



FOCUS We find landscape everywhere. Whatever we do, we change it. The landscape researchers at WSL take a closer look so that we can shape these transformations together.

Our landscape concerns us all

An aerial photograph of a Swiss valley. A river flows through the center, surrounded by green fields and a town. In the background, there are steep, forested mountains. A white line points from the text box to a forested area on the left side of the river.

The proportion of forest is increasing in high-lying sites because the meadows and pastureland are no longer managed. The landscape is changing.

An aerial photograph of a Swiss valley. A river flows through the center, surrounded by green fields and a town. In the background, there are steep, forested mountains. A white line points from the text box to a section of the river in the lower left.

Most Swiss rivers have been straightened to provide protection against flooding and to gain land. Today river restoration projects allow nature to have more space again.



In a WSL survey, 70 per cent of respondents said they would prefer to live in a village.

The Glarner part of the Linth Plain with Näfels (right) and Mollis (left). Oberurnen is in the foreground.

Photo: Markus Jüdi, Linth Administration

The Linth Plain between Lake Walen and Lake Zurich is a modern landscape on the Swiss Central Plateau. The rivers have been straightened and the land wrested from the floods is intensively cultivated. It is a typical landscape on the edge of a large agglomeration, with affordable housing and lots of green. The population, residential area and traffic are increasing particularly quickly, and humans and the natural environment are more frequently getting in each other's way – in the midst of magnificent mountain scenery.

This is where our fictive travel companion – let's call him Jonas Hauser – lives. Using him as an example, we want to show how landscapes are not just the subjects of photos, but also of their own separate branch of research – and rightly so. Hauser is 32, and lives with his wife and daughter in Schänis (SG) in a detached house close to some fields. The Hausers like life in the village, where they also grew up. The shopping center is within easy reach by car. They represent, in a sense, the average inhabitant in this type of landscape, which is widespread in Canton Aargau's Freiamt or Canton Luzern's Seetal. This "average inhabitant" is derived from the analysis of a representative survey carried out as part of WSL's Research Programme "Room for People and Nature".

Changing needs

Monday morning: the car mechanic, Jonas Hauser, drives to work in Rapperswil, Canton St Gallen, along the A3 highway. His route to work already touches on several WSL research topics. The highway runs parallel to the Linth Canal, built by Hans Konrad Escher more than two hundred years ago to tame the Linth,

which was previously prone to flooding. In summer the Hausers enjoy trips in an inflatable boat and having a break on the gravel banks where the river has recently been widened in Hänggelgiessen, creating space not only for peak floodwater but also for rare animals and plants. A new tunnel for wild animals goes under the A3. In the research study ENHANCE, WSL and partner institutions explored how roads and intensive agriculture separate deer, insect and frog populations and what can be achieved with measures to improve connectivity. Social scientists have also investigated whether and how river regeneration can create new natural areas for locals seeking places for recreation. Tips for future such projects can be found in the WSL guidelines “Socially Sound River Restoration” (available only in German ‘Sozialverträgliche Fluss-revitalisierung’).

As people’s needs have changed, so too have their attitudes to this landscape. While in 1807 it was described as a “sad bit of marsh” with “poisoned air” in a brochure to raise money to construct the canal, today it is seen as a “nursery for species diversity” where beavers, fish and rare birds can live. For the Hauser family it is welcome destination for excursions. This makes it clear that a landscape is not just made up of physical things. Landscapes are also defined through emotional and personal values. Who likes old farmhouses or lively city parks? Is a meadow valuable because of the butterflies, the nutritious hay or what it would cost on the property market? The program “Landscape Monitoring Switzerland” (LABES), managed by WSL and FOEN, the Federal Office for the Environment, records not only the physical qualities of a landscape but also how it is perceived locally (see page 16). Landscape research is therefore a very interdisciplinary research topic, which occupies biologists, social scientists and economists equally. The Landscape Research Center at WSL coordinates the different areas of expertise involved.

For more information
on the Center for
Landscape Re-
search, see:
[www.wsl.ch/land-
scape_center](http://www.wsl.ch/landscape_center)

Little space, but many demands

Landscape research at WSL has its roots in nature conservation, when the forerunner Institute of WSL began in the 1970s to make an inventory of Swiss raised bogs. In 1987 the Rothenthurm Initiative to protect mires was approved by the Swiss electorate and social scientific landscape research was started at WSL to create a scientific basis for the inventory of “Wetlands of Outstanding Beauty”. Very soon afterwards, the focus of this research was on one of the most hotly debated conflict zones: residential areas.

