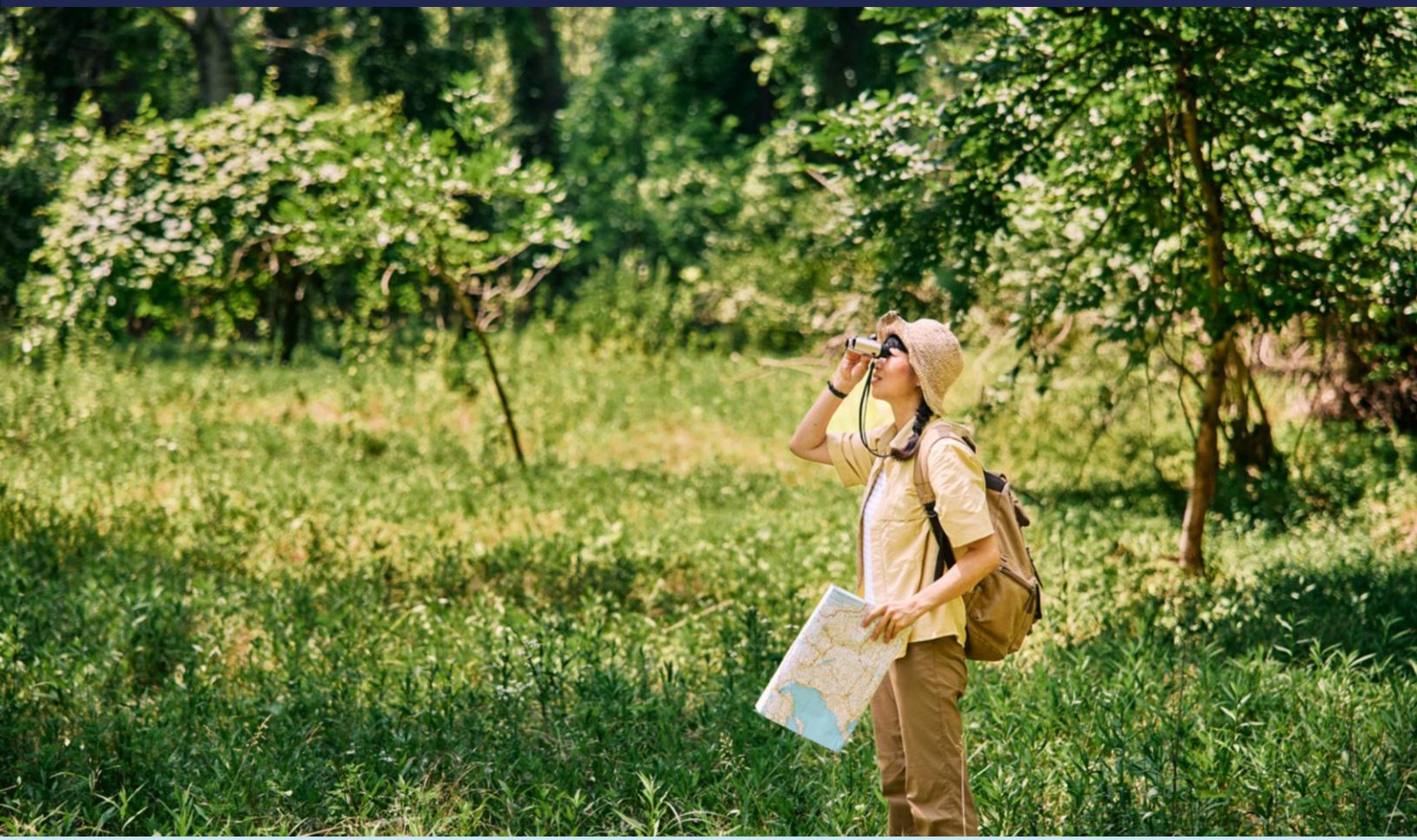
LDE Thesis Lab 2026-2027

Human-Nature Relationships for Thriving Biodiversity

Ecology, Humanities, Design, Finance, Governance and Education for a Nature-Inclusive Future



Thesis Labs
Leiden-Delft-Erasmus Universities

Universiteit Leiden

TU Delft

Erasmus University Rotterdam

Leiden Biodiversity Network

Assignments

YOUR OWN ASSIGNMENT? 5

#0 Your own assignment? Come up with your own thesis research! 5

ASSIGNMENTS ON ECOLOGY, BIODIVERSITY & NATURE-BASED SOLUTIONS 6

#1 Is native still relevant? **(Gemeente Leiden)**.....7

#2 Developing a biodiversity monitoring protocol for NatuurBuurt, a field lab focusing on nature inclusivity **(NatuurBuurt – The Green Village – TU Delft)** 8

#3 Design of urban blue-green spaces: climate adaptive, subsidence-mitigating, biodiversity increasing, yet with low mosquito risk? **(The Green Village – TU Delft)**.....10

CLOSED

#4 From agricultural impacts to Nature-Positive solutions: assessing impacts on biodiversity with THRIVE **(Naturalis Biodiversity Center)**.....12

ASSIGNMENTS ON URBAN ECOLOGY, SPATIAL DESIGN & PLANNING 14

#5 Soil as more-than-resource: visualizing soils as dynamic ecologies **(TU Delft)**.....15

#6 Cultivating urban foodscapes: exploring the ecological and social impacts of urban food-production **(Gemeente Leiden)** 16

#7 From grey giants to green giants: Rethinking the post-war apartment complex for people, plants and biodiversity **(Inhabitants project group Sustainability VvE)** 17

#8 Design principles for biodiversity-supportive area development on TU Delft Campus **(TU Delft)** 18

#9 From nuisance to neighbour: Rethinking our relationship with urban trees **(Belangenvereniging Binnenstad Noord Delft - burgerinitiatief de Kroonlezing)** 20

#10 How can we improve growing conditions for mature urban trees? **(Gemeente Leiden)** 22

ASSIGNMENTS ON SOCIETY, BEHAVIOUR & ENVIRONMENTAL EDUCATION 23

#11 All creatures great and small got to obsidentify them all **(Stichting Duurzame Stad)**.....24

CLOSED

#12 Does participation make a difference? Exploring nature connectedness in De Staart **(IVN Natuureducatie)**.....25

#13 Coexisting with the river: Residents of de Staart and their relationship with the Wantij **(IVN Natuureducatie)** 26

#14 Understanding nature connectedness and engagement among IVN members **(IVN Natuureducatie – Leidse regio afdeling)** 27

#15 Reimagining urban rivers: how art can foster human–nature relationships and biodiversity stewardship **(Erasmus - Institute for Housing and Urban Development Studies (IHS))** 29

#16 Human–nature relations and higher education: cultivating capacities for a flourishing world **(We Are Nature - Stichting Spiritual Ecology)** 31

#17 From visitor to steward: fostering nature-friendly recreation in Hollandse Duinen **(Nationaal Park Hollandse Duinen)** 33

Assignments on Governance, Justice & Sustainable Transitions 35

#18 Controlling nature or collaborating with it? How climate technologies shape human-nature relationships **(Stichting Toekomstbeeld der Techniek (STT))** 36

#19 Local ecological knowledge and the blue economy: the case of seaweed **(Leiden University - Institute for History)** 38

#20 Conservation without (further) marginalization: reconciling biodiversity conservation with indigenous rights and self-determination (Leiden University) 39

#21 Nature as relation, not resource: indigenous ontologies and the future of conservation **(Leiden University)** 41

#22 Beyond circularity: designing decision frameworks that restore biodiversity and strengthen human-nature relationships **(Circular Clarity B.V.)** 43

#23 Harvest knowledge and regenerate to practice **(Leiden University – LIACS & Humanities)** 45

#24 Whose variables count? Local knowledge and data analytics for sustainable crop futures in Cerrado (Brazil) **(Leiden University – LIACS)** 47


Leiden
Biodiversity
Network


Leiden


Naturalis
Biodiversity
Center


THE
GREEN
VILLAGE


Belangenvereniging Binnenstad Noord


ivn
natuur
educatie


CIRCULAR
CLARITY.org


Stichting
Toekomstbeeld
der Techniek


Nationaal
Park
Hollandse
Duinen


Universiteit
Leiden


TU Delft


IHS
Making cities work

YOUR OWN ASSIGNMENT?

