

the environment

3 | 2020

Natural resources in Switzerland



A beautiful diversity

Landscape and its importance for quality of life



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Greater awareness of landscape qualities



Image: Source available

Every time I travel to Zurich, I savour the openness of the landscape. To me, having grown up in the city on the Limmat, the lake and the wide vistas mean home. In Bern, I always feel slightly hemmed in: its arcades are like a lid above my head and the north face of the Eiger feels just a little too close. For others, the reverse may be true: Bern's cosiness winning out over Zurich's slightly distant air. Yet most people would agree that diverse and distinctive landscapes are both a characteristic feature of Switzerland and one of its greatest assets.

However, while all of us would like to live in beautiful surroundings, the landscape and its quality inevitably come under pressure from the demands that we place on it. Our dreams of owning a home with a garden all too often result in frayed and amorphous settlements, and a haphazard look to the landscape. Moreover, in a world of increasingly standardised buildings and nondescript settlements that could be anywhere, we have a yearning for the individual, for things that have evolved in a particular region.

Of course, the solution cannot be to stand still. The landscape must be allowed to develop, but its qualities need to be conserved, and even, where possible, enhanced. This requires skill and expertise – and a well-thought-out approach. The Swiss Landscape Concept (SLC) provides a basis for exactly that, one of its aims being to promote landscape diversity by enhancing regional landscape character and advocating site-appropriate land use.

Switzerland owes a lot to its beautiful landscapes. Here I am thinking less of the tourist hotspots that draw people from all over the world, and more of the well-designed, people-friendly urban landscapes and settlement edges that provide most of us with a high quality of day-to-day life. To preserve the advantages conferred by Swiss landscapes, all those who shape them need to have the awareness and competence to act appropriately. Promoting these is a stated aim of the SLC, and of this dossier, which I hope you will find both interesting and useful!

Franziska Schwarz | Vice Director FOEN

Landscapes

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Image: Markus Forte | Ex-Press | FOEN

Lavaux in the canton of Vaud embodies many people’s idea of an aesthetically pleasing landscape, with low-lying Lake Geneva framed by terraced vineyards on its northern shore, and the Alps rising on the opposite side. But as well as providing aesthetic pleasure, landscapes also improve people’s health, create feelings of connectedness and so help to forge a sense of identity, and boost a region’s economic power. *The environment* profiles four landscapes exemplifying these qualities (pp. 8–15).

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Introduction

Landscape policy in Switzerland: everyone's business

The landscape is important in Swiss society. Switzerland has developed an ambitious landscape policy that strives to put the focus on landscape quality throughout the entire country. This policy is distinctive in that it is cross-cutting and coherent across different policy areas and political levels.

Text: Gilles Rudaz and Matthias StremLOW

From snowy Alpine peaks to historic city centres, Switzerland has a wide range of landscapes. Thus, a typology based on natural features and land uses reveals no fewer than 38 types of landscape across Switzerland's 41,285 km² of territory. The landscape is important for the Swiss psyche and identity. Recent initiatives and popular votes on landscape issues show the Swiss population's intense attachment to "its" landscapes. The diversity and beauty of landscapes promote well-being in the population and are a decisive factor in the decision to locate in Switzerland. Due to the importance of the landscape, policies have to be devised and implemented in order to guide landscape development toward quality.

Landscape policy

The industrialisation and urbanisation of society created more pressing concerns for the landscape at the beginning of the 20th century. In 1936, the Federal Council created the Federal Commission for the Protection of Nature and Cultural Heritage, whose mission was to prepare expert reports for the authorities. In 1962, the protection of the landscape was enshrined in Switzerland's Constitution. Based on this article of the Constitution, the Federal Act on the Protection of Nature and Cultural Heritage (NCHA) was passed in 1966. In Switzerland, landscape protection is governed by this act and its ordinances, as

well as various other special ordinances. Articles 2 and 3 of the NCHA make the Confederation responsible for looking after all landscapes within the national territory, and not just landscapes of outstanding beauty that are considered worth protecting.

The NCHA has given rise to various instruments, including the Federal Inventory of Landscapes and Natural Monuments and the Federal Inventory of Mire Landscapes of National Importance. In 2007, Switzerland reviewed the NCHA and introduced parks of national importance. These territories, which cover nearly 12% of the national territory, protect and showcase their precious natural and cultural resources, while stimulating and strengthening regional economies. Switzerland also has a unique instrument in the Swiss Landscape Fund. Established in 1991 by the Swiss parliament in honour of the Confederation's 700th anniversary, this organisation provides financial support to landscape projects promoted by individuals, associations, communes and regional organisations.

As a federal country, Switzerland is composed of 26 cantons and half-cantons which enjoy a great deal of autonomy, especially when it comes to spatial planning and landscape protection. Based on the NCHA, the Confederation supports the cantons in fulfilling their tasks. For example, it supports the cantons in developing cantonal landscape concepts and implementing landscape measures.



The mural in the chamber of the Swiss National Council illustrates well the political importance of landscape in Switzerland.

Photo: Ruben Wytttenbach | Ex-Press | FOEN

Beyond a single law

One law alone is not enough to ensure that landscapes are comprehensively managed. Other policy areas are concerned as well, due to their impact on the landscape. For that reason, various other laws also incorporate the concepts of landscape protection and management. The Federal Act on Spatial Planning definitely plays a decisive role, especially when it comes to limiting urban sprawl. While this act mainly emphasises areas, it requires landscape and biodiversity issues to be taken into account because they contribute largely to the quality of these areas. Under the Agriculture Act, direct payments were introduced for farmers who conserve landscapes. Other national laws and strategies also make reference to the landscape. For instance, the Federal Council's Health2030 Strategy underscores the importance of a quality landscape in its 7th goal, which is to "support health through a healthy environment".

Toward a coherent landscape policy

Since the landscape evolves as a result of many different decisions and actions, it must be ensured that landscape policy is coherent and cross-cutting. In 1997, Switzerland adopted the Swiss Landscape Concept (SLC). This instrument, which is used by the Confederation for planning purposes, establishes the framework for the coherent, quality-based development of landscape as a dwelling place, a space for working, relaxing and moving, a cultural and economic space, and a space where biodiversity can grow. The general and sector-specific goals set out in the SLC are mandatory for all competent authorities of the Federal Administration, which

must take the landscape into account in their activities and strategies. To reflect the changes that have occurred in the issues since 1997, the SLC was updated and adopted in May 2020 by the Federal Council. Thirteen sector-specific policies were affected, from agriculture to transport to national defence. While the SLC primarily concerns federal authorities, it also promotes cooperation between the Confederation, cantons and communes.

Everyone's business

The main goal of any landscape policy is to actively guide landscape development toward quality. This goal can be achieved only through cooperation within the framework of partnerships and a focus on common goals. Indeed, there are many actors who influence the landscape without even knowing it. Moreover, it is essential to demonstrate what this type of development can offer society and the economy in terms of opportunities and potential. All of these actors also need guidance and support if they are to give due consideration to the landscape in their activities and decisions and ultimately fulfil their responsibility for the landscape. Everyone must be involved if landscape features are to be conserved and developed so that current and future generations can enjoy a high quality of life.

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Homes but no industrial zones: Fläsch in the canton of Graubünden.

Photo: Markus Forte | Ex-Press | FOEN

Landscape services

Much more than “just” beautiful

Paintings have shaped our notions of the ideal landscape. Yet landscape does much more than “just” provide us with aesthetic pleasure. **Text:** Lucienne Rey

The yearning for idyllic landscape is at least as old as the pictorial representations of ancient civilisations: murals painted in ancient Egyptian tomb chapels around 1300 BCE show hunting scenes in papyrus thickets and paradisiacal pleasure grounds – testimony to the close relationship between idealised landscape, the society’s religious values, people’s emotions and their aesthetic sensibilities.

