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A GUIDE
TO THEMED ROUTES

TRAILS IN THE REALM OF THE GREAT BUSTARDS IN SALONTA

Laura TURDEAN
Oradea, 2023

Contents

Some useful information & practical tips

- The duration of the routes is indicative (10-15-minute break/information board included). To follow the trail on your mobile phone, download its track from the website, then open the file with GPX Viewer (or a similar app). More details: www.dropia.eu
- Please remain on the trails, and avoid creating disturbance to the Great Bustards by all means! In case you plan to venture off into the border area, be aware that until Romania joins the Schengen Area you need to inform the Romanian Border Police beforehand. (Salonta Office phone no.: +40259/373.745)
- Please keep dogs on a lead as much as possible (especially on The Realm of the Great Bustards trail).
- In spring and autumn: wear a waterproof jacket (to protect you from wind and rain), hiking or wellington boots - especially on rainy periods, as these lowlands may be covered by water, and the topsoil could be muddy and slippery.
- In summer: wear sunscreen, a hat and protective clothing.
- Plan ahead, bring sufficient food and water with you.
- You can have a picnic anywhere, but please do not start a fire.
- You can use the facilities of the *Great Bustard Nest* visitor centre: parking area, toilets, playground etc.

Trails in the Realm of the Great Bustards in Salonta (A Guide to Themed Routes)
Laura TURDEAN
Oradea, 2023
ISBN 978-973-0-38351-5

Introduction | Welcome!

Heritage has great potential in sustaining local communities. Besides tangible benefits, like creating new jobs, it instils pride within resident populations based on local cultural and natural values.

As heritage is the expression of a legacy that we pass on to the next generation, it is imperative to talk about sustainability. How can we make sure that we can pass on these inherited "resources" ideally unaltered or even enriched? This is why this guide is equally addressed to the young, not only to the adults.

Water shaped this landscape which once was abundant in marshlands, periodically flooded grasslands and woods, where people could take refuge in times of the Mongol and Ottoman invasions. However, the canals and waterways, built at the end of the 19th century, have completely changed this landscape resulting in the draining of the marshes, which afterwards were turned into pastures and croplands.

We also aim to showcase what kind of life people led here and how they tried to adapt to these natural conditions. Initially, their life was based on pastoralism (rearing livestock), which later was complemented with farming as the herders were soon joined by their families. Thus, their homestead was entirely organised around these occupations. These were the traditional *crofts* (small-scale farms).

So, the expedition that we invite you on is a journey not only in space, but also in time.

What you will find in this guide

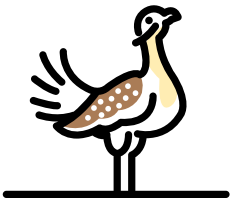
We strive to offer a comprehensive outlook on the themed routes in the area of Salonta. You can choose among the *linear route* of the Salonta - Gyula - Békéscsaba **bicycle track**, which neighbours five Natura 2000 protected areas, or the *network route* developed in the area of the **Great Bustard Nest visitor centre.**

To help you get the children involved in this expedition, we devised some activities that you will find at the end of each chapter.

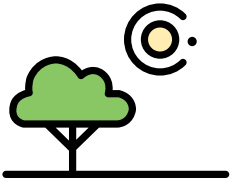
Let the journey begin!

Themed walking and cycling routes

Trail 1:
The Realm of the Great Bustard*

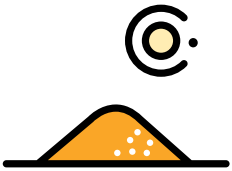


Trail 2:
Natural Riches of the Steppe*



**You may combine Trails 1 & 2 to make a circular route.*

Trail 3:
Bygone Treasures Hidden in the Puszta



Trail 4:
In Two Countries on Two Wheels: Salonta-Békéscsaba

The Realm of the Great Bustard

The trail leads to a medium-voltage power line pillar, where more than 6-kilometre-long cables were moved underground to protect the bustards from potentially fatal collisions. Along the route, you will be able to observe the typical feeding, display and nesting grounds.

Itinerary:

- start: Great Bustard Nest visitor centre
- via: observation tower
- finish: underground power line pillar

- means of transport: on foot, by bicycle
- distance: 6.6 km
- duration (one way): about 2hrs10' (on foot) / 1h10' (by bicycle)

Highlights and points of interest:

a. **The Great Bustard in Romania - from an iconic steppe bird to a symbol of Salonta**
b. **Great Bustard habitats: feeding, display and nesting grounds**

a. The Great Bustard in Romania - from an iconic steppe bird to a symbol of Salonta

The Great Bustard *(Otis tarda)* is the heaviest flying bird in Europe. Classified globally as vulnerable, this species disappeared from most parts of Europe as its once far and wide habitats (the Eurasian steppe) had been heavily fragmented. By the 1950s, it disappeared from most of Europe, which is also what happened in Romania. After the nationalisation during the communist era, the grasslands (its natural habitats) were tilled and converted into farmlands. Mechanised agriculture, hunting and poaching also contributed to their decline in numbers.

Did you know

Archaeological excavations in the Tisa Plain and Salca-Oradea[1] revealed the discovery of Great Bustard bones dated back to the Neolithic, which could have been used as tools.

Great Bustards in Salonta

[1] *https://journals.openedition.org/physio-geo/1052?lang=en*

On the other hand, our field monitoring observations, which began in 2007, certify the existence of a small *cross-border population* of 40 to 50 individuals which use territories on each part of the border with Hungary, in the area of Salonta-Mezőgyán.

The accidental discovery of a Great Bustard nest in May 2020 proved undeniably that this species, which once was thought to be extinct in Romania, is indeed breeding in our country. Moreover, we should also consider the behaviour of the bustards - i.e. they tend to return to their traditional *display* (courtship ritual of the males) and nesting sites. Therefore, we have all the reasons to believe that they maintained in Salonta their last stronghold within Romania.

Great Bustard nest in a wheat field, Salonta, May 2020 / Photo: Ioan Matiu jr.

Did you know

The bustards of Salonta constitute the only viable Great Bustard population all across Romania.

b. Great Bustard habitats: feeding, display and nesting grounds

The bustards of Salonta mainly use grasslands, oilseed rape, lucerne, cereal fields, fallow and rarely maize and sunflower fields. Proper distribution of these plots has contributed to the sustenance of a viable population in the area and, in the meantime, creates a *mosaic-like* landscape, which is more likely to accommodate a higher variety of animal species.

In spring and summer, grasslands, lucerne, green fallow, old fallow are suitable feeding grounds for their animal (millipedes, insects, snails, small mammals or even small bird chicks) and plant-based (oilseed rape, lucerne, wheat) omnivore diet. During winter, bustards are often spotted in larger droves feeding on oilseed rape, their main food source.

Three male bustards on an oilseed rape field, Salonta

The breeding season starts in March-April with the iconic courtship ritual - display. Just like for many other species, breeding is one of the most important events in the life of a Great Bustard.