#0 Your own assignment? Come up with your own thesis research!

Create your own angle and 'explore the bigger picture'. You can choose to create your own question (your own thesis research, from your own study background). Your research should of course relate to the central question of this Lab. If you participate in the Lab with your own question, we will help you connect with the network of participating organizations so you can gather insights, data or do interviews.

Assignments on Ecology, Biodiversity & Nature-Based Solutions

#1 Is native still relevant? **(Gemeente Leiden)**

Organisation

Gemeente Leiden is the local government responsible for developing and implementing policy and services for the city and its residents. Together with residents, businesses and other organisations, the municipality works on the future of Leiden and the wider Leiden region. Website**:** https://gemeente.leiden.nl/

Thesis assignment

In this study: https://knnv.nl/kennisbank/vijf-jaar-onderzoek-naar-overwinterende-insecten-op-platanen-in-bergen-op-zoom/ some amateur researchers came to the surprising conclusion that Sycomore (Platanus) trees, known for their lack of supporting biodiversity, host a surprising amount of diversity under their bark in winter. Prompting calls for the further adoption of this non-native species in the Netherlands urban landscape for reasons of biodiversity. This study, however, omitted one vital detail of scientific rigor and that is to include a control in their study.

Research Question: Are native species in an urban setting still more relevant for biodiversity in comparison to long adopted non-native species?

How does Sycomore (Platanus) holds up against our native Sycomore (Acer pseudoplatanus) in winter bark insect diversity? Or, compared to our native Oaks (that has groovy bark) or even just pieces of loose pavement. Is Platanus deserving their new status as biodiversity champions or is there still merit to utilizing native species in the urban environment?

Expected type of work or methodologies

It would be good to follow the method in described in the previous study

Available data/reports or other relevant information sources for the project

https://knnv.nl/kennisbank/vijf-jaar-onderzoek-naar-overwinterende-insecten-op-platanen-in-bergen-op-zoom/

#2 Developing a biodiversity monitoring protocol for NatuurBuurt, a field lab focusing on nature inclusivity **(NatuurBuurt – The Green Village – TU Delft)**

Organisation

NatuurBuurt is a field lab at The Green Village focused on nature-inclusive building and increasing biodiversity in urban environments. It brings together governments, businesses, knowledge institutions and other partners to develop and test nature-inclusive innovations.
Website**:** https://thegreenvillage.tudelftcampus.nl/

Thesis assignment

The Green Village is establishing NatuurBuurt, a new field lab dedicated to testing and validating innovations that contribute to nature inclusivity and biodiversity enhancement in the built environment. NatuurBuurt will serve as a living lab where researchers, entrepreneurs and governments can develop and evaluate solutions that support biodiversity. A key challenge within NatuurBuurt is the assessment of biodiversity impact. To determine whether innovations contribute positively to biodiversity, monitoring methods are required. Various monitoring approaches are currently available, ranging from traditional field surveys to innovative techniques such as environmental DNA (eDNA) and automated detection using cameras, sensors, and artificial intelligence. In addition, several entrepreneurs collaborating with NatuurBuurt have developed monitoring tools and methods. To ensure consistent and evidence-based evaluation of innovations, The Green Village seeks a standardized biodiversity monitoring protocol for use within NatuurBuurt.

The objective of this graduation project is to evaluate existing biodiversity monitoring methods and develop a practical monitoring protocol that can be applied to the innovations of NatuurBuurt.

The student will investigate and compare different monitoring approaches and provide recommendations on how biodiversity can be monitored effectively, efficiently, and consistently across innovation projects.

Main Research Question: How can biodiversity within NatuurBuurt be monitored effectively to evaluate the impact of nature-inclusive innovations?

Sub-questions:

1. Which biodiversity monitoring methods are currently used in research and practice?
2. What are the strengths and limitations of methods such as Biodiversity monitoring according to BKN principles, Environmental DNA, Automated species detection (camera traps, acoustic monitoring, AI-based recognition and monitoring methods developed by participating entrepreneurs.
3. How do these methods compare regarding costs, accuracy and reliability, ease of implementation, scalability, applicability within a field lab environment.
4. Which combination of monitoring methods is most suitable for NatuurBuurt?
5. How can biodiversity monitoring be standardized through a practical monitoring protocol?

Expected type of work or methodologies

- Literature review on biodiversity monitoring methods
- Benchmarking and comparison of monitoring approaches
- Interviews with experts, researchers, and entrepreneurs
- Evaluation of monitoring requirements for NatuurBuurt
- Assessment of costs, accuracy, and applicability
- Development of a biodiversity monitoring protocol
- Recommendations for implementation within NatuurBuurt

Available data/reports or other relevant information sources for the project

We will share all information we have on NatuurBuurt, such as the program plan. We will link the student to a relevant network related to the topic.

CLOSED

#3 Design of urban blue-green spaces: climate adaptive, subsidence-mitigating, biodiversity increasing, yet with low mosquito risk? **(The Green Village – TU Delft)**

Organisation

The Green Village is an open-air living lab at TU Delft where researchers, students, companies, governments and citizens develop and test sustainable innovations in a real-life environment. Its work focuses on areas such as sustainable buildings, future energy systems and climate-adaptive cities. Website**:** https://thegreenvillage.tudelftcampus.nl/

Thesis assignment

Deltas have long been attractive places to live because of their fertile soils. Yet ongoing urbanization has placed increasing pressure on these vulnerable environments. Today, deltas around the world face challenges such as pollution and land subsidence. In the Netherlands, for example, economic losses related to subsidence are projected to exceed 50 billion euros by 2025 if no major innovations are implemented. Nevertheless, more than one million new homes are planned in the Dutch delta, reflecting a broader international trend. This raises a crucial question: how can we inhabit deltas in a more sustainable way, learning to live with water rather than fighting against it? Although many concepts and ideas exist, implementing them at scale remains difficult. TU Delft's new 10-hectare field lab The Blue Village aims to become a testing and demonstration site for innovations that support safe and healthy living environments in deltas. Like the existing field lab The Green Village, it will serve as an intermediate step between laboratory research and real-world application, helping to accelerate the upscaling of promising solutions. One promising approach to making urban deltas more climate-resilient, reducing land subsidence, and enhancing biodiversity is to increase water levels, expand water surfaces, and create more (wet) green spaces. A common concern, however, is that such measures might attract potentially harmful mosquitoes. Research shows that with thoughtful design of water and green areas this risk can be significantly reduced.

The thesis assignment consists of three components:

1. conducting a literature review on the relationship between water/green design and mosquito risks,
2. developing a design for water and green infrastructure in The Blue Village, including a monitoring plan,
3. drafting practical guidelines for municipalities.

Your thesis will contribute to the development of The Blue Village as a new and unique innovation facility. You are encouraged to work part-time at our The Green Village office to interact with our team and partners.

Expected type of work or methodologies

Literature review, research by design

Available data/reports or other relevant information sources for the project

- The Green Village website: https://www.thegreenvillage.org/ Documentation on The Blue Village can be send on request.
- https://www.universiteitleiden.nl/en/research/research-output/science/interplay-of-landscape-and-climate-on-culex-pipiens-mosquitoes-in-the-netherlands

CLOSED

#4 From agricultural impacts to Nature-Positive solutions: assessing impacts on biodiversity with THRIVE **(Naturalis Biodiversity Center)**

Organisation

Naturalis Biodiversity Center is a national research institute, museum and heritage institution dedicated to understanding and preserving biodiversity. Through scientific research, collections, data and public engagement, Naturalis contributes to addressing challenges related to biodiversity, climate and the living environment. Website: https://www.naturalis.nl/

Thesis assignment

Agriculture is one of the major drivers of global biodiversity loss and occupies approximately 4.8 billion hectares, more than one-third of the Earth's land area. At the same time, agricultural production is essential for global food security. A key challenge is therefore to understand where and how agricultural activities affect biodiversity, and where interventions could reduce these impacts while maintaining food production. Naturalis Biodiversity Center is one of the leading institutions for biodiversity research and conservation and increasingly works with companies and financial institutions to translate biodiversity science into practical decision-making. Through initiatives such as BIONEERS and the development of THRIVE, a biodiversity impact and dependency assessment tool, we aim to quantify biodiversity impacts and identify opportunities for mitigation and nature-positive action. This project will investigate how agricultural activities affect biodiversity across different spatial contexts and how these impacts can be assessed using THRIVE and complementary biodiversity data. Key questions could include: Where are agricultural activities associated with the greatest biodiversity impacts? Which biodiversity components are most affected? Where do opportunities exist to conserve, restore or enhance biodiversity within agricultural landscapes? And how can this information support more nature-positive agricultural decision-making? The project will help bridge biodiversity science and practical decision-making by translating ecological information into spatially explicit insights relevant to conservation, restoration and sustainable agriculture.