Today, our view of landscape is more prosaic, but just as complex. For example, the Landscape Convention of the Council of Europe defines landscape holistically as “an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors”.

As well as providing aesthetic appreciation, the landscape also improves people’s health, creates feelings of place attachment and so helps to forge a sense of identity, and boosts a region’s economic attractiveness. The fact that these four key landscape services are now widely recognised is due in no small part to the debate about ecosystem services that began in the 1990s. This debate was prompted by ideas from environmental economics, namely that natural functions – viewed by traditional economics as being available free of charge – should be given a price, this being the only way to incorporate them into the economic cycle as tradable commodities.

As a result, scientists began to classify the diverse benefits of ecosystems, culminating in the Millennium Ecosystem Assessment launched in 2001. This study into the state of the environment, begun by the United Nations under Secretary-General Kofi Annan, saw the term “ecosystem services”

become firmly embedded in the expert lexicon. The associated approach then made its way from the world of research into the Swiss strategies on biodiversity and landscape. “Landscape services are a further development of ecosystem services”, confirms Roger Keller, a geographer at the University of Zurich who researches landscape’s contribution to the development of the economy and society as well as to individual well-being.

However, attempts to express the diverse services rendered by ecosystems as a monetary value are controversial, and landscape services can barely be represented in monetary terms. Thus, while a forest’s function as a filter for clean drinking water can – in theory at least – be given a price tag by comparing it with the costs of the equivalent infrastructure, the four key landscape services are closely interrelated and have no substitutes. Consequently, greater awareness is needed of the value to society and individuals of these four landscape services which are explored in the following portraits.

[Link to article](https://bafu.admin.ch/mag2020-3-01)
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Identity

Landscape that fosters attachment

“The Hudelmoos near Zihlschlacht is a very special place. I like the springy feel of the ground underfoot and I love the aromatic scents. The sounds are wonderful too. There’s something mysterious about this bog: you could quite easily get lost here in the mist! At the same time I’m aware of the scars where peat was once dug, which serve as a reminder that we need to treat this habitat with care. That’s why we don’t want hordes of visitors, but welcome those who appreciate the beauty of this landscape.”



Heidi Grau-Lanz

*Heidi Grau-Lanz | Mayor of Zihlschlacht-Sitterdorf (canton of Thurgau)
and member of the Thurgau cantonal parliament*



Photo: Markus Forte | Ex-Press | FOEN
Portrait: Kilian J. Kessler | Ex-Press | FOEN

Landscapes are shaped by their history and therefore bound up with the stories of the people who live in them – stories that are handed down through the generations: for example, how auntie used to pick beautiful bunches of wild flowers on her way home from school, or how granddad would clean his boots in the village fountain.

Knowing the history of specific features in the landscape makes them even more powerful repositories of identity. The gentle, strip-shaped elevations in the Thurgau/Fürstenland countryside, for instance, many now home to natural meadows or standard fruit trees, are actually ridge and furrow formations created in the Middle Ages. The ploughs used at that time, with their fixed mouldboards, could only deposit the soil on one side and were also difficult to turn. The farmers therefore used to plough in long oval strips around the centre of a field. Over time, soil rich in humus accumulated into ridges, while troughs (furrows) formed around the edges, which acted as drains. A study carried out on behalf of the FOEN concluded that the population should be better informed about these and other such features. It found that there was a lack of awareness about the unique character of these

fields, and noted that people were more likely to conserve the landscape if they felt proud of it.

But the feelings of attachment that landscape inspires are not solely linked to its past: residents can identify with an evolving landscape too. “However, the changes mustn’t take place too quickly and the quality of the change is key”, explains landscape researcher Roger Keller. In town and city neighbourhoods, for instance, a redesigned square that encourages people to linger tends to be well received by the locals, as many examples have shown. Moreover, if residents are given a say in the management of “their” landscape, this is likely to foster acceptance of the change – and a feeling of connection to the new.



Aesthetics

Landscape that pleases

“Nobody can fail to be moved by the majesty of Lavaux. Its special atmosphere is attributable first and foremost to the rapidly changing light, as when the sun breaks through the clouds after a storm. It is a landscape shaped by humans, which offers some surprising perspectives: wandering among the vines, it can be quite astonishing to suddenly find yourself almost on top of one of the villages that nestle in the landscape, compactly built to take up as little space as possible.”



Gérald Valléian

Gérald Valléian | Mayor of St-Saphorin (canton of Vaud), Vice President of Lavaux Patrimoine and organic winegrower and cellar master at the Domaine des Faverges vineyard



Photo: Markus Forte | Ex-Press | FOEN
Portrait: Flurin Bertschinger | Ex-Press | FOEN

Because we originated in the savannah, human beings retain a preference for open landscapes with clumps of trees, watercourses and elevated viewpoints – or so goes a traditional theory of landscape perception. In prehistoric times, such areas offered ideal conditions for hunting and fishing, as well as for hiding from predators.

While the needs of modern *Homo sapiens* may differ from those of their ancestors, certain landscape preferences have remained entrenched. “A vantage point is important, and bodies of water are generally perceived as beautiful”, confirms Roger Keller, a landscape researcher in the University of Zurich’s Department of Geography. Lavaux in the canton of Vaud embodies this ideal, with low-lying Lake Geneva framed by terraced vineyards on its northern shore, and the Alps rising on the opposite side. One also has an overview of the landscape, making it easier to read and navigate the space.

The diversity of its constituent parts is what makes this landscape so attractive. “Compact, homogeneous villages contrast with the structured texture of the sloping vineyards and their walls”, explains Keller. It is not only the material components of the landscape that are varied, but also the

lighting: depending on the position of the sun, the lake, which stretches from east to west, shimmers in a variety of shades, from slate grey to opalescent teal to silver. The vegetation also contributes to the play of colours. “Photos are particularly popular in autumn when the vine leaves have turned yellow”, says the expert.

However, a landscape does not retain its charm by always staying the same. “Residents greatly appreciate the beauty of Lavaux”, Keller has discovered. Holidaymakers also need to be made more aware that this aesthetic pleasure arises from an interplay between conservation and the ongoing development of the landscape.



Economics

Landscape that stimulates the economy

“Fläsch focuses on being a place for people to live. It has no industrial zones, and its green spaces have been created in areas designated for building in order to protect the vineyards and orchards and so preserve the charm of this old wine-growing village. Any new structures must fit in with the character of the surroundings. This is something people value: indeed, many have moved here for that very reason. Even the orthopaedic clinic that opened in 2017 chose Fläsch because of its great quality of life.”

René Pahud | Mayor of Fläsch (canton of Graubünden)



René Pahud



Photo: Markus Forte | Ex-Press | FOEN
Portrait: Kilian J. Kessler | Ex-Press | FOEN

The economic attractiveness of a location is heavily dependent on its landscape qualities. “People look for good accessibility and a high quality of life when deciding where to live”, confirms landscape researcher Roger Keller. Thus, properties in quiet areas and with beautiful views command higher rents: Zürcher Kantonalbank has calculated that great views of a lake or hillside locations with afternoon and evening sun generate an average rental premium of 5%. By contrast, an unattractive view pushes rents down. Overhead power lines are particularly unpopular, due to their visual impact but also fears of the negative effects of electromagnetic radiation. If you are letting a property within 150 metres of a power line, you can expect to take a hit of 3% on the rent you can charge.

Highly skilled workers can afford expensive homes in attractive locations with good connections to the nearest urban centre, meaning buoyant tax revenues for the communes concerned. “Switzerland always comes out top in quality-of-life rankings”, says Keller, adding that the landscape plays an important role in this – although determining how important is difficult.