Males reach sexual maturity at 4-5 years, whereas females do sooner, after 3-4. During courtship, males expose their white plumage and move slowly in a circle. Thus, they will be noticed even by females who are many kilometres away. To attract them, the suitors continue their dance, and once the females are closer, they proudly show off their white feathers surrounding their inquisitive spectator.

After mating, the female leaves the display site in search of a suitable, quiet place, where she will be able to lay and incubate the eggs (between 1-3) without any help from the male. As they get older, females tend to establish traditional nesting sites for themselves. Should the first nesting attempt fail, the female may lay a new clutch, but usually with just one egg.

Male bustard in breeding season / Photo: Béla Motkó

The nest is a small depression on the bare ground made by the female, 30-40 cm in diameter. It is usually laid on grasslands, fallow, in lucerne or cereal fields, which offer perfect hiding places. Chicks are *nidifugous* (they can leave the nest immediately after hatching).

Female bustard with her chick / Photo: Béla Motkó

Did you know

Bustards show a very low breeding success. According to a study made in Spain, a female Great Bustard during her lifetime (10 years on average) can rear only 1.4 chicks.

Illustration: Szabolcs Kókay

Our vision is that the Great Bustard population from Salonta strengthens, increases in numbers and the Great Bustard becomes a symbol of the city, enhancing local pride for any inhabitant - young or old (who may as well have once lived near these magnificent birds).

Activities for Children

Reading

The Great Bustard and the Falcon

Excerpt translated from "Complete Works of András Fáy: Stories and Allegories", vol. 1, published by Károly Geibel, Budapest, 1843.[2]

At one of the meetings of the birds, the bustard spoke: 'We should get accustomed to running! Let us learn this skill from the four-legged animals, and combine the agility of our wings with the velocity of our legs!'

Many birds approved, but the noble falcon averted: 'You'd better forget this senseless advice which would deny our own race and make us outcasts from air and land. And you, lead-bird, I know why you're trying to deceive us - you're heavy and you fly gracelessly!'

It can be useful to follow good examples from strangers, but you have to do it wisely. Every breed has its original strength, and it can be risky to sacrifice it only for the sake of copying others.

Critical thinking and creativity | Teamwork

Illustration: Szabolcs Kókay

1. Do a role-play based on the story.
2. Why does the falcon call the bustard 'lead-bird'?
3. What are the strengths of the bustard? What about the falcon? Write down at least three examples for each. Then choose one species, focus just on one particular talent and illustrate it as if it were a superhero.

[2] *https://play.google.com/store/books - Fáy András szépirodalmi összes munkái: Mesék és allegoriák, p. 187*

Natural Riches of the Steppe

This route will take you deep into the puszta of Salonta while making you more familiar with the Pannonic steppe. On a small scale, *Reed Pond* will unveil what this wet and marshy landscape looked like until the end of the 19th century.

Itinerary:

- start: observation tower
- via: *Reed Pond*
- finish: *Great Bustard Nest* visitor centre

- means of transport: on foot, by bicycle
- distance: 7.7 km
- duration (one way): about 3hrs (on foot) / 1h30' (by bicycle)

Highlights and points of interest:

a. **The Pannonic steppe**
b. **What is an ecosystem?**
c. **European protected species in the area of Salonta**

a. The Pannonic steppe

The Pannonian bioregion* - with its predominant landscape, the Puszta - covers only 3% of the surface of the EU area, but accommodates 55 types of European habitats and a high number of species. Besides 46 plant and 118 animal species protected under the Habitat Directive, approximately 70 threatened birds - listed under the Annex I of Birds Directive - inhabit this region[1].

**The Pannonian region includes entire Hungary and neighbouring areas from the Czech Republic, Slovakia, Ukraine, Romania, Serbia and Croatia.*

[1] *http://publications.europa.eu/resource/cellar/cd7b58a8-dbeb-4093-8269-6d5a2951563a.0002.02/DOC_1*

As we point out this region's precious biodiversity, we must also emphasize how important it is to protect these habitats, which are too often under threat or in a fragile balance due to the increasing demand for new croplands, or various infrastructure and development projects.

Habitats Directive and **Birds Directive** are legislative tools that lie at the foundation of nature conservation within the EU.

In numbers:

*Annex I of the Habitats Directive lists **233 natural European habitats**, out of which **71 are under threat** and therefore classified as priority habitats.*[2]

Out of a total of 500 species of birds native to Europe, Annex I of the Birds Directive specifies 194 bird species and sub-species are particularly threatened.

More details:
https://ec.europa.eu/environment/nature/natura2000/

**Pannonic salt steppes and marshes (1530)* are one of the priority habitats of the European Community. These can be found mainly within the Carpathian Basin. Hence, they are listed in Annex I of the Habitats Directive - therefore, Sites of Community Importance should be designated for their conservation (see page 35 for more details).

Human interventions over the last two centuries led to the deterioration and destruction of precious natural habitats - wetlands, swamps, floodplainsand grasslands. The semi-natural habitats that we still witness today in the Carpathian Basin are only a fraction of the biodiversity that once depicted this region.

[2] *https://inspire.ec.europa.eu/document/HabDir*

Eastern Imperial Eagle - an emblematic bird of the Pannonian steppe *(Aquila heliaca)*

Like the Great Bustard, this is another bird species threatened with extinction and globally classified as vulnerable. Its distribution area covers Central and South-East Europe. The Eastern Imperial Eagle is a large bird of prey - its wingspan can measure over 2 metres. It feeds on small and medium-sized mammals (voles, ground squirrels, hamsters, hares). The pairs they form tend to stay together for as long as they live. The maximum lifespan recorded in the wild is 26 years, whereas in captivity - 44. In Romania, Eastern Imperial Eagles may be spotted only in a few areas in the open plains with solitary trees. For the time being, there are only two breeding pairs documented in Romania. Nonetheless, since June 2022, a young pair has been observed near their nest in Salonta. The individuals most likely originate from the Hungarian population.

b. **What is an ecosystem?**

An ecosystem stands for a community of living organisms and their interactions with the environment, forming an intricate, interlinked system. The sheer complexity of the relationships within an ecosystem makes their study quite challenging. Beyond the more conventional, i.e. food-consumer or prey-predator, there are many other types of relationships, like competition, symbiosis and commensalism (a distinctive sort of relationship between the individuals of different species in which one gets food or other benefits from the other without affecting the latter neither positively nor negatively). All these interactions are instrumental to the community's capacity for resilience.

A freshwater ecosystem - like a lake - may be home to a great variety of species of flora and fauna.
Illustration: Szabolcs Kókay / © Duna-Ipoly National Park Directorate, Hungary (Illustrative image)

Through their activities, humans have an enormous impact on these ecosystems. Hence the expression - *anthropogenic factor*, which usually carries a negative meaning. Polluting natural ecosystems with industrial waste, heavily industrialised agriculture (monocultures, excessive use of chemical fertilisers, draining wetlands for new agricultural lands, tillage and conversion of grasslands into croplands), hydraulic engineering (building of canals, dams, embankments, micro-hydropower plants which cut the natural flow of water), hunting, poaching - are only a few examples.

In pristine places, where nature takes its course, these processes evolve freely - like in tropical rainforests, unspoiled wetlands, steppes.

