

Biodiversity plan 2020-2030 for UGent: follow-up report 2022

1. Framework and principles

UGent preserves and enhances green space and biodiversity in areas for which it is responsible. It achieves progress in both quantity and quality, at campus and institutional level, and thus uses a 'net gain' of green space and biodiversity as a starting point.

This means that UGent:

- preserve the greenery and biodiversity present on its sites;
- is working on expanding and improving the quality of the greenery on its campuses;
- green space and biodiversity as a fully-fledged guiding principle in policy decisions.

This ambition was made concrete for the next 10 years in the [biodiversity plan 2020-2030](#). Five strategic pillars were put forward:

- appropriate design and management of green spaces and biodiversity on the campuses;
- Integration and embedding of green space and biodiversity in policy decisions on development projects;
- measuring and monitoring;
- communication and engagement;
- Use of UGent expertise.

First concrete actions for these pillars were proposed in the biodiversity plan.

The biodiversity plan is part of UGent's [climate plan](#), and is followed up by the biodiversity working group.

This follow-up report gives a state of affairs and explains the actions carried out. Depending on the result of the actions taken, follow-up actions are necessary or adjustments need to be made. To this end, input was provided by the biodiversity working group and suggestions were collected in the think tank Transitie UGent and the Raretijdenkabinet.

The proposed actions for 2022-2024 will also be included in the sustainability agenda of the sustainability report (publication September 2022).

2. Evolution of indicators

In order to monitor the state of the present greenery and biodiversity, a thorough inventory of what greenery is present on the UGent campuses is needed, as well as an assessment of the biodiversity value. This has been done (see action 3). The greenery present on 10 campuses was mapped at¹ (see fig. 1). The species diversity of these campuses was also inventoried, so that the biological value maps for these zones now contain sufficient detail (see waarnemingen.be, location 'UGent'). In addition, the ecosystem services of four of these campuses were quantified.

¹ Campus Coupure, campus Sterre, campus Heymans, campus Dunant, campus UFO, campus Boekentoren, campus Ledeganck, campus Merelbeke, campus Proeftuinstraat, campus Rommelaere, campus Heide, campus Tweekerken

Based on this information and the [Biodiversity metric 3.0](#), biodiversity maps per campus can be developed. These will make it possible to monitor the surface area and quality of the greenery per campus. A first map will then form a *baseline* on which later developments (both greening and loss of greenery) can be indicated. Comparisons between an actual map and this *baseline* will then provide indicators of the quantity and quality of green space. A first step in this direction has already been taken for the Sterre campus (see fig. 2).



Fig. 1a: Mapping of the greenery present on the Proeftuinstraat campus



Fig. 1b: Mapping of existing green space on the Ledeganck campus



Fig. 1c: Mapping of existing green space on the Book Tower campus

- kroonoppervlak bomen
- wateroppervlak
- onverhard oppervlak
- contour campus

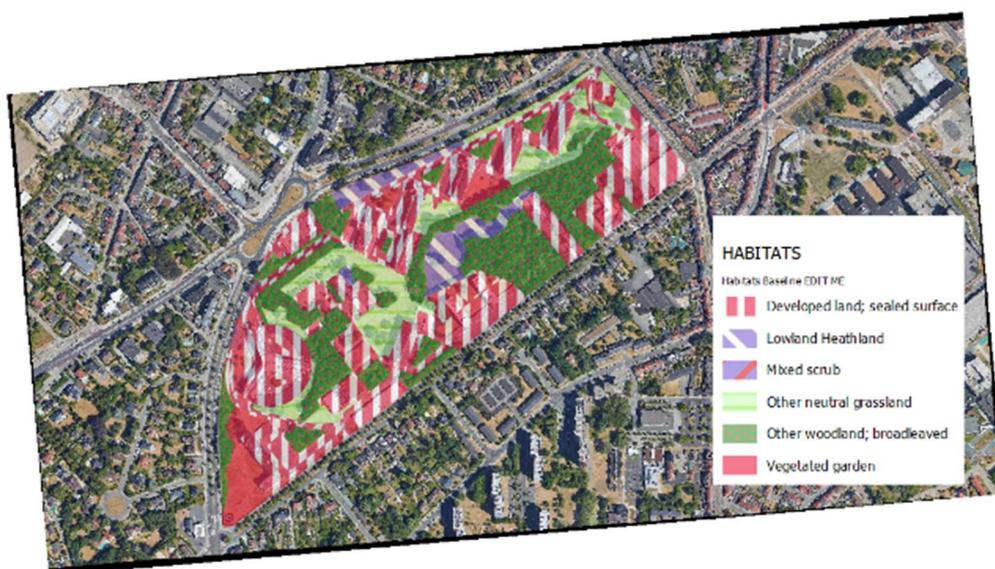


Fig. 2. Biodiversity map of Sterre campus (only basic layer habitat types shown (design), so no solitary trees, wood edges, etc.)

