The Fyris River Walk

Follow the Fyris River from ancient times to the future – an educational walk through time and space along Uppsala's lifeline

Student guide (autumn 2025)

UPPLANDS STIFTELSEN
NATURVÅRD & FRILUFTSLIV

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A sustainable future

We live in a changing world at a time when we are facing new complex problems and the need for change. Now and in the future, we need creative young people who can find solutions to our challenges from different perspectives and who have the courage to implement them.

In 2015, the countries of the world adopted a global agenda for 2030. The Global Goals are the most ambitious agenda for sustainable development that the world's countries have ever adopted and exist to end extreme poverty, reduce inequality and injustice in the world, promote peace and justice, and solve the climate crisis. Through the global goals for sustainable development, this can become a reality (www.globalamalen.se).

It is part of the upper secondary school's educational mission that you, as students, should be able to use your knowledge to formulate, analyse and test assumptions and solve problems both individually and together with others. You should be able to reflect on your experiences, critically examine and evaluate statements and courses of action, and have confidence in your own abilities. This is important so that we can work together for sustainable development around the world.

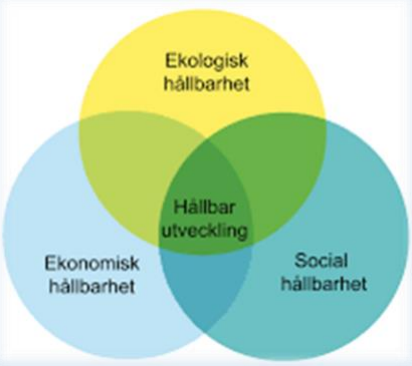
During the Fyris River Walk, you will work with sustainable development in practice by getting to know your city in a new way. We hope that you feel committed to a sustainable future – your participation is valuable!

Sustainable development – using the Earth's resources without harming future generations.

1. **Ecological sustainability** – taking care of the Earth's nature and ecosystems so that they can exist for future generations.

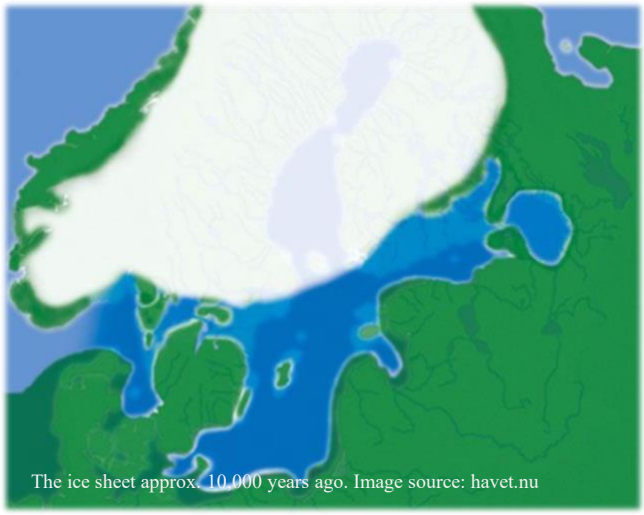
2. **Social sustainability** – when individuals' needs for influence, security and freedom can be met.

3. **Economic sustainability** – economic development that does not have negative consequences for ecological or social sustainability.



Uppsala in time and space

Twenty thousand years ago, Scandinavia was covered by a blanket of ice several kilometres thick. Slowly but surely, the ice age released its grip and the inland ice sheet shrank as the ice melted. Rivers formed under the ice sheet, transporting large quantities of stone and gravel, and the boulder ridge that runs south-north through Uppsala was built up. The edge of the inland ice sheet retreated further and further north, and the landscape was covered by deep water. Small clay particles in the meltwater spread over large areas and formed thick layers of clay.



The ice sheet approx. 10 000 years ago. Image source: havet.nu

When the ice disappeared to the north, the landscape began to rise out of the water, and land uplift began. This was due to both the meltwater from the ice sinking away and the heavy ice cover now being gone. Plants, animals and entire ecosystems were able to establish themselves. The warmer climate also meant that people began to migrate north from more southern latitudes. People came to our part of Sweden around ten thousand years ago. The landscape looked different then, with large areas of Uppland still under water. Geographically speaking, Uppland is therefore a young landscape. Water was important as a means of transport and also as a source of food in the form of fish. Even today, most people on Earth live along coasts, rivers and other waterways.