Human interventions from the last two-three centuries have accelerated these natural processes, caused biodiversity loss and damaged several ecosystems. Nowadays, agro-ecosystems cover 55% of Romania, whereas the ecosystems of rivers, lakes and wetlands combined only 3%[3]. The wetlands are so scarce they are less than 1%. It is vital to protect those that still exist.

[3] *https://biodiversity.europa.eu/countries/romania*

Did you know

Ecosystem services are essential goods and services that nature provides for the benefit of humankind - from the simplest (food, water, air, soil, wood) to the most complex (pollination, storage of carbon dioxide, soil water retention). Damaging natural ecosystems as a consequence of human activities on a large scale may irreversibly affect their capacity to deliver these advantages. In the context of rapid global population growth and climate change, it has become more urgent than ever to acknowledge the importance of ecosystem services.

Activities for children

Knowledge & understanding of the natural world

1. How many species do you know in the image on the previous page? What can you tell about them?
2. Look up more information about at least 3, and make a presentation on each.

A European protected species and the relationship it has with its environment

Fisher's Estuarine Moth *(Gortyna borellii)** and Hog's Fennel *(Peucedanum officinale)*

**Special Areas of Conservation (SAC) ought to be designated for species listed in Annex II of the Habitats Directive*

As a noctuid moth, it belongs to the family of Noctuidae, commonly known as owlet moths. Despite its large distribution in Europe, this is one of the most threatened species of Lepidoptera (order of insects that includes moths and butterflies) on the continent. One of the causes is the limited distribution of the plant it feeds upon - i.e. Hog's Fennel *(Peucedanum officinale)*. The Carpathian Basin is still home to notable populations. In Salonta, this species lives in habitats associated with to saline soils and salt marshes. It spends the winter as an egg, laid on long coarse grass. After hatching in spring, the larva is looking for a new host - the Hog's Fennel, which is the only plant it consumes. In August, it enters a new stage by pupating under the ground. The Fisher's Estuarine Moth emerges in September, when it reaches adulthood and may breed until the first signs of frost. This moth is threatened mainly by conversion of grasslands to croplands and grassland mismanagement (e.g. overgrazing, extensive use of pesticides, burning of dry grass).

Photo: Tamás Deli

European protected species in the area of Salonta

A species (or a population), in order to survive, has to find a suitable habitat - where food is available, it can breed, find shelter and is not exposed to threats. Generally, changes within an ecosystem, like landscape transformation, may also trigger habitat fragmentation or the disappearance of many species. Alas, human pressure to 'cut' from these suitable feeding, resting, breeding sites for wildlife is endlessly growing.

This is why these habitats must be protected. The Natura 2000 protected areas network aims to preserve rare natural habitats, breeding and roosting sites of species under threat. On the other hand, initiatives related to ecological tourism, preservation of nature-friendly agricultural and pastoral practices, or promotion of natural and cultural heritage are also encouraged within the Natura 2000 sites, as the interests of local communities are seen as an integral part of the network.

Some European protected species from the area of Salonta

The Great Bustard is a landmark species for conservation and can be spotted here all year long. Some bird species come here to breed, like the European Roller, Lesser Grey Shrike, Montagu's Harrier. These are called summer visitors, while the Short-eared Owl, Rough-legged Buzzard or Hen Harrier are called winter visitors as they come here to roost. Occasional sightings of White-tailed Eagle, Eastern Imperial Eagle, Peregrine Falcon have also been recorded. Wild geese flocks can be seen regularly in spring or autumn. Amongst other protected animal groups, there are sighting records of mammals (Eurasian Otter, European Ground Squirrel, European Wildcat), fish and reptiles (Weatherfish, European Pond Turtle), and also invertebrates (Fisher's Estuarine Moth, Large Copper).

European Roller (Coracias garrulus)

European Pond Turtle (Emys orbicularis) / Photo: Tibor Sos

Large Copper (Lycaena dispar) / Photo: Anna Dénes

Mammals

European Ground Squirrel
(Spermophilus citellus)

Nowadays, this European endemic species is strictly protected as it has become globally endangered mostly because of the fragmentation of its habitat. During the last century, it was associated with pests and various control methods were applied to eradicate ground squirrels. This small mammal lives in colonies, where each individual has their own burrow system. The European Ground Squirrel has an important role within grassland communities, and its conservation is vital for many other species. Its underground burrows are used by reptiles and amphibians, and it is the main food source of the Saker Falcon, Eastern Imperial Eagle and Steppe Polecat. It may be spotted very rarely on the outskirts of Salonta as it has been observed only to the east of the Barmod Puszta, near the state border, opposite the Hungarian village of Kötegyán.

Birds

Montagu's Harrier
(Circus pygargus)

This is a rare species even though it breeds in almost every European country. It has been estimated that the Romanian population has under 100 pairs. Montagu's Harriers depend on grasslands for nesting. Nonetheless, nowadays they may also nest on croplands. As they build the nest directly on the ground, agriculture has an immense influence upon this species. Montagu's Harrier nests regularly on the outskirts of Salonta, and the number of the breeding pairs increases considerably in years when vole populations explode.

Lesser Grey Shrike
(Lanius minor)

The EU's largest population lives in Romania. This species inhabits open lowlands and hills. Because of intense farming in Western Europe, the number of invertebrates (its main food source) decreased drastically. Another threat to the species is the cutting of roadside trees, which can provide good nesting places. In Salonta, Lesser Grey Shrikes can be spotted in black locust groves, shrubs and trees near abandoned crofts or sheep farms.

Photo: Tibor Sos

Amphibians

Fire-bellied Toad
(Bombina bombina)

It is a small-sized toad, approximately 5 centimetres long. It uses permanent or temporary water habitats (from waterholes and lakes to low-water streams) in lowlands and hills, up to 500 m altitude. The toads appear in the water in March, and reproduction starts in April when they are active also during the night. Females need vegetation to which they can cling their eggs. They feed on insects, worms, tiny snails. In the cold season, they hibernate under rocks, in dens or galleries made by rodents. Fire-bellied Toads are threatened by degradation of their habitats, particularly by pollutants from agriculture.

Plants

Plume Thistle
(Cirsium brachycephalum)

Considered not long ago an endemic species of the Pannonian Basin, recently it has been also found in Transylvania. It can reach a height of 2 metres. It prefers meadows and salt marshes. Desiccation and tillage of its habitats are its main threats. Due to intensive grazing, Plume Thistles can rarely be seen on the grasslands of Salonta. They may be present on wet patches of older fallow or untilled stripes of salt marshes.

Activity for children

Knowledge & understanding of the natural world
Creativity | Teamwork

Biodiversity is the very essence of life on Earth. It entails not only a great variety of living species (from plants and animals to microorganisms), but also the complex relationships between them and the environment they inhabit. If a species disappears or a habitat deteriorates, other species that live in the same environment will be affected, too.

- Create a puzzle of a natural or semi-natural - land or water - ecosystem. You can start with a drawing or a collage. Use numbers to mark the species and write their name in the key of your artwork.

