

INVESTIGATION - LEARNING MODULE

Nature conservation and landscape protection



“Szigetköz” nature park and water landscape just outside the city of Győr, with a very rich flora and fauna: a unique and valuable natural area – that certainly needs protection.

www.orszagiaro.net/szigetkoz

Introduction

We are lucky in Hungary, Győr, since we are part of the unique natural area called ‘Szigetköz’, where we can definitely experience and present that the protection of nature, environment and landscape are closely related to each other. The landscape bounded by the Danube (Old Danube) and the Mosoni Danube is basically the biggest island of Hungary, with an area of 375 km². There are 33 settlements in the region, 2 of them are cities: Győr and Mosonmagyaróvár. The area is an extremely important wet habitat, where due to the unique geomorphological, climatic, soil and water balance conditions especially diverse biotopes evolved, giving an opportunity for a rich and varied wildlife.

Unfortunately, the number and extent of such habitats have rapidly decreased during the last decades, therefore the conservation as well as rehabilitation of the current areas is extremely important. Humans have settled early in areas rich in water and wildlife, which offered livelihood. However, the frequent flooding, constant changing of the river beds and shorelines meant a permanent threat. Piles of stones and embankments around the settlements reduced the destruction of inundations, however these did not provide security against bigger floods. During history, the following years brought the greatest floods: 1242, 1426, 1760, 1809, 1845, 1850, 1862, 1883, 1954, 2002 and the last one in 2013.

The area of ‘Szigetköz’ has been rebuilt, the dams have been strengthened by state aids and social efforts, thus disappearing the traces of devastating floods. The branch system of



'Szigetköz' is unique in Hungary and Europe, however the dam-system escorting the river branches of the Danube became an essential part of the landscape for centuries now.

In order to ensure the proper water level and water circulation of the Szigetköz tributary system (fully known as the Szigetközi Floodplain Water Replacement System), water professionals have placed numerous objects in the floodplain in recent decades. Some of these are invisible to the human eye, only from the changed behaviour of the water can we conclude that "something is there". The primary function of the structures of the water replacement system is to maintain the functionality and to ensure appropriate water conditions.

The above is a great example of how water management and river regulation can affect the connection to water surfaces within a micro-region. The elements of river regulation are spread over a large area, but they are still spectacular, landscape-defining elements. In this module, students will have the opportunity to understand how human intervention due to flood protection affects the shaping of landscapes. They can get an insight into how engineering works, how man-made and constructed works enable everyday life in an area endangered by rivers, and how it can be compatible with nature conservation.

The investigation can be implemented by following these steps:

1) **Planning**

In Planning, students and teachers design their investigation activities on landscape, for instance they decide what to do, how to do it, when to do it, where to do it.

According to the topic or issue chosen for investigation, the class will need to identify what kind of actions to undertake in terms of literature review, hands-on research activities, and it will identify the most suitable methods and list the needed materials to gather the necessary information.

Expert stakeholders from local research centres, universities and local authorities can be contacted as a valuable opportunity to access up-to-date knowledge and to make use of scientific equipment.

2) **Performing**

In Performing the investigation, the class implements the devised plan, and follows the steps of action along the project timeline. Data collection can regard environmental data during a field trip, a survey on the perceptions and views of the local community, or investigations on historical and artistic documents regarding the landscape of interest. Specific materials, equipment and worksheets can be used, allowing students to approach methods and software of common use in research. Experiments can be performed to understand the reason for certain phenomena.

3) **Data analysis and interpretation**

In Data analysis and interpretation, the collected data are analysed and interpreted in order to understand the extent of the environmental issue (generating new knowledge) and the relations between the factors and variables that are involved in the investigation.



