

cus sp.), dragonfly larvae and water striders (*Gerris sp.*) that are "skating" on the water surface just like whirligigs (*Gyrinus sp.*). Oxbow lakes are perfect **places for reproduction of amphibians**. Permanent dwellers are smooth newts (*Triturus vulgaris*) and fire-bellied toads (*Bombina bombina*) but toads (*Bufo sp.*) and agile frogs (*Rana dalmatina*) visit oxbows only during their mating season. The rare penduline tit (*Remiz pendulinus*) builds its pocket-like nest on branches of willows bending above the water surface.

6. Gallery forest

As a result of the river control only a narrow strip of gallery forests can be found along the Bódva River and few oxbows. The most typical tree species are white poplar (*Populus alba*), white willow (*Salix alba*), common alder (*Alnus glutinosa*), crack willow (*Salix fragilis*). Several shrub species can be found there in large numbers such as common hawthorn (*Crataegus monogyna*), common elder (*Sambucus nigra*), dog-berry (*Cornus sanguinea*) and sparsely guelder rose (*Viburnum opulus*). Although, hiking is quite difficult at some places because of the abundant and dense dewberry (*Rubus caesius*). Hops (*Humulus lupulus*) creep on trees and shrubs like a liana. Characteristic species of the understory are the touch-me-not (*Impatiens noli-tangere*), the wolf's-bane (*Bidens tripartitus*) and several dock species (*Polygonum sp.*). Nettle (*Urtica dioica*) has a natural occurrence in this community. Leaf beetles (*Chrysomelidae*) and curculionid beetles (*Curculionidae*) are common in the foliage. Longhorned beetles use tree trunks as places for reproduction, ground-beetles are looking for preys on the ground. Lesser purple emperor (*Apatura ilia*) and southern festoon (*Zerynthia polyxena*) are common in the forest and its edge. Amber snails (*Succinea sp.*) with



Guelder rose

fragile and transparent shells can be found on the leaves of the understory. Older trees are used for cutting hollows as nests by the black woodpecker (*Dryocopus martius*). Other characteristic bird and mammal species are icterine warbler (*Hippolais icterina*), penduline tit and striped field mouse (*Apodemus agrarius*).

7. Hay meadow

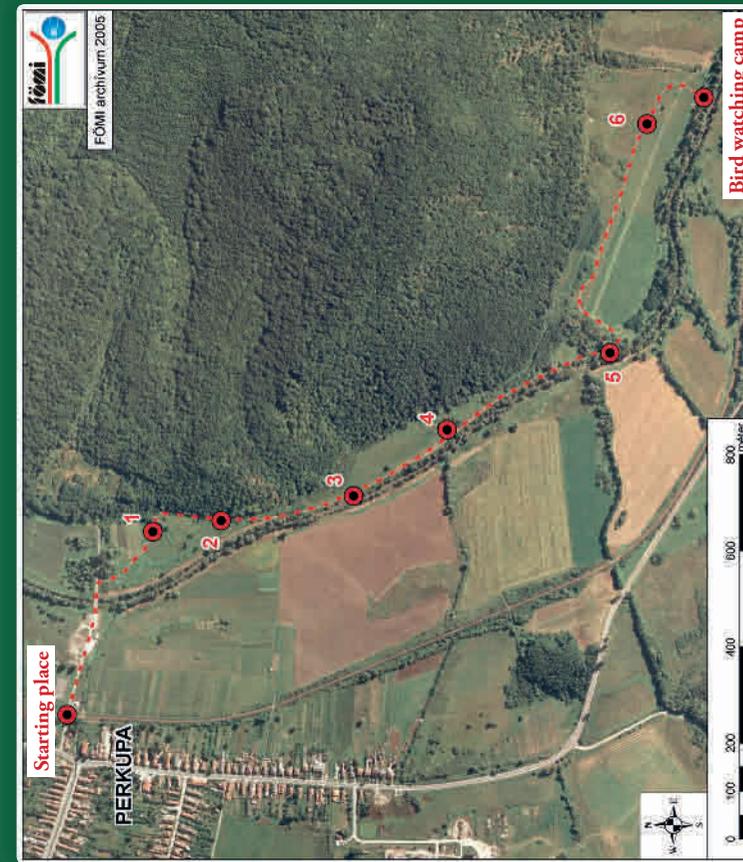
Hay meadows are created and managed by humans. The colourful „carpet” of yellow, pink, purple and white flowers of meadow buttercup (*Ranunculus acris*), ragged robin (*Lychnis flos-cuculi*), spreading bellflower (*Campanula patula*) and oxeye daisy (*Chrysanthemum leucanthemum*) is very spectacular in the beginning of summer. Brown knapweed (*Centaurea jacea*), parsnip (*Pastinaca sativa*), rough hawk's-beard (*Crepis biennis*), annual fleabane (*Erigeron annuus*), mouse garlic (*Allium angulosum*) and great burnet (*Sanguisorba officinalis*) are in bloom at the end of summer, in the beginning of autumn.



Lesser marbled fritillary

A meadow is a paradise for butterflies where fritillaries (e.g. *Argynnis sp.*), ringlets (*Erebia sp.*), coppers (*Lycaena sp.*) and several blue species (e.g. *Plebejus sp.*) can be observed. Plenty of grass and sedge species are food for several grasshoppers. Besides butterflies, hoverflies (*Syrphidae sp.*) and jewel beetles also feed on the colourful flowers.