Uppland is often seen as very flat, but in and around Uppsala there are large differences in elevation, partly due to the boulder ridge. But why did people come to the area we now call Uppsala? Well, there were important resources here! The boulder ridge was used as a road. It was dry and hard, long before asphalt was invented. The height of the ridge provided good visibility over the area. This was important for people to feel safe when travelling. The Fyris River, which runs parallel to the ridge, was also an important transport route. The population in the Uppsala area grew, and several thousand years ago, the community that became the foundation of Uppsala began to take shape. But the water was higher then, both the sea and the Fyris River. It was possible to travel further on the water. That is why the oldest part of Uppsala, Gamla Uppsala, is located further north than our modern city.

The time and society we live in are influenced by historical events and decisions. In the same way, our lives today affect not only our own time but also the Uppsala of future generations. What are the conditions that have created – and continue to create – our society and our city? How will today's decisions affect future generations' ability to live here? In what ways is the city's development linked to the region and our entire planet?

On the Fyris River Walk, you can follow the river "from ancient times to the future" and see how you are part of the present, but also of history and, not least, the future. You can make decisions and influence our common future in a world with limited resources and complex challenges, but also with fantastic opportunities!

The walk

The following text describes the various stations along the Fyris River Walk. The locations of the stations are marked on the map.

1. Uppsala Castle (Practical station)

2. The Pump House (Practical station)

3. Tullgarn Bridge

4. Kungsängsverket

5. Bouleråker (Practical station)

6. Hospital Park

7. Ulleråkers allotment area

8. Övre Föret (Practical station)

