD take part in the following organisations:

- Member of the Bács-Kiskun County Treasure Committee.
- Member of the Association of Grey Cattle Breeders and of the Association of Racka Sheep Breeders.
- Member of the National Park Label Scheme and coordinator of the regional division.
- The National Association of Environment and Nature Protection Training Centres.
- Hungarian Society for Environmental Education.

One such action relates to sustainable agriculture in the buffer and transition area / zone of cooperation where there are a number of governmental programs available for giving financial supports, advice and assistance to individual farmers, directed mainly to individual farm conditions. The Biosphere Reserve has contributed mainly by hosting community meetings and exhibits or demonstration events that help to promote sustainable land use or farming practices.

There is a relatively new project for certification of “National Park Products”. Packaging and labelling requirements and the definition of the relevant criteria of the products and services have been announced. It can be used for advertising the products of the local inhabitants of the national park and biosphere reserve and the inhabitants of the surrounding areas as well, generating more income from the protected status of the area.

A special, integrated system of farming exists on the land owned by the BR. Land not necessary as feed source for the cattle and buffalo stock of the national park but in need of grazing are rented out to farmers under special conditions for a determined period (usually ten years). In the rental agreement limitations of farming activity that serve nature conservation purposes are set, such as maximum grazing pressure, animals used for grazing, temporal and spatial limitations in hay harvesting, etc.

Cooperation between the BR and the municipalities has been pipelined into the official **Forum for the Kiskunság Biosphere** with ten participating municipalities so far. It covers the following activities: involvement as consortium partners of municipalities when applying for funding projects, collaboration agreements with municipalities in various fields, mostly in advancing tourism, organising cultural programmes, etc. and participation with educational programmes on cultural events organised to the local inhabitants by municipalities.

There are large numbers of different events in the Biosphere reserves (Great Bustard Festival, “Moving Sand” Half Marathon, Shepherds Festival, Shepherds Dog Festival, Earth Day, Day of Birds and Trees, 50 guided tours/year). These events are not only places for recreation, but potential places for communication with local people. The participants of these programs exceed 30.000. Elaborated environmental education programme is available

for children and youth of the age group between 3–18 years. For higher education students field study and internship, as well as topics for diploma theses are offered also. In the education programmes teachers of local educational institutions are actively involved. Year to year more than 2500 children are involved in these activities.

3.5. FUTURE PLANS

- Improve coordination amongst major stakeholders.
- To start consultations with the mayors of the nine municipalities about new zonation of the biosphere reserve.
- Protect natural habitats against the invasion of exotic and other harmful species, overgrazing and pollution.
- Protect grasslands against conversion to agriculture and other negative developments.
- Protect people and biodiversity from the harmful impacts of chemicals.
- Build capacities of stakeholders in appropriate management skills, social mobilization and sustainable development.
- Enhance collaboration between research institutions and the administration of BR for seeking effective solutions to various issues in the socio-ecological and other sectors.
- Promote sustainable tourism.
- Build capacities for climate change adaptations.
- Build capacities to cope with fire and other natural disasters.
- Promote awareness of stakeholders to the values of the sandy ecosystem and need for its conservation.
- Promote coordination for major stakeholders to jointly address the issues and challenges of the Biosphere Reserve in the fields of conservation, sustainable development and scientific research.
- Strengthen the knowledge base of the Biosphere Reserve for now and the future.
- Promote awareness and communication as basic tools for the proper understanding of the values of the Biosphere Reserve and urging support for maintaining it as a national and international asset.

APPENDIX I. – Abbreviations

BR – Biosphere Reserve
HBMS – Hungarian Biodiversity Monitoring System
HNV – High Nature Value area
KBR – Kiskunság Biosphere Reserve
KNP – Kiskunság National Park
KNPD – Kiskunság National Park Directorate

APPENDIX II. – PHOTO GALLERY of the KBR's MAIN ASSETS



Shepherd Festival at Bugacpuszta



Gray cattle



Traditional grazing



Excursion in the biosphere reserve at Bugac



Folklore choir and traditional shepherd's clothing at the Shepehrd's Festival



Meeting with local stakeholders



Environmental education



Horse-drawn carriage tour at Bugac



Sheep herding competition