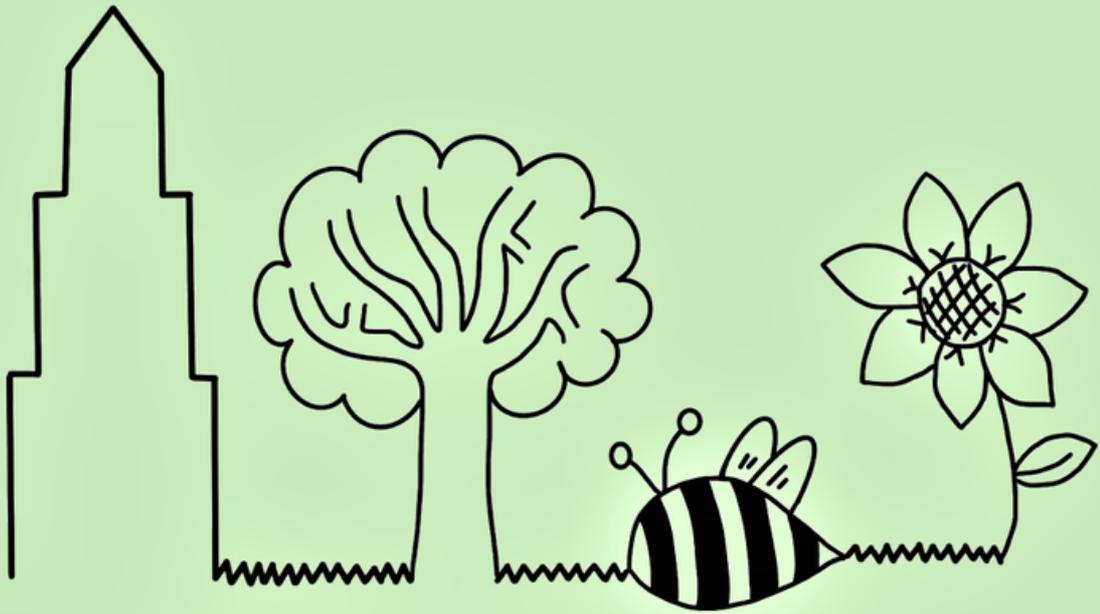




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BIODIVERSITOUR

Walking directions

Thanks for walking with us!

In this document, you'll find the walking directions for biodiversity in Utrecht. If you're walking the route on the 22nd of May, the working group and several experts will be waiting for you at some of the locations to tell you more about biodiversity in the city. If you're unable to walk the route on the 22nd, no worries! You can walk the route whenever suits you best. Go to the website:

<https://www.njr.nl/nl/verhalen/biodiversitour/>

Enjoy!



Before you start...

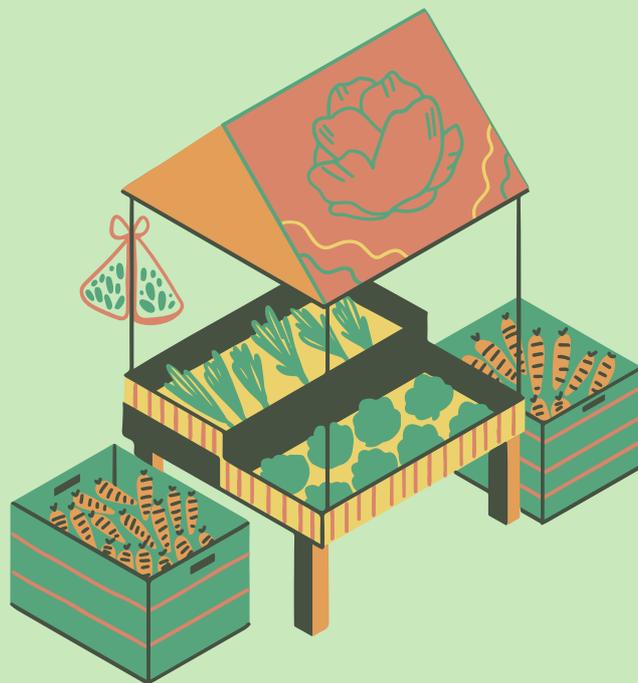
You can find the exact route [here](#), and some courtyards on or near the route (fun if you have some more time!). This document has more explanation per location and a more general route - perfect if you're already familiar with Utrecht. Sometimes it takes a little while to walk from one place to the other, but that doesn't mean there's nothing to see! Try to count how many **green bus stops you** can find: they help biodiversity in the city by giving pollinators a home. Also, check out this [bee-count form](#) and pay attention to all the pollinators that are stopping by to say hi on your walk!



