



info flora

Zurich University
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zhaw

Life Sciences and
Facility Management

Institute of
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**Schweizerischer
Nationalfonds**

VegCHange

A toolbox to investigate anthropogenic
changes in the Swiss flora and
vegetation

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ZHAW Wädenswil & Info Flora

5/70



VegChange: Motivation and research gaps

I - Knowledge on plant diversity change and its drivers limited

“Biodiversity conservation paradox”

- ▶ Diversity patterns are scale-dependent
- ▶ Long-term trends often not analysed

Drivers of biodiversity loss/change are not well understood

- ▶ Attribution to drivers mostly based on expert opinion
- ▶ Few data-driven analyses of the relative importance of drivers

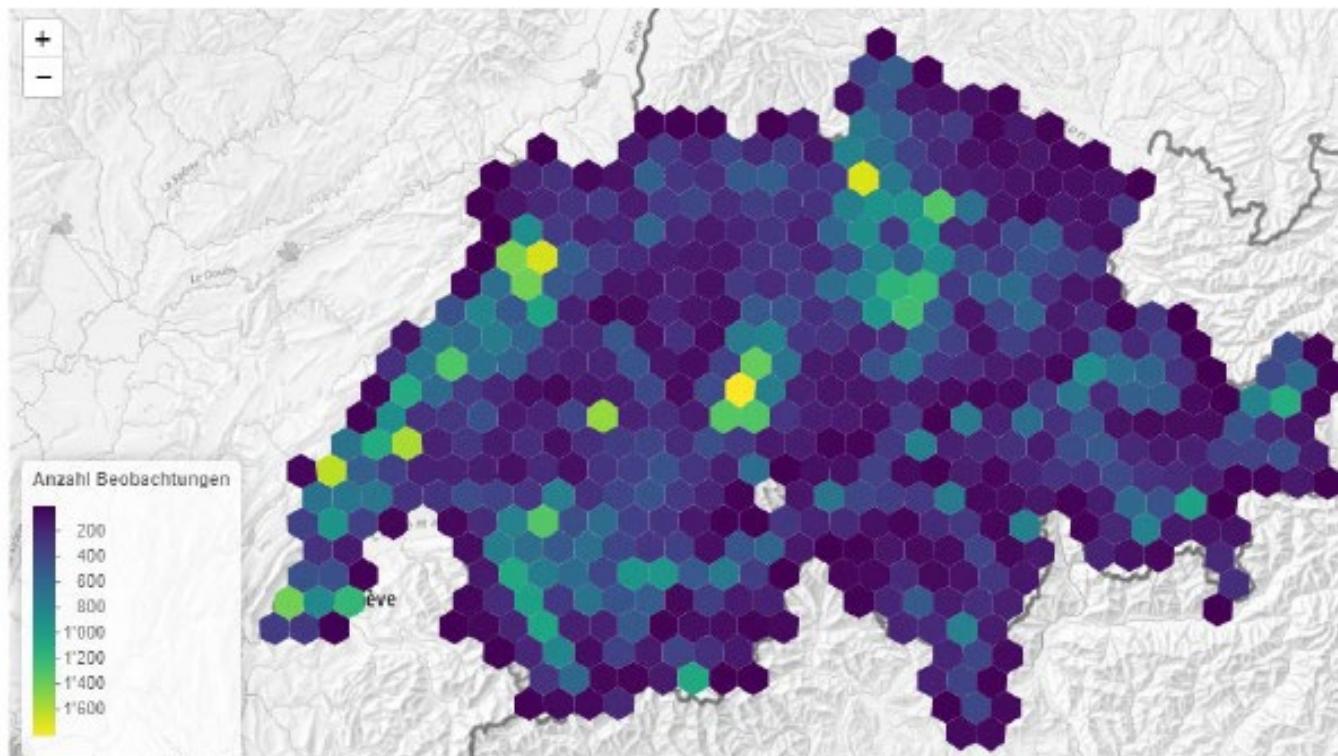
- ▶ **Limited knowledge hinders effective conservation and communication**

VegCHange: Motivation and research gaps

II – Untapped potential of plant diversity data in Switzerland

E.g.: CH has at least 180,000 historic vegetation-plots in digital format

- ▶ not usable for science so far



VegChange: Motivation and research gaps

III – Translation into conservation action

Shortfalls in conservation status assessments (Red Lists)

- ▶ Lack of quantitative trend data for plant species
- ▶ No solution available to allow continuous updates