An indication of how most Swiss view urban sprawl critically was the way they voted on the Second Homes Initiative in 2012, and a year later on the revision of the Spatial Planning Act. Landscape researchers at WSL asked, as part of the National Research Program “Soil as a Resource” (NRP 68), all Swiss municipalities what measures they were using to try to control urban sprawl (see Diagonal 2/16). These instruments can now be evaluated in other projects in a systematic way, and thus constitute a further important pillar of WSL’s landscape research.

The landscape affects all of us because many of the decisions we make have an impact on it, for instance, when we build houses, commute to work, play golf or vote. “In densely populated Switzerland, many demands come together within a small area,” says Matthias Bürgi, Head of the Research Unit

“Landscape Dynamics” at WSL. Jonas Hauser, for example, loves racing downhill with his mountain bike, which many hikers don’t like at all. At the same time, he gets annoyed if the parking places along the Linth are full on Sundays. WSL research tries to find solutions for such conflicts.

What kind of landscape do we want? The answer, according to WSL’s investigations, depends very much on who one asks. People living in Alpine regions, for example, tend to prefer the traditional cultivated landscape, while city-dwellers want more wilderness and the return of large carnivores in mountain areas. The Hauser family still want to live in a green area, but are totally against high-rise buildings in their village even though building more densely would help to cope with the expansion of residential areas. This is typical of the attitude “not in my backyard”, so well-known in the social sciences.

For landscapes to be developed in an environmentally friendly and socially sound way, we first need to know how human interventions affect people and the natural environment. The relevant facts can be obtained from landscape researchers’ numerous studies, such as how to reduce light pollution, which disturbs bats. The researchers are finding out which human and natural influences change mountain forests, or how tourists react to solar panels on avalanche protection structures.

Restricting individual freedom

Creating more space for the natural environment, forgoing the construction of new houses and managing sports activities all restrict individual freedom and may create costs. We therefore need to know whether the measures have the desired effects. In, for example, the project “Monitoring the Effectiveness of Habitat Conservation in Switzerland”, the Federal Office for the Environment (FOEN) assigned WSL researchers the task of assessing whether the protection of habitats of national importance was effective. Another such project is evaluating the campaign ‘Respektiere Deine Grenzen’ (gloss: “Respect your boundaries”), which is intended to keep powder-snow enthusiasts like Jonas Hauser, a passionate free-rider, away from wildlife protection zones.


“Change alone is eternal,” said the philosopher Arthur Schopenhauer (1788–1860), almost as if he himself were a landscape researcher. Or he could have lived on the Linth Plain, which is one of four model regions in WSL’s Research Programme “Room for People and Nature”. In workshops with researchers and locals on positive and negative visions for future development, it became very clear that the scenario “business as usual” is not an option as it leads to undesirable urban sprawl (see the interview on page 12).

Thanks to landscape research, the municipalities in the model regions have a concrete idea about the direction in which they should develop. They also have more idea about how they can influence the development to ensure that Switzerland does not just develop wildly in an unplanned way, but is shaped as far as possible by all those involved. Even if the Hausers really like going shopping in the town, they still want to live in the countryside. *(bki)*

For more information on the Programme “Room for People and Nature” (in German), see: www.wsl.ch/raumanspruch

Many Swiss have, according to WSL studies, rather inconsistent attitudes to wilderness, i.e. natural environments untouched by people. They tend to view them positively, but still want to have parking spaces, garbage bins and barbecue areas.





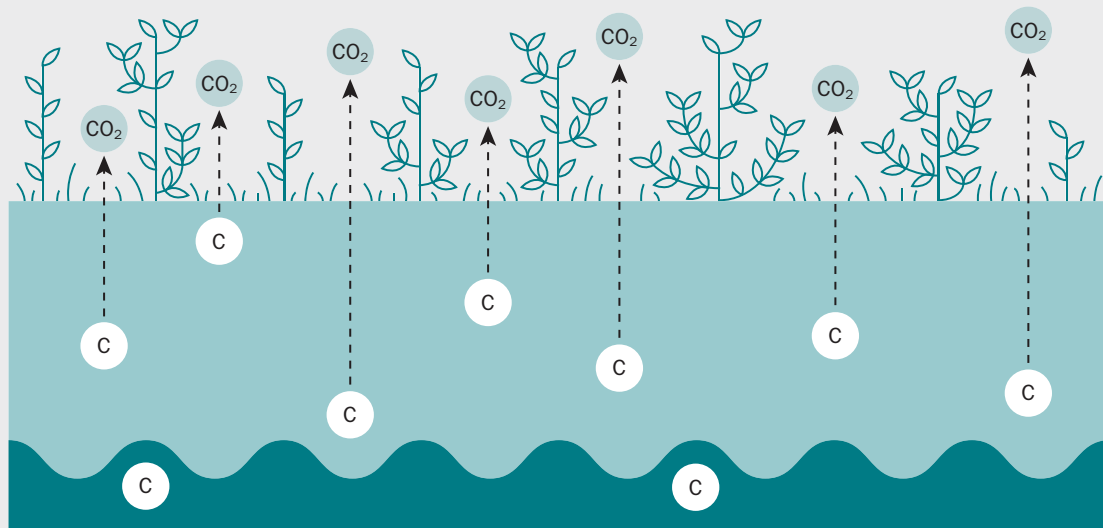
WaMos (Socio-Cultural Forest Monitoring), a joint project of WSL and FOEN, has shown that people for whom the forest was important or very important during their childhood can, as adults, relax and recuperate better there than other people.