Directions

Stop A/B/I: Utrecht central station/Vredenburgplein

Leave the station on the center side and walk through the shopping mall Hoog Catherine. Follow the signs "Vredenburgplein" to find the right exit.



Information Vredenburgplein

Every Friday there is a biological farmers market from 10.00-18.00. This way of consuming is more sustainable because it makes use of shorter chains. Normally, food is produced abroad where it takes a long journey to arrive via distribution centers in the supermarket. This involves a lot of transport. But often we are not aware of the journey our food took and the emissions that were involved. Additionally, we don't know whether the farmer abroad can maintain his family with the income he receives or whether the environment is polluted.

Short chains try to combat these problems by reducing the number of chains between the producer and consumer. This can help reduce emissions and food waste and can provide a better and more stable income for farmers. It also allows for better estimations of how much food will be consumed. Besides, food waste can be reused more easily in short chains! Normally when a farmer wants to sell milk, soy needs to be imported from abroad to feed the cows. Pesticides and artificial manure are used to increase production. This pollutes the soil and makes that increasingly more pesticides need to be used the year after. Short chains in circular agriculture enable the farmer to use the manure of his cows for the growth of vegetables and reduce the use of pesticides. Food waste can be a source of nutrition again!

Stop C: Driftbrug

Walk to the other end of the Vredenburgplein and turn left. On this big crossroad, you can find a Nijntje-stopligh! Turn right and walk through the Lange Viestraat until you reach Neude. Here, turn left into the Voorstraat. Keep walking until you reach GYS. This is a 100% organic and vegetarian restaurant, and mostly vegan. They serve dishes that keep us and the planet happy.

Continue on the Voorstraat until you reach the Driftbrug. Turn left towards the Plompetorengracht and walk alongside it. Read the information on the following page to learn where to look at!



Information Driftbrug

Even the most barren places can hold wonderful plants. The walls along the 'Plompetorengracht' are a good example. These walls have the nickname maidenhair spleenwort-land because this rare fern grows abundantly on these walls. This species of ferns grow almost exclusively on rocks. Ivy-leaved toadflax is another plant that lives on these old walls. Originally, this plant could only be found in Slovenia and bordering parts of Italy. But because of its wonderful flowers, the plant has been exported to all corners of the world which caused it to become a really common species of plant on old stone structures. The vegetation on the walls of the Plompetorengracht is so special, that when researchers started investigating it in 1890 and never stopped. This makes it the longest ongoing floristic in the Netherlands!

However, not all walls are suitable for wall plants. You might have noticed that wall plants mostly grow on old walls. To start with, do most plants grow on walls that are moist and not exposed to high amounts of sunlight. In addition, is the type of substrate really important. In old walls, the mortar that was used to stick the stones together consisted mostly of chalk and sand. This material was softer than the bricks and it easily formed cracks and holes. These collect sand and water and form a perfect place for plants to root. Bricks are too hard for this, which explains why plants hardly grow here. Nowadays, walls are built with mortar that contains cement. Because of the cement, the mortar is hard and does not form cavities. This makes it difficult for plants to settle here. This hard mortar is also used for reparations of old walls, almost all wall plants are declining. Luckily, nowadays more attention is paid to wall vegetation and old mortar is increasingly used for reparations.