For tourism, the importance of landscape is obvious. Breathtaking panoramas, glittering lakes and other scenic attractions are central to the appeal of many tourist destinations. According to a 2014 study by the Valais Tourism Observatory, tourism in the canton of Valais alone, with resorts such as Zermatt and Saas-Fee, generated gross value added of CHF 2.4 billion. For the whole of Switzerland, the figure was just under CHF 18 billion in the same period. Even away from the world-famous holiday resorts, it is often the landscape that attracts visitors, albeit in comparatively modest numbers. “Ecotourism will never generate the same revenues as mass tourism”, according to Keller. “But for the regions concerned, providing authentic experiences offers the potential for additional income” (see also p. 26).



Health

Landscape that promotes health

“The Gibeleich Nursing Centre in Opfikon, near Zurich, has a large garden. Our residents love it – especially as they are entering the home increasingly late in life so aren’t as mobile as they used to be and are therefore happy that we bring nature to them. Visitors also enjoy strolling in the park area. A lot of the plants from the kitchen garden are used for cooking. For me as well, the garden is somewhere I go to unwind and enjoy the changing seasons!”



Irene Kuhn

Irene Kuhn | Qualified recreational and garden therapist



Photo: Markus Forte | Ex-Press | FOEN
Portrait: Flurin Bertschinger | Ex-Press | FOEN

Attractive landscapes that tempt people outdoors and encourage them to exercise are beneficial for health. People who regularly walk, run or cycle to their destinations tend to stay fitter and live longer than those who are physically inactive. Particularly for diseases in which body weight plays a role, the positive effects of regular exercise are beyond dispute. Activities on a bike and on foot prevent 12,000 cases of cardiovascular disease in Switzerland each year, and a physically active lifestyle also helps to ward off depression and dementia. Various surveys have shown that attractive landscape is a significant factor in people's choice of a cycle or walking route.

Naturally, there is no "one-size-fits-all" landscape for every activity and every individual. "People's recreational needs are very varied", confirms Roger Keller, a landscape researcher at the University of Zurich. "Some like to be active while others want peace and quiet." This means that a variety of "recreational landscapes" are called for. While cyclists are likely to be happy riding through a residential area with gardens, those seeking silence and relaxation are drawn towards more natural surroundings. This requires a corresponding diversity in the

amenities provided in an area: footpaths and cycle paths for the exercise enthusiasts, benches for people who like to sit and enjoy the view and take in the landscape.

Accommodating different demands is not always easy. "Guiding people's behaviour is an important consideration", says Keller. For example, having some parts of nature reserves where there are no footpaths and cycle paths will benefit plants and wildlife. Cantonal authorities are still not focusing enough on people's need to experience the natural world and take part in outdoor activities, according to the expert. Authorities need to think in terms of "recreation planning", he says, in order to prevent conflicts and optimise offers.

Measuring landscape quality

Understanding landscape change

How do you determine the quality of a landscape? One way is to assess landscape elements such as forests, settlements and bodies of water. The FOEN also teams up with the Swiss Federal Institute for Forest, Snow and Landscape Research (WSL) to gauge the views of the Swiss public as part of the Swiss Landscape Monitoring Programme (LABES), which records and monitors both the physical characteristics of the landscape and the way that people perceive it. **Text: Peter Bader**

Do you have a favourite landscape? Open spaces with fields and meadows, perhaps? Or would it have to include forests – somewhere to escape to? Do you like living near water? Maybe you prefer urban environments? Or is mountain scenery your top priority because it reminds you of the place where you grew up? Landscapes – which include building culture (Baukultur) and biodiversity – are important for quality of life and for connecting people to where they live. A high quality of life is inextricably linked to a high-quality landscape. The European Landscape Convention, adopted in 2000, states that the landscape is a “key element” of individual and social well-being.

Objective perception?

Given the great importance of the landscape, monitoring and assessing changes to it is vital. However, this is a challenging task because landscape change is often gradual and can only be recorded if suitable indicators can be collected in the same way over an extended period. Describing the landscape based on its physical characteristics is comparatively easy. But a landscape can only be considered of high quality if it is also rated positively by the people who live in it, says Gilles Rudaz of the FOEN’s Landscape Policy Section. “Landscape quality is not defined solely according to the spatial mosaic of natural and cultural elements, but primarily by how we humans perceive and judge that mosaic.”

Among other things, people tend to find landscapes beautiful if they have acquired special significance for them during their lives and through their socialisation. The perception of landscape is also shaped by individual needs and interests. This raises the question of whether there is such a thing as an objectively measurable perception of landscapes, which can form the basis for a generally applicable quality assessment. According to Marcel Hunziker, a specialist in social sciences in landscape research at WSL, the answer is: “Yes and no.” Perceived landscape quality is essentially a subjective judgement shaped by individual preferences and personal socialisation. However, this shaping, and hence the resulting landscape assessment, are not entirely arbitrary because “people with similar socialisation tend to think in a similar way and therefore make similar judgements”. This “intersubjective agreement” is greater than one might think, Hunziker says. In addition, certain landscape structures and features have widespread appeal for people around the world, such as the typical mix of open land and clusters of trees found in traditional Swiss countryside, as well as rivers and lakes.

Switzerland at the forefront

It is a core task of the Confederation, cantons and communes to conserve and enhance landscape qualities in the face of a steadily growing population and the associated increase in development. Reliable information about the current state and



The Swiss like living in towns and cities too. Pictured is St Gallen with its historic Abbey District, designated a UNESCO World Heritage Site. The Alpstein massif rises in the background, including its highest peak Säntis (2,502 m).

Photo: swiss-image.ch | Christof Sonderegger

ongoing change processes provides the foundation for an effective landscape policy. “Switzerland is a world leader in monitoring the development of landscape quality because it recognises that landscape quality cannot be gauged solely by physical characteristics but also has to incorporate the way these characteristics are viewed by society”, explains Hunziker.

The LABES programme has been recording the state of the Swiss landscape since 2007. It sees the FOEN work in tandem with WSL, where Felix Kienast and Marcel Hunziker are responsible for methodological development and implementation. About 40 indicators are used to assess landscape quality. These include physical description indicators (e.g. land cover, land use, flowing and standing waters, wetlands and protected areas, light pollution), for which LABES draws on data from the land-use statistics and the Federal Office of Topography (swisstopo), as well as evaluating satellite images and agricultural data sources.

In addition, regular surveys representative of the entire Swiss population are conducted, covering

“Landscape quality is defined primarily by how we human beings perceive and judge it.”

Gilles Rudaz | FOEN

various aspects of perception. These include the “landscape beauty” of a place, as articulated by the people that live there, and “landscape distinctiveness,” which indicates whether “a landscape stands out in people’s perception because of its distinctive qualities”.

High satisfaction rate among Swiss population

According to the LABES final report from 2017, the population rates Switzerland’s landscape quality “rather highly”. It is striking that communes in the Alps do particularly well, significantly more so than those in the Swiss Plateau and to the south of the Alps. In addition, rural communes score especially highly on authenticity, i.e. the degree to which

residents identify with where they live and the surrounding area.

Generally speaking, towns and cities are also viewed favourably by the public, Hunziker notes. “The most negative perceptions relate to suburban areas on the outskirts of cities and more outlying peri-urban and commuter zones. The people who live in these places often work and spend their free time elsewhere.” Such negative perceptions may well be linked to the rapid increase in urban sprawl in recent decades, adds LABES Project Manager Felix Kienast. “In suburban and peri-urban areas, well over half of the buildings – some 65% – were built after 1960. By contrast, city-centre and rural neighbourhoods, which are perceived as more attractive, have more buildings dating from before 1960 – 60% and 50% respectively.”

expand, meaning an increase in soil sealing and habitat fragmentation. And while various federal government measures, such as the protection of waters, have had a positive effect, the landscape is still losing its distinctive regional characteristics. “Surveying and promoting landscape quality therefore remains an important ongoing task”, says Rudaz.