Expected type of work or methodologies

We are open to the student's own methodological approach. Spatial analysis and quantitative data analysis would be particularly relevant, potentially combining agricultural land-use data, biodiversity data and environmental or conservation-priority information. Depending on the research question, suitable approaches could include GIS and spatial analysis, biodiversity impact assessment, statistical modelling, scenario analysis, data integration or visualization. We would encourage the student to propose and develop the most appropriate methodological framework in consultation with the commissioner(s). We are particularly interested in an interdisciplinary approach connecting biodiversity science with spatial analysis, sustainability, and/or business and governance.

Available data/reports or other relevant information sources for the project

- BIONEERS, an NWO-funded project on nature-inclusive decision-making: https://www.nwo.nl/en/news/five-research-projects-launched-for-nature-inclusive-decision-making-kic
- THRIVE, Naturalis' biodiversity impact and dependency assessment tool: https://www.naturalis.nl/en/science/biodiversity-and-society/thrive

Assignments on Urban Ecology, Spatial Design & Planning

#5 Soil as more-than-resource: visualizing soils as dynamic ecologies **(TU Delft)**

Organisation

Delft University of Technology (TU Delft) is a research university specialising in engineering, technology and design. It combines scientific research and education with collaboration with industry, government and society to address technological and societal challenges. Website: https://www.tudelft.nl/

Thesis assignment

Soil is largely treated as a resource to be leveraged for human needs. Even "nature-inclusive" approaches tend to value soil mainly for what it delivers to us, rather than as a living, relational entity in its own right. This instrumental framing limits how we can imagine multispecies futures. It also flattens soil's temporality: the dynamic, layered timescales of soil formation rarely feature in how we plan, design, or engage with it otherwise.

Question: How can soils be represented as living and dynamic ecologies that humans play a part in? And how might such representations influence the way people understand, value and engage with soil?

This question connects directly to my PhD research, which uses design experimentation to explore alternative ways of working with soil in spatial planning and design. Soil rarely gets the same visual or imaginative attention as more visible counterparts.

Expected type of work or methodologies

Artistic methods: modelling, drawing, etc.

Available data/reports or other relevant information sources for the project

Lots of relevant literature; research would not be data-based but rather based on experiences, fieldwork, design work.

See the winners of the Ig Nobel prize: https://www.nature.com/articles/d41586-026-02650-x

And the article: https://www.science.org/doi/10.1126/science.adw0030

#6 Cultivating urban foodscapes: exploring the ecological and social impacts of urban food-production **(Gemeente Leiden)**

Organisation

Gemeente Leiden is the local government responsible for developing and implementing policy and services for the city and its residents. Together with residents, businesses and other organisations, the municipality works on the future of Leiden and the wider Leiden region. Website: https://gemeente.leiden.nl/

Thesis assignment

The city is exploring opportunities for developing a municipal food strategy. This is a new policy area for Leiden. It is likely to intersect with related topics such as biodiversity and human–nature relationships. It could include, for example, community gardening, food production education, or supporting local biological production. To help policymakers explore this topic, we have formulated three potential questions.

Please feel free to select the question(s) you consider most relevant (if any at all):

1) How can urban food production be integrated into climate-adaptive urban design to boost biodiversity without increasing pressure on water resources?
2) Which forms of urban food production (e.g. community gardens, allotments, food forests, rooftop agriculture, edible public space) are most suitable in different urban contexts (historic center, pre-war neighborhoods, post-war neighborhoods, industrial areas), considering their ecological, social, economic, and spatial costs and benefits?
3) How do different forms of urban food production shape human–nature relationships for different user groups, including participants/volunteers, consumers, neighboring residents, and passers-by?

Expected type of work or methodologies

Free to find their own approach, but the more locally-oriented, the better.

Available data/reports or other relevant information sources for the project

The existing network of the city can function as a good starting point for research.

#7 From grey giants to green giants: Rethinking the post-war apartment complex for people, plants and biodiversity **(Inhabitants project group Sustainability VvE)**

Organisation

The Inhabitants Project Group Sustainability is a resident-led group within a homeowners' association (VvE) that focuses on sustainability and improving the environmental performance of the building. The group brings residents together to explore and support practical sustainability measures.

Thesis assignment

The project group Sustainability is a group of inhabitants that live in Delft, in an apartment building built in the 1960s. After World War II, this type of apartment complex was built often throughout Delft, with the intention to house as many people as quickly as possible. The complex consists of stone and concrete and is designed to take up minimal space. Therefore, balconies and galleries are small. Due to change in climate, especially with heat during summer, these apartment complexes are prone to heat induced stress. In addition, animals and insects find no shelter, food or mating ground in or around these complexes, as there is no space for any type of greenery. In short: these types of apartment complexes are tall, grey giants with little to no use to biodiversity.

The question arises: how can we improve existing (old) apartment complexes to be a healthy living area for both people, animals and plants? Is it possible to design a solution that is applicable to not only this particular apartment complex in Delft, but many others in Delft and maybe even in The Netherlands or abroad?

Nowadays, with the knowledge that we have about biodiversity and the environment, new apartment complexes are built with this is mind. Green complexes with vertical green walls and ample room for plants on balconies and galleries. But what do we do with all the apartment buildings that already exist? Rebuilding them takes a lot of resources, both in time and in money. Demolishing an existing complex also creates a different environmental challenge: waste. So, what if we could use what we already have? Improving not only the living area of the inhabitants of the project group, but creating a groundbreaking innovation that can improve existing apartment buildings all over the world!

Expected type of work or methodologies

They are free to find their own approach

Available data/reports or other relevant information sources for the project

The Green Village in Delft has information and resources on greenery in and around apartment buildings. You may contact Hannah Sorgedrager.

#8 Design principles for biodiversity-supportive area development on TU Delft Campus **(TU Delft)**

Organisation

Delft University of Technology (TU Delft) is a research university specialising in engineering, technology and design. It combines scientific research and education with collaboration with industry, government and society to address technological and societal challenges. Website: https://www.tudelft.nl/

Thesis assignment

The TU Delft campus is undergoing significant spatial transformation in the coming years, including new construction, renovation, and redesign of outdoor areas. These developments put pressure on the available green space and therefore on the habitat of locally occurring species. At the same time, area development offers an opportunity to structurally enhance biodiversity, provided ecological design principles are integrated from the very beginning. The challenge is that ecological values are often considered too late in the design process, causing missed opportunities and suboptimal implementation of measures.

The aim of this project is to investigate which design principles and spatial interventions are needed to sustainably support locally and potentially occurring species on campus. This includes identifying target species, analysing their habitat requirements, and translating these into concrete design guidelines for buildings, outdoor spaces, and green-blue structures. These guidelines, in turn, may serve as input for future developments.

This issue is relevant because TU Delft is committed to creating a future-proof, biodiverse campus that contributes to well-being, climate adaptation, and ecological connectivity within the city. Involving students will generate new knowledge, inspiration, and a broadly supported vision for nature-inclusive area development.

Expected type of work or methodologies

Students are free to choose their approach, but recommended methods include:

- Habitat suitability analysis
- GIS spatial analysis
- Design research
- Literature review
- Interviews with experts
- Output should include maps with suggestions for interventions for habitat creation for target species, in line with planned project activities on campus

Available data/reports or other relevant information sources for the project

Available materials include:

- TU Delft vision documents on the development of TU Delft Campus
- Ontwikkelkader EcoCampus: policy framework for a climate adaptive and nature-inclusive campus with target species and green-blue structures map
- Ecological quick scans
- Waarneming.nl with data on observed species on campus
- Municipality of Delft policy framework on nature-inclusive buildings

Other remarks

The output should be a science-based, explorative research on design principles for enhancing urban biodiversity. It should provide maps that describe desired interventions for TU Delft in line with the current state of the campus and planned spatial projects. The methods used, however, should set an example for how locally relevant design principles may be developed and applied. In this way, the general body of knowledge on this topic should be increased, supporting other organizations (such as campuses and municipalities) as well.