Typical features of a popular recreation area are, according to the findings of a joint WSL and FOEN project, a stretch of water, abundant forest, varied land use and a dense network of paths. Most important, however, is ease of access.

The Chapfen Lake near Mels (SG) is a popular and easily accessible destination for recreation.

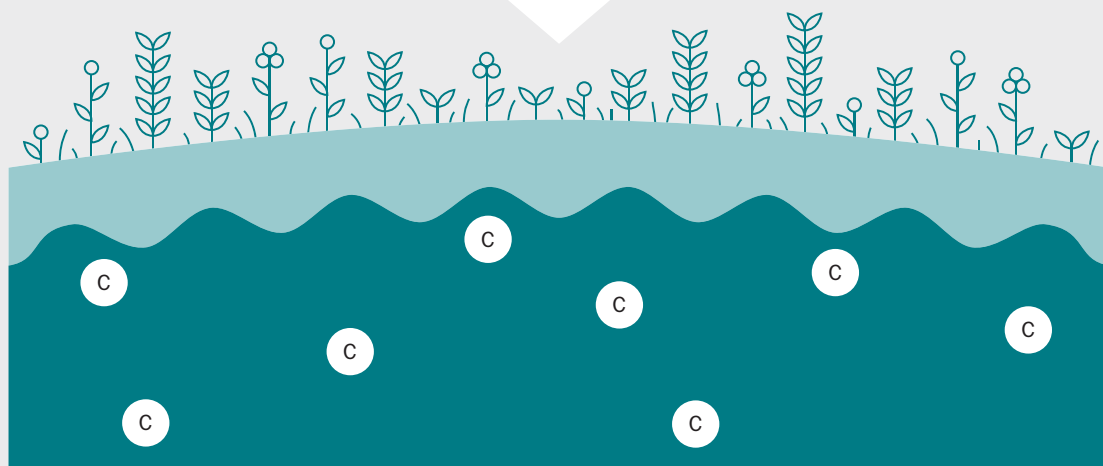
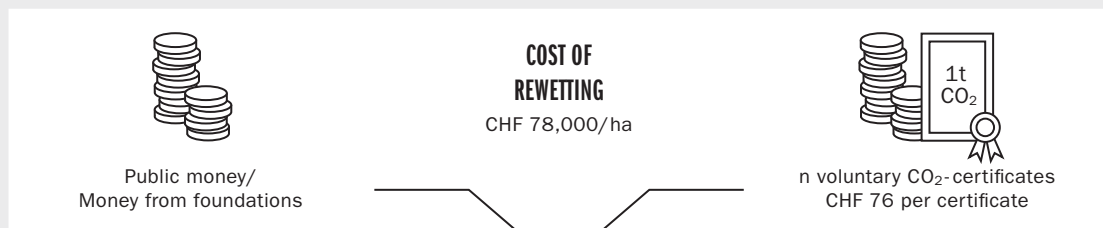
INFOGRAPHIC Protecting the climate through peatland conservation

Most of the raised bogs in Switzerland have been drained. This has led not only to the loss of a unique habitat, but also to another problem: former peat soils emit a great deal of CO₂. WSL researchers have estimated how much CO₂ emission could be prevented through rewetting raised bogs, and have produced a proposal for voluntary compensation payments.



DRAINED RAISED BOG

0.056 t org. C/m³ potential emissions
 ≅ 1026 t CO₂-equivalent/ha and 50 cm peat depth



RESTORED RAISED BOG

0.056 t org. C/m³ bound
 ≅ 1026 t CO₂-equivalent/ha and 50 cm peat depth

The figures given are averages.