According to the LABES final report, the population rates Switzerland’s landscape quality “rather highly”.

In the rapidly changing, heavily populated areas around major cities, residents clearly miss the internal cohesion between landscape elements, and seem to have difficulty identifying with and feeling at home in a landscape lacking in distinctive character. Further research is under way into public perceptions of settlement development in local communities.

“An important ongoing task”

The quality of the Swiss landscape may be viewed favourably by the population, but we should not forget that the landscape as a whole is under massive pressure, according to the FOEN’s Gilles Rudaz. In particular, the settlement area continues to

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How are perceptions changing?

“The specific quality of the landscape is an anchor for identity”

The Council of Europe’s Landscape Convention defines landscape as “an area, as perceived by people”. Both human activity and the influence of nature feed into this perception. However, the way we view the landscape has changed over time, environment discussed this issue with Renate Amstutz, Director of the Swiss Union of Cities (SSV), and Raimund Rodewald, Head of the Swiss Foundation for Landscape Conservation (SL). **Interview: Lucienne Rey**

The Council of Europe Landscape Award 2018–19 went to the renaturation of the River Aire near Geneva (see also pp. 32ff). Why do you think the jury reached this decision?

Raimund Rodewald: As far as landscape is concerned, this renaturation project represents a major step forward because it’s a rare example of collaboration between biology, nature conservation, architecture and spatial planning. These disciplines normally operate separately, but in this case they were all involved together. Also, the old configuration was recontextualised rather than simply eliminated, with the Aire’s former channel now serving as a walkway within the redesigned landscape. The result is a successful landscape transformation that exudes optimism.

Renate Amstutz: In fact, the project is about going “forward to nature” and attests to a new respect for the natural world. This is different from the past when we sought to tame nature by confining rivers in narrow channels. Another significant feature of the project is that it accommodates a range of different needs – habitat diversity, flood protection and recreation. The cooperation across national borders is also forward-looking.

We have plenty of positive words for describing landscapes – “charming”, “breathtaking”, “magi-

cal” and “lovely”, for example – but relatively few negative terms. Most of the time we make do with “scarred”, “sprawling” or “eyesore”. Given the massive changes currently affecting the landscape, why does the positive lexicon predominate?

Amstutz: “Landscape” is often taken to mean not landscape as a whole, but that part of it which hasn’t yet been changed. The commonly used terms express a kind of yearning and are bound up with what we feel needs to be conserved. And also, we generally prefer describing beautiful things!

Rodewald: Public surveys based on landscape photos reveal widespread agreement on which landscapes are aesthetically pleasing, but when people are asked about “ugly” landscapes, the answers are not so forthcoming. The problem with linking “beauty” and “landscape” in this way is that it completely over-

“Designing high-quality settlements with distinct identities is challenging.”

Renate Amstutz



Photo: Severin Nowacki | Ex-Press | FOEN

Raimund Rodewald

graduated from the University of Zurich with a PhD in plant biology. In 1990, he became a research assistant at the Swiss Foundation for Landscape Conservation (SL) in Bern, which he has headed since 1992. He has been a guest lecturer at the University of Bern since 2015 (spatial planning) and at ETH Zurich since 2017 (landscape aesthetics). Raimund Rodewald received an honorary doctorate from the University of Basel's Faculty of Law in November 2008. His latest book is *Die schönsten Landschaften der Schweiz*, published by Werd Verlag, Thun (2019).

looks landscapes where humans have functionally reshaped their world. We ignore precisely those spaces for which we need to create high-quality aesthetics. In this context, the holistic view taken by the European Landscape Convention is groundbreaking. **Amstutz:** However, there are currently major changes under way, reflected for example in the adoption of the Second Home Initiative and the revision of the Spatial Planning Act. The efforts to promote inward settlement development and clear demarcation of building and non-building land show a concern for the environment in which we live. There is also an increasing focus on already transformed landscapes. We're beginning to move beyond an idealised perception of the landscape to one that encompasses urban landscapes too.

And yet, particularly in films, cities with their skyscrapers and expanses of concrete are portrayed as oppressive and serve as backdrops to grim future scenarios. Why is that?

Amstutz: Dystopian plots concerning social conditions have to take place in man-made settings; an unspoilt natural setting wouldn't really work. Megacities are the obvious choice. Also, there have been major failings in urban development in the past: nondescript, soulless neighbourhoods designed without input from local residents, and all too often blighted by social problems. Looking from a Swiss perspective, however, a more varied picture emerges: no megacities but a network of towns, cities and regional centres of all sizes that have evolved over time, each with its own character. What's more, our towns and cities are changing, thanks to increasingly carefully designed architecture, intermediate and outdoor spaces, parks, expanses of water and green façades. A juxtaposition of old and new, including features that convey a sense of identity, allows places to be read, brings them to life and helps to tell their stories. The past 20 years have seen people moving back into towns and cities.



Renate Amstutz

is an economist and has been director of the Swiss Union of Cities since 2008. After graduating, she worked in the private sector and held various positions at Swiss Federal Railways (SBB) before becoming general secretary of the canton of Bern's Construction, Transport and Energy Directorate.

Photo: Severin Nowacki | Ex-Press | FOEN

Rodewald: Swiss cities have improved enormously in terms of quality, and people are noticing that – but the general perception is lagging about 50 years behind reality. This is also reflected in the idealisation of the rural landscape, whose industrial features are concealed.

While the reputation of cities is on the up, the same is less true of their outskirts, the so-called agglomeration. Why is the prevailing view of these places ambivalent at best?

Amstutz: Our evidence suggests that the agglomerations are perceived less negatively than is often claimed. However, it is true that they face some major challenges. They are growing rapidly, and designing high-quality settlements with distinct identities is challenging. But people are now becoming much more aware of how important this is.

Rodewald: When communes profile themselves online, it's striking how the same sort of characteristics are always cited: proximity to the centre and good transport links for speedy travel elsewhere.

Whereas there's hardly any mention of the qualities that would make people want to spend time in the local area. Many communes suffer from a lack of identity and the absence of a distinct centre. Because communes in the agglomerations are growing fast, little attention is paid to the design of green spaces and there's a lack of joined-up thinking in the design of green spaces, open spaces and buildings. **Amstutz:** But that is changing! Agglomeration programmes supported by the Confederation can only be approved if they are comprehensive in scope. Participation procedures too are increasingly holistic in nature, right down to the issue of diversity and coexistence.

Rodewald: But cities have the advantage over agglomerations of having neighbourhood associations that demand participation and have established a culture of debate. This is harder to organise in agglomerations, where communes tend to coalesce. And it's conflicts that lead to the formation of campaign groups and the required engagement between the authorities and the population.

Do you think that the authorities' perception of landscape is also changing?

Amstutz: When we look back at films from the 1960s enthusing over newly-built motorways, the fervour is hard for us to understand now. Our view of the landscape has become more holistic, as have planning requirements, and regulations are much stricter. These reflect changing perceptions within society.

Rodewald: However, thinking about settlement development from a landscape perspective requires extensive advice and consultation. The Federal Council's Swiss Landscape Concept focuses heavily on advice and consultation as a way of harnessing an area's individual potential and distinctive characteristics. This enables the specific quality of the landscape to serve as an anchor for identity. Working on these terms will also enable areas to be re-designed and new qualities created.

Amstutz: On social media, I fear that beautiful surroundings are primarily there as decor for the individual. There's little real engagement with the landscape – as shown by the accidents that happen in pursuit of selfies.

Rodewald: Concern is also my dominant feeling right now. But to give social media its due, it has also facilitated grassroots movements: for example, in some towns and cities where the council could no longer afford to maintain green spaces, residents have got together on social media to step into the breach. Landscape conservation starts with every square metre, and engaging with the landscape is key. People will only take responsibility for something if they feel part of it.