#9 From nuisance to neighbour: Rethinking our relationship with urban trees **(Belangenvereniging Binnenstad Noord Delft - burgerinitiatief de Kroonlezing)**

Organisation

Belangenvereniging Binnenstad Noord is a residents' organisation representing the interests of people living in the northern part of Delft's historic city centre. De Kroonlezing is an initiative of the association that brings residents, experts, policymakers and other stakeholders together around issues related to trees, greenery and a liveable urban environment. Website: https://binnenstadnoord.nl/

Thesis assignment

In historic city centres, residents increasingly need trees that provide shade and help cool the city. Yet trees that deliver significant cooling benefits need sufficient space to develop large crowns and healthy root systems. In practice, the choice of urban trees is often dominated by concerns about potential nuisance, such as honeydew on cars, uneven pavement, tree-disease, non-native species, visual compatibility with historic streetscapes, or the loss of parking spaces needed for larger tree pits. As a result, municipalities may choose smaller or slow-growing species that minimise perceived nuisance, but also provide limited shade and cooling.

This creates a growing mismatch between the needs of a warming city and the way we currently value and manage urban trees. The positive contributions of mature trees (such as shade, cooling, biodiversity, health and quality of life) are often less visible in decision-making than their potential disadvantages.

Our research question: How can we transform the urban tree from a perceived source of nuisance into a valued partner in creating a climate-resilient and biodiverse city?

As a residents' association, we are particularly interested in how residents and the municipality can develop a new shared perspective on the role of trees in the historic city centre. What forms of dialogue, design, spatial planning and shared stewardship could help us make room for larger, healthier trees while addressing legitimate concerns about nuisance, heritage and limited urban space?

This question is directly relevant to our organisation because we want to contribute to a liveable, climate-resilient neighbourhood while strengthening the relationship between residents, the municipality and urban nature. It also aligns closely with the Lab's aim of rethinking human-nature relationships and translating this into practical changes in urban planning and everyday decision-making.

Expected type of work or methodologies

Free to find own approach

Available data/reports or other relevant information sources for the project

- Www.binnenstadnoord.nl
- Www.Kroonlezing.nl
- https://binnenstadnoord.nl/2026/05/09/onderzoek-geeft-perspectief-voor-schaduwbomen-langs-onze-grachten/
- Contact with the residents, policymakers and local experts will be facilitated and supported.

#10 How can we improve growing conditions for mature urban trees? **(Gemeente Leiden)**

Organisation

Gemeente Leiden is the local government responsible for developing and implementing policy and services for the city and its residents. Together with residents, businesses and other organisations, the municipality works on the future of Leiden and the wider Leiden region. Website: https://gemeente.leiden.nl/

Thesis assignment

We would like to research how the growing conditions of mature trees in urban areas can be improved. In particular, we are interested in technical solutions that can help preserve mature trees and provide them with better opportunities to thrive in a densely built urban environment.

Many of the canal walls in our city are lined with lime trees (Tilia) that are now 50–60 years old. Because these trees have very limited space for rooting and growth, they remain relatively small and vulnerable. In the coming years, many canal walls in the historic city centre of Leiden will be replaced. As a result, these lime trees may need to be removed because they simply do not have enough space to continue growing. We therefore consider it valuable to research which technical solutions could improve the growing conditions of these trees and thereby increase their lifespan, vitality, and chances of survival.

Research question:
How can the growing conditions of mature urban trees be improved, and which technical solutions can increase their vitality and lifespan in a densely built urban environment?

Expected type of work or methodologies

Literature study, possibly including fieldwork

Assignments on Society, Behaviour & Environmental Education

#11 All creatures great and small got to obsidentify them all **(Stichting Duurzame Stad)**

Organisation

Stichting Duurzame Stad is a non-profit organisation focused on promoting sustainability at the local and urban level. It works on connecting people and initiatives and encouraging practical solutions for a more sustainable city.

Thesis assignment

Placeholder – assignment will be added.

CLOSED

#12 Does participation make a difference? Exploring nature connectedness in De Staart **(IVN Natuureducatie)**

Organisation

IVN Natuureducatie is a national organisation that helps people learn about and connect with nature. It organises nature education, activities, courses and community projects throughout the Netherlands. Website: https://www.ivn.nl/

Thesis assignment

In De Staart, Dordrecht, a tidal park will be developed as a Nature Based Solution (NBS). Through this project, we aim to strengthen the relationship between residents and the Wantij. By involving residents in the development of the tidal park, we hope to foster a greater sense of connection, ownership, and care for the river and its surroundings.

Questions: But how can we tell whether this actually happens? How can we measure whether participation helps residents feel more connected to the Wantij and more willing to care for it? And which aspects of the participatory process contribute most to these outcomes?

The answers to these questions can help create a blueprint for future participation in Nature Based Solution projects.

The research question can still be modified, since we are still developing the specific direction of the project. However the core questions will be maintained: naturbased solutions; participation; effective nature connectedness. This thesis proposal can be connected with the other Assignment we submitted as IVN: Coexisting with the river: Residents of de Staart and their relationship with the Wantij. We can imagine that cooperation of two students would create much benefit.

Expected type of work or methodologies

Together we'll find a good method. For us it must be easy repeatable after the student has once helped us in Dordrecht.

Available data/reports or other relevant information sources for the project

There is a lot of information available because the project is part of the program NL2120 Elevating Naturebased Solutions (https://www.nl2120.nl/kennisbank/).

Besides this the thesis student will get access to information from IVN. The student will become part of a projectgroup of IVN actively busy with NL2120, participation and organising nature connectednes.

#13 Coexisting with the river: Residents of de Staart and their relationship with the Wantij **(IVN Natuureducatie)**

Organisation

IVN Natuureducatie is a national organisation that helps people learn about and connect with nature. It organises nature education, activities, courses and community projects throughout the Netherlands. Website: https://www.ivn.nl/

Thesis assignment

In De Staart, Dordrecht, a tidal park will be developed as a Nature Based Solution (NBS). To ensure that this development is well connected to the local community, it is important to understand how residents relate to the Wantij.

This assignment explores the role of the Wantij in the identity and everyday lives of residents of De Staart. How do residents experience and interact with the river? What meaning does it have for them? And what opportunities does this offer for developing a more reciprocal relationship between people and nature?

Through this exploration, students will reflect on how Nature Based Solutions can strengthen connections between local communities and their natural environment.

The research question can still be modified, since we are still developing the specific direction of the project. However the core questions will be maintained: connections between local communities and their natural environment. This thesis proposal can be connected with the other problem we submitted as IVN: 'Does participation make a difference? Exploring nature connectedness in De Staart'. We can imagine that cooperation of these two students would create much benefit.

Expected type of work or methodologies

Together we'll find a good method.

Available data/reports or other relevant information sources for the project

There is a lot of information available because the project is part of the program NL2120 Elevating Naturebased Solutions (https://www.nl2120.nl/kennisbank/) . Besides this the thesis student will get acces to information off IVN. The student will become part of a projectgroup of IVN actively busy with NL2120, participation and organising nature connectednes.