Objective of the Investigation

To learn about:

- ✓ The different aspects of nature conservation and landscape protection
- ✓ Tools, techniques and resources for nature conservation and flood control
- ✓ NGOs, volunteers and governmental organisations who deal with landscape protection in a certain area

To be able to:

- ✓ observe and evaluate effects of nature conservation and landscape protection
- ✓ plan a scientific experiment/project
- ✓ debate on a divisive topic, using pros and cons

HOW TO INVESTIGATE

When: After the Conceptualization Phase (Step 2)

Time estimated: 3-4 teaching sessions

Where the activity takes place: in the classroom and outdoor (field visits)

Method (how the students have to work): group-work

Art activity - in every step of investigation students are invited to produce an artistic product about their investigations: texts, photos, drawing, videos, music or sound, meme (images, videos, piece texts, etc., typically humorous in nature, that is copied and spread rapidly by Internet users, often with slight variations. <https://en.wikipedia.org/wiki/Meme>), patchwork/collage, theatrical performances.

In the classroom, the students are divided in groups and the students could follow the suggestion in the table below.

Planning	After selecting the location for the investigation activities, focus on the followings: <ul style="list-style-type: none">• Introduction of water management and nature conservation outside the built-up areas. (Main aims, historical aspects, radical changes over time.) Focus on the presentation of unique natural wet habitats, and the main problems/threats. Present, how water management can deal with these problems/threats, and how interventions affect the natural habitat (for example through flood control).• Present the most typical representatives of the biodiversity in the given area. Explain what biodiversity means and how we can protect it. What are the main tools and methods in preserving a natural (wet) habitat?• Present those organisations/NGOs who are dealing with the selected natural area. (Teachers/facilitators can also ask representatives of such organisations to give a presentation on their main activities.) Focus on nature conservation. What are the differences between the
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	nature conservation practices/activities of civil organisations and governmental/state organisations? Who can serve the interests of the area better?
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Performing	<p>After the Planning phase, students are encouraged to perform one or more of the following activities, focusing on the main research question: <i>How can we most effectively preserve our natural water landscapes and how can water management help us with it?</i></p> <ul style="list-style-type: none"> ● Exploring the natural water landscapes/Field trip: Students are encouraged to make photographs during a field visit to the selected natural area. They shall form groups and ask them to photograph as many elements of the biodiversity (flora and fauna) they can in a given time period (for example 30 min). Back in the classroom, ask students to prepare a short presentation of the photos, presenting how rich the wildlife of the landscape is. Remind students why is it important to preserve and maintain the natural habitats. ● Visualizing moods through colours/Visual culture: Students are encouraged to make paintings or drawings by using different colours. This is a great exercise after the field visit. How could students compare or contrast the water landscape in a natural and in a built area, only by using colours? ● Inviting external experts/Interviews and/or debates: Teachers/facilitators shall invite external experts, who can present (1) nature conservation of a specific area (what they do and how they do it) and/or (2) the necessary water management measures of a specific area, which basically serve the interest of the local inhabitants (for example flood control measures). Ask students to prepare their questions in advance, and make small interviews with the representatives of the organisations. ● Plan a nature conservation campaign/event/action: Students shall form groups, and brainstorm about ideas, how to do something for the preservation of the selected water habitat, and how to invite citizens/local inhabitants for a common action. A sample can be found in Worksheet 1 (however, students are encouraged to use their imagination). The ideas can be then presented to NGOs or civil organisations active in the area, and the best ideas can be selected (and also implemented with the help of the experts).
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Data analysis and interpretation	After the data collection, data should be analysed and discussed, in order to highlight the specific relations, and to give answers to the formerly asked research questions. Data analyses can be facilitated by the teachers and/or external experts.
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WORKSHEET 1 – Sample for planning a nature conservation campaign/ event/ action

Name of the event

(try to think of an awareness-raising title that will generate wide interest among people)

Description of the topic:

Give a short but concise description of the current situation: why do we need nature conservation actions in the given area? Why shall we protect the water habitat? How can we do something for the preservation? What are the major threats and problems?

Outline the actions/essence of the event:

What do you plan to do during the campaign/event? List all the elements that you think can contribute to the nature conservation of the area!

Organisational details:

When and how do you plan to implement the above mentioned actions? Who would you like to invite? How long will it take? What will happen? Be as specific as you can – but not too long!

Think about visualizing!

Use your imagination to visualize your ideas, and make your nature conservation idea a successful event. Think of using colours, photos, illustrations, drawings, etc. to reach out to your target audience!

Present your plan to the local NGO!