A meadow is also an inviting table for the white stork (*Ciconia ciconia*), who hunts grasshoppers, frogs and small mammals. A rare, endangered bird, the so called corn crane (*Crex crex*) builds its nest in hay fields. It can hide very well by mimicry, the only way to notice it is listening to its characteristic crackling sound at night.



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English

Bódva Valley Education Trail



Building partnership



Seasonal trail, it can be visited during the Bird Watching and Nature Conservation Camp from 1st September to 26th October. The education trail introduces the habitats along the Bódva River, as well as the effects of human activities on natural habitats, their flora and fauna. The length of the trail is about 2 km, it takes about 30-50 minutes to walk along it.

1. Bódva Valley Education Trail

Bódva Valley is **one of the most important ecological corridors** of northeast Hungary, a special area establishing connection between natural and semi-natural habitats this way it makes possible for several species to be able to migrate large distances so that the biological diversity can be preserved. Bódva Valley is a series of natural, semi-natural and agricultural areas: wetlands, hay meadows, oxbow lakes and the Bódva River.

The originally natural habitats **have been changed by human activities** for several decades. Wetlands have been drained, ploughed and used as farmlands. The curvy bed of the Bódva River was straightened by cutting off and separating oxbows.



Flood in the Bódva Valley

2. Invasive plant species

Plants not native to an area but get there by artificial planting or by chance, are called **invasive species**. These species are spreading aggressively and forming huge homogenous populations while the original plant communities of the area are disappearing. This way the habitat degrades and farming becomes impossible.

Flood plains of rivers and streams are the most endangered habitats. When the first invasive specimens are noticed they should be removed physically (by cutting, stem crushing, individual removing) or chemically (by using herbicides) so that the given habitat can be conserved. Removing bigger populations of invasive plants in the areas valuable from the point of view of nature protection are supervised by the Aggtelek National Park Directorate.



Thinleaf sunflower

3. Hornbeam-oak forest

Hornbeam-oak forests can be found on the northern slopes of the Bódva Valley and in canyon-like sections. Besides durmast oak (*Quercus petraea*), hornbeam (*Carpinus betulus*) can also be observed in the forest as well as individual specimens of wild cherry (*Cerasus avium*), Norway maple (*Acer platanooides*), ash (*Fraxinus excelsior*) and broad-leaved lime (*Tilia platyphyllos*). Plenty of bulbous plants burst into bloom in the **early spring**.

The larvae of several longhorn beetles (*Cerambycidae*), bark beetles (*Scolytus sp.*) and jewel beetles (*Buprestidae*) develop in decaying tree



Nuthatch

trunks. Other typical insect species are stag beetles (*Lucanus cervus*), ground beetles (*Carabus sp.*) being quick predators, and dor beetle (*Geotrupes vernalis*) rolling a dung-ball.

The most spectacular animals in a forest are birds. Robins (*Erithacus rubecula*) build nest either on the ground among roots or hollows while look for food on the soil surface or in bushes. Tits (*Parus sp.*), woodpeckers (e.g. *Picus sp.*), nuthatches (*Sitta europea*) and tree creepers (*Certhia familiaris*) live and nest in hollows of tree trunks. Chaffinches (*Fringilla coelebs*) and warblers (e.g. *Phylloscopus sp.*) live and look for food in the foliage.

Hornbeam-oak forests are **rich in games**. If you are calm and careful enough, wild boar (*Sus scrofa*), roe-deer (*Capreolus capreolus*) and red deer (*Cervus elaphus*) can be observed.

4. Bódva River

Small patches of reedbeds and Typha beds can be found along the Bódva River. Characteristic plant species are water plantain (*Alisma plantago-aquatica*), yellow flag iris (*Iris pseudacorus*), purple loosestrife (*Lythrum salicaria*). Sometimes the leaves of the great water dock (*Rumex hydrolapathum*) and the water parsnip (*Sium latifolium*) can also be seen on the water surface.

Larvae of several invertebrates develop in water, while the mature animals leave the water bodies and migrate large distances. Larvae of may-flies (*Ephemeroptera*) and stone-



Demoiselle



Common kingfisher

flies (*Plecoptera*) can be found under the water surface, mainly on rocks. Larvae of caddisflies (*Trichoptera*) build special „houses” for themselves from tiny gravels, sticks and other debris. Larvae of dragonflies (*Odonata*) are dangerous predators of water courses, they eat not only larvae of other insects but also tadpoles and young fishes.

A lot of fish species live in this part of the Bódva River like chab (*Leuciscus cephalus*), bitterling (*Rhodeus sericeus amarus*), rife minnow (*Alburnoides bipunctatus*) and the endangered barbeau (*Barbus peloponnesius petenyii*). A well-known predator of fishes is the dice snake (*Natrix tessellata*).

The common kingfisher (*Alcedo atthis*) builds its nest in high river banks, it hunts small fishes from tree branches bending above the water surface.

5. Oxbow lake

Most of the oxbows in the Bódva Valley were artificially created by humans since they were cut off the river. Depending on the amount of alluvium the edges of oxbows are covered with reedbeds, Typha beds and willows. Swampy still waters are habitats for great pond snails (*Lymnaea stagnalis*) and great ramshorns (*Planorbis cornuus*). Caddisflies and may-flies can also be found, although different species than that of the Bódva River. Invertebrate predators of oxbows are water beetles (e.g. *Dytis-*



Yellow flag iris



Green toad