3. Evaluation of action plan and adjustment

Given the high level of ambition of the biodiversity plan and the urgency of the biodiversity problem, it is very important to closely monitor the proposed objectives and the progress of the action points. Depending on the results of the actions undertaken, adjustments will have to be made. The evaluation below will therefore at the same time determine the action plan for the coming year.

Pillar 1: Appropriate design and management of green spaces and biodiversity on campuses

The aim of this Biodiversity Plan is to preserve, strengthen and extend the greenery and biodiversity present on the campuses. In a number of places, management will have to be adjusted or development measures will have to be taken.

In the first instance, an **inventory is** needed of what is presently available (see also pillar 3): where are valuable green spaces located, where is the potential for green space and high biodiversity, where can the quality of existing green space be increased through adjusted management or development measures?

On the basis of the inventory, appropriate management measures are proposed. These can be written out in **management plans**. These plans show where one wants to go with the greenery and biodiversity at a certain site and show what function and what management is envisaged for each unit of land.

In addition, a number of **specific management measures** can produce significant results in terms of green space and biodiversity.

Action 1.	Draw up management plans per campus or per type of green space (or in combination), with the cooperation of students and staff (see also pillar 4)
Evaluation	<p>Management plans were drawn up for:</p> <ul style="list-style-type: none">- Management plans have already been drawn up for the Ardoyen campus and the Sterre campus by the Fris in het Landschap study bureau in 2016 and by students of HoGent under the supervision of Prof. Lieven Dhollander in 2019, respectively.- In 2020-2021, a management plan was drawn up for the Merelbeke campus by Greenspot.- In 2021, a management plan was drawn up for the Proefhoeve by a student from the Green Office under the supervision of ForNaLab. <p>For the preparation of the recent plans, feedback moments were built into the process with the biodiversity working group, the residents of the campus and the Veterinary Medicine faculty council / Agrivet steering committee. The new plans include an inventory, an assessment of biodiversity and measures to strengthen and expand biodiversity, in line with the principles of this biodiversity plan.</p> <p>In addition, preparatory work was also carried out by students for other campuses:</p> <ul style="list-style-type: none">- As part of their course 'Green Management', Bio-engineering students Forest & Nature made an inventory of the existing greenery and biodiversity for the campuses Proeftuinstraat and Pharmacie. They estimated the biodiversity

	<p>potential, identified challenges in maintaining and increasing biodiversity and formulated some recommendations.</p> <ul style="list-style-type: none"> - Students of the Summerschool Climate developed a future vision for campus Coupure in terms of biodiversity and mobility.
Adjustment and planning	<p>In 2022, a green management plan will be drawn up for the Pharmacy campus, in 2023 for the Trial Garden campus.</p> <p>The green management plans will gradually be aligned with the 'biodiversity maps'. A biodiversity map is a map layer for a campus layout or master plan. It must incorporate principles such as maximum green space retention, softening of superfluous infrastructure and space for water and greenery. This map layer must then be coordinated with those for new spatial needs, energy, mobility and circular water management. In the context of new developments, this needs to be done urgently for the Pharmacy Campus and the Proeftuinstraat. This requires manpower and a strong will to actually implement the proposed ambitions.</p>

Action 2.	Create a toolbox of new/alternative forms of green management for the benefit of biodiversity; targeted application of the tools/management forms.
Evaluation	Such information is collected on the sharepoint of the biodiversity working group.
Adjustment and planning	The sharepoint is continuously fed with information.

An inventory can be made to identify locations that currently have a low level of biodiversity, but which do have a lot of potential for the **development of biodiverse green space**. These are, for instance, areas with suitable abiotics (e.g. nutrient-poor soil) where biodiversity can be increased through sowing or adapted management. Moreover, further development is also possible in places where redundant infrastructure is being softened.