#14 Understanding nature connectedness and engagement among IVN members **(IVN Natuureducatie – Leidse regio afdeling)**

Organisation

IVN Natuureducatie is a national organisation that helps people learn about and connect with nature. It organises nature education, activities, courses and community projects throughout the Netherlands. Website: https://www.ivn.nl/

Thesis assignment (Dutch only)

Wij willen graag weten wie onze leden zijn, wat zij nodig hebben en of wij onze IVN-doelen realiseren. Het doel van IVN Natuureducatie is om mens en natuur dicht bij elkaar te brengen. We laten kinderen, jongeren en volwassenen beleven hoe leuk, gezond én waardevol natuur is. (ivn.nl/wat-wij-doen/) Lukt ons dat ook? Gaan ze meer van de natuur houden en er daardoor beter voor zorgen? Is de relatie met natuur veranderd in de loop van de jaren, bij de leden van IVN Leidse regio? 20% van de leden geeft op vrijwillige basis natuureducatie in de omgeving. Van 80% van onze leden weten we eigenlijk niets. Het is niet makkelijk om leden te activeren om iets te doen. Wat hebben ze nodig om mee te doen? Willen leden, die actief zijn, meer met andere IVN'ers doen of is hier helemaal geen behoefte aan? Of zijn de leden eigenlijk wel tevreden? In 2027 viert IVN Leidse regio haar 50-jarig jubileum. Het is tijd om onderzoek te doen. Mogelijke vragen:

A) Is bij IVN'ers de relatie met natuur in de tijd veranderd?
   i) Wanneer was hun eerste natuur herinnering?
   ii) Wat maakt natuur interessant? Wat doet natuur met ze? Wat is natuur?
   iii) Is de relatie met natuur in de tijd veranderd? Zijn ze er meer van gaan houden en voor gaan zorgen?
   iv) Heeft IVN daaraan bijgedragen? Hoe?

B) Wat doen leden om natuur dichtbij te brengen voor zichzelf en bij anderen?
   i) Waarom (en wanneer) zijn mensen lid geworden?
   ii) Zijn leden actief vanuit IVN Leidse regio? Bij ja: Wat doen ze? Wat maakt dat leden (nog steeds) actief zijn?
   iii) Zijn leden actief bij andere organisaties die in/aan/met natuur werken? Welke?
   iv) Wat zijn voorwaarden om actiever te zijn/worden? Als leden iets (meer) bij IVN zou willen doen, waar denken ze aan? En wat is er daarvoor nodig?

Expected type of work or methodologies

De studenten zijn vrij om een eigen benadering te bepalen. We willen wel inzicht in de opzet en vragen. Met onze ervaring kunnen we daar een goede inbreng hebben. Vanwege de regels voor privacy verlopen de contacten met de leden in eerste instantie via het bestuur van IVN Leidse regio.

Available data/reports or other relevant information sources for the project

- Ganzevoort, W., & van den Born, R.J.G. (2018). Groene vrijwilligers: Wie zijn ze, wat doen ze en wat drijft hen? Institute for Science in Society, Radboud Universiteit.
- https://www.researchgate.net/publication/339150240_Burgers_voor_natuur_-_Policy_paper -> In dit artikel gaf Figuur 3 mij veel inzicht in de randvoorwaarden om als burger in de publieke ruimte iets te realiseren.
- Ganzevoort, W. (2021). Green volunteers in the spotlight: Understanding action for nature through studying citizen scientists and other nature volunteers. Doctoral dissertation, Radboud University.
- Gladys Barragan-Jason, Claire de Mazancourt, Camille Parmesan, Michael Singer, Michel Loreau. Human–nature connectedness as a pathway to sustainability: A global meta-analysis. Conservation Letters, Wiley, 2021, 15 (1), ff10.1111/conl.12852ff. ffhal-03768696f
- Riechers, M., Balázsi, Á., García-Llorente, M., & Loos, J. (2021). Human-nature connectedness as leverage point. Ecosystems and People, 17(1), 215–221. https://doi.org/10.1080/26395916.2021.1912830
- En er is een test ontwikkeld, zie https://natureintelligence.eu/publications/

#15 Reimagining urban rivers: how art can foster human–nature relationships and biodiversity stewardship **(Erasmus - Institute for Housing and Urban Development Studies (IHS))**

Organisation

IHS is an education, research and advisory institute within Erasmus University Rotterdam that focuses on housing, urban development and governance. It combines academic knowledge with practical experience to address urban challenges and support sustainable urban development. Website: https://www.ihs.nl/

Thesis assignment

Urban rivers are important ecosystems that support biodiversity while also providing social, cultural and recreational value. However, urban development and the management of rivers as infrastructure have often weakened people's relationships with rivers as living ecosystems. Residents may experience rivers mainly as scenery, recreational spaces or water-management systems, with limited awareness of the species and ecological processes they support.

Art and creative interventions could help make these less visible relationships more tangible, creating opportunities for people to experience, understand and care for urban rivers differently. However, there is limited understanding of how art can influence human–river relationships and whether these relationships can contribute to biodiversity stewardship.

The main research question is: How can art strengthen human–river relationships to support thriving biodiversity in urban environments?

Supporting questions are: How do residents currently perceive and relate to urban rivers and their biodiversity? How can artistic interventions create greater awareness, connection, care or responsibility towards river ecosystems? How can urban organizations incorporate arts-based approaches into river management and biodiversity initiatives?

This issue is relevant to urban management because successful river restoration requires more than ecological and technical interventions. It also requires public understanding, participation and long-term stewardship. Exploring art as a bridge between communities and river ecosystems could support objectives related to biodiversity restoration, community engagement, placemaking, climate resilience and nature-inclusive urban development.

Expected type of work or methodologies

Students are free to find their own approach

Available data/reports or other relevant information sources for the project

https://www.leiden-delft-erasmus.nl/en/news/can-art-change-our-view-of-nature-creatives-and-scientists-are-working-together

#16 Human–nature relations and higher education: cultivating capacities for a flourishing world **(We Are Nature - Stichting Spiritual Ecology)**

Organisation

We Are Nature and Stichting Spiritual Ecology work on the relationship between people, nature and society, exploring sustainability from ecological as well as personal and societal perspectives. Their activities include education and learning programmes focused on sustainability, systems thinking and inner development. Website: https://we-are-nature.nl/

Thesis assignment

We are interested in the role of education in a time characterised by ecological degradation, biodiversity loss, climate change, social uncertainty and increasing complexity. Universities traditionally prepare students primarily for professional and academic life, but may also have an important role in preparing them to navigate uncertainty, respond constructively to ecological and societal challenges, and participate in creating more sustainable futures.

This raises a deeper question about what education is ultimately for. If human flourishing is understood as fundamentally interconnected with the flourishing of the other-than-human world, education may need to move beyond transferring knowledge and technical skills. It may also need to cultivate inner, interpersonal and relational capacities that enable students to develop a sense of connection, agency, resilience and responsibility towards the living world. We would like to explore what such an educational perspective could mean for higher education and, more specifically, for students.

Expected type of work or methodologies

Depending on the student's disciplinary background and interests, the research could take a more philosophical/conceptual approach, or have a more applied focus through an empirical study / qualitative research (or mixed-methods) approach.

For example, the student could investigate the question ""which capacities and educational conditions may enable students to flourish while becoming active contributors to a flourishing living world", by studying students' experiences and perceptions, explore existing educational practices and perspectives of scientist/teachers from different disciplines on this matter, review relevant literature across fields such as environmental education, psychology, philosophy and sustainability science. The ultimate aim would not necessarily be to design a complete new educational system, but to better understand which capacities and educational conditions may enable students to flourish while becoming active contributors to a flourishing living world. We think students with a background in social sciences may fit well here, like anthropologist/sociologists, or other.

In case the student - or another student - from Philosophy is preferred/interested, we could also dive deeper in the concept of agency. This is used widely in institutional contexts, education,

popular culture and research across disciplines, and is commonly understood as the capacity of an individual to act. This research question would inquire into the possibilities and implications of non-individual and more-than-human or ecological conception of agency. This question can be further specified in any number of directions, depending on the interest of the student. Some examples might be: What if we conceived of agency not as a property of individual humans, but as a collective capacity, extending both into human communities and acknowledging our entanglement with more-than-human life? How might a critique of popular narratives and mythologies of individual agency allow for more vital and life-affirming alternatives to emerge? How might non-individual and eco-centric notions of agency inform practices in disciplines such as education, arts and culture, economics, and others? What ethical, epistemological or ontological implications does such a conception of agency have? What further questions does this raise about our relationships and responsibilities towards existing indigenous notions of self, epistemologies and ontologies? These questions could be raised purely philosophically, or against the context of the pilot project 'Knowledge to Wisdom' that we are currently developing with Leiden University, in which relationships with the more-than-human world are explored through experiential and contemplative pedagogies. The research could both help inform the educational practices developed during this pilot, as well as take the practice as a starting point for reflection.

