

# VegCHange

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

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Prof. Dr. **Jürgen Dengler** & Dr. **Stefan Eggenberg**  
ZHAW Wädenswil & Info Flora



# 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

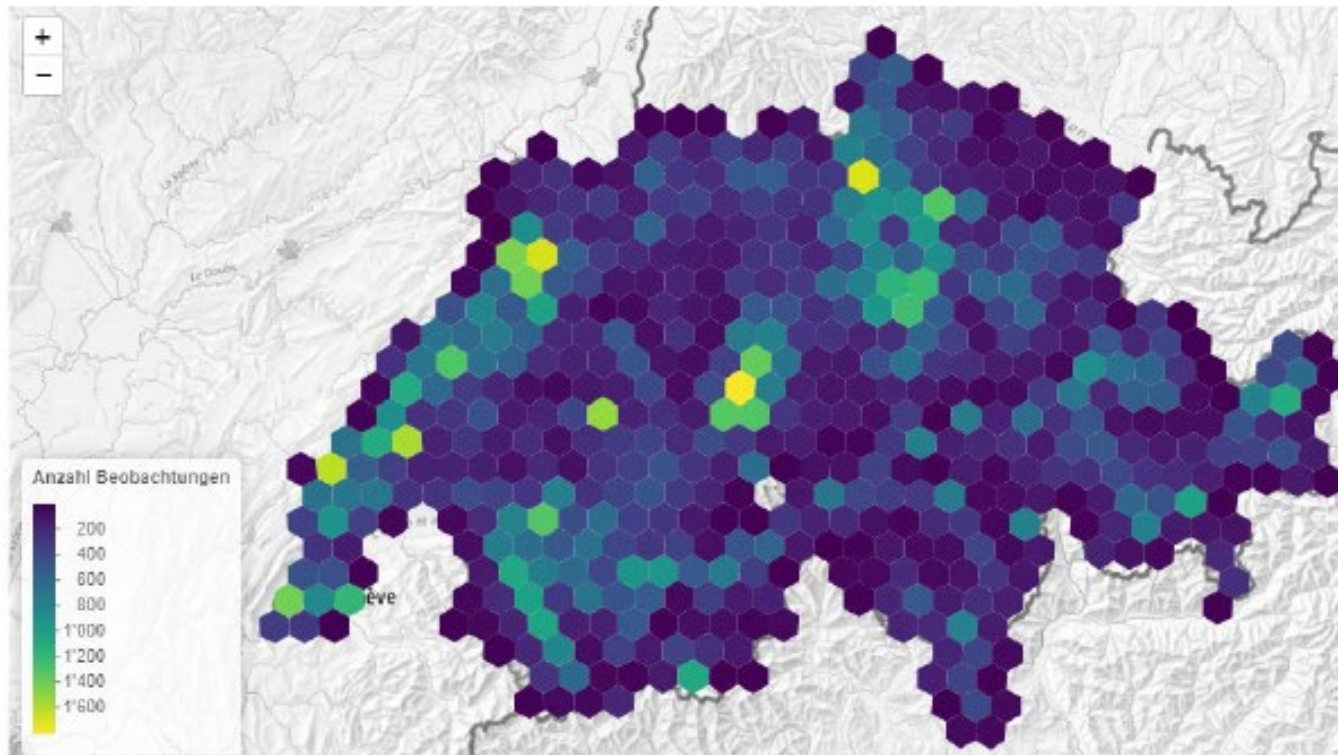
- ▶ Limited knowledge hinders effective conservation and communication

## 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

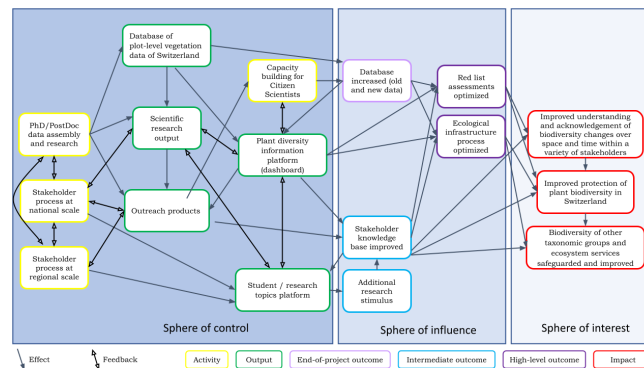
### A – Comprehensive data compilation and analysis

- All “botanical” taxa:
  - Vascular plants
  - Bryophytes
  - Lichens
  - Charophytes
- All available data sources and multi-scale perspective
  - Occurrence data ( $\gamma$ -diversity)
  - Co-occurrence data ( $\alpha$ -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 20th century, possibly in the 19<sup>th</sup> century
- **Advanced analytical frameworks** inspired by our partner projects sMon (Germany), EVA and ReSurveyEurope (Europe)