Action 3.	Development of additional greenery and biodiversity on the campuses: sowing, planting trees/forests, excavating, impoverishing nutrient-rich soils, creating corridors, softening, developing green facades, providing water features, etc.
Evaluation	<p>In 2020 and 2021, additional green spaces and biodiversity were developed in the following zones:</p> <ul style="list-style-type: none"> - 80 m² of softening and hedge planting on Sterre campus; planters placed in S4 car park. - 250 m² softened and greened on campus Coupure around boiler room. - 1500 m² softened and greened on campus Gontrode. - 500 m² softened and sown with flower mixture along Muinkschelde. - 200 m² softened and greened on Dunant campus. - Regeneration of green zone on campus HILO-GUSB and Dunant 1. - Façade planting new campus Pharmacy and GUSB. - Flower bulbs planted in garden between Rectorate, UFO and Technicum and in front of Ardoyen campus. - ...
Adjustment and planning	<p>Several projects are planned for the coming years, either as part of investment plans or provided for in the operating budget:</p> <ul style="list-style-type: none"> - Roof garden on bicycle parking Rectory.

- Green circles on student square UFO.
- Soften and green the Plateau courtyard by 800 m².
- 110 m² of softening and greening of De Brug courtyard.
- 3600 m² softening and greening of the shooting range.
- Rehabilitation and greening of S11 car park on Sterre campus.
- Façade planting on Veterinary Medicine campus, Aula campus and Technicum.
- Garden landscaping Technicum 2.
- Planting of Technology Park as part of the new development plan.

In addition, there are a number of projects that were not included in the investment plan, but which, according to the sustainability agenda, should be implemented from 2018 onwards:

- Regenerate and green parking spaces on the Pharmacy campus and create a 'forest room', in accordance with the green plan that was added to the environmental permit application for the new Pharmacy building and the new Home C on the Heymans campus, Pharmacy (sustainability agenda 2018, 2020: *'When new greenery is cut, this should be compensated as much as possible on the campus itself'*).
- Softening of parking spaces and planting of trees on Campus Coupure (Sustainability Agenda 2018, 2020: *'More efficient use of available underground car parks with overcapacity in the vicinity, so that freed up ground level car parks can be laid out differently'*).

As a result of the commotion surrounding the felling of forests for new building projects, the idea arose here and there to keep potential expansion zones ready for building so that valuable greenery would not have to be eliminated later. This should by no means be the outcome of the biodiversity plan, which aims to provide an answer to the urgent biodiversity crisis. When greenery and biodiversity can be increased in a potential expansion area (the project of which has not yet been included in the investment plan), then this must be possible. However, the temporariness of this nature can be made visible, for example, in a master plan.

3.2 Pillar 2: Integrate and embed green space and biodiversity into policy decisions on development projects

Parallel to increasing the area of green space and biodiversity (see also pillar 1), the impact of concrete (infrastructural) development projects on existing green space and biodiversity must be limited as much as possible. Therefore, UGent applies a **mitigation hierarchy**² for green space and biodiversity impact in policy decisions concerning concrete dossiers in order to realise this ambition.

Mitigation is understood to mean all measures aimed at reducing the impact of development projects on green spaces and biodiversity. Priorities can be assigned to these principles and related measures by placing them in a hierarchy, whereby maximum efforts are first made to take measures from a higher category before finally opting for less desirable options: avoidance > minimisation > restoration > compensation (see biodiversity plan). It is an established tool in *'good practices'* in environmental legislation and actions.

² Bull et al., 2016. Seeking convergence on the key concepts in 'no net loss' policy. *J. Appl. Ecol.* 53, 1686-1693.

Maron et al., 2016. Taming a wicked problem: resolving controversies in biodiversity offsetting. *BioScience* 66, 489-498.