Available data/reports or other relevant information sources for the project

Yes, we have quite some insights in interesting (scientific and other) literature that can be used for the theoretical framework, and can give proper advice and guidance on this. We are also giving a first pilot course on a similar topic through the From Knowledge To Wisdom Course in cooperation with CML/ Leiden University. Our partner at CML in Leiden may also be able to help with this (both in terms of literature tips and maybe data, but the data is not sure as there's a strict (ethics) policy on protecting the use of collected data. We would have to check this if this project is selected. We could also help to find contacts at the different faculties, in case the student is planning to do interviews.

CLOSED (preliminary)

#17 From visitor to steward: fostering nature-friendly recreation in Hollandse Duinen **(Nationaal Park Hollandse Duinen)**

Organisation

Nationaal Park Hollandse Duinen is a coastal landscape in South Holland where nature, recreation, culture and urban areas come together. The park brings together more than 60 organisations to protect and develop the area's natural and cultural values; it received official national park status in April 2026. Website: https://www.nationaalparkhollandseduinen.nl/

Thesis assignment

Nationaal Park Hollandse Duinen is a unique coastal landscape where nature, recreation, heritage and urban living come together. The area welcomes millions of visitors every year for activities such as walking, cycling, dog walking, horse riding and beach recreation. While recreation contributes to health, wellbeing and support for nature conservation, it can also place pressure on vulnerable habitats and species.

The challenge for Hollandse Duinen is not simply to reduce recreational use, but to encourage visitors to behave in ways that are more compatible with nature conservation goals. Many visitors experience the area primarily as a place to enjoy or consume recreational opportunities. However, long-term conservation of the landscape requires visitors to also feel connected to, and responsible for, the natural environment they use.

The central research question is: Which interventions can help recreational users in Hollandse Duinen feel more connected to nature and thereby encourage more nature-friendly behaviour?

Sub-questions may include:

- What factors influence whether visitors feel connected to and responsible for nature in Hollandse Duinen?
- How do different recreational groups (walkers, cyclists, dog owners, horse riders, beach visitors, etc.) experience and value the landscape?
- Which behavioural, communication, educational or design interventions are most effective in stimulating stewardship and nature-friendly behaviour?
- How can these interventions be applied within the context of a densely populated coastal national park?

This project directly supports the objectives of Nationaal Park Hollandse Duinen to strengthen the relationship between people and nature, increase public support for biodiversity conservation, and create a sustainable balance between recreation and ecological quality.

Expected type of work or methodologies

The student is free to develop an appropriate research design in consultation with supervisors. Field-based observations and behavioural experiments would be welcomed if feasible.

Available data/reports or other relevant information sources for the project

Potential sources include:

- National Park Hollandse Duinen strategic documents and management plans (https://www.nationaalparkhollandseduinen.nl/documenten/).
- Existing visitor surveys from partners such as Dunea, Staatsbosbeheer, PWN, municipalities and the Province of South Holland.
- Natuur en recreactieprofielen-kaarten (https://www.nationaalparkhollandseduinen.nl/wp-content/uploads/2024/07/NPHD-Natuur-en-recreatieprofielkaarten.pdf)
- PhD dissertation on Transformative landscape governance from Susan de Koning (https://books.radbouduniversitypress.nl/index.php/rup/catalog/view/Transformative-landscape-governance/605/377)
- Relevant networks and stakeholders that can facilitate interviews, focus groups and field experiments.

Other remarks

We are particularly interested in interdisciplinary approaches that combine environmental psychology, behavioural science, governance, recreation management and biodiversity conservation.

The research should provide practical recommendations that can be implemented by National Park Hollandse Duinen and its partners. We welcome students from different disciplinary backgrounds and are happy to facilitate access to our network of land managers, governments, NGOs and recreation stakeholders within the park area.

Assignments on Governance, Justice & Sustainable Transitions

#18 Controlling nature or collaborating with it? How climate technologies shape human-nature relationships **(Stichting Toekomstbeeld der Techniek (STT))**

Organisation

Stichting Toekomstbeeld der Techniek is an independent organisation that explores how technological developments may shape society in the future. Through multidisciplinary future studies, STT brings together perspectives from science, government, industry and civil society to explore long-term societal developments. Website: https://stt.nl/

Thesis assignment

Climate change adaptation is often presented as a challenge that can be addressed through technologies, innovations and environmental interventions. Examples include smart water management systems, digital twins, urban greening projects and nature-based solutions. While discussions on climate adaptation frequently focus on the effectiveness, efficiency, costs, or feasibility of such interventions, far less attention is paid to how they shape our relationship with nature. Different climate adaptation approaches implicitly promote different understandings of nature and humanity's role within it. Some technologies frame nature as a system that can be monitored, predicted and controlled. Others view nature as a provider of ecosystem services, while still others emphasize collaboration with natural processes as a source of resilience. These underlying assumptions influence which climate actions are considered desirable, legitimate or responsible.

This raises the following research question: How do different climate adaptation technologies mediate human-nature relationships?

Possible sub-questions include:

- What understandings of nature are embedded in different climate adaptation technologies?
- How do technologies shape how people perceive climate risks and environmental change?
- How do different technologies influence ideas about control, stewardship, partnership or dependence in relation to nature?
- What implications do these mediated relationships have for future climate action?

This question is relevant to Stichting Toekomstbeeld der Techniek's exploration of the future of a climate-resilient living environment. The exploration investigates how different visions of climate resilience are linked to different roles for technology, nature and society. A deeper understanding of technological mediation can help reveal the assumptions and values underlying climate adaptation strategies and support reflection on alternative pathways towards climate resilience.

Expected type of work or methodologies

Foresight and/or futuring are central to STT's way of working, so we would like these methods to be considered in the students thesis as well.

Available data/reports or other relevant information sources for the project

The student will be able to draw on materials developed within Stichting Toekomstbeeld der Techniek's (STT) ongoing exploration The Future of a Climate-Resilient Living Environment. These include a typology of different understandings of climate resilience. STT's preferred language is Dutch, the materials developed within the ongoing exploration will also be available in Dutch only. An English language thesis is no problem, but be aware of translation work that has to be done to make the information sources available in English.

#19 Local ecological knowledge and the blue economy: the case of seaweed **(Leiden University - Institute for History)**

Organisation

The Institute for History at Leiden University conducts research and provides education across a broad range of historical periods, regions and themes. Its researchers work from different perspectives and approaches to understand the past and its relationship with the present.
Website: https://www.universiteitleiden.nl/en/humanities/institute-for-history

Thesis assignment

Seaweed is being rapidly reimagined in Europe's blue economy: as a sustainable source of food, a feedstock for bioplastics and biofertilizers, a resource for medical and pharmaceutical applications, an ingredient in cosmetics, and, increasingly, as a climate tool because of its capacity to capture and retain carbon.1 Unlike in other parts of the world, where seaweed production depends largely on farming, European seaweed production still relies overwhelmingly, by some estimates as much as 99 percent, on the harvesting of wild stocks, which constitute the central focus of this project. Wild seaweed harvesting presents both economic opportunities and socio-ecological challenges, as its potential must be carefully balanced with ecological and social sustainability. The problem, indeed, is that current efforts to develop and expand the harvesting of wild seaweed in Europe are framed predominantly through narratives of investment, scaling, and market integration, while insufficiently addressing the broader implications these activities generate across the social seabed. Extensive seaweed harvesting can create or exacerbate unequal power relations between producers and local communities, resulting in the reconfiguration of coastal commons and social frictions. These tensions arise when the economization and enclosure of nearshore space collide with customary governance and place-based values. When ignored, even well-intended nature-based solutions can reproduce extractive logics and erode public trust, ultimately undermining conservation and restoration outcomes.

The core questions are: How can Local Ecological Knowledge (LEK) make seaweed harvesting simultaneously ecologically sound, socially inclusive, climate-effective, and economically profitable? How can these approaches be shared, adapted, and replicated across diverse coastal contexts without flattening local values or transferring benefits upward? And how can LEK help us to craft both policies and market strategies? What can we learn from the historical development of these forms of LEK?