9. Ultunaåsen (Practical station)

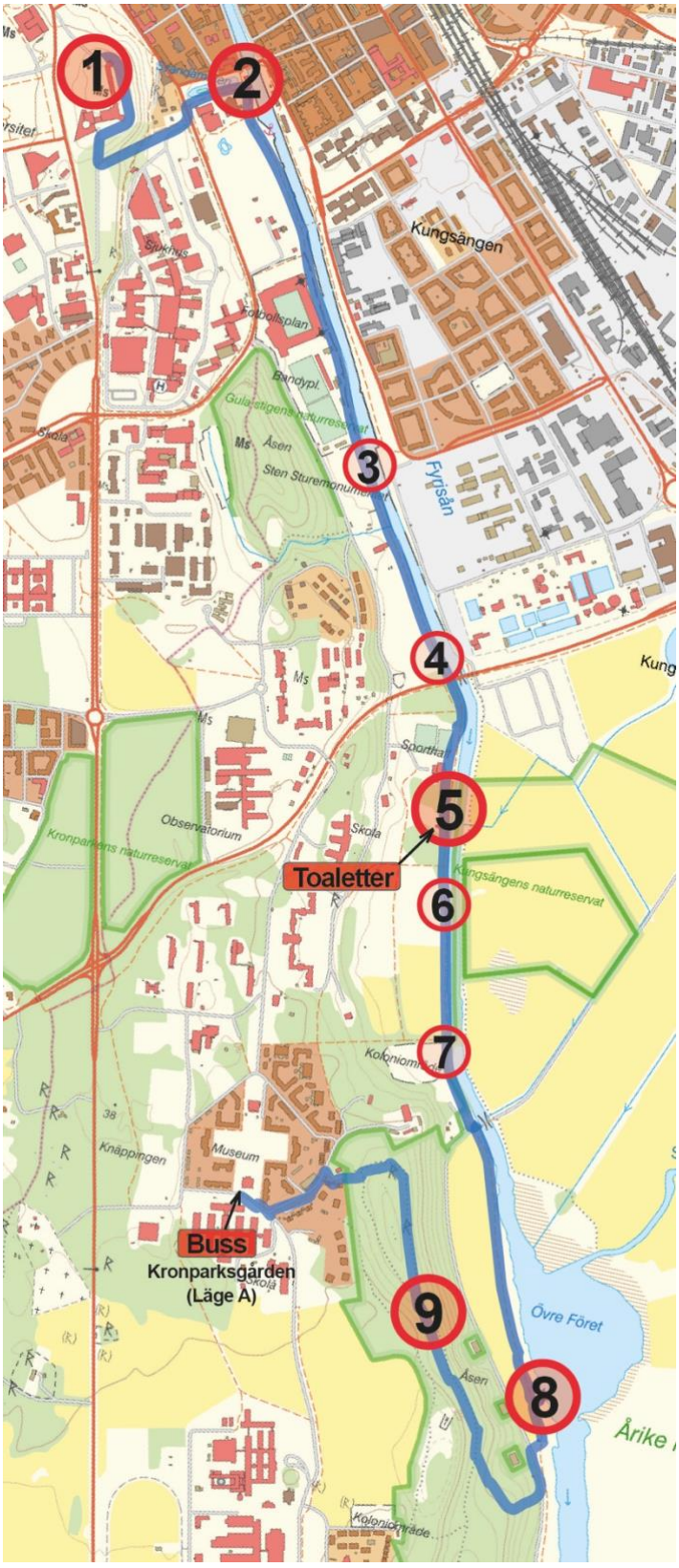


Figure 1. The Fyris River is actually much more than just the river itself. The map shows the Fyris River's catchment area marked in blue. Enormous amounts of rain (and snow) that fall in this area eventually flow into the Fyris River. The water then flows into Lake Mälaren and eventually into the Baltic Sea. Everything in the water, such as nutrients and environmental toxins, is carried along with it. You and everyone else in the city of Uppsala are 'borrowing' water from this part of the water cycle. (Map from lantmateriet.se)