Action 4.	Making the mitigation hierarchy operational in a <i>hands-on</i> decision support tool. There are examples of this that can be translated into a workable UGent version with the help of academic UGent expertise.
Evaluation	<p>Together with Bio-Engineering students, a working student funded by ELAND³ and the Biodiversity Working Group, they explored how to formalise mitigation strategy.</p> <p>The focus was on Campus Sterre, where various infrastructural developments are planned in the coming years, and where there was also a great deal of commotion about the felling of trees, necessary for the new Home B building.</p> <p>A first spatially explicit calculation was made for the campus, based on the new biological value map and the Biodiversity metric 3.0. The aim was to find a transparent procedure that can later be applied to other campuses. The aim of the exercise was to go through all the steps and to identify where extra data is needed, where expert input is required, and where strategic choices have to be made. All of this was written down in a concrete step-by-step plan that should enable the creation of a final map for the campus.</p>
Adjustment and planning	<p>A concrete map layer for Sterre campus, the biodiversity map, must be calculated in detail. It will then be placed alongside other layers (map layers for mobility, energy, water, new buildings and renovation, etc.), making bottlenecks visible and open to discussion. In this way, the biodiversity map contributes to the Sterre campus master plan, which will give direction to new developments and must be part of future applications for environmental permits.</p> <p>In the context of new developments, similar biodiversity maps, as part of a master plan, should be drawn up urgently for the Pharmacy Campus and the Trial Garden Road. The elaborate repeatable and transparent procedure can help. The exercise for campus Sterre was done with funds from ELAND, but for future calculations operating funds will have to be provided by the Central Administration.</p> <p>A more economical use of space, a compact university and a well-considered choice of planting location that avoids cutting up new greenery must ensure that compensation is avoided. If green space has to be cut anyway, then the new mitigation hierarchy, but also the commitment from the sustainability agenda since 2018, requires financial commitments for softening and green compensation on the campus itself. At present, this is not (or hardly) included in the project budgets or has not been given a separate budget in the investment plan .</p>

Action 5.	Integrate a 'biodiversity check' into the planning phase of the construction process that ensures the application of the <i>hands-on tool</i> , green compensation and <i>net gain</i> . This biodiversity check can be done by the biodiversity working group.
Evaluation	A Spatial Planning Officer was appointed within DGFB. This staff member is now part of the biodiversity working group, in order to better monitor and apply the biodiversity check in future infrastructure projects.

³ ELAND is an association research community (UGent - HOGent) where cooperation takes place on a.o. education in the broader theme of forest-nature- green management.

Adjustment and planning	The need to include green space and biodiversity in the assessment (new building / renovation / densification, choice of location) right from the planning phase is now very clear. New infrastructure works must be part of an approved master plan for the entire campus, in which the ambitions with regard to sustainable mobility, energy transition, circular water management, biodiversity, etc. are included. The encroachment of greenery must also be avoided. For this, a thorough investigation of alternatives must be carried out, including a look at other campuses. This is not only very important from a social point of view, but also from the point of view of the policy option of the City of Ghent and the Nature and Forest Agency, which states that a maximum of nature must be designed to save nature, and from the point of view of UGent's ambitions from the climate plan and biodiversity plan.
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Action 6.	Draw up a procedure for restoring impact on green spaces and biodiversity during works: prior consultation, limiting impact and restoring.
Evaluation	The building guideline stipulates that the DGFB's green space manager must be involved in the site design. The green space manager helps to determine which green spaces must be preserved and how the green spaces must be restored afterwards. The project managers supervise the site.
Adjustment and planning	Penalty clauses in the specifications for the compensation of biodiversity damage must be addressed. The difficulty here is assessing the value of nature. The costs of restoration can be compensated, but what, for example, with a historic grassland that is de facto irreplaceable?

3.3. Pillar 3: Measuring and monitoring

There is a need for a thorough inventory of what is present in the field of green space and biodiversity on the UGent campuses. This is needed as a guideline for certain decisions on conservation and management, but also to evaluate the evolution of green spaces and biodiversity in the future. To establish this initial situation, one does not have to start from scratch. The City of Ghent has drawn up its own Biological Value Map (BWK) for green structures in the city. This provides the campuses in Ghent with a basis for the quantification of biodiversity. For some sites, additional data on biodiversity are available thanks to earlier inventories. It is interesting to take into account not only plants, but also other organisms such as insects, fungi, mosses, birds and mammals.

The inventory allows us to assess the biodiversity value per campus, after which specific targets can be formulated (e.g. measure every five years and there must be x% progress).