Expected type of work or methodologies

Historical and qualitative research; oral history and interviews; comparative history

Available data/reports or other relevant information sources for the project

Horizon application

#20 Conservation without (further) marginalization: reconciling biodiversity conservation with indigenous rights and self-determination (Leiden University)

Organisation

Leiden University is an international research university founded in 1575, with faculties covering fields ranging from the humanities and social sciences to science, life sciences and medicine. The university combines research and education with a focus on contributing academic knowledge to society. Website: https://www.universiteitleiden.nl/en

Thesis assignment

Across the world, biodiversity-rich and biodiversity-threatened regions overwhelmingly overlap with Indigenous ancestral lands -from Amazonia to Panama's Darién Province to protected areas across the Global South and North. Conservation policy is still largely built on a Western conceptual split between "wild nature" and "human land," which treats Indigenous presence as a complication to be managed rather than a form of stewardship to be supported. In practice, this goes well beyond land title: conservation organizations and protected-area regimes have restricted farming, fishing, and hunting rights, and in some documented cases have obstructed or delayed infrastructure that communities themselves requested - health services, education development, roads, communication access- on the grounds that such development would threaten conservation goals. The result is a paradox in which the same institutions meant to protect biodiversity end up deepening the marginalization of the people who have sustained it.

This raises the question: How can biodiversity conservation practices be redesigned to uphold rather than undermine Indigenous sovereignty and land rights -as illustrated by the tension between protected-area management and Indigenous land claims in Darién, Panama, and comparable cases elsewhere in the Americas and the Global South and North? And more specifically: what mechanisms allow conservation goals and Indigenous self-determination to reinforce rather than compete with each other, and what can comparative cases across the Americas and the wider Global South and North teach us about which models succeed and which fail? This tension sits at the center of global biodiversity policy today and speaks directly to Leiden University's mission to educate engaged global citizens who contribute concrete, informed solutions to the world's most pressing challenges -here, the challenge of protecting ecosystems without reproducing the marginalization it claims to prevent.

Expected type of work or methodologies

A mixed-methods approach is encouraged, combining ethnographic or participatory engagement with affected communities (to understand how land sovereignty -or its absence- is experienced and negotiated locally), comparative case analysis across regions (e.g. Darién alongside a Global North case), and supporting quantitative data on conservation and development outcomes where land status varies (e.g. land-cover change, infrastructure access). Legal/policy documents (titling procedures, protected-area overlaps, court rulings) are a useful data source but not intended as the

primary lens. The student is free to propose and discuss their own methodological/multi-inter-trans-disciplinary approach with us.

Available data/reports or other relevant information sources for the project

Some sources exist but are fragmented and unevenly documented. These include national land-tenure and comarca/collective-title legislation, legal case files and court rulings on disputed land claims, and comparative deforestation/land-cover data (Indigenous territories vs. state-run protected areas) based on scientific research -and published in journal articles. Downstream effects on health, education, and infrastructure access are especially under-documented in formal literature and largely reside in grey literature: NGO internal reports, government correspondence, environmental impact assessments, undergraduate and masters theses, and local news coverage. Synthesizing this scattered material into a coherent comparative account of how land sovereignty (or its absence) shapes these downstream outcomes is itself part of the research contribution.

Other remarks

Working knowledge of Spanish would be a strong asset, given the concentration of relevant case material in Latin America. We're also open to the student narrowing the scope to one or two comparative case studies (e.g. Panama alongside one Global North example) rather than attempting full global coverage, depending on what's feasible within the thesis timeline. If a student proposes a compelling case beyond Latin America that reflects these same tensions (e.g. in Africa or Asia), we're open to discussing that as an alternative or complementary focus as well.

#21 Nature as relation, not resource: indigenous ontologies and the future of conservation **(Leiden University)**

Organisation

Leiden University is an international research university founded in 1575, with faculties covering fields ranging from the humanities and social sciences to science, life sciences and medicine. The university combines research and education with a focus on contributing academic knowledge to society. Website: https://www.universiteitleiden.nl/en

Thesis assignment

Mainstream conservation practice rests on a largely unexamined premise: that "humans" and "nature" are separate categories, with conservation defined as protecting nature from human activity. This framework is culturally specific rather than universal -many Indigenous relational understandings of nature do not draw this same boundary, instead treating land, ancestors, non-human species, and human communities as bound up in ongoing, reciprocal relationships rather than a protected object and its external threat. Decolonial scholarship has shown how this human/nature split is not a neutral scientific starting point but a colonial inheritance, one that has historically justified the dispossession and marginalization of Indigenous Peoples in the name of "protecting" land they had in fact long sustained. When conservation policy is built on this split without examining it, it risks treating Indigenous presence and practices as a problem to be managed, even where those same practices have sustained the ecosystem for generations.

This raises the question: How does the Western conceptual divide between "humans" and "nature" shape (and often undermine) conservation practices that overlap with Indigenous territories, and what would conservation look like if built instead on Indigenous relational understandings of land and nature? More specifically: what philosophical and ethical commitments do Indigenous relational frameworks entail, how do decolonial approaches help name and unsettle the conservation paradigm's colonial assumptions, and how could these insights be translated -without appropriation or flattening- into conservation policy and practice?

This question sits at the ethical root of the more practical and policy-facing tensions between conservation and Indigenous rights seen worldwide, and speaks to Leiden University's mission to educate engaged global citizens who contribute concrete, informed solutions to the world's most pressing challenges -here, by examining the ideas underlying conservation practice itself, not only its policy outcomes.

Expected type of work or methodologies

A case-study approach is expected: developing the conceptual and ethical argument through close engagement with one or more specific communities or contexts, rather than treating the human/nature divide in the abstract. This would combine literature review (Indigenous studies, decolonial theory, environmental philosophy, political ecology, archaeology) with ethnographic or participatory engagement where feasible, to ground the argument -and its decolonial critique of the

conservation paradigm- in a concrete case rather than leaving it purely theoretical. The student is free to propose and discuss their own case selection, disciplinary lens(es) and methodological approach with us.

Available data/reports or other relevant information sources for the project

This is a conceptual question best explored through a case-study lens, so relevant sources combine scholarly literature (Indigenous studies, decolonial theory, environmental philosophy, political ecology, archaeology) with case-specific material on the community or context selected. There is a growing body of work on Indigenous relational ontologies, "grounded normativity," and decolonial critiques of conservation and land governance, though much of it remains discipline-specific and has not yet been systematically connected to conservation policy debates. Ethnographic accounts, participatory mapping studies, and community-authored materials (where available for the chosen case) would serve as valuable primary sources for grounding the argument in lived practice rather than abstraction.

Other remarks

This question pairs naturally with the governance/land-sovereignty question we also submitted -a student could engage one directly and reference the other, a student with strong interdisciplinary interests could potentially bridge both, or two students could work as a team while each pursuing their own separate thesis, one on each question.

Working knowledge of Spanish would be an asset if working with Latin American case material, though this question is well suited to non-Latin American cases too, given its more conceptual framing.

#22 Beyond circularity: designing decision frameworks that restore biodiversity and strengthen human-nature relationships **(Circular Clarity B.V.)**

Organisation

Circular Clarity is a consultancy and network that helps organisations develop and accelerate circular and future-oriented business practices. Its approach focuses on practical tools, collaboration and creating value for organisations, society and future generations. Website: https://circularclarity.org/

Thesis assignment

Many circular economy initiatives successfully reduce material consumption, carbon emissions, and waste generation. However, biodiversity considerations are often treated separately, resulting in circular solutions that are resource-efficient but do not necessarily contribute to ecological restoration or stronger connections between people and nature.

As biodiversity loss continues to accelerate, organizations increasingly face the challenge of balancing circularity ambitions with broader ecological goals. Yet there is limited practical guidance on how design, procurement, and investment decisions can incorporate biodiversity outcomes and human-nature relationships alongside traditional circular performance indicators.

Circular Clarity supports organizations in developing circular strategies and decision-making frameworks. We see a growing need to move beyond a focus on resource efficiency towards regenerative and nature-positive approaches that create value for both people and ecosystems.

The central research question is: How can circular design, procurement, and investment decisions be structured so that they not only reduce resource use but also contribute to stronger human-nature relationships and the restoration of biodiversity?

Potential sub-questions include:

- How are biodiversity and human-nature relationships currently addressed within circular economy frameworks?
- Which decision criteria and indicators can be used to integrate biodiversity considerations into circular decision-making?
- What examples already exist of projects that successfully combine circularity, biodiversity enhancement, and human wellbeing?
- How can organizations practically apply these insights in procurement, design, and investment processes?

The goal is to develop actionable recommendations and a practical decision-making framework that helps organizations transition from "less harmful" circularity towards regenerative and biodiversity-positive value creation.