Ilustration: Szabolcs Kókay

Bygone Treasures Hidden in the *Puszta*

During this route, you will find out about the historic landscapes and human settlements which either no longer exist or had been transformed so dramatically that nowadays they are barely perceptible. Still, these appear on old maps, which is why we invite you to treat them as treasures waiting to be discovered.

Itinerary:

- start/finish: Great Bustard Nest visitor centre
- via: water treatment plant
- means of transport: on foot, by bicycle
- distance: about 12 km
- duration: about 4hrs10′(on foot) / 1h50′ (by bicycle)

Highlights and points of interest:

a. **Marshes, grasslands and forests**
b. **Earth mounds - the monuments of the *puszta***
c. **The canal system and landscape transformation**
d. **Crofting life**
e. **Pusztas - the estates of Salonta**
f. **Herders, fighters, outlaws (betyárs)**

a. Marshes, grasslands and forests

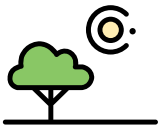
Let us imagine a lush landscape shaped by water - floodplains, marshes, oxbow wetlands, streams separating from their mainstem and, after a meandrous course, flowing back into their river - teeming with wildlife (insects, fish, amphibians, reptiles and water birds).

The natural landscape of Salonta, beginning of the 19th century (reconstruction). Illustration: Márton Zsoldos

Map of the Themed Routes

Trail 1:
The Realm of the Great Bustard*

Trail 2:
Natural Riches of the Steppe*



**You may combine Trails 1 & 2 to make a circular route.*

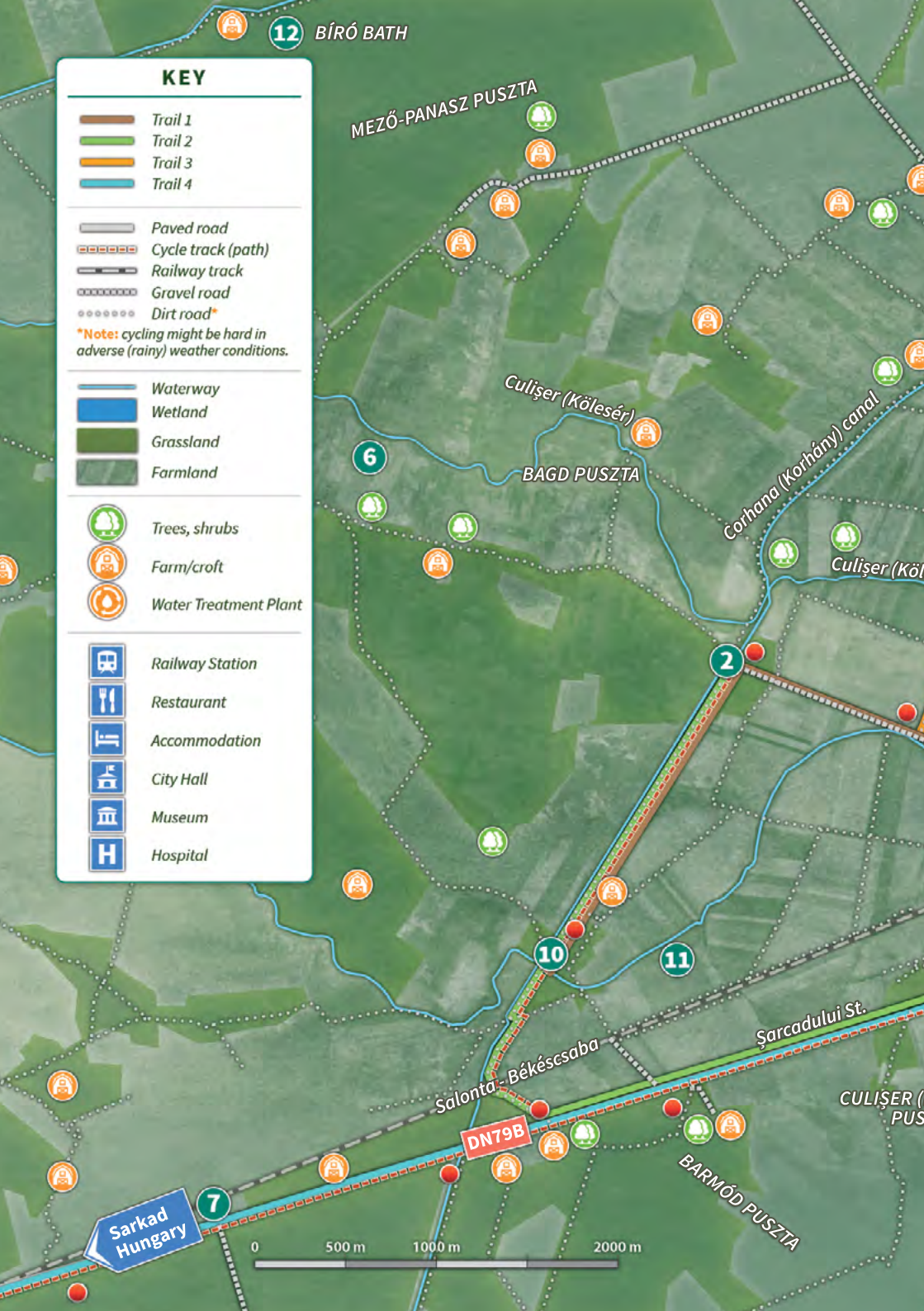
Trail 3:
Bygone Treasures Hidden in the Puszta

Trail 4:
In Two Countries on Two Wheels: Salonta-Békéscsaba

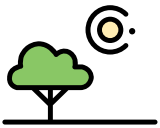
Discover the richness of the puszta in Salonta!

How to make sure you don't get lost: download the track and follow the trail on your phone (you can open it with GPX Viewer or a similar app).

Details: **www.dropia.eu**


KEY
Trail 1
Trail 2
Trail 3
Trail 4
Paved road
Cycle track (path)
Railway track
Gravel road
Dirt road*
*Note: cycling might be hard in adverse (rainy) weather conditions.
Waterway
Wetland
Grassland
Farmland
Trees, shrubs
Farm/croft
Water Treatment Plant
Railway Station
Restaurant
Accommodation
City Hall
Museum
Hospital
12
BÍRÓ BATH
MEZŐ-PANASZ PUSZTA
Culișer (Kölesér)
6
BAGD PUSZTA
Corhana (Korhány) canal
Culișer (Köl
2
10
11
Șarcadului St.
Salonta - Békéscsaba
DN79B
CULIȘER (
PUS
BARMÓD PUSZTA
7
Sarkad
Hungary
0
500 m
1000 m
2000 m


POINTS OF INTEREST
1 Great Bustard Nest Visitor Centre
2 observation tower
3 Reed Pond
4 Trupului Mound (Testhalom)
5 Movila Mound (Halom domb)
6 Bagd Mound
7 Black Sheep Tavern (Fekete bárány) (demolished after 1920)
8 Kajla Tavern (demolished in the 1950s)
9 former oxbow wetland (19th c.)
10 pillar of underground power line
11 possible site of Culişer (Kölesér) fortress, destroyed in the 16th c.
12 baths (first half of the 20th c.)
information board
Corhana (Korhány) canal
Ghestelului St.
Oradea - Arad
CFR Railway Station
Str. Republicii
Salonta
Salonta City Hospital
Mădăras Oradea
E671
M. Kogălniceanu St.
Regele Ferdinand St.
Avram Iancu St.
Salonta City Hall
János Arany Museum
Museum of the Romanian Peasant
DJ795
Tulca Tinca
CUIBUL DROPIEI
TÚZOK FÉSZEK
RÉPÁS-KESZI PUSZTA
NAGYVÁSÁRI AND KISVÁSÁRI PUSZTAS
DN79
Ciumeghiu Arad
N



Map of the Themed Routes in the Realm of the Great Bustards in Salonta | Oradea, 2023

Data source: Google © 2023 CNES / Airbus | © Maxar Technologies | © Airbus

All data have been carefully inserted, yet we do not claim and cannot guarantee that these are unflawed. It was not possible to show all the roads, landmarks and points of interest on this map scale.