Action 7.	Preparation and follow-up of an indicator.
Evaluation	<p>A working student of the Green Office made an inventory of the species richness on 10 campuses and supplemented the data already available via the Biological Survey Cards of the City of Ghent. For these 10 campuses there is now a species list, which was included in waarnemingen.be.</p> <p>A PhD student from ForNaLab mapped the greenery on 10 campuses and translated it into scores. This is now the baseline measurement. The maps were included in waarnemingen.be.</p> <p>A Master's student in Bioengineering has quantified the ecosystem services provided by four contrasting urban campuses. These figures are useful for further</p>

	substantiating and framing the policy and actions for green space and biodiversity.
Adjustment and planning	<p>The Biological Valuation Map can be further refined by adding other geodata, mosses, etc.</p> <p>Based on the new Biological Value Map and the Biodiversity Metric 3.0 (see action 4), a first version of the biodiversity map for Sterre campus was developed. This should now be finished and the exercise should also be done for the other campuses.</p> <p>It is clear that such a map per campus (see Action 4) will also allow the surface area and quality of the greenery on the campuses to be monitored. An initial map will then form a <i>baseline</i> on which subsequent developments (both greening and loss of green space) can be indicated. Comparisons between an actual map and this <i>baseline</i> will then provide indicators of the quantity and quality of green space on UGent campuses.</p>

3.4. Pillar 4: Commitment and Communication

Involvement

This biodiversity plan originated from a constructive engagement of UGent citizens and was further shaped in the participatory context of 'Transition UGent'. The further roll-out and realisation of this plan in concrete actions must also take place in a strong co-creative mindset, with maximum effort being put into the active involvement of administrators, academics, policy staff, technicians, students,... and external partners, such as the City of Ghent, civil society organisations, local residents,... Social cohesion, a sense of community and co-ownership are central to what we want to achieve: planning together, planting together, gardening together, maintaining together, picking together, relaxing together, thinking together, realising together. Incidentally, various green projects that have already been implemented were initiated by committed members of staff and students: a butterfly garden, bulbs in a lawn, a vegetable garden, bee hives on the roof, plant pots in a stone courtyard, a parking makeover, etc. Green and biodiversity bring people together. We want to continue in this vein. With a broad commitment, a number of things can also be realised without having to pay much. For example, the 'living lab' philosophy of the City Academy can be applied and students can make inventories, refine measuring methods, propose plans, etc. via master's theses or within courses.

Action 8.	<p>Involving the UGent community in existing initiatives (incl. integration in education) and supporting the UGent community on an ad hoc basis in its own, bottom-up initiatives by creating a framework and space in which these can be realised.</p> <ul style="list-style-type: none"> → Experience: invite initiatives to take place (e.g. guided walk). → Plans: co-creation of green plans by policy officers, students and teachers, within and outside existing learning paths. → Do: involve in the effective construction and maintenance of more biodiverse sites, involve in monitoring. → Learning: make teachers enthusiastic and support them in integrating planning, construction and monitoring of green spaces into existing learning processes (e.g. practicals on their own sites, case studies); increase support by making links with other educational themes such as activating learning, sustainability, social impact, entrepreneurialism.
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Evaluation	<p>In 2020 and 2021 the UGent community was involved and/or supported in the following projects:</p> <p>Experience</p> <ul style="list-style-type: none"> - Biodiversity trail campus Sterre. <p>Plans</p> <ul style="list-style-type: none"> - For the preparation of the recent green management plans, feedback moments were built into the process with the biodiversity working group and the residents of the campus. - Together with the Green Office, StuJardin, students and staff of the faculties involved and the green space manager, a design was made for the softening and greening of car parks on the Sterre, Coupure and Dunant campuses. - Green and biodiversity is a recurring theme during meetings of Transitie UGent. In this way, information is shared, suggestions are collected and initiative is stimulated. <p>Do</p> <ul style="list-style-type: none"> - Together with the Green Office, StuJardin and students from the Faculty of Engineering, thousands of flower bulbs were planted and a car park at Coupure campus was softened and planted. <p>Leather</p> <ul style="list-style-type: none"> - Several lecturers and students have contributed to the inventory and assessment of the biodiversity value, the drawing up of a management plan, the elaboration of a mitigation strategy, etc.
Adjustment and planning	Strengthen the UGent community by activating faculty biodiversity working groups.