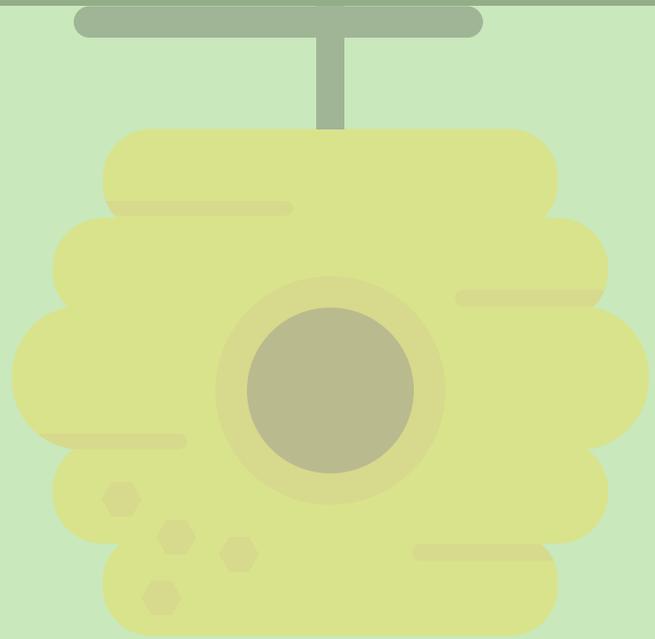
Stop D: Noorderbrug

When you have reached the end of the Plompetorengracht, turn to the left and then right again on the Begijnekade. On your right hand side you can see the water which leads you to the **Noorderbrug**. This is where you have to cross the water.

Information Noorderbrug

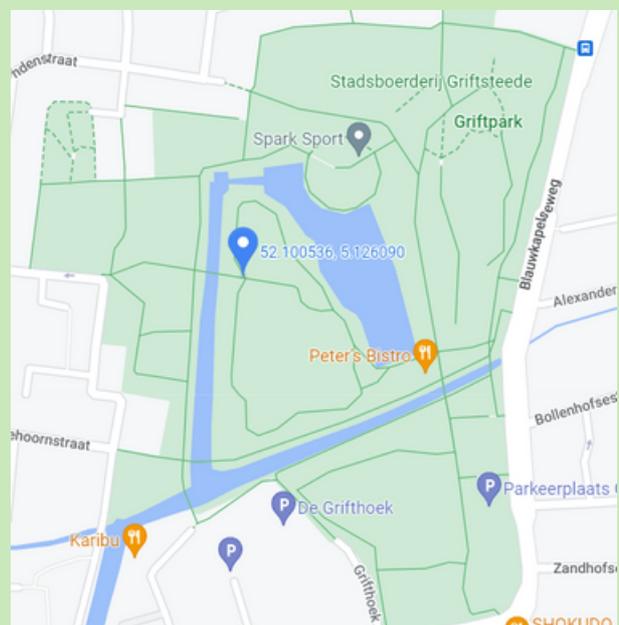
The channels of Utrecht are fed with water from the rivers 'Nederrijn' and 'Lek'. Even if the water quality leaves something to be desired, the situation is vastly improved since the fifties. Back then, the feces were floating in the water! Even though the brown water of the channels may not look like a biodiverse habitat, a lot of species can be found here! The water is not necessarily brown because of pollution. It is mostly caused by floating clay particles and algae. Fish species like common bream and common rudd feel perfectly at home in the channels. Besides fish are several species of damselflies living in the water. Even though you might have seen damselflies only in the air or on some plants, their larvae live in the water! And don't forget mosquito larvae! Mosquitoes might be annoying buzzing animals, they form an important food source for animals in the air, as well as in the water!

The channels don't contain many aquatic plants. Trench sheeting or sheeting on the shores doesn't have a slow depth gradient. This is however really important for aquatic plants because, in these places, a lot of light reaches the waterbed! Because the water in the channels is already very murky, aquatic plants cannot grow well because of a lack of sunlight on the waterbed. To support the growth of these plants, small islands with shallow shores have been created in several places in the channels. More aquatic plants increase the water quality and biodiversity of both plants, and the animals which are dependent on these plants. In some places, the vegetations adjacent to the channels contain special and rare species which you would not expect to grow in a city. The reason for this is that the soil next to the channels can be swampy. If you are lucky, you might find the marsh helleborine. This shows that channels can also form an important component of life on land!



Stop E: Griftpark

For the next stop, you need to take the second street to the right on the roundabout after the Noorderbrug. Walk to the end of this street until the street name changes into van Humboldtstraat. Keep following that road until you can turn right on the J.D. van der waalstraat (which will change into the stieltjesstraat). Here you can enter **Griftpark**. Take a nice walk through the park and take a moment to enjoy its nature. Tip: see if you can find the bee hotel!



Informatie Griftpark

In addition, mowing is placed in phases. This way, foraging and seeking shelter are still possible after mowing, and the structure of the vegetation is more diverse. Diverse structures make it possible for insects to sunbathe, and seek shelter from hard wind and rain if the weather changes. In some places, mowing is skipped for a year. This is important because it creates suitable habitats for insects that can hibernate, and birds like the European goldfinch can snack on seeds that didn't fall from the plants.