“Thinking about settlement development from a landscape perspective requires extensive advice and consultation.”

Raimund Rodewald

Amstutz: Yes, it's about reading the space at a macro level while also maintaining specific characteristics at a micro level. The goal has to be to create residential neighbourhoods where people feel at home and are happy to spend time, rather than wanting to escape to somewhere else. In an era of globalisation, it's important to satisfy people's yearning for roots as they will treat the landscape more considerately if they feel rooted within it.

Social media influencers like to photograph themselves against spectacular backdrops. Do you think this could lead to a new-found appreciation of landscape?

Link to the article
bafu.admin.ch/magazin2020-3-03

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The Swiss Landscape Concept in practice

Designing the “everyday landscape”

Nowadays, shaping landscape change in a high-quality way is part of a commune’s economic development policy. The updated Swiss Landscape Concept (SLC) now defines objectives to this end: ensuring green spaces and carefully designing settlement edges. The example of Manno (canton of Ticino) shows how the abstract requirements of the SLC can be implemented in practice. **Text: Vera Bueller**

Why Manno? What makes this particular commune such a successful example of how the SLC’s objectives can be defined and achieved at a local level? Rapid settlement and economic development in recent decades has left unsightly marks on the wider Lugano area, with the proliferation of traffic infrastructure, industrial buildings, small and medium-sized enterprises, and logistics and other service companies. But Manno’s former mayor, Fabio Giacomazzi, sees beyond this. At the offices of his architecture and spatial planning agency, he takes out the commune’s design plan and explains: “You have to look more closely at the buffer zones between the industrial areas and the hills with the old village centre.” Around ten years ago, the local council started buying plots here to prevent private individuals from building on the land and keep it out of the hands of speculators.

This proved to be a boon for the environment. Back in 2004, Manno brought in Fabio Giacomazzi as a spatial planner to overhaul its design plan. Giacomazzi (who went on to become mayor from 2012 to 2016) had the foresight to realise that in some areas even the most sophisticated development plan would damage the landscape. “If you design the landscape with a focus on quality, this creates added value. And it results in open spaces that can make the area attractive to businesses – especially on the outskirts of cities”, says Daniel Arn, Deputy Head of the FOEN’s Landscape Policy Section, who praises Giacomazzi’s pioneering work.

Settlement edges as places for recreation

With Giacomazzi’s election as mayor, the project quickly took shape. Thanks to its industry and commerce, the commune also had the funds to buy up property worth CHF 2 million. “Rather than lowering the tax rate further, we wanted to use surpluses to create leeway for a careful design of the area – including use by non-profit organisations and the public”, says Giacomazzi.

The focus was on three areas: the Piana-Cairelletto district, which lies between the commercial/industrial area and the residential zone, and the Ronco Do and Bellavista-Ronchetti building zones on the slope above the old village centre. Wasn’t it tricky to take some 12,000 m² of land out of potential development? “If the area had been flat and easily accessible, rather than steeply sloping, it might have been a different story”, says Giacomazzi, smiling. But that was not the case, so the building zones are now reserved for recreation and agriculture. To ensure quality design, a competition was organised between three firms of landscape architects.

In the Ronco Do area, the council has laid out a public park for leisure and educational purposes, including a space where people can enjoy a picnic or while away the time, a vineyard and an orchard containing rare fruit varieties. “An experimental area for organic farming has been created, which also serves as an educational facility for schools”, explains Giacomazzi on a visit to the site.

Objectives of the Swiss Landscape Policy

General landscape quality objectives

1
Enhance Switzerland's landscape diversity and beauty

2
Strengthen the landscape as a location factor

3
Ensure that land uses are site-appropriate

4
Perform interventions carefully and with a focus on quality

5
Recognise the cultural and natural heritage of the landscape

6
Protect and connect high-quality habitats

7
Allow natural dynamics to have an effect

Quality objectives for specific landscapes

8
Urban landscapes – consolidate development with a focus on quality, ensure green spaces

9
Peri-urban landscapes – protect against further urban sprawl, design settlement edges

10
Rural landscapes – prioritise site-appropriate use

11
High Alpine landscapes – preserve natural character

12
Landscapes used mainly for agriculture – conserve and ecologically enhance agricultural land

13
Tourist landscapes – safeguard and enhance landscape and building culture qualities

14
Outstanding landscapes – enhance regional landscape character

A network of footpaths leads through the area, taking in woodland, chestnut groves and dry stone walls.

The project cost CHF 675,000, 40% of which was covered by federal and cantonal funding and money from the Swiss Landscape Fund. “Key to all this was the realisation that settlement edges matter, because the built environment is part of the landscape too”, the designer points out. “In Ticino, the authorities mostly recognised this some time ago, so some excellent local projects have already taken shape there”, confirms the FOEN’s Daniel Arn. However, he goes on to say that within Switzerland as a whole, awareness of the importance of landscape design is often lacking, as is the relevant expertise.

“Key to all this was the realisation that settlement edges matter, because the built environment is part of the landscape too.”

Fabio Giacomazzi | Spatial planner

New contact point for local councils?

The FOEN is exploring the possibility of setting up a landscape advisory unit to impart knowledge and promote projects, and generally raise awareness about landscape quality, by means of events or walks in different regions for example. A contact point providing initial advice to local councils is also being considered. This would be based on the updated SLC. During the SLC consultation, the Swiss Union of Cities (SSV) stressed the importance of measures at the communal level. “We and our members would like to see the Confederation become an implementation-oriented partner and specific projects and measures, such as modules for advice, education, communication and awareness-raising

as well as cooperation, emerge in the near future, implemented in direct cooperation with cities and communes”, explains SSV Director Renate Amsutz (see also pp. 19ff). The essential aim, she goes on, is to contribute to a new understanding of landscape. “For us too, landscape always includes the urban landscape, and not just the countryside.”

The importance of “everyday landscape” was emphasised in the earlier SLC dating from 1997, and yet, according to Daniel Arn, so far it has not played a major role in spatial planning. “With the updated SLC, it is now coming to the fore.” Landscape change is inevitable, he says, but quality does not come about by accident: it has to be actively pursued. The updated SLC encourages all stakeholders to make a joint contribution to this – the Confederation, cantons, communes and outside organisations. “First and foremost, green spaces have to be secured as local recreational areas, and settlement edges in particular require careful design.” This is exactly what has happened in Manno, making the commune an exemplar for how the dry content of a policy document can be turned into reality on the ground.

Link to the article
bafu.admin.ch/magazin2020-3-04

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Regional development

A true taste of the Jura

The landscape is an asset in many ways, not least in the development of peripheral regions. But capitalising on Switzerland's diverse landscapes also means protecting and looking after them. **Text: Kaspar Meuli**

Electric bikes are now a regular sight outside the Brasserie Tonnebière in the medieval town of St-Ursanne. The brewery is located on the Route Verte, a tourist route for e-bikers traversing six regional nature parks and spanning the entire Jura Arc. There is plenty to discover along the way. The Parc du Doubs even has its own beer, "L'Apronne," made entirely from ingredients sourced within the park. The organic barley comes from Epiquez and is malted in Delémont, and several farmers in the park grow hops, although the quantity harvested is not yet quite enough to meet demand. The beer is then brewed at the Brasserie Tonnebière.

This inspiring story about a unique product perfectly encapsulates the idea behind the Route Verte, which opened in 2018. "Stop off along the way to discover the secrets of the beautiful landscapes around you", its website proclaims. "The parks' residents are proud of their natural and cultural heritage and are passionate about conserving these precious resources and treating them with respect. In return, nature rewards them with the ingredients to make delicious regional products."