Action 9.	<p>Giving residents and users access to green areas on UGent campuses for soft recreation, whereby</p> <ul style="list-style-type: none"> - special attention should be paid to neighbourhoods where public green spaces are scarce - the carrying capacity of the existing green elements is taken into account.
Evaluation	<p>On Sterre campus, a running track and a biodiversity path were laid out. Because stray dogs were damaging the vulnerable nature area in the central zone, restrictions had to be implemented there (no dogs allowed on campus).</p> <p>A neighbourhood safari was organised on Sterre campus for local residents.</p>
Adjustment and planning	

Action 10.	Contact external organisations and policy makers to set up partnerships for biodiversity.
Evaluation	UGent signed the Green Deal 'biodiversity and business' and joined the Global Coalition #UnitedforBiodiversity .

Adjustment and planning	
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Communication

Not all UGent citizens are aware of the importance of biodiversity yet; either they do not understand why certain forms of management are implemented, or they do not know the value of specific biotopes and their associated biodiversity. A specific task therefore lies in strengthening this knowledge and awareness among the broader UGent public. In this way, targeted communication (with a recognisable, recruiting style) will also be crucial to realise the hoped-for involvement in (and therefore the effective realisation of) the biodiversity plan.

Action 11.	Regular communication about biodiversity on UGent sites for the UGent administration and the UGent community, as well as on site for passers-by.
Evaluation	<p>Annual reports are submitted to the UGent Board, the UGent community and external parties on the achievements, the bottlenecks and the follow-up actions via the follow-up report, the sustainability report and the climate plan.</p> <p>All relevant information is collected on the 'biodiversity' website.</p> <p>Projects, actions, campaigns, special observations are communicated through the communication channels of the Green Office. There was also an article in the Durf Denken magazine: 'Students and staff working together for more biodiversity'.</p> <p>Information boards on site (at the nature reserve, pop-up garden and biodiversity path on Sterre campus, at the vegetable gardens, etc.) inform the passers-by.</p>
Adjustment and planning	

3.5. Pillar 5: Deployment of UGent expertise

There is a great deal of expertise on biodiversity and green space (management) within UGent. A biodiversity working group that brings these experts together with policy staff and the UGent administration acts as an advisory body and takes on the following tasks:

- evaluating proposals from the green space department, faculties, staff and students concerning the organisation and management of green space and biodiversity and testing them against the UGent Biodiversity Plan (see also pillar 1);
- formulate own proposals on the design and management of and communication about green spaces and biodiversity;
- advising on policy decisions within UGent that have an impact on biodiversity and green space (see also pillar 2);
- Follow up on the progress of the biodiversity plan.

Action 12.	Establish and operationalise a biodiversity working group
Evaluation	The biodiversity working group consists of a coordinating steering group that meets monthly and a broader working group that is kept informed via Transitie

	UGent and ad hoc at an interesting stage of a green management plan, a tour, etc.
Adjustment and planning	The biodiversity working group must receive a formal mandate from the UGent Board that ensures clarity on the responsibilities, tasks and role of this working group.

The following collaborations with academics, students and policy-makers have been or are being set up:

Scientific publication for Nature Sustainability (forthcoming): How to turn universities into action-oriented living labs for urban green and biodiversity?
<i>Cooperation with experts biodiversity working group</i>
Master's thesis: Quantification of the ecosystem services delivered by green infrastructure on UGent campuses (see action 7).
<i>ForNaLab, biodiversity working group</i>
Student job: First spatial calculation for Sterre campus, based on the new biological value map and the Biodiversity metric 3.0 (see action 4).
<i>ForNaLab, DGFB, Biodiversity Working Group</i>
Student job: inventory of species diversity on 10 campuses (see action 7).
<i>Department of Biology, Green Office, working group biodiversity</i>
Student job: Drawing up an ecological green management plan for agricultural land of Proefhoeve Melle (see action 1).
<i>ForNaLab, Green Office, DGFB, biodiversity working group</i>
Living lab campus Sterre: How to increase biodiversity after softening? Setting up block experiment with different types of substrate and seed mixtures.
<i>ForNaLab, Green Office, DGFB, biodiversity working group</i>
Master's thesis: Biodiversity conservation, restoration and expansion on private property, with case study UGent (ongoing).
<i>Department of European, public and international law</i>
Bachelorproef: Behoud van groen en biodiversiteit in beleidbeslissingen UGent.
<i>ForNaLab, biodiversity working group</i>
Bachelor thesis: Drawing up of indicators for the UGent biodiversity plan (see action 7).
<i>ForNaLab, biodiversity working group</i>