Expected type of work or methodologies

The student is free to develop an appropriate methodology in discussion with their academic supervisor. However, we believe the project would benefit from a mixed-method approach, potentially combining:

- Literature review.
- Comparative case study analysis.
- Semi-structured stakeholder interviews.
- Mapping and evaluation of existing decision-making frameworks.
- Development and testing of a practical decision-support framework or assessment model.

We welcome both a more reflective/theoretical perspective and a practice-oriented approach, provided the research generates actionable insights for organizations seeking to integrate biodiversity and human-nature considerations into circular decision-making.

Available data/reports or other relevant information sources for the project

Circular Clarity can provide access to relevant frameworks, project documentation, circular economy methodologies, and professional networks within the circular built environment and sustainability sectors. Potential information sources include:

- Circular economy frameworks and decision models used in practice.
- Biodiversity and nature-positive business frameworks.
- European and Dutch policy developments related to circular economy and biodiversity.
- Selected case studies from the built environment, procurement, and area development.
- Interviews with practitioners including sustainability professionals, designers, procurement specialists, investors, and public sector representatives.
- Relevant academic literature identified in collaboration with the student and university supervisors.

Additional project-specific information and contacts can be made available depending on the scope and interests of the student.

Other remarks

We are particularly interested in interdisciplinary perspectives that combine ecological, social, governance, design, and business disciplines. Circular Clarity is happy to support the student through regular discussions, access to our professional network, and feedback on interim findings. We also welcome opportunities to connect the research to real-world organizational challenges and ongoing transitions towards regenerative and nature-positive practices.

#23 Harvest knowledge and regenerate to practice **(Leiden University – LIACS & Humanities)**

Organisation

The Leiden Institute of Advanced Computer Science (LIACS) is Leiden University's institute for research and education in computer science and artificial intelligence. Its work covers areas including algorithms, data science, machine learning and AI, with applications across science and society. Website: https://liacs.leidenuniv.nl/

Thesis assignment

How do chagras (Amazonia) and food forests (Netherlands) —despite different histories—hold biodiversity and culture together, and why does their knowledge remain largely unshared?"

Chagras —small-scale, biodiverse polyculture plots cultivated by Indigenous communities in the Colombian Amazon—and voedselbossen (food forests) in the Netherlands are, on the surface, very different systems: one rooted in millennia of Indigenous land stewardship, the other a relatively recent regenerative-agriculture practice in a Global North context. Yet both function as living repositories of place-based knowledge: through ongoing practices, they encode an understanding of what to grow, how to manage it, and why these practices matter for ecological health and cultural continuity alike. Both approaches are important to biodiversity conservation, and beyond that, both also serve as sites that ground communities in place, enable transgenerational transmission of knowledge, and sustain people's connection to landscape and to their own food systems; functions that are as much social and cultural as they are ecological. Despite this shared internal logic, chagras and voedselbossen are rarely studied comparatively, and the knowledge each system holds tends to stay isolated within its own geographic context. From this the central question, this project explores the practices, forms of knowledge transmission, and governance structures that allow these systems to sustain both ecological diversity and cultural continuity, and how they diverge because of their different colonial, ecological, and institutional histories?

Relevance: As biodiversity loss and the erosion of place-based knowledge accelerate globally, understanding how communities -in very contrasting ecological and cultural contexts- sustain both simultaneously is directly relevant to Leiden University's mission to educate engaged global citizens who contribute concrete, informed solutions to the world's most pressing challenges, by generating a genuinely reciprocal (rather than one-directional) exchange of knowledge between Global South and Global North practices.

Expected type of work or methodologies

This project is expected to be primarily literature-based: a comparative analysis drawing on existing scholarship, project reports, and grey literature on both systems. Interviews are welcome as a complementary method where feasible -fully possible for the Dutch case, and possible for the Colombian case as long as language is not a barrier (i.e., where the student has relevant language skills or interviews can be conducted in English or with an interpreter). The student is free to propose and discuss their own methodological approach and balance between the two sites with us.

Available data/reports or other relevant information sources for the project

There is existing literature on chagras as agrobiodiversity systems and traditional ecological knowledge in the Colombian Amazon (including work situating them within Indigenous territorial governance), as well as a smaller but growing literature on Dutch voedselbossen as regenerative, community-based land-use models. We have connections to practitioner partners on both sides - including Indigenous and grassroots organizations working with chagra systems in the Leticia area, and voedselbos initiatives in the Netherlands- who could support the student with access, contacts, and site-specific knowledge. A body of relevant material (project reports, community-authored materials, monitoring data) also exists as grey literature rather than formal publications.

Other remarks

Working knowledge of Spanish would be a strong asset for engaging with the Colombian Amazon case; no additional language is required for the Dutch case. Depending on feasibility and student interest, the comparative balance between the two sites (equal weight vs. one as primary case with the other as counterpoint) can be discussed and adjusted.

#24 Whose variables count? Local knowledge and data analytics for sustainable crop futures in Cerrado (Brazil) **(Leiden University – LIACS)**

Organisation

The Leiden Institute of Advanced Computer Science (LIACS) is Leiden University's institute for research and education in computer science and artificial intelligence. Its work covers areas including algorithms, data science, machine learning and AI, with applications across science and society. Website: https://liacs.leidenuniv.nl/

Thesis assignment

How do epistemic assumptions embedded in data science and machine learning shape our understanding of crop yield and biodiversity value, and how can these frameworks be rebuilt to incorporate local knowledge (using Baru and Araucaria species in Brazill's Cerrado as case studies)?

Crop yield patterns and performance are conventionally analyzed through biological and environmental variables. We collect data from the crop itself and apply parameters such as crop yield, shape and size together with weather conditions as clear indicators for understanding successful growth. For agricultural crops, the amount of data that can be collected has increased immensely. Genetics has given insight into variation and its environmental interplay. Even though this approach explains a lot, it treats crop as an isolated biological unit, creating an artificial divide between plant, and ecosystem it is embedded in, and the human communities entangled in those ecosystems. For species such as Baru and Araucaria in Brazil's Cerrado, both holding ecological importance for local biodiversity and economic value for communities who cultivate and manage their ecosystems, this is a significant research gap: local knowledge about which variants thrive where in combination with which other species, and why is rarely built into the data science frameworks used to analyze yield.

Research Question: Thus, how can data analytics for agricultural crops be constructed to reflect socio-cultural context so that the resulting analysis creates genuine added value for local communities and their sustainable futures - rather than treating community knowledge as an afterthought layered onto conventional variables? More specifically: how can local knowledge inform the construction of the variables analyzed, not just their interpretation, using Baru and Araucaria as case studies?

Relevance: The Cerrado in Brazil has an abundance of small communities that live from our species of interest, and these communities understand their place in the ecosystem while assessing their economic potential. The combination of conventional data and social-cultural factors is not explored and important to the understanding of ecological value of the species – this addresses the world's most pressing challenges to educate engaged global citizens who contribute concrete, informed solutions, hereby rethinking how data science itself encodes epistemic assumptions.

Expected type of work or methodologies

With the data that is made available we will start exploring machine learning (ML) tasks. If possible, we can augment the classical ML to deep learning. The idea is to make a good base-line analysis from the data; the deep learning is an addition and not a goal per se. The student can propose the model and the evaluation of the model. Importantly, in addition to crop data, socio-cultural data needs to be collected. This is available from governmental repositories and generally are well accessible; however, it is not known if the format is directly suitable for analysis. Structuring of this socio-cultural data so it can be linked to crop data is a key challenge of the project to understand how locality and crop yield influence each other.

For this project a good command of machine learning is important and especially an interest in mixed methods. The volume of the dataset might give the opportunity to train a deep learning model. The effectiveness of such model with respect to the dataset is part of the research that is conducted. The research is in collaboration with EMBRAPA researchers in Brazil who will make data available. Reading abilities of Portuguese/Spanish might come handy; most material will have English annotations.

Available data/reports or other relevant information sources for the project

Our collaborators from EMBRAPA will make data available that has been collected over the past decade, concerning Baru and Araucaria in the Cerrado region in Brazil. The potential of the sustainable character of these species and their contribution to biodiversity is of great importance, but the economic value for local communities is not fully explored.