That is the image we get from the historical documents and witness accounts from those who survived the Mongol (1241) and Ottoman (16th and 17th century) invasions. Culișer *(Köles-ér)* and Ghepeș *(Gyepes)* streams separated from the Crișul Negru *(Fekete Körös)* river and, through their 100 km watercourse, formed pools, mashlands and islands before flowing back into their mainstem.

The earliest farmsteads of this area had very modest dwellings, which were established on islands and cleared land, at about 3-5 or even 10 km far from one another. There were endless riparian woodlands - oak-beech forests along the course of the Crișul Negru *(Fekete-Körös)* river up until the second half of the 18th century.

Activities for children

Knowledge & understanding of the natural world
Creativity | Teamwork

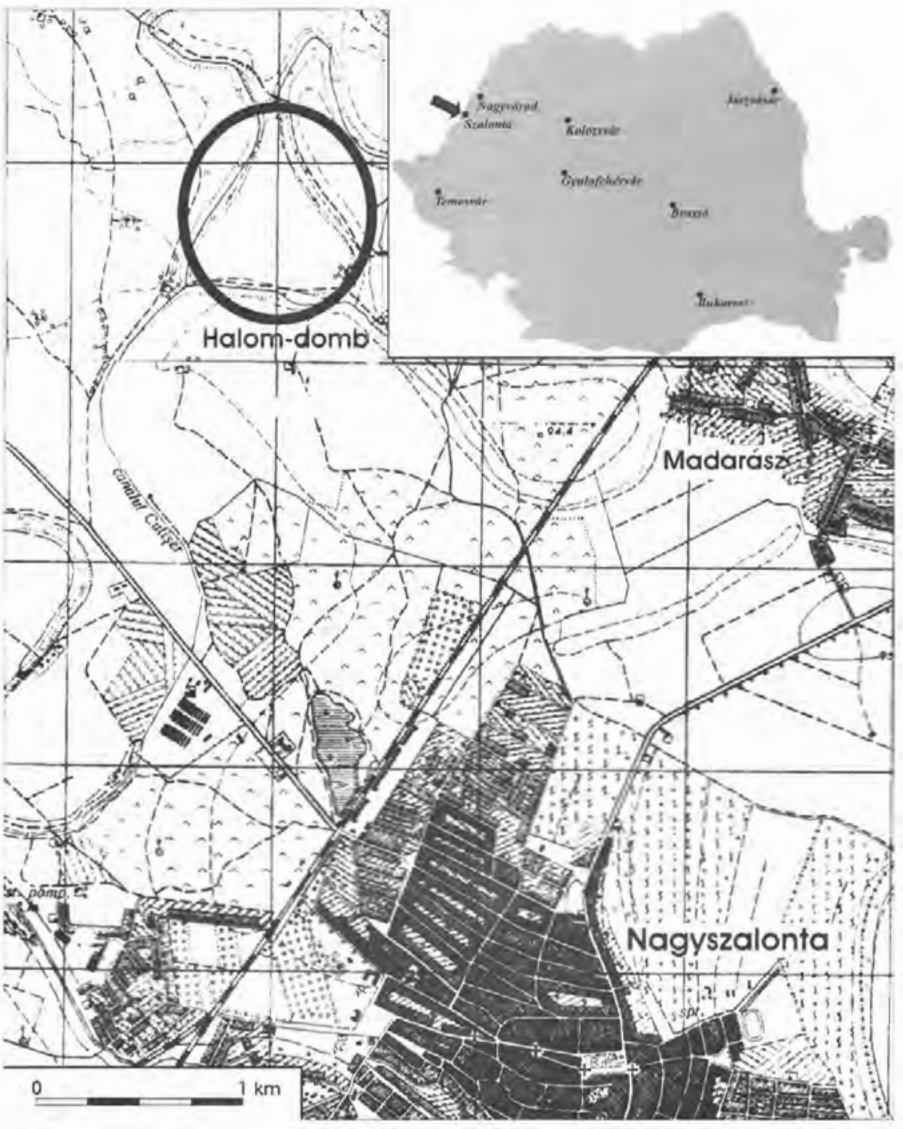
1. Create an illustration of what you believe the natural landscape of Salonta looked like, based on the description in this chapter and the map on page 27. Choose a spot on the map and start by drawing all the surrounding landmarks - streams, marshes, forests, grasslands and roads. Continue with other elements that have also been mentioned in the previous paragraphs. Don't forget the animals! Have you finished? Congratulations, you have just created your own version of a 19th-century landscape of Salonta reconstruction illustration.
2. *For the children from Salonta:* ask for help from your parents or teachers and look up the place you've chosen on the map. Frame a photo with the current landscape as you're holding up the illustration to the centre of the picture. Don't forget to post it on Facebook or Instagram with #SalontaMea (#MySalonta).

b. Earth mounds - the monuments of the *puszta*

Earth mounds are natural or artificial heaped piles of earth, usually found in lowlands. It is thought that they originated in alluvial deposits, which early humans started to use as burial mounds *(tumuli)*, boundary markers, refuges during seasonal floods, or astronomical observation sites. According to popular belief, prehistoric humans performed various rituals around these mounds - astronomical readings, healings, soothsaying, or even burials, as from these elevated grounds, the dead heroes could watch over the living. Archaeological finds show that some earth mounds date back to the Neolithic and had been used as settlements and burial grounds.