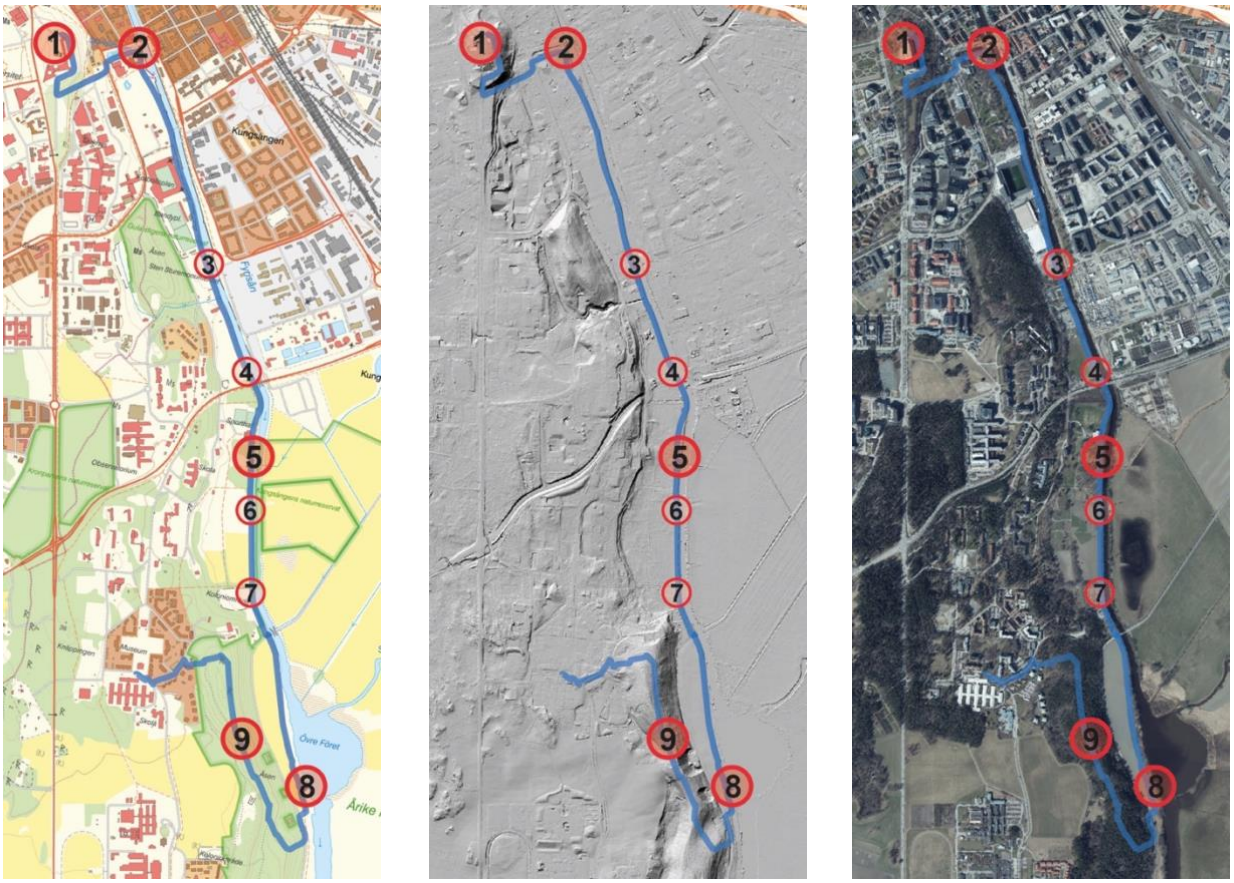


Figure 2. The Fyris River walk gives you the opportunity to experience the city, the landscape and how society affects nature. The three maps (from lantmateriet.se) above show exactly the same area but with different backgrounds. Feel free to compare them during the walk.

The **general map** on the left provides a traditional overview of an area. It is a good "base map" for an area. You can see the city of Uppsala and how the Fyris River flows through the community. You can clearly see different forms of infrastructure in the community (e.g. buildings, roads, railways, bridges).

The grey **terrain map** in the middle shows the topography (elevation structure) of the area with the boulder ridges, the Fyris River and flat areas (wetlands/agricultural land). This is the structure of the landscape left behind by the inland ice sheet. Why do we build our community the way we do? A quick comparison with the general map provides many answers.

Finally, **aerial maps** such as the one on the right (present day) provide an understanding of how we humans use the area in the form of agricultural land and buildings.

1. Uppsala Castle (Practical station with the Uppland Museum)
We will meet at the Gunilla Bell. The Uppland Museum will guide you from Uppsala Castle down to the City Gate.

Uppsala – why a city here?
The Fyris River has been central to the formation of the city of Uppsala. For a long time, the river was navigable far north of present-day Uppsala, to Gamla Uppsala and further upstream. Due to land elevation during the Iron Age, a threshold emerged where the mill (Upplandsmuseet) is located today (around 500 AD). This was the shallowest part of the river, making it possible to wade across. In the Middle Ages, the Fyris River was called the Sala River, but the part south of the city, at the level of the Islandsfallet waterfall, was called the Pål River.

The early roads often ran along the ridges, where the ground was dry and more open. However, the waterways were the most important transport routes, and Uppsala was therefore very well situated for trade. The first dwellings were found on the eastern side of the river (on the same side as Stora Torget), but during the 12th century, a castle was built on Domberget (near the site of the current cathedral), and after this, the western side also developed.

In the mid-17th century, it was decided that Uppsala would become a modern city. This meant that streets and houses were demolished to fit into the new grid pattern. The city became a rectangle measuring 800 x 1200 metres, with straight streets crossing each other at right angles. In 1702, a major fire broke out and almost the entire city burned down in a single night. All that remained of the white castle and the cathedral with its tall spires were smoking ruins.

The university and the church have both been important for the city's growth, but during the 19th century, Uppsala also developed into an industrial city. Between 1850 and 1900, the city's population tripled, from around 7,000 inhabitants to 23,000 at the beginning of the 20th century. In the 1970s, Uppsala became Sweden's fourth largest city in terms of population, which had increased to 100,000. Today, the population is around 170,000 according to Statistics Sweden, and the city is still growing.

Uppsala Castle. Construction of the "Wasaborgen" in Uppsala began in the 1540s, and it looked completely different then than it does today. The castle was built by Gustav Vasa and was intended to serve as a defensive structure with a royal residence in and around the tower. Today, only the bastions remain of the original castle. One of these is the site where the Gunilla Bell stands today.

The Battle of Good Friday. 500 years ago, on Good Friday in 1520, one of Sweden's bloodiest battles took place here in Uppsala. The battle was the last major battle in a long conflict over the royal power in Sweden. On the castle hill, there are several mass graves with skeletons of the fallen soldiers.

The castle toll. Located below the castle. Between 1622 and 1810, Sweden had a toll system that imposed an import tax on goods entering Swedish cities. The duty was levied on all "edible, consumable and perishable goods", i.e. food, handicrafts and merchant goods to be sold in the cities. The intention was to raise money for the crown.