The Griftpark also includes many dense bushes. These are perfect for the hedgehog! This animal is a real opportunist and can handle itself well in cities as long as a sufficient amount of dense bushes and semi-natural habitats are present. During the daytime, hedgehogs sleep underneath dense bushes, a rabbit hole, or another covered spot. During the night, they start hunting. Based on hearing and smelling they locate the prey, which is mostly caterpillars, worms, and beetles. However, they will happily eat food waste from humans if they find it! Hedgehogs have the reputation of being quite nocturnal animals, but they can be loud! They make all sorts of noises, varying from loud smacking noises to intense snorting. At night, they can travel several kilometers and even swim.

Stop F: Park Lepelenburg

The next stop is a 20-minute walk. Exit griftpark on the side of the skatepark, towards the kleine singel. Continue your way past the Wittevrouwensingel and the culture boat coffeeshop. Keep following the water for about 15 minutes (the name of the single will change from wittevrouwen into maliesingel) at de Herenburg you can cross the water. Here you can turn left into the Lepelenburgstraat until you arrive at **Park Lepelenburg**.



Information Lepelenburg

Park Lepelenburg is an ideal place to have a picnic or to play sports. A natural environment is not always self-evident in urban environments although it is important for the health and wellbeing of people. We have become increasingly aware of this because of Covid-19. A green environment helps us recover from stress, invites social interaction, and stimulates movement. In the summer it also reduces the heat in the city! Every 10 percent covered with trees reduces temperature with 3 degrees of radiation temperature. This proves to be an important solution when it comes to climate change.

Although parks have many benefits there is sometimes a conflict between places to relax and nature. For example, when a big event is hosted and a big pile of waste is left afterward. Another example is when parks consist of only straight fields of grass because this doesn't stimulate biodiversity. But adding trees, bushes, wooded banks, and vines can help! There are other factors to consider, such as safety. Does the height of vegetation affect the feeling of safety in the city? These are complex questions that involve a lot of research. Currently, research is being done on different species of grass, flowers, and herbs for a sustainable future.

Stop G: Sonnenborgh Observatorium

The next stop is an 8-minute-walk away. Continue your way through the park past the singel until you reach the **Sonnenborgh Observatorium**.

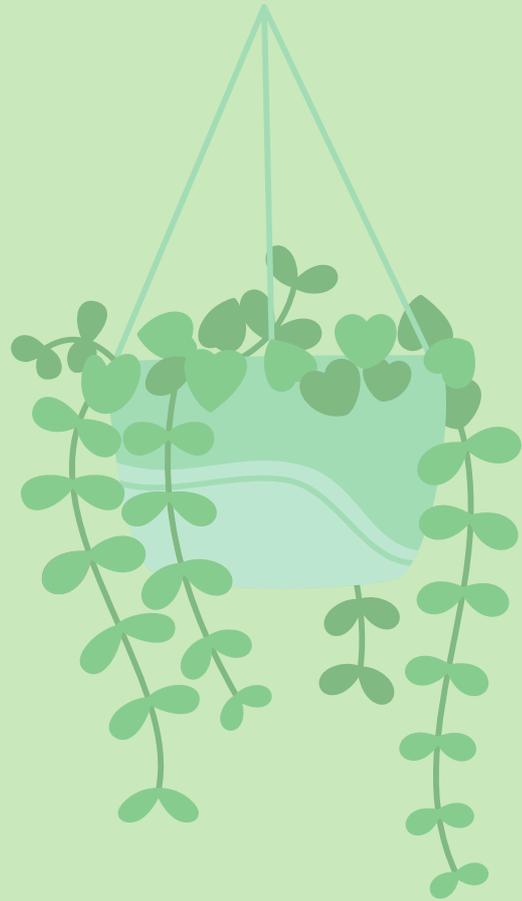
What does a museum for astronomy have to do with biodiversity? Well, in 1639, the Sonnenborgh became Utrecht university's first botanical garden. The garden was meant for botanical research and medical studies and was therefore called the Hortus botanicus et Medicus. Unfortunately, Sonnenborgh, with its high location, was not suited as a botanical garden: there was too much wind and limited space, and people had to use a bucket and rope to get water from the single to water the plants. Because of this, the Hortus moved to a new location in 1723.



Information Sonnenborgh Observatorium

A botanical garden holds a lot of different species, so there is high biodiversity! However, a significant part of the plants of botanical is not native to the Netherlands. These exotic species may sound fun, and in some cases, an exotic species like the potato can be a valuable addition. Where will the Netherlands be without the potato?! However, an exotic species can also cause big problems!

