Third Summer School

BLUE-GREEN BIODIVERSITY

Research and Practice at the Interface of Aquatic and Terrestrial Ecosystems




DAVOS, SWITZERLAND

24 - 29 AUGUST 2025

ORGANIZER: WSL BIODIVERSITY CENTER

Blue-green biodivesity

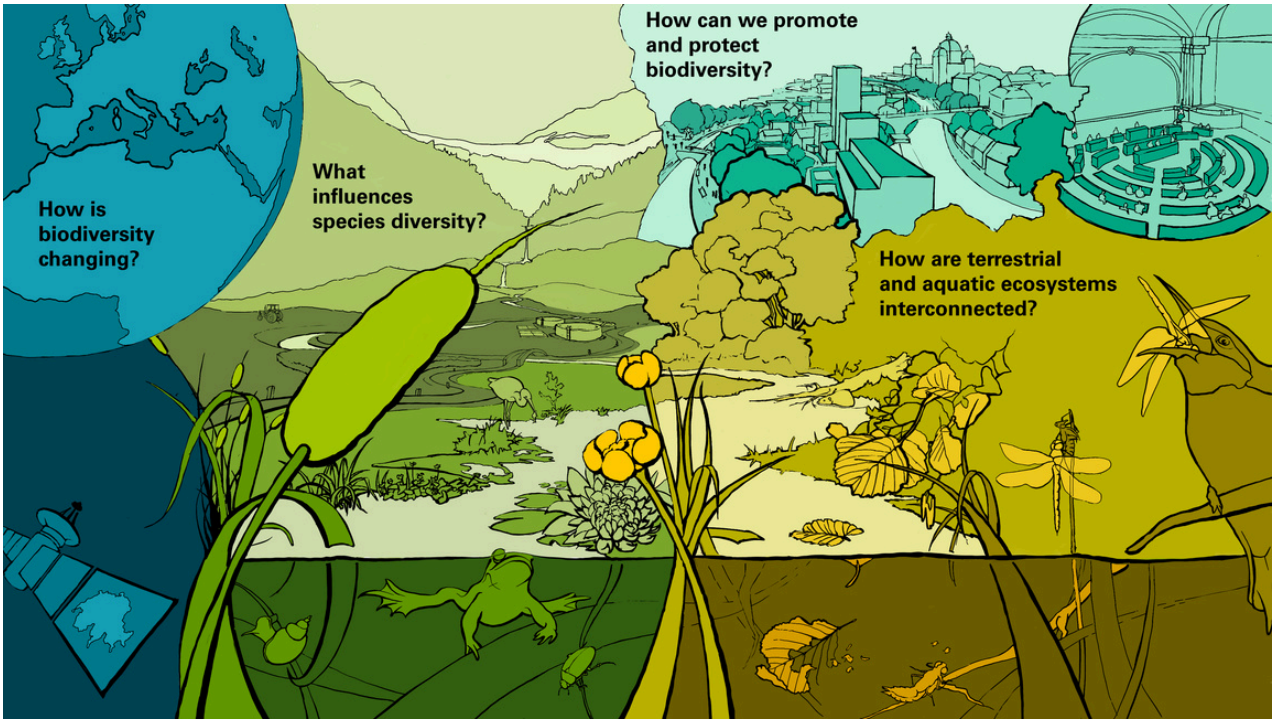

Image credit: Blue-Green Biodiversity Initiative (WSL & Eawag)

Recent debates on biodiversity decline, land-use change, and the climate crisis have begun to emphasize that aquatic and terrestrial realms are intricately linked yet studied largely in isolation. This isolation permeates both research and application where, on the one hand, major scientific institutes, departments, or centers focus on a single realm, and, on the other hand, governmental offices are often divided among ecosystem types. As a result, there is a lack of understanding of the linkages between aquatic (blue) and terrestrial (green) ecosystems, especially in terms of biological diversity, where many organisms require both types of ecosystems for survival and reproduction.

The blue-green biodiversity linkages need to be addressed comprehensively, encompassing scientific, practical, economic, societal, and political dimensions.

At the scientific level, it is essential to understand the role of biodiversity in linkages between blue and green ecosystem functioning and dynamics, including the many processes and interactions within and between these systems. Such understanding is crucial for unraveling cause-response relationships and developing reliable future scenarios.

At the applied level, sustainable management practices must consider both blue and green ecosystems and support biodiversity under current and future climate conditions and societal needs. to improve ecosystem resilience in order to safeguard the multitude of ecosystem services they provide.

On the economic, societal, and political level; the economic, societal, and political framework is central to warranting the sustainable and efficient management of blue-green ecosystems and infrastructure.

Our summer school

The goal of the Blue-Green Biodiversity Summer School is to provide an in-depth understanding of the linkages between aquatic and terrestrial ecosystems and the interdependencies between social and ecological systems. While focusing on Swiss habitats, we will highlight how an integrated analysis that considers the ecological, evolutionary, and social dimensions of blue and green ecosystems benefits the conservation, maintenance, and restoration of biodiversity.

The program consists of lectures, field excursions, and group work. State-of-the-art knowledge and approaches will be presented and discussed considering the expectations of current and future blue and green ecosystems from scientific, nature conservation, management, and socio-economic perspectives. The participants will reflect on their own scientific work with respect to other disciplinary methods and discuss possible benefits of interdisciplinary approaches in their field.

The summer school “Blue-green Biodiversity: Research and Practice at the Interface of Aquatic and Terrestrial Ecosystems” will take place in Davos, Switzerland, from August 24 to 29, 2025. The summer school is a collaboration between WSL and Eawag, and it is organized by the WSL Biodiversity Center.