# VegCHange: Our approach

## B – Integration of societal stakeholders



### Activities

### Products

#### National level

Annual stakeholder workshop

Prepare results for ongoing Red List revisions

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

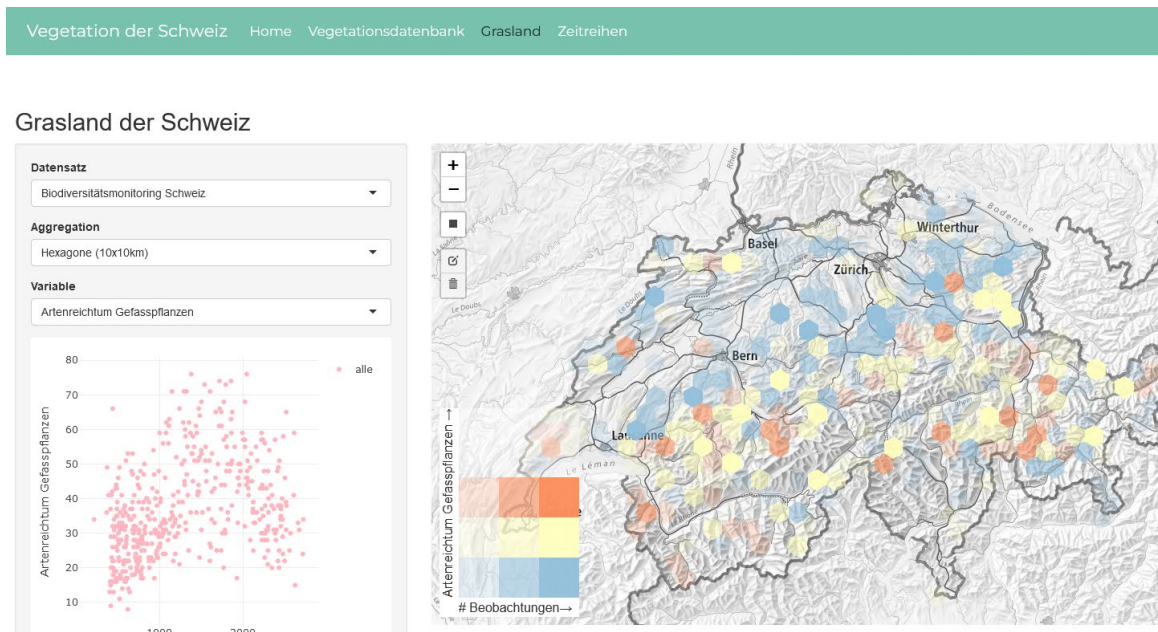
Co-created policy and stakeholder briefs

Missions for citizen science project Flora Raetica

## VegCHange: Our approach

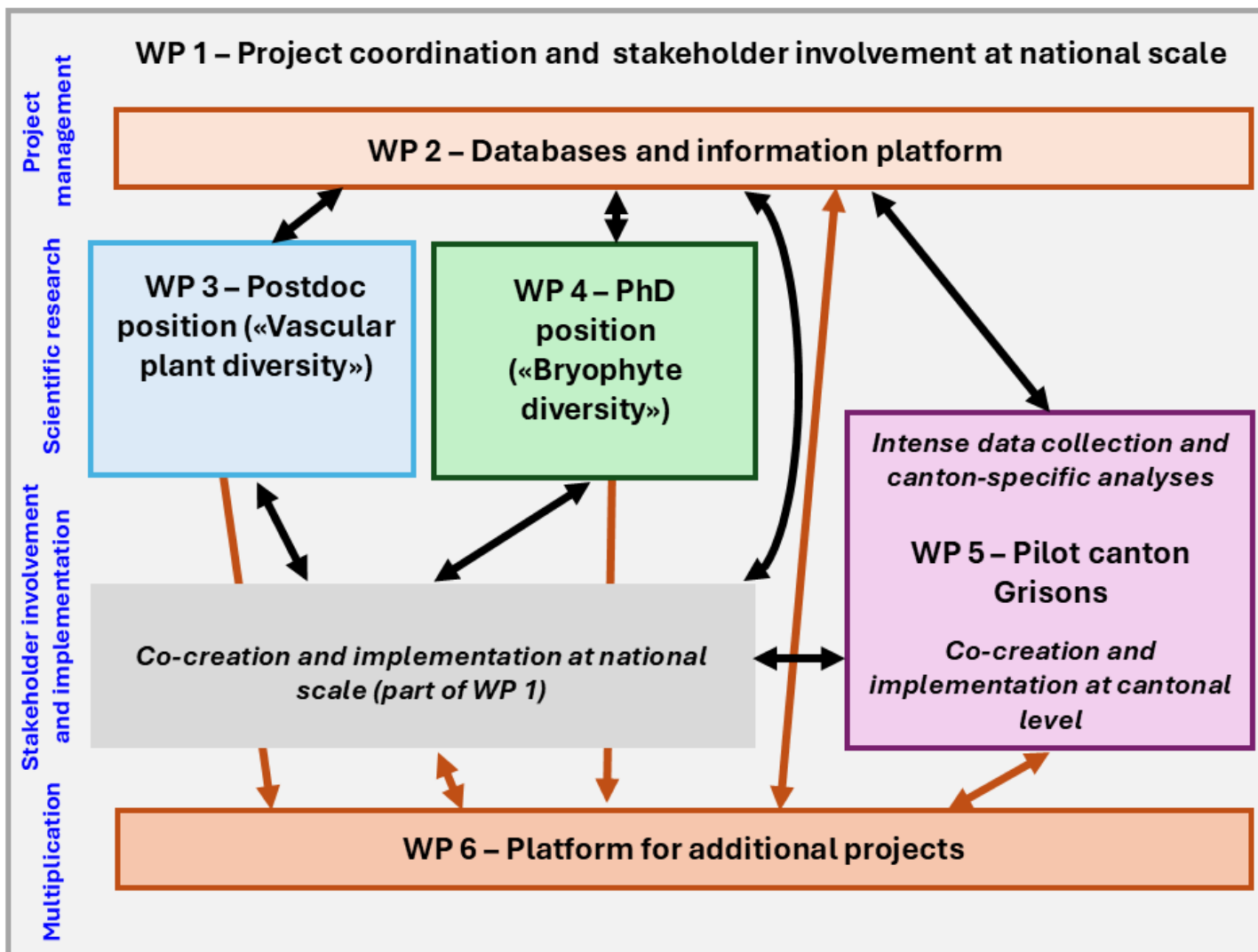
### C – Outreach beyond SNSF funding and project duration

- 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