Slottskällan. Slottskällan is Uppsala's old water cure facility with a spring that has been known since the 16th century. The building on the site was erected in the spring of 1859 as a cold water cure facility by Lars Georg Dovertie. Today, the building houses offices.

Svandammen. Svandammen, below the castle, was built as a rudd pond, i.e. a pond for domesticated rudd fish, as early as 1590. The pond has had several names, such as Kungsdammen and Slottsdammen, but has long been known as Svandammen in popular parlance. Swans used to live in the pond, but they are no longer there.

Task during the walk
Take photos with your mobile phone of all the places where the Uppland Museum stops and gives information.

2. The pump house (Practical station with Uppsala water)

The pump house used to supply the city's population with water purified through the Uppsala Ridge. Here you can learn more about the water's journey through the ridge, water purification and what pollutes our water. We will discuss and demonstrate a historical perspective on water supply, explain different drinking water technologies and take a look at our own role in this in the future, the problems we face today and perhaps in the future. We will also carry out a practical water purification experiment.

Task during the walk
Write down a suggestion for how the school could reduce its water consumption or its use of environmentally hazardous chemicals.

3. Tullgarn Bridge

Tullgarnsbron is an important link for the continued development of the southern parts of Uppsala and the expansion of the city's infrastructure. Tullgarnsbron connects residential areas in Kungsängen with the Student Sports Ground, Stadsträdgården and the large workplace Akademiska sjukhuset. It is also an important route for emergency vehicles such as ambulances.

Task during the walk
Write down one positive and one negative effect for the city of Uppsala (or for you personally) of the construction of the Tullgarn Bridge.

4. Kungsängsverket (Uppsala water)

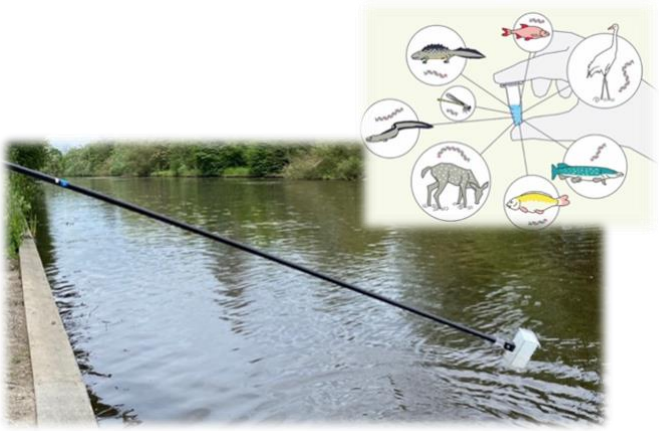
Now head south on the right (west) side of the Fyrisån river. Before you pass under Kungsängsleden, you will see Uppsala's largest sewage treatment plant, Kungsängsverket, as grey buildings on the other side of the water. At Kungsängsverket, all sewage from Uppsala is treated before being discharged into the Fyrisån river. The water is mainly purified of organic material and various nutrients from faeces and toilet paper. However, it is difficult to purify the water of substances such as medicines (leftover medicines should be returned to the pharmacy) and many environmental toxins such as PFAS. Uppsala Water is therefore working on new technology to purify pharmaceutical residues from sewage water.

The treatment plant is currently being expanded as the city grows. You are standing at the point where the water cycle in the city comes full circle, when what we have borrowed is returned. This is where the purified wastewater flows out.

Task during the walk
Can you see where the purified water from the treatment plant comes out? Look carefully!

5. Bouleråker (Practical station with SLU)

Information in the student booklet



At this station, you will learn how researchers at the Swedish University of Agricultural Sciences (SLU) monitor the quality of the water in the Fyris River. For example, they can examine the levels of nutrients and environmental toxins. They can also find out which plants and animals live in the Fyris River by examining DNA residues in the water. Which fish species are declining this year? Is COVID-19 currently on the rise in Uppsala? What pesticides are leaking from plots and fields around the river? Sweden is required to take samples of water from rivers and watercourses every year as part of its national environmental monitoring programme. The class will help the researchers collect water samples using a special invention from Uppsala called the 'Fyrishämtaren'.