One example is the Jaune longue du Doubs, an old, nearly extinct variety of carrot. It has a distinctive, slightly sweet flavour and is perfectly adapted to the area's high altitudes. The nature park has now launched a campaign to use the yellow carrot as a catalyst for reviving culinary traditions and old knowledge from the Jura, and it is proving successful, with various local eateries, from country inns to fine-dining restaurants, featuring the rare vegetable on their menus. Three of these establishments are located right on the Route Verte and are

delighted at the growing number of e-bikes in their car parks.

Nature and culture

This new e-bike route for nature and culture enthusiasts appears to have struck a chord, with around 27,000 people researching the Route Verte online in 2019 and an estimated 1,000 e-bikers riding all or part of the route last season. Cycling the entire length from Schaffhausen to Geneva takes seven days. Those without their own vehicle can rent an e-bike on site, and e-cyclists can even ask for their luggage to be transported from one overnight stop to the next. The promoters of this "eco-friendly activity holiday" are pleased with the growing number of visitors that the route is bringing to the nature

"The goal is uniqueness. For that you first need to understand which natural and cultural features define a landscape."

Daniel Arn | FOEN

parks – especially when they take time to enjoy the beauty of the landscape and stay overnight in the region. But it isn't all about hotel bookings and turnover. "We don't just promote tourism, we also have



Around 1,000 e-bikers rode some or all of the Route Verte last season (pictured: the Jura Vaudois Nature Park).

Photo: Switzerland Tourism

Landscape-focused regional development leads to a greater appreciation of the landscape among local people.

an awareness-raising remit”, explains Nadège Graber from the Parc du Doubs. The aim is for people travelling the Route Verte to also learn something about the history and significance of Swiss landscapes – and really take the time to absorb the surroundings. “We encourage soft mobility”, says the tourism and culture project manager, “partly because we want to show our visitors how important it is to conserve nature.”

Landscape promoting development

In other words, landscape on the Route Verte is not just a backdrop: it is a core part of the offering – and that is something new. Breathtaking mountain and lake scenery has been integral to Swiss tourism

from the outset, but there has been very little attempt to promote a real understanding of the landscape. *Landschaft als Leitthema für eine nachhaltige Regionalentwicklung* (Landscape as a guiding theme for sustainable regional development) is the title of a FOEN-commissioned study published in 2019. The study involved researching 111 examples of innovative approaches to landscape, in Switzerland and abroad, of which 12 from Switzerland were then analysed in detail. The central question was whether landscape has the potential to promote sustainable regional development. According to the authors, the answer is a resounding yes. Landscape-focused regional development leads, for example, to a greater appreciation of the landscape among local people. It can also generate added value and enhance stakeholder cooperation.

For proof that a landscape project can promote integration, we need look no further than the Route Verte. The scheme was devised by the Jura Arc’s six regional nature parks, spread across nine cantons. Their idea was to create a shared identity that would set them apart from the Alpine parks. The Route Verte’s marketing and activities are coordinated by the Swiss Parks Network. Rianne Roshier, the woman responsible, explains:

“We managed to bring together around one table a number of tourism organisations that would otherwise never have talked to each other.” But she stresses that it is local actors who keep the project going.

Developing its own ideas rather than just copying existing tourism formulas is what sets landscape-related regional development apart. “It’s not enough to say: let’s do another nature trail!” explains Daniel Arn, who is responsible for regional policy at the FOEN. “You have to focus more on the things that make you distinctive.” The landscape specialist refers to a real “paradigm shift” in regional development.

“We managed to bring together around one table a number of tourism organisations that would otherwise never have talked to each other.”

Rianne Roshier | Netzwerk Schweizer Pärke

For too long, he says, only tried-and-tested solutions were replicated, but this leads to a loss of regional diversity. Describing the new development approach, he says: “The goal is uniqueness. But for that you first need to understand which natural and cultural features define a landscape and what makes it special. Only then can development projects be taken forward.”

Support for innovative projects

A key player in Swiss tourism policy is the State Secretariat for Economic Affairs SECO. SECO invests primarily through the Innotour programme, supporting projects that promote innovation, cooperation and knowledge development in tourism. The Swiss Parks Network and the Route Verte are among the beneficiaries. “Bottom-up projects such

as the Route Verte are particularly good for promoting development in the park regions”, explains Mireille Lattion, who is responsible for Innotour at SECO.

Back to the e-bike route through the nature parks of the Jura, where there is no shortage of ideas on how to harness the potential of people, their products and the landscape that shapes them. Les Rottes, for example, is an organic farm in Saint-Brais, surrounded by the wooded pastures of the Franches-Montagnes. It makes a very special Tête de Moine cheese: not the industrially produced kind sliced with the round Girolle curler, but one made to an old recipe from a time when Tête de Moine was still scraped with a knife. The recipe was unearthed by Bernard Froideveaux, a now-retired farmer and cheese maker, following years of research. Bernard was very keen to pass on his knowledge before retiring from artisanal cheese production, and he now has three young successors in the Parc du Doubs, ensuring that the Tête de Moine AOP fermière Bio will continue to be made in the future – another inspiring story very much in the spirit of the Route Verte.

Link to the article
bafu.admin.ch/magazin2020-3-05

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Biodiversity

“We want to preserve these open spaces at all costs”

Agglomerations can also contain valuable landscape and natural elements, but growing housing needs and the requirement for the consolidation of settlement areas are placing these assets under pressure. The Geneva commune of Meyrin shows that it is possible to safeguard green spaces while also connecting them to form an ecological network. **Text: Nicolas Gattlen**

Few people head to Meyrin in search of scenic gems or natural treasures. The suburban commune in north-west Geneva is more of a draw for physics buffs and architecture fans. In 1955, the European Organization for Nuclear Research (CERN) established itself on the edge of what was then an agricultural village. The research centre was soon employing thousands of specialist staff, who were housed on a specially-built estate called the Cité de Meyrin. Erected in the 1960s, the Cité is considered Switzerland’s first “satellite town” and was designed in accordance with Le Corbusier’s Athens Charter, which called for housing, industry and commerce to be located outside town and city centres and kept separate from each other. The Cité de Meyrin comprises several dozen blocks of flats, built well away from each other to allow for extensive green spaces and gathering places for the 12,000 residents.

“These open spaces improve our quality of life, and we want to preserve them at all costs,” explains Pierre-Alain Tschudi, a member of the communal executive. He refers to the “onslaught of investors and owners who would like to build houses on every spare inch of land”. Pressure on Meyrin’s open and green spaces is tremendous: it has the fastest population growth of any agglomeration commune in Switzerland (4.5% a year on average),

and has ballooned from around 2,000 inhabitants in 1950 to over 25,000 in 2018.

“Agglomeration communes have an important role to play in establishing an ecological infrastructure that will ensure biodiversity.”

Claudia Moll | FOEN

Biodiversity a priority

In recent years, the communal authorities have been looking hard at how they can meet the increasing demand for housing without sacrificing green spaces. These are deemed to include public parks, tree-lined avenues and historic gardens such as the Jardin Botanique Alpin – a green oasis in the middle of the town. Over recent decades, road-building projects had eaten away at the perimeter of the botanical garden. In 2012, the local council applied to the canton for protected status and set about transforming the rather overgrown villa garden into an attractive destination for the entire population.



Meyrin has created several new habitats in recent years, including the near-natural Lac des Vernes on its northern outskirts.

Photo: Laurent Barlier

Meyrin sees its open spaces not only as places for recreation and social interaction, but also as plant and animal habitats that deserve to be safeguarded and enhanced. The commune has made conserving its biodiversity a “priority objective” for the 2015–20 legislature period. It has been promoting biodiversity in its green spaces for over 20 years, adopting a system of “differentiated management” whereby areas are maintained with differing degrees of intensity according to their potential and function (aesthetics, social use, ecology).