When a specie is introduced to another place on earth, they often have no natural enemies if the distance from its natural habitat is long enough. Under the right conditions, this can result in an immense increase in the population size. All this growth is at the cost of the native species with which the exotic species share their habitat. This can have disastrous consequences for biodiversity. Scientists believe that exotic species are responsible for the 40 percent decline of global biodiversity. In most cases, exotic species are introduced by accident. For example, the zebra mussel was transported from Europe to America via the ballast water in cargo ships. In America, the mussel endangers complete aquatic ecosystems, because it creates huge populations! It out-competes other mussel species, they filter out too many nutrients and plankton, and they also clog pipelines causing damage worth billions of euros per year. In some cases, exotic species are introduced with good intentions. The Japanese plant Kudzu was introduced in America to limit erosion, but in the end, the plant dominated native vegetation. The Kudzu is now an expensive problem that is hard to get rid of. A Dutch example is a Japanese knotweed. It was introduced as a garden plant, but it escaped from gardens and now dominates native vegetation and damages pavement and walls with its roots.



Stop H: Oude Hortus

The next stop takes 5 minutes to walk to. Continue your way through the park towards the Servaasbrug and cross the water onto the Agnietenstraat. Continue your way and turn right at the Lange Nieuwstraat. On your right-hand side you will find the **Oude Hortus**.



Information Oude Hortus

The Oude Hortus is a botanical garden that has many different species of plants and trees. In the Regiustuin the medical power of herbs is studied. Over the years people have learned a lot from plants. We learned for instance that human beings need vitamin c to prevent scurvy. The bark of the willow tree has been used for hundreds of years to treat pain. Its active substance is salicylic, which is currently identified in the bark of the tree. Nowadays, we call this medicine aspirin.

We have only come to know the surface of what we can know about the biosphere! That makes biodiversity very valuable. This was recognized in 1992 at the Convention in Rio. Still, many scarce specimens are exploited around the world to research in the lab. The measures we are currently taking prove insufficient to protect biodiversity. Isn't it ironic that the success of modern medicine goes along with the loss of potentially valuable pieces of information?

Stop I: Louis Hartlooper complex

The next stop is about 8 minutes away. Walk the Lange Nieuwstraat back towards the canal, but this time take a right at the Agnietastraat towards Nicolaas kerkhofstraat. You'll walk past the Nijntje museum. Take a left into the nicolaasdwardsstraat followed by taking a right on the wijde doelen past the park. Here you'll find the **Louis Hartlooper complex**.

This national monument built in 1927 used to be a police station. In 2001 the the then-vacant building was bought from the municipality of Utrecht to transform it into a film theater. The Louis hartlooper complex (LHC) is a film theater, cultural center, and catering. The TLC participates in initiatives focused on visual and movie culture. The catering facility participates in the preservation of biodiversity. They do this by offering 100% biological products, honest ingredients, and fair-trade products.

Information Louis Hartlooper Complex

The city preserves nature in its way. Each unique habitat has its unique nature. For 30 years 'urban district' can be found on the map of the flora of the Netherlands. Some species can be found nowhere else but in the city and there are special assemblages of species. The living conditions within the city are very different compared to those outside the city. There is a lot of traffic, stones, and the main source of food is wasted. Besides, did you know that the temperature in a big city can be 7 degrees celsius higher?

There is also a lot of change in the city, and as the plant, you have to be resilient to this. Some plants ever prosper from these hard living conditions since it also means less competition from other, more vulnerable species. Every year there are around six new plant species discovered in cities!

As you know, there is a 'close watch' on flora and fauna in the city. It is not only monitored but also influenced, for example through mowing management. This involves a lot of factors. The attention to nature is increasing and luckily biodiversity preservation becomes higher on the agenda.

We hope you have enjoyed your walk and have learned that there is a lot of nature to enjoy in the city when you know where and how to look! We recommend having a drink at the Louis Hartloper Complex and enjoying the rest of your day!



Stop A/J: Utrecht central station

The final stop is Utrecht central station. This takes about a 20-minute walk along the water on the Sterrenburgpad. Keep walking along the water until you reach the end of the canal. here you can re-enter Hoog Catherine. We hope you enjoyed the walk and the biodiversity in the city!