The effectiveness of conservation instruments is rarely evaluated

- ▶ Relatively large amounts of money spent, but effectiveness unknown

- ▶ We need more evidence-based biodiversity conservation
- ▶ We need to bridge the gap between scientists and practitioners and learn from each other

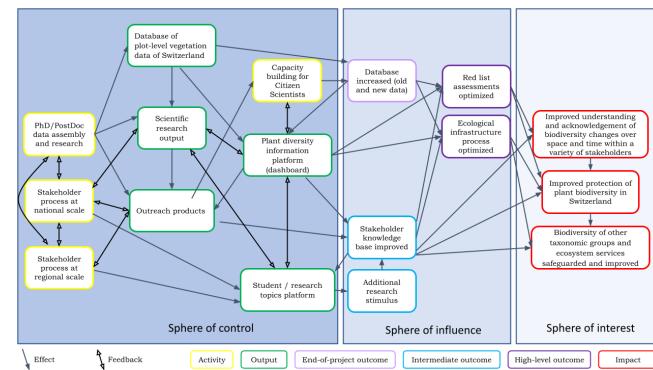
VegCHange: Our approach

A – Comprehensive data compilation and analysis

- All “botanical” taxa:
 - **Vascular plants**
 - **Bryophytes**
 - Lichens
 - Charophytes
- All available data sources and multi-scale perspective
 - **Occurrence data (γ -diversity)**
 - **Co-occurrence data (α -diversity)**
 - > Swiss National Vegetation Database (in prep.)
 - > Recent biodiversity monitoring programs
 - > Resurvey studies
- **Not only the last few decades**, but starting in the first half of the 20st century, possibly in the 19th century
- **Advanced analytical frameworks** inspired by our partner projects sMon (Germany), EVA and ReSurveyEurope (Europe)

VegCHange: Our approach

B – Integration of societal stakeholders



Activities

National level

Annual stakeholder workshop
Prepare results for ongoing Red List revisions

Products

Various communication products
Interface to Red List projects

Pilot canton Grisons

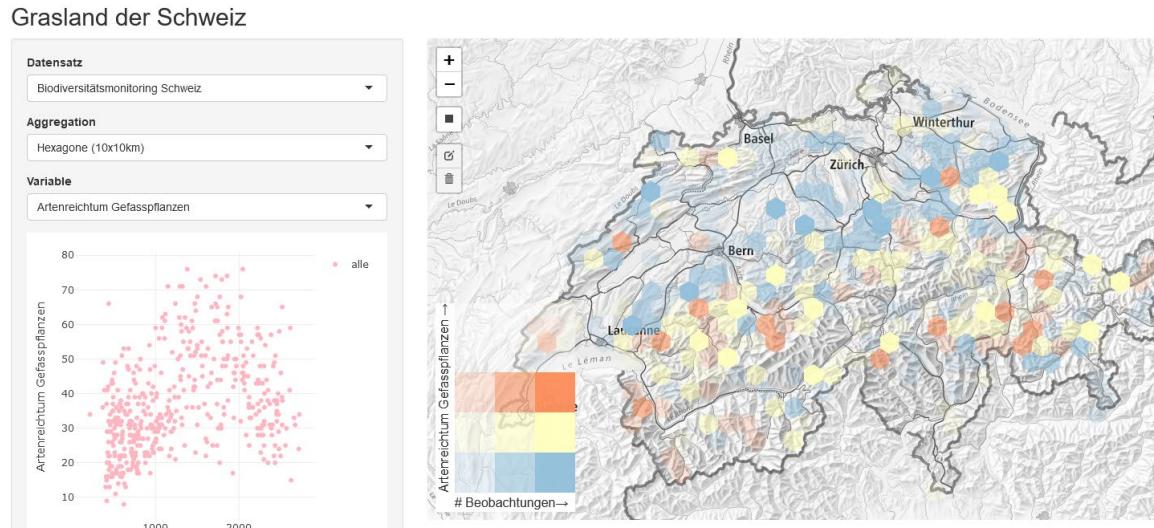
Establish regional stakeholder group
Regular meetings where results and needs are exchanged
→ co-creation meetings

Co-designed conservation platform
Co-created policy and stakeholder briefs
Missions for citizen science project Flora Raetica