Some perform all three functions, and in these areas you will find ornamental flower beds alongside neatly mown lawns and species-rich unfertilised meadows. “Differentiated management has proved successful,” says Olivier Chatelain, head of the commune’s environment department. “The town is now home to many plant and animal species that lack

suitable habitats in the surrounding farmland. Take orchids, for example. We’ve recently discovered another species in a park, bringing the total recorded in Meyrin to 13.”

A green network

As well as enhancing existing green spaces, the council has also planted numerous trees and created a range of new habitats in recent years. These include a near-natural lake, Lac des Vernes, on the northern outskirts, and parks in the new Les Vergers eco-quarter. The aim is to create a “green network” spanning the entire settlement area and connecting it with the adjacent agricultural land, the forests and the canton of Geneva’s last remaining moorlands.

“Agglomeration communes have an important role to play in establishing an ecological infrastructure

“The town is now home to many plant and animal species that lack suitable habitats in the surrounding farmland.”

Olivier Chatelain | Meyrin Environment Department

that will ensure the long-term preservation of space for biodiversity”, says Claudia Moll, who is responsible for landscape in built-up areas within the FOEN’s Biodiversity and Landscape Division. “85% of the population already live in urbanised areas and that number is set to rise further. The Spatial Planning Act states that these communes should primarily grow inwards. While such consolidation curbs urban sprawl into the open countryside, in many places it comes at the expense of open spaces and puts natural and landscape assets under pressure.” If these assets are to be conserved, they need to be given greater consideration in agglomeration policy and at all levels of spatial planning, explains Moll.

Optimal use of spatial planning

The FOEN-led project “Promoting biodiversity and landscape quality in agglomerations” is currently investigating how spatial planning tools can be optimally used. The project is part of the action plan to implement the Swiss Biodiversity Strategy and is being developed within the framework of the Tripartite Conference, a political platform bringing together the Confederation, cantons and communes. The findings will lead to practical recommendations for stakeholders, showing when and where action can be taken to ensure greater biodiversity and landscape quality within agglomerations.

In the Greater Geneva area, the *Projet de territoire Grand Genève 2016–30* requires the issue of landscape to be addressed across communal, cantonal

and national borders. It defines spaces with special landscape functions and formulates a package of measures, including the creation of habitat corridors. A major corridor runs through the commune of Meyrin, and the local council has made a contractual commitment to protect it. This corridor – along with five other wildlife corridors – is included in the commune’s revised structure plan.

The plan also provides for the urban area to be structured by multifunctional green and open spaces. But how can this goal be reconciled with the growing demand for housing and the requirement for the consolidation of settlement areas? “Primarily by adding stories to existing buildings”, explains Pierre-Alain Tschudi. Furthermore, every extension is conditional upon outside areas being enhanced, through the planting of trees for example. Once branded “sterile”, Meyrin aspires to become a green and vibrant model for other towns to follow, says Tschudi.

Link to the article
bafu.admin.ch/magazin2020-3-06

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Landscape dynamics

A boon in the fight against global warming

Switzerland is not immune from the global climate crisis, but restoring natural landscape dynamics can help in the fight against rising temperatures. **Text:** Anne Burkhardt

The effects of global warming are being felt in Switzerland in the form of summer droughts, heavy precipitation, winters with little snowfall, and more blisteringly hot days and tropical nights. Risks from natural hazards are on the rise, while population growth and land use are putting pressure on our landscapes and biodiversity. In 1997, the Federal Council adopted the Swiss Landscape Concept (SLC), which formulates a coherent policy and specifies binding spatial planning objectives

“We need solutions that take account of the new climatic conditions and offer added value for nature and people.”

Claudia Moll | BAFU

designed to protect nature and landscape. Intact natural landscape dynamics can do a lot to limit the adverse effects of a warming climate. “We need solutions that take account of the new climatic conditions and offer added value for nature and people”, explains Claudia Moll, from the FOEN’s Biodiversity and Landscape Division, where she is responsible for landscape in built-up areas. This

demands a coordinated approach by all actors as well as consideration of regional circumstances.

Ever-changing

The European Landscape Convention, which Switzerland ratified in 2013, defines landscape as “an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors”. This description implies that landscapes are constantly changing. The climate has a major influence on which organisms can live where, because each species has different requirements. As temperatures rise, certain species will migrate or become extinct and natural phenomena will change. This will profoundly alter the appearance of the landscape (see box on p. 33).

Events such as avalanches, landslides, fires, storms and floods, which are generally considered to be natural hazards, may be conducive to biodiversity in certain circumstances, because they create new spaces in which pioneer species, and subsequently other plants and animals, can settle. Such “disruptive” events trigger natural dynamics and also help to rejuvenate populations. However, for this to happen, these events need to be relatively rare and spatially limited so that repopulation can take place.

Human intervention

The only places in Switzerland where natural dynamics are still given free rein are the high mountains

and the Swiss National Park. At lower altitudes, livestock farming, winter sports facilities and hydropower plants have left visible traces. In the lowlands, humans have largely tamed nature, in particular by draining or channelling bodies of water to create land for agriculture, settlements, industry and transport routes, although there are still a few areas here and there that are left to develop unhindered, such as floodplains, forest reserves and core zones of nature discovery parks.

In some places, however, human activity has developed to an excessive degree, resulting in a loss of landscape quality and biodiversity, increased soil sealing and the construction of buildings and infrastructure in locations at high risk from natural hazards. “Climate change will result in more extreme events such as floods and landslides, which inevitably cause damage”, notes Moll. To remedy this, the original SLC set out clear guidelines for spatial development. The updated version, published in 2020, firms up the existing statutory mandates in areas such as nature and landscape conservation, forest, agriculture and waters protection.

A return to natural dynamics

Since 2011, the Waters Protection Act has required the cantons to rehabilitate their rivers and streams. In Frauenfeld (canton of Thurgau), for example, the bank of a channelled section of the Murg has been flattened and the river allowed to return to part of its original course, thus creating a floodplain. The river, willow thickets and an unfertilised meadow now offer habitats for a wide variety of animals

Around our cities and agglomerations, where almost 85% of the population live, nature urgently needs more space.

and plants, while newly created footpaths and picnic and bathing areas provide pleasant places for recreation and relaxation. “With the increase in inward settlement development, easily accessible

Climate change in Switzerland

The mean annual temperature in Switzerland has risen by 1.8 degrees Celsius since the second half of the 19th century. According to MeteoSwiss, we can expect longer and more frequent heatwaves in the future, combined with increased summer droughts. Heavy precipitation is becoming more frequent and intense, the glaciers are retreating, and there is less snowfall.

Permafrost in the Alps is thawing to ever greater depths, and the terrain is becoming unstable. All of this has consequences for living organisms, with a range of species likely to retreat to higher, cooler locations. Some will die out because they cannot move to new habitats quickly enough, while others will be displaced by competitors. The spruce, for example, could disappear from lowland areas. There will be a lack of water for winter wheat and potatoes, and certain insects will become more widespread as temperatures rise. Heatwaves will lead to increased mortality and water shortages. Permafrost thawing and heavy precipitation are resulting in ever more frequent floods, mud flows, landslides and debris flows. If the measures to curb global warming are not successful, this will have implications for our quality of life and for the landscape.

recreational areas are becoming more and more important”, explains Moll. Indeed, various studies have confirmed the positive impact of green spaces on health and social interaction.

Last but not least, the Murg-Auen-Park was also designed with climate change in mind: trees sequester CO₂ as they grow and provide shade in the summer, making the park an attractive destination during hot spells. “Readily accessible on foot or by bicycle, such local recreational areas are pleasant places for residents to spend their free time”, continues Moll. In summary: restoring the natural dynamics of this section of the river has benefited biodiversity as well as the climate and local people.