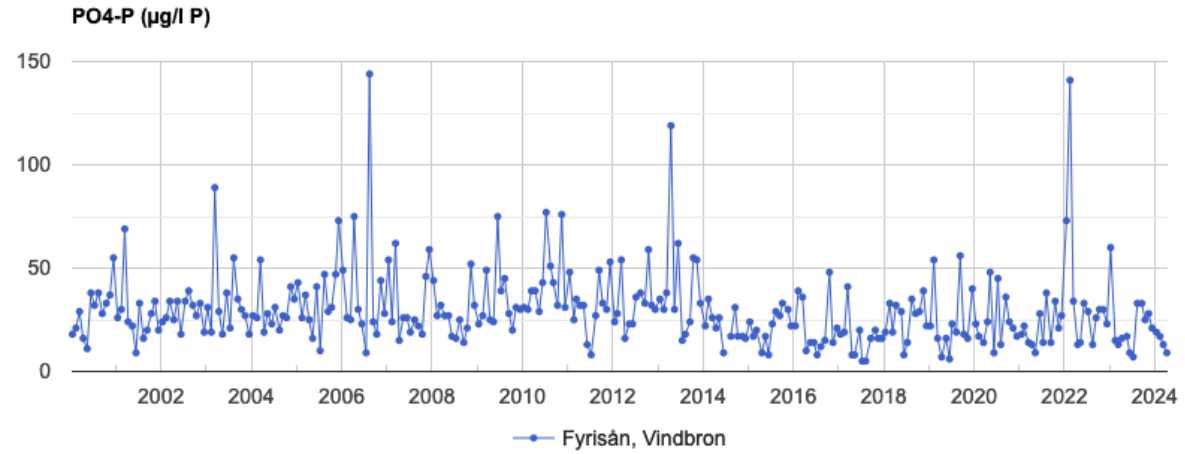


Figure 3. Phosphate levels in the Fyris River at Vindbron. Phosphate is an important nutrient that, in high concentrations, can contribute to eutrophication. Source: https://miljodata.slu.se/MVM/Search.

Task during the walk

If environmental samples are taken at the same location for several years in a row, a time series of samples is obtained. What are the advantages and disadvantages of taking samples from the same location compared to taking only a few samples?

6. Hospital Park

South of the city is a contiguous forest area that has been protected as a royal hunting park since the 17th century. This has resulted in the very old and large trees that can be seen today. The large trees fulfil an important function for many species (some of which are red-listed), both as a habitat and for foraging.

At the end of the 18th century, parts of the forest area were cleared to make way for a crown distillery on the Fyris River. In the early 19th century, the distillery buildings were converted into a hospital for mentally ill patients. The idea was to physically separate the physically ill (hospital patients) from the mentally ill (asylum patients). The hospital's location outside the city enabled health-promoting activities such as outdoor recreation and gardening, in accordance with the ideals of the time.

The Ulleråker district is currently undergoing development and thousands of new homes will be built. The hospital garden is being converted into a district park and a visitor attraction in Södra Åstråket with unique natural, cultural and recreational values.

Task during the walk
Use your mobile phone to take a photo of something in the area around Hospitalparken that contributes to *socially* sustainable development.

Figure 4. Uppsala Municipality's programme map for Ulleråker, and aerial photo of the area as it looks today. Source: uppsala.se.

7. Ulleråker allotment area

Self-sufficiency was important for hospital operations in Ulleråker, and there were fields, farms and greenhouses here. Farming has been an integral part of food supply for much of human history. Even city dwellers had farmland and animals in the past. But even in modern times, knowledge of how to grow vegetables has been crucial, for example during the Second World War. Now, the non-profit association Odlarföreningen Ulleråker leases land to create a social environment for cultivation and community.

We live in a social system that is completely dependent on fossil fuels, with continuous economic growth and increasing globalisation. Both the coronavirus pandemic and Russia's invasion of Ukraine in March 2022 suddenly shed new light on our shared vulnerability and how our everyday lives are affected by global events. Global food consumption and production make us dependent on the whole world. The war in Ukraine, for example, affects food prices and food availability in Sweden and throughout Europe. According to real estate statistics and farmers' organisations, interest in both urban farming and a return to rural life is growing in Sweden.

