

### Additional information

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#### Justification for the application of each Criterion

**Criterion 5:** In most years, the number of waterbirds is in excess of 20 000 during the autumn/early winter migration period. The migration period in summer begins already in August. Flocks of teals (*Anas crecca*) and garganey (*Anas querquedula*) are the first arrivers with a total of more than 10 000 individuals. They are followed by mallards (*Anas platyrhynchos*), shovelers (*Anas chipeata*), wigeons (*Anas penelope*), gadwalls (*Anas strepera*) and pintails (*Anas acuta*) whose total number could rise to the order of magnitude of the previous species together. During the wintering season, geese represent the bulk of waterbirds with maximum 15.000 – 20.000 individuals. The flocks consist of greylag goose (*Anser anser*), greater white-fronted goose (*Anser albifrons*) and bean goose (*Anser fabalis*). (Maximum number of waterbirds in November 2011: 27.776 individuals.)

Bibliographical references:

Faragó, Sándor (2012): A vadlúd monitoring eredményei a 2011/2012-es idényben Magyarországon, In: Magyar Vízivad Közlemények (Hungarian Waterfowl Publications), No. 22, pp. 3-50

Faragó, Sándor (2012): A magyar vízivad monitoring eredményei a 2011/2012-es idényben, In: Magyar Vízivad Közlemények (Hungarian Waterfowl Publications), No. 22, pp. 51-284

Faragó, Sándor (2011): A vadlúd monitoring eredményei a 2009/2010-es idényben Magyarországon, In: Magyar Vízivad Közlemények (Hungarian Waterfowl Publications), No. 20-21, pp. 3-42

Faragó, Sándor (2011): A magyar vízivad monitoring eredményei a 2009/2010-es idényben, In: Magyar Vízivad Közlemények (Hungarian Waterfowl Publications), No. 20-21, pp. 43-200

**Criterion 6:** Data for the European population is taken from the official searchable database of wetlands.org while data for the Kis-Balaton populations are taken from Hungarian Waterfowl Publications, No. 18-21 (2010-2011) and from own surveys, monitoring, census and reports of the Balaton Uplands National Park Directorate.

Pygmy Cormorant (*Phalacrocorax pygmeus*): 1% threshold = 290, Kis-Balaton: cca. 130-150 breeding pairs (2013), 518 wintering individuals (Dec. 2011) - max. rates

Great Egret (*Casmerodius albus*): 1% threshold = 460, Kis-Balaton: cca. 350-400 breeding pairs (2013) – max. rate

Greater White-fronted Goose (*Anser albifrons*): 1% threshold = 1.100, Kis-Balaton: >5.000 wintering individuals (Nov. 2011) – max. rate

Greylag Goose (*Anser anser*): - 1% threshold = 560, Kis-Balaton: 6000 in January 2008, 6000 in November 2008, 8757 in November 2010, 15580 in November 2011.

Northern Shoveler (*Anas chipeata*): 1% threshold = 400, Kis-Balaton: 1.800 migrating individuals (Nov. 2011) – max. rate

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**Noteworthy flora:**

Obviously, water-dependent habitats are very diversified according to the degree of water cover. Floating associations containing white water-lily (*Nymphaea alba*), water chestnut (*Trapa natans*), water-soldier (*Stratiotes aloides*) or the water-hogweed (*Persicaria amphibia*) attract attention by their natural values. Botanical rarities - like the peat fern (*Thelypteris palustris*), the fen-nettle (*Urtica kioviensis*), the cicuta (*Cicuta virosa*) and the sweet-flag (*Acorus calamus*) - exist at the borders and openings of the large reedbeds.

Other areas covered with rush and sedge are important, too. Bogs, moors and fens are located on shallow-watered and provisionally water-logged grounds. These areas are ideal for the reed-buttercup (*Ranunculus lingua*), the marsh-pea (*Lathyrus palustris*), the feather-foil (*Hottonia palustris*), the Siberian iris (*Iris sibirica*) and numerous species of orchids. The wetlands are skirted with mesophilous hayfields, meadows and planted forests with common alder (*Alnus glutinosa*), silver poplar (*Populus alba*), English oak (*Quercus petraea*) and field maple (*Acer campestre*).

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**Noteworthy fauna:**

Zoological values of the Kis-Balaton are highly diverse: special habitats are designated by uncommon species. The fauna of benthonic invertebrates is very rich. Populations of rare dragonflies (*Leucorrhinia pectoralis*, *Coenagrion ornatum*, etc.) are principally important here. Slack waters of the wetlands are excellent for fish species – the european mud-minnow (*Umbra krameri*), the weatherfish (*Misgurnus fossilis*), the spiked loach (*Cobitis elongatoides*) and the sunbleak (*Leucaspis delineatus*) – that require specific ecological circumstances. Populations of other native fishes are notable, too. Natural stocks of asp (*Aspius aspius*), bitterling (*Rhodeus sericeus*), tench (*Tinca tinca*), carp (*Cyprinus carpio*), pike (*Esox lucius*), pikeperch (*Sander lucioperca*) and wels (*Silurus glanis*) is followed up by experts year after year. Many protected amphibians and a few reptile species exist here.

The Kis-Balaton is one of the most important areas for nesting and migrating birds in Central Europe. It has an outstanding role for waterbirds during migration periods. Most of the waterbird species that have occurred in Hungary have been recorded in the area. There are observations about 170 bird species from the Kis-Balaton and 90 species nest here, too. In the following part of our document we focus only on species that have prominent significance from the nature protection point of view.

The migration period in summer begins already in August. Flocks of teals (*Anas crecca*) and garganey (*Anas querquedula*) are the first arrivers with a total of more than 10 000 individuals. They are followed by mallards (*Anas platyrhynchos*), shovelers (*Anas chipeata*), wigeons (*Anas penelope*), gadwalls (*Anas strepera*) and pintails (*Anas acuta*) whose number could rise to the order of magnitude of the previous species together. During the wintering season, geese represent the bulk of waterbirds with maximum 20.000 – 30.000 individuals. The flocks consist of greylag goose (*Anser anser*), whitefronted goose (*Anser albifrons*) and bean goose (*Anser fabalis*).

The number of species and individuals decreases until the beginning of breeding period. At that time, populations of nesting birds play the main role at the Kis-Balaton and Phase II becomes dominant in terms of the breeding season due to reed-beds and its habitat structures.

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**Physical features of the site:**

The Kis-Balaton formed formerly the westernmost bay of Lake Balaton. This bay was at the same time the mouth of River Zala, which has been the main water supplier for Lake Balaton as well. Erosion has been started by human development and intervention in the woods around the Kis-Balaton. This process had caused slow soil silting there and the area started to turn into a marshland. Afterwards, the drainage of the marshland was continued by the farmers and by state companies. In order to protect the railway lines, the River Zala was regulated and forced between dikes. Until the 1920's, the contraction of natural habitats was drastic as a result of draining and the open water surface shrank to cca. 3 ha. Owing to the fact that the incoming water couldn't flow through its natural filtering zone formed by macrophytes, the water quality of Lake Balaton began to decrease. That was the main consequence of processes caused by human activity. The different types of artificial fertilizers gave rise to accumulation of nutrients washed out from plough-fields to a critical level.

To resolve that problem, there was a decision about building and rehabilitation of Kis-Balaton as a water protection system in the 1970's. The construction started with flooding of the area in 1985 and work has been in progress ever since. The first step was the creation of a water reservoir named Phase I.