VegCHange: Our approach

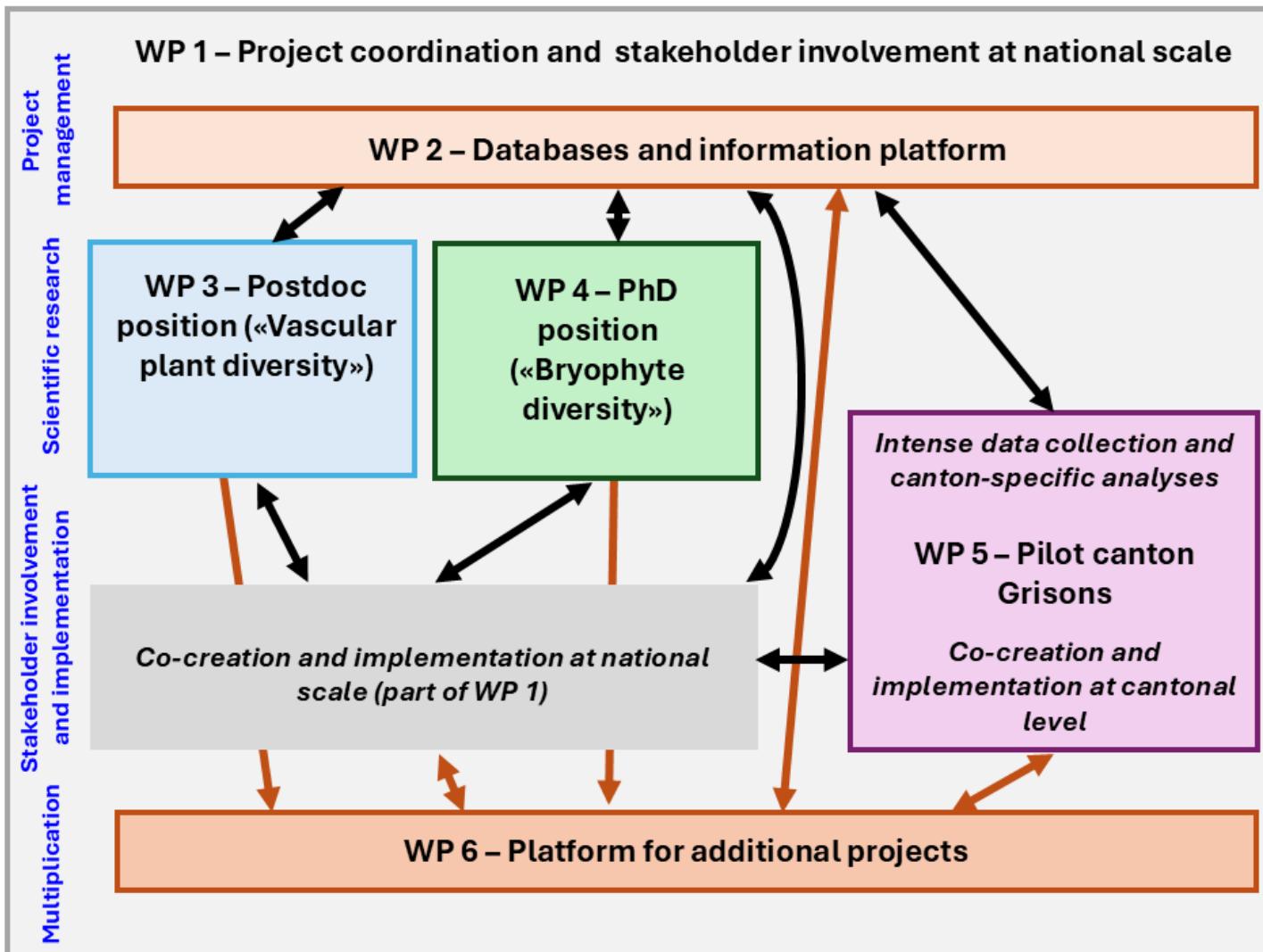
C – Outreach beyond SNSF funding and project duration

- Setup of the **Swiss National Vegetation Database** as a permanent research tool
- **Plant diversity and information platform of Switzerland** (<https://vegetation.ch>)



- Platform of additional projects and analytical toolbox for these
- Aiming for **complementary funding** and **Transformation Acceleration Grant (TAG)**

VegCHange: Project organisation in Work Packages



VegCHange in a nutshell

- Comprehensive use of the wealth of existing data to understand trends in plant diversity across Switzerland
- Strong stakeholder interaction to produce results that can be taken up in conservation practice and policy
- Development of tools that keep their utility beyond the project time

VegCHange: Theory of Change