Biological diversity is essential for the Earth's ecosystems to remain in balance and provide us with what we need – air to breathe, water to drink and food to eat. Food production is one of the main causes of biodiversity loss, partly due to the use of pesticides. The food we eat also affects the climate and access to clean water. Food accounts for about a quarter of a person's climate impact, and about 70% of the world's fresh water is used to produce food.

Task during the walk
Imagine that your family needed to grow vegetables. Which vegetables would you like to grow? Are some vegetables better to grow than others (e.g. if they are easier to grow, contain more nutrients or are expensive to buy in a shop)?

Figure 5. The view from Uppsalaåsen in Ulleråker, looking towards the Fyrisån river with Övre Föret, wetlands and surrounding agricultural areas. A large part of the area is a nature reserve: Årike Fyris.

8. Övre Föret (Practical station with Biotopia and the Upplandsstiftelsen foundation)
Övre Föret is a bulge in the Fyrisån river with large areas of wetland. The area has a wide variety of natural habitats (lakes/watercourses, wetlands, damp beach meadows, pastures) with great biological diversity. To protect this area, the valley through which the Fyrisån river flows, as well as Kronåsen and Sunnerstaåsen, the Årike Fyris nature reserve was established in 2018 (Uppsala Municipality 2018). At this stop, we will focus on the area's natural values. We will take a bird's eye view from the top of the bird tower and investigate life "below the surface" in the Fyris River.

You will investigate the ecosystem. We will try to study different organisms to cover different roles in the ecosystem and food chains/food webs: plants (including phytoplankton), different consumers, predators, top consumers. Everyone will be given their own task to find out some interesting and exciting information about one of the organisms (e.g. phytoplankton, zooplankton, dragonflies/larvae, water scorpions, snails/mussels, asp [fish], pike, osprey, mink).

Tasks during the walk – Bird tower
From the top of the bird tower, you have a great view of Övre Föret and a good overview of the entire area. Look around! Describe what the landscape looks like in a few short notes. Has the Fyris River always been here, or could it have moved? What do you think would happen to the area if Uppland were hit by heavy rain?

There is a lot of wildlife in the area. Use binoculars to look for birds. Why do you think this wetland is important for many species?

Tasks during the walk - Beneath the surface
Use the equipment provided to investigate life in the water. With the help of nets, buckets, magnifying glasses and field guides, we will investigate the biological diversity. What organisms live here? What do they eat? How do they breathe? All species must live together – how do the different species fit into the ecosystem?

9. Ultuna åsen (final practical station with the Upplandsstiftelsen foundation)
At this station, we climb the important Ultuna Ridge (part of the long Uppsala Ridge). A little further south along the ridge is the Swedish University of Agricultural Sciences (SLU). Exciting research is being conducted there that will lead us towards a sustainable future!
First, we will take a closer look at the biological diversity of the forest in the Årike Fyris nature reserve. In the nature reserve, the trees are left untouched, and when they fall to the ground, they are left where they are. They then become home and food for many different insects and fungi, for example. Unfortunately, many species are endangered and are included in the so-called red list.
Once we reach the viewpoint on Ultunaåsen, the Upplandsstiftelsen foundation will treat us to bread baked over an open fire. We will also talk about how the Fyris River hike ties in with the global goals and how you can continue working with sustainable development in school.

Questions for the concluding discussion

- How have the global goals and the different perspectives on sustainability (ecological, social and economic) been visible during the Fyris River hike?

- What is the most important area for you to get involved in?

Thank you for joining us!
We hope you enjoyed the walk and this slightly different day at school. Please feel free to contact us if you would like to tell us what you thought and how we can improve. Contact details can be found at upplandsstiftelsen.se/fyrisavandringen.

Anna, Maria, Carina, Stina, Stina, dog #1, Stina, dog #2, Johan and Kalle

Fyrisåvandringen is a collaborative project between Upplandsstiftelsen, KUPP, Biotopia, Upplandsmuseet, Uppsala vatten and SLU. The Upplandsstiftelsen's investment in outdoor educational activities for Uppsala's upper secondary schools is funded by a government LONA grant to the local nature conservation project *Lära in utomhus på gymnasiet (Learning outdoors in upper secondary school)* in Uppsala Municipality, in close collaboration with the Upplandsstiftelsen.