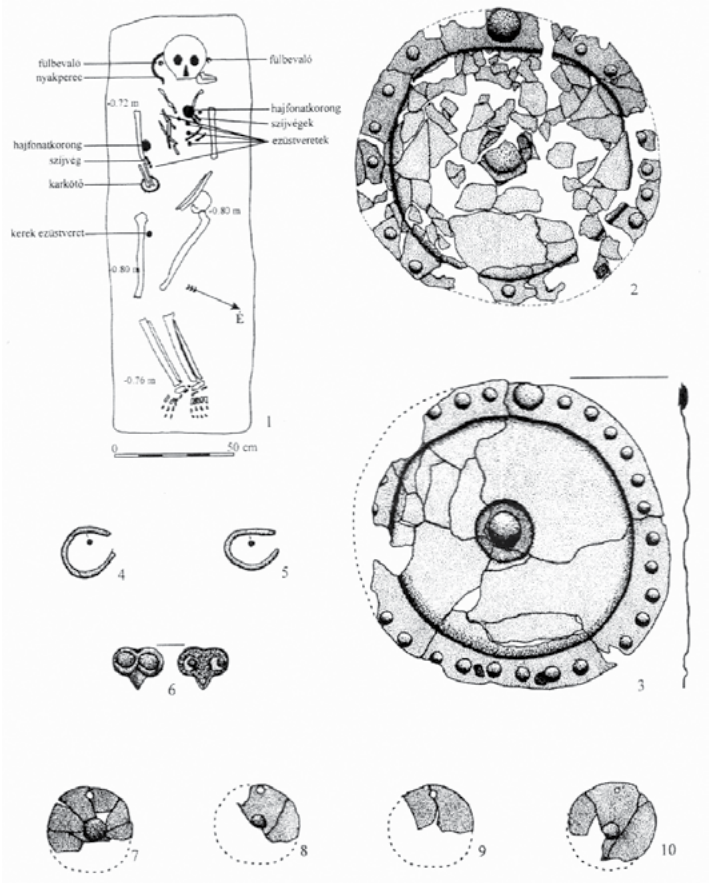
Their majority, however, remains undocumented. Sadly, human presence over the years hasn't been favourable either because of tomb raiders or farmers who flattened the original shape of these mounds with motorised vehicles and converted them into croplands.

Earth mounds can be differentiated according to the purposes they served. The oldest mounds were located near streams or rivers - these were burial grounds or settlements. Boundary or look-out mounds date from Medieval or modern times. These were frequently aligned with one another to enable the use of alarm, fire or smoke signals.



Movila Mound (Halom domb) / © Attila Lakatos

In 1962, on the so-called Movila Mound *(Halom domb)* an Eneolithic (transition period between the Stone Age and the Bronze Age) settlement had been discovered, belonging to the Tiszapolgár culture (3300–3100 BC). At another level of the same site, two early Medieval (10th-century - Magyar conquest period) graves have been unearthed belonging to a man and a woman. The woman was buried with silver and golden bronze jewels - earrings, bracelets, hair and clothes ornaments (e.g. a bird head adornment), suggesting high status. The man, probably of a similar rank, had on each side of his legs the remains of a horse - bones and skull - possibly sacrificed. The archaeological materials also include a bronze necklace, a bronze ring, arrowheads and sticks from a quiver and horse stirrups - all made of iron.



The archaeological materials of Movila Mound (Halom domb) / © Attila Lakatos

Activities for children

Creative thinking

1. Get some inspiration from the illustrations of the archaeological materials of Trupului Mound *(Testhalom)** and Movila Mound *(Halom domb)*, and sketch your version of jewellery, clothes or pottery based on the period you find most inspiring. Do mention the period you chose (Neolithic, Bronze Age or Early Middle Age).

Knowledge & Understanding of the World | Teamwork

2. Complete *Trail 3: Bygone Treasures Hidden in the Puszta*, then make a timeline of the archaeological discoveries in Salonta throughout the years.

3. Have a look at the animal bone inventory of *Testhalom**, and make a list of the animals whose bones future archaeologists could identify in the area where you live. Try to separate domestic from wild animals. Go on trips with your classmates, parents or teachers, pay attention to wildlife, and look up the species that live in your area. Visit the closest museum. What do you think will be the artefacts of our times that future archaeologists will find? What will these objects tell them about us? Write down everything on an inventory and observation sheet.

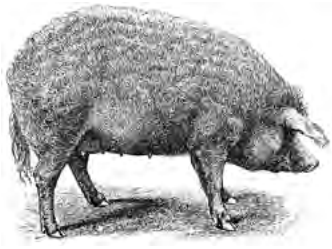
**You can find more details about Trupului Mound (Testhalom) on information board no. 3 (Ghestului street area) on Trail 3: Bygone Treasures Hidden in the Puszta.*

C. River regulation works and landscape transformation

Watercourses were constantly changing the riverbeds, and seasonal flooding created rich wetlands (marshes and swamps), teeming with wildlife. Every year, snowmelt and heavy rains in the mountains and hills generated runoffs and occasional flooding in the lowlands.

Records from 1816 reveal that 300 houses in Salonta were destroyed by the flood, and the local population suffered from famine as their farmlands were covered by water and turned into marshes.

According to the *Geographical Dictionary of Hungary*, printed in 1851, there were 10,300 inhabitants in Salonta. Despite having vast fields, they also needed to rent land (*puszta*) from local landlords to provide for their communities. Locals raised cattle, sheep, pigs, and honeybees, but they also grew watermelon which most likely was brought to Salonta by the Ottomans.



Salonta pig / Source: www.arcanum.hu

Did you know

A new breed of domestic pig was developed in Salonta, which in the 19th century slowly disappeared as Mangalitsa became more and more popular. In Salonta, pigs were raised in swamp oak forests and on floodplains.

The large-scale river regulation works and the construction of drainage ditches that began at the turn of the 19th century were meant to prevent future risks of flooding, but have also brought unimaginable changes to the surrounding landscape.

The area of Salonta - Second Military Survey of the Habsburg Empire (1819-1869). Source: https://mapire.eu/

d. Crofting life

> ***Motto:*** *When [János] Arany* lived his childhood happily, the marshlands that Salonta is part of, would accurately hold the name 'mashy field' (Sárrét in Hungarian). Still, winding, shallow waters, an abundance of meadows, pastures, wild waters, a few patches of forests or glades, and, within this landscape, animals in their millions - and among them - humans - as many as nature could sustain.*
>
> ***Károly Viski – The People of Arany (sketches of ethnographical objects)***

János Arany, lithography by Miklós Barabás (1848), Miklós Barabás / Wikimedia Commons

****János Arany** (1817–1882) was a Hungarian poet and writer born in Salonta in the 19th century, when it was part of the Hungarian Kingdom. He was also a journalist, translator, professor, member and secretary of the Hungarian Science Academy.*

According to the *Dictionary of Hungarian Ethnology,* the croft (*tanya* in Hungarian) was a permanent peasant farmstead, scattered typically on the outskirts of lowland towns and villages, which usually contained a dwelling and some additional compounds. In the Hungarian lowlands, crofts developed and became far and wide starting with the 18th century, as the peasants were finally granted land use and property rights. Crofts were typically widespread (in Hungary and Western Romania) until the reform of agriculture and land nationalisation, when smallholdings were engulfed by large, collective agricultural plots.

Traditional costumes from Salonta, Bihar county, 19th-20th century. Watercolour by Arthur Heyer / Source: OSZK MEK

Did you know

In the time of János Arany, men - landed gentry and peasantry alike - wore three-fingers-wide brim hats, decorated with European Feather Grass. Earlier, when the wetlands of Salonta were rich in biodiversity, they wore heron and crane feathers attached to their hats. Only the herdsmen kept their traditional wide-brimmed hats.