Lecturers are academics from Eawag, WSL, and other research institutions and practitioners. This is the third edition of our summer school on blue-green biodiversity. Over the 2023 and 2024 editions, we welcomed 38 students based in 15 countries around the world.

The WSL Biodiversity Center is a strategic and interdisciplinary initiative to promote, further develop, and consolidate research and outreach in biodiversity science at the Swiss Federal Institute for Forest Snow and Landscape Research WSL.

Content

We will cover a diverse set of topics, from the ecology and evolution of blue-green ecosystems to ecosystem services and governance. We will combine lectures, field excursions and group work to present and discuss state-of-the-art knowledge and practices.

The content of the summer school will be based around these questions:

- How do evolutionary and ecological processes differ in aquatic and terrestrial ecosystems?
- What are the characteristics of species interactions and ecosystem processes, such as carbon recycling or toxin production, across aquatic and terrestrial ecosystems?
- How will blue-green ecosystems and their biodiversity respond to climate change and other anthropogenic drivers? How will the differences in ecological processes lead to divergent responses to human impacts across ecosystems?
- How should conservation strategies and urban development be aligned to best preserve both aquatic and terrestrial biodiversity in Switzerland?
- How should socio-ecological interdependencies and existing knowledge and attitudes of stakeholders and the public be considered to optimize the outcome of ecological restorations?
- How can an evidence-based understanding of biodiversity be used to improve policy and decision-making?

In addition to the active participation in the Summer School, PhD students are expected to contribute with a poster addressing disciplinary and interdisciplinary interfaces of their own work to the major topics of the Summer School: natural science basics, nature conservation, management, or socioeconomic perspectives (a poster session will be held during the summer school).

Furthermore, participants are expected to read some introductory articles relevant to the major topics of the Summer School. These articles will be appointed in advance by the lecturers.

Speakers

Ariel Bergamini (WSL)
Janine Bolliger (WSL)
Kurt Bollmann (WSL)
Robin Bretscher (ETHZ)
Andreas Dietzel (Eawag)
Manuel Fischer (Eawag)
Cristian Gees (Auin AG)
Catherine Graham (WSL)
Anne Kempel (SLF)
Dechen Lham (Eawag)
Blake Matthews (Eawag)
Marco Moretti (WSL)
Anita Narwani (Eawag)
Jeanine Reutemann (ETHZ)
Benedikt Schmidt (UZH)
Danina Schmidt (Eawag)
Ross Shackleton (WSL)
Cornelia Twining (Eawag)

Target audience

The Summer School is open to PhD students working on biodiversity and related disciplines. We also welcome applications from Master students (in their last year) if their background and motivation letter show a strong commitment to blue and/or green biodiversity research.
We can accommodate up to 20 highly motivated students.

We encourage and welcome the participation of applicants from different backgrounds in terms of gender, origin, religion and values, gender identity or sexual orientation, age, or impairment. We aim to promote a culture of respect and inclusion among all participants in our Summer School

Application & fees

- Please provide your CV, a motivation letter (one A4 page), and PhD thesis abstract.
- **Early application:** for students requiring a visa to Switzerland or external funding.
  - Application deadline: 15 March
  - Notification: early April
- **Regular application** for all other applicants.
  - Application deadline: 1 May
  - Notification: end of May
- Applications will be evaluated according to their fitting and interest in the research topic, their evidence of academic quality, and their expected benefits from this Summer School.
- For more information and to apply, visit our webpage or scan the QR code.

- Regular fees: 700 Swiss Francs
- Reduced fees: 175 Swiss Francs (for qualified participants affiliated to/working for an institution located in a Low-Income, Lower-Middle Income or Upper-Middle Income Country).
- Fees includes accommodation (in shared rooms) at the Hotel Shima, meals during the Summer School, course materials, and excursions. Accepted participants are expected to bear travel costs to Davos.
- If you have serious and genuine difficulties paying the regular fees, please contact us. Each request will be evaluated on a case-by-case basis.

Preliminary Program

	Sun 24	Mon 25	Tue 26	Wed 27	Thu 28	Fri 29
Morning		Ecology and evolution (Narwani)	Multifunctional blue-green infrastructure in cities (Dietzel & Moretti)	Participatory approaches and stakeholder engagement in environmental management (Shackleton)	Aquatic and terrestrial food web connections (Twining)	Lab work: Aquatic and terrestrial invertebrates along environmental gradients (Kempel, Matthews, Schmidt & Twining)
	Arrival & Welcome (Graham & Castro)	Poster training (Graham & Castro)	Blue-green infrastructure for biodiversity (Schmidt)	The Science-Policy Interface for Biodiversity (Lham)	Excursion: Aquatic and terrestrial invertebrates along environmental gradients (Kempel, Matthews, Schmidt & Twining)	
Afternoon	Green and blue food webs - general aspects and examples of links between them (Graham)	Excursion: Ecology and conservation of bogs and fens ALP FLIX (Bergamini)	The water pipit – a flying commuter between water and mountains (Bollmann)	Workshop: Visual Abstracts (Reutemann & Bretscher)		Trophic cascades within and between ecosystems (Matthews)
	Social ecological networks for blue- green infrastructure and biodiversity in human-dominated landscapes (Bolliger & Fischer)		Excursion: Dischma valley (Bollmann)		Restoration of Dischmabach (Gees)	Wrap-up (Graham & Castro)

Photo credits: Nadia Castro (WSL)