Fostering dialogue

Landscape design frequently entails working across communal boundaries, with numerous actors involved. A prime example of this is the rehabilitation of the River Aire in the canton of Geneva and across the border in France. “All stakeholders were involved in the plans: the farmers who had to give up their land, local council representatives, nature conservation organisations and residents”, explains the FOEN expert. The former canal has been partially filled in and is now an attractive promenade for local people, while the river is able to wend its own way through diamond-shaped dredged furrows.

The restoration of ditches, hedges, bushy areas and wetlands has created an ecological corridor through the agricultural and settlement area, which protects against flooding and serves as a recreational space for residents. Such functioning ecosystems strengthen the natural adaptability of habitats to the effects of climate change.

More harmonious development

The beauty of Switzerland lies primarily in the quality of its landscapes. Land here is scarce, and needs to be used wisely. Striking a balance between economic growth and landscape conservation is difficult, but around our cities and agglomerations, where almost 85% of the population live, nature urgently needs more space. In most cases,

restoring natural dynamics not only benefits biodiversity but is also a sound investment when it comes to mitigating the impacts of global warming, which in turn benefits human health and infrastructure.

Spatial planning relies on effective coordination between all the actors involved. “Experiences to date show that dialogue is extremely important. At the same time, we need to act with proportionality and preserve region-specific landscape features”, concludes Moll. Especially in the context of climate change, sustainable landscape development has real potential to enhance the well-being of people in Switzerland.

Link to the article
bafu.admin.ch/magazin2020-3-07

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Following the rehabilitation of the small River Aire in the canton of Geneva, the river is able to wend its own way through diamond-shaped dredged furrows.

Photo: Fabio Chironi



Photo: Jean-Michel Zellweger



Comparison of pictures: The communes of Blonay and St-Légier-La Chiésaz (canton of Vaud) in 2016 (above) and in 1960.

Photo: A. Kammacher | Aéroport lausanne | Archives Cantonales Vaudoises

Visualising changes

Photography as a spatial planning tool

Photographic landscape observation is gaining ground in Switzerland, from Schlieren to the Chasseral. According to its proponents, it could also provide valuable guidance for spatial planning. **Text:** Patricia Michaud

The photo from 2005 shows a typical street junction: a greyish residential building in the foreground on the right, in the background on the left a garage with new cars displayed on the forecourt, and an undeveloped plot in the background on the right. The same junction photographed from the same angle four years later (2009) reveals an imposing residential building with a blue and white façade to the rear of the previously undeveloped plot. Two years after that, in 2011, more buildings are under construction to the front and rear of the blue and white apartment block. A new footbridge has been built over the road. In 2017, the once grey apartment building in the foreground is concealed by scaffolding; by 2019, it has been transformed with a completely renovated façade.

Between 2005 and 2020, the changing face of the Zurich commune of Schlieren in the Limmat Valley was meticulously documented in photographs. Shots were taken every two years from 63 different locations in the built-up part of the commune – always from the same perspective and in similar conditions. The project, entitled “Long-term photographic observation of Schlieren 2005–2020”, was initiated by a team from the Institute for Contemporary Art Research (IFCAR) at Zurich University of the Arts, led by Meret Wandeler and Ulrich Görlich. It is now nearing the end of its first phase. “We wanted to combine photography and applied research”, recalls Görlich. “When we learnt that the company Metron was developing an urban development plan for Schlieren, we asked if we could get involved by documenting the impact of the plan’s implementation on the landscape.”

The shock of the visual

Photographic landscape observation projects have been undertaken elsewhere in Switzerland. Locations are photographed at regular intervals from the same angle, thus providing a visual illustration of the changing landscape. The approach has also been adopted in a number of publications juxtaposing shots of the same place decades apart. One notable example is *Glaciers: Passé-présent du Rhône au Mont-Blanc*, a book of photographs documenting the dramatic melting of the glaciers.

“Only photography can identify developments that, while less conspicuous, are nonetheless extremely revealing.”

Meret Wandeler | Zurich University of the Arts

“Such projects have an enormous communicative impact”, says Gilles Rudaz of the FOEN’s Landscape Policy Section. “Numbers can give a precise description of how glaciers are changing in terms of surface area and volume, but nothing illustrates glacier retreat more clearly than a visual before-and-after comparison.”

In 2017, the Chasseral and Doubs regional nature parks launched what Rudaz calls an “exciting photographic landscape observation project” in which several dozen locations in both parks are “adopted” by local people, who pledge to photograph them at regular intervals. Examples include a former factory in Courtelary (canton of Bern) and the main road between Villeret and Corgémont.

A sophisticated technique for geolocating historical photographs of Swiss landscapes (Snapshot) has been developed at the Vaud School of Management and Engineering. Archive images provided by partners including EPFL, the National Library and the Federal Office of Topography (swisstopo) are made available online. Anyone who recognises one of the locations shown can pin the image to the corresponding location on a virtual 3D globe.

What was it really like?

In February 2019, the FOEN held a workshop bringing together those responsible for the various photographic landscape observation projects in Switzerland. Representatives from Schlieren were among the 23 attendees. “What’s particularly interesting about the Schlieren project is that the pictures are taken from a pedestrian’s perspective and document the development of an everyday landscape”, explains Rudaz. The time series of the photos reveal subtle changes in the landscape qualities. This sets them apart from aerial shots, which are taken every ten years. Project manager Meret Wandeler agrees: “Only photography can identify developments that, while less conspicuous, are nonetheless extremely revealing.”

Schlieren town planner Barbara Meyer, meanwhile, appreciates being able to use this valuable photographic archive as a fact-checking tool: “Sometimes, I get calls from people who think that such and such a place was better in the past. The photos allow me to check for myself whether those concerns are justified, based on a range of parameters. A meadow might have been built on, for example, but the photo shows that it wasn’t previously accessible to pedestrians anyway.”

A common platform?

Meyer goes one step further: in her view, photographic landscape observation has the potential to improve the urban planning process. She is therefore seeking funding to continue the project in Schlieren after 2020. The results of the FOEN workshop suggest that most participants share Meyer’s view: as well as being a valuable awareness-raising and communication resource, photographic landscape observation should also be recognised and used as a spatial planning tool.

A belief in the benefits of photographic landscape observation is not confined to Switzerland. Back in 1984, the French authorities launched a “photographic mission” which resulted, five years later, in the establishment of a national photographic landscape observatory. Could this be an example for Switzerland to follow? “Not necessarily”, says Gilles Rudaz. Instead, the FOEN expert would like to see greater harmonisation of the process, with shared archives or even the creation of a common platform. This would deliver real added value. “Comparing data from the various Swiss projects could provide valuable insights.” Insights that would undoubtedly help to enhance landscape quality.

Link to the article
bafu.admin.ch/magazin2020-3-08

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Publication details

The FOEN's umwelt magazine, on which this English-language version is based, is published quarterly. Subscriptions are available free of charge.

Reader service

bafu.admin.ch/leserservice | Stämpfli AG, Abomarketing,
Wölflistrasse 1, 3001 Bern | +41 31 300 64 64

Publisher

Federal Office for the Environment (FOEN). The FOEN is an office of the Federal Department of the Environment, Transport, Energy and Communications (DETEC), bafu.admin.ch, info@bafu.admin.ch.

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Closing date for contributions

3 April 2020

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Languages

German, French, English (case histories only), Italian (case histories only)

Online

The magazine content is available at bafu.admin.ch/magazin.

Facebook

facebook.com/UmweltMag

Circulation of this issue

40,200 German copies | 15,100 French copies
1,100 English copies

Paper

Refutura, recycled from 100% waste paper, FSC-certified,
Blue Angel seal, low-VOC printing

Proofreading, printing and distribution