The locals were mainly subsistence farmers. They grew grapes, fruits, sugar beet, poppies, tobacco, sorghum. Agricultural mechanisation enhanced the use of natural fertilisers and crop rotation. Cereal grains were each cultivated on different plots: wheat, maize, oat, millet; fodder: lucerne, clover and oilseed rape. After the union of Transylvania, Banat and Crișana with the Kingdom of Romania in 1918 and the Land Reform of 1921, the large estates had been highly fragmented, resulting in multiple ownership. For instance, a pasture near Salonta, *Péterháza Puszta*, was distributed among Romanian settlers, who came from other towns and villages of Bihor county. This neighbourhood is known until this day as the 'Colony'.

Did you know

Even though the school was mandatory, in 1905, out of 2,902 pupils registered in Salonta, only 1,942 attended school. The poor attendance rate was due to the high number of children who lived on the remote farmsteads (crofts), far from the town schools. Henceforth, the same year two schools were built on the outskirts of Salonta to educate the children of the crofting families.

*Shepherd in Hortobágy in a traditionally embroidered coat (Hungary, 1908) / Source: Fortepan / Magyar Földrajzi Múzeum / Erdélyi Mór cége**

*Women crofters with children (Hungary, 1915) / Source: Fortepan / Melinda Ongrádi**

Thus, ethnic Romanians adjoined a population that until the 20th century, was mainly ethnic Hungarian. The newly fixed border with Hungary - 14 km from Salonta - not only divided land and private property, but also stopped the free movement of goods and people.

As a result of the communist collectivisation in Romania (1949-1962), the crofting lifestyle began to disappear in Salonta. The large, agricultural estate holdings incorporated the land of the small-scale farmers. At the turn of the 20th century, there were 430 traditional farmsteads near Salonta, but after the nationalisation only about 15 were left, which had been highly reorganised to serve the purposes of the communist co-ops.

**Illustrative image*

Activities for children

Creative thinking | Teamwork

1. Choose a farmstead on the map. Imagine that you are a woman, a man or a child who lives there. You may work in groups - describe a day for each one of them.
2. *For the children from Salonta:* Find out more information about the crofts. Ask your grandparents and other elderly people who may have lived in those times. Write down their stories and personal accounts. Ask for photographs as well.

Creative thinking | Artwork

3. Design a sketch, a map or an illustration with the main elements of a croft.

e. *Pusztas* - the estates of Salonta

From a geographic and ethnographic perspective, the *puszta* entails a relatively vast area used for raising domesticated animals. As in other parts of Europe, these areas started to emerge in the 13th and 14th centuries and were kept until the 18th century, when taxes soared, epidemics and wars broke out, and economic changes occurred.

The estates of Salonta

By the end of the 16th century, 22 human settlements in the region had been decimated by the Ottomans. Those who survived the attacks took refuge in the surrounding forests, marshlands and the safer villages. As a consequence, from this time on, these depopulated settlements are mentioned as lands or estates (in Lat. *praedium*) in the historical documents, and the word *puszta* (in Hungarian means 'barren, bare') is attached to their original name: Andacs, Atyás, Bagd, Barmód, Erdöpatai, Pata, Mező-Panasz, Mezőgyarak, Kisvásári, Nagyvásári, Pata, Répás-Keszi, Simon-Kerék, Szil, Vimér etc.

A 1552 portal* survey shows records of 384 estate portals (at this time, each portal also included four serfs), shared among local landlords, as were the Toldi brothers, and especially the Catholic Diocese of Oradea.

***portal** - the taxable value that an estate had to pay, assessed on the portal or entrance that a cart loaded with cereal crops could pass through (1342). A portal subsumed four serfs or 12 thralls (peasant bound in servitude to a landowner with little land or no land at all, who lacked the serfs' judicial regime) (1609). After that, a portal meant four carts with one pulling animal and one serf or 16 thralls[1].

[1] *http://mek.oszk.hu/02100/02115/html/4-1027.html*

Salonta/Szalonta, on the other hand, until the 16th century, was a small settlement of approximately 300 people, where the Toldis, a local noble family, owned vast estates. In 1606, as a reward for their service, Bocskai István, the prince of Transylvania, donated the town of Culișer/Kölesér to 300 brave local *hajdúk**, led by Gergely Jothe (who was about to become the captain of Salonta for over fifty years). With their hometown in ruins, the soldiers chose Salonta, which seemed a safer place to settle as it was farther from the main road (between Gyula and Oradea). The *hajdúk* set up their military base in Salonta - built a fortress and, in five decades, Salonta turned into a booming town.

Hajdú from Veszprém, Hungary (17th-century engraving) / Source: Dictionary of Hungarian Ethnology

***hajdú:** 1. (*'hajdú'* in Hungarian) mercenary foot-soldier in the 17th-century Hungarian liberation army / 2. herdsman (*'hajtó'* in Hungarian).

Social category related to livestock raising. Initially, they were herdsmen and hunters.[2] They were allowed to carry arms as they drove massive herds of cattle to Vienna and other large cities of the Austrian Empire. In 1541, Buda (nowadays Budapest) was conquered by the Ottomans, hence the Budin Eyalet was established. Subsequently, the commercial relations between Partium and the Austrian market were cut off, which left the *hajdúk* out of work. In the 16th century, the Transylvanian princes emancipated the *hajdúk* granting them rights and land in return for their military support.

Activities for children

Creative thinking

1. If you could be a 17th-century *hajdú*, herdsman, serf, landlord, captain, priest or barmaid from Salonta what would you choose and why?
2. Look at the historical map on page 27. On which estate (*puszta*) are the most numerous crofts or farmsteads? In your opinion, what influenced the number of farmsteads on a *puszta*?

[2]*Móczár J., 1906. Nagyszalonta 1606-1906, Nagyszalonta*

Herders, fighters, outlaws (betyárs)

Pastoralism is one of the oldest occupations of humankind. Ever since the 1st century BC, nomadic tribes occupied vast territories of the Eurasian steppe: Scythians, Sarmatians, Huns, Avars, Mongols. As we refer to the Pannonian Basin, the Mongol invasion of 1241 devastated areas and massacred populations to such an extent that, in post-15th-century historical documents, these are called deserted lands - *puszta*.

In the aftermath of several centuries of invasions and battles, the surviving population started to rebuild their lives in the depopulated settlements. They rented the neighbouring pusztas, and soon they managed to set up the base of an extensive livestock farming system. During the warmer months, they raised their animals on the remote pasturelands, and during the cold season in the enclosures closer to the herders' dwellings.

From the second half of the 18th century, these seasonal farmsteads gradually developed into permanent dwellings (crofts). First, the herdsmen brought the livestock closer to their shabby homes. Then, as soon as the herders' families started to join them, the homesteads grew into proper farmsteads with houses, barns, stables and vegetable gardens, which would provide for the families' basic needs.

But who were these herders? Cowmen were looking after the cattle, wranglers were herding horses, swineherds pigs, shepherds sheep, and older children were watching over the flocks of geese.

To us, the well sweep is one of the most emblematic images of the *puszta*, but in the past it had a crucial role in providing water for the animals. On the maps of the last two centuries, crofts and well sweeps are both located. To give only one example - in Barmod Puszta there were dozens of them, and each had its own name: Sheep Croft, Sandhole, Spotted Herd Well etc.

*Herdsmen (Hungary, 1964). Source: Fortepan / Magyar Rendőr**

**Illustrative image*

Did you know

Well sweeps could be used to inform herders when it was time to take the animals to drink or when they were expected for lunch. The message would be read depending on the position of the sweep (the horizontal pole). Outlaws (betyárs) who were hiding from gendarmes in the puszta could also be warned in the same way.

*Hungarian Grey cattle in Hortobágy (Hungary, 1941) / Source: Fortepan / Fortepan**

Old tavern of Kondoros (Hungary, 1848) / Source: Hungarian Museum of Trade and Tourism/Europeana

Did you know

Along the main roads, at one or half-day walking distance from the bigger towns, puszta taverns (or inns) were established. As the local administration could seldom reach these remote locations, they became increasingly popular among bandits (betyárs). Therefore, many puszta taverns were renowned for being associated with betyárs who were immortalised in stirring folk ballads and local legends.

*Illustrative image

In Two Countries on Two Wheels: Salonta-Békéscsaba

Salonta – Gyula – Békéscsaba bicycle trail goes along the main road between the three cities, borders or crosses five Natura 2000 protected areas: one site in Romania (Salonta) and four in Hungary: Salt Steppes of Dél-Bihar, Gyepes Canal, Körösközi Forests and Fekete-, Fehér- and Kettős-Körös.

Itinerary:

- start: *Great Bustard Nest* visitor centre, Salonta
- via: Gyula
- finish: Békéscsaba (city centre)

- means of transport: by bicycle
- distance: over 54 km
- duration(one way): about 3hrs20' (by bicycle)

Highlights and points of interest:

a. **Romania: Salonta Natura 2000 Site**

b. **Hungary: Salt Steppes of Dél-Bihar, Gyepes Canal, Körösközi Forests and Fekete-, Fehér- and Kettős-Körös Natura 2000 Sites.**

We aim to present in this guide only Salonta Natura 2000 Site. More details about the Hungarian sites are available on the information board along the route, and also on the website of Körös-Maros National Park, their custodian (administrator): www.kmnp.hu.

Source: Körös-Maros National Park Directorate / Zoltán Sallai

Salonta Natura 2000 Site

It has been designated as a Site of Community Importance for the conservation of the European Ground Squirrel and the **Pannonic salt steppes and salt marshes habitat (1530)* - one of the 71 priority habitats within the European Community (with 233 habitats in total) listed in Annex I of the Habitats Directive.

European Ground Squirrels / Photos: Anna Dénes

***Pannonic salt steppes and salt marshes habitat (1530)**

Historical background

Like in other areas of the Pannonian biogeographical region, this type of habitat, with mainly natural origins, has been heavily influenced by animal grazing and the man-made, 19th-century large-scale river regulation and drainage projects.

Saline soils occurred within the Carpathian Basin near riverbanks and in natural depressions. They formed under the influence of groundwater level rising towards the surface, which also moved upwards salt and other mineral deposits coming from the bottom of the Pannonian Sea accumulated over 10 million years ago.

Approximate extent of Pannonian Sea over 10 mil. years ago / Data source: Qorilla/Wikimedia

Besides these primary saline soils resulting from long natural processes, secondary saline soils derived from hydro-technical works (construction of embankments, canals) at the end of the 19th century. Hence, the ancient wetlands had been drained, the groundwater level lowered, the salt content in these soils increased, and these newly formed grasslands were then used as pastures and meadows. Most certainly, the soils which were not saline were the first ones to be tilled and used for agriculture, thus remaining very few as grasslands.

Nowadays

As a result of these anthropogenic interventions, the extent and quality of these habitats have declined dramatically. Therefore, at the EU level, protected areas of Community importance ought to be designated for the conservation of Pannonic salt steppes and salt marshes.

In spring, these grasslands are regularly flooded and become inland salt marshes. In summer, when they dry out, they leave white salt crystals on the topsoil.

Salty soils are very poor in humus and nitrogen. Therefore, they provide low agricultural productivity. There is, however, a specialised category of plants - *halophytes* - adapted to the Pannonian climate and the high concentration of salt in the soil.

Sea Aster (Aster tripolium) / Photo: Anna Dénes

Siberian Statice (Limonium gmelinii) / Photo: Anna Dénes

Did you know

Halophytes make up the vegetation cover of saline soils and are present in various plant communities, which can also include medicinal plants, such as Chamomile (Matricaria chamomilla).

Overgrazing, tillage and conversion of grasslands into croplands, vegetation fires are all threatening halophytic vegetation. Therefore, for the conservation of these threatened habitats, it is necessary to apply sustainable management measures, such as grazing regulation and extensive grazing using native breeds of domestic animals.

Activities for children

Knowledge & understanding of the natural world | Teamwork

Ilustration: Szabolcs Kókay

1. Visit two types of habitats: one natural or semi-natural (forest, grassland, stream of water or a pond) and one man-made (orchard, garden, cereal plot, fishery or a fish tank). Please choose the same environment for both cases - either terrestrial or aquatic. Observe and record as many living organisms as possible in both habitats: plants, fungi and animals (including invertebrates). Note also the size of the visited/surveyed area. Document both sites with photographs or illustrations.
2. On a sheet of paper, compare the two types of habitats. Write down the name, type, size of the examined area and the species that you observed. Discuss the role and position of humans in both examples.

Conclusion

The realm of the Great Bustard near Salonta bears a history of several millennia. Those elements that today are no longer part of its natural and cultural heritage show the importance and the necessity to protect the existing values.

A more eco-friendly lifestyle, environmental education, supporting local enterprises and those who are on the frontline of nature conservation and cultural heritage preservation, nature-friendly farming practices, actions and initiatives that aim for keeping crafts and traditions alive, promoting cultural values - all contribute to building local pride and a common identity based on fundamental values.

Ilustration: Szabolcs Kókay

We thank you for your visit and hope that you had a good time. If you wish to experience the *puszta* more intensely, we encourage you to retake the journey in other seasons, too. We await your return to the realm of the Great Bustards!

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Special thanks to Tudor Duică, Gruia Fazecaș, Krisztina Havadtői and Attila Lakatos for their valuable expertise and support.

Project title: ROHU-14 **"Conservation, protection and promotion of the natural values from the Salonta-Békéscsaba crossborder area - The Nature Corner"**

Material editor: Milvus Transilvania Vest Association

Publishing date: 06/2023

This project is funded by the European Union under the European Regional Development Fund and co-financed by Romania and Hungary.

Text written by (including the outdoor information boards): Laura Turdean
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English translation: Laura Turdean
Cover illustrations: Szabolcs Kókay: *Great Bustards near Salonta / Male Bustard*
Images: "Milvus Group" Association (except for those whose author/source has been mentioned)
Graphic design: Imago S.R.L.

ISBN 978-973-0-38351-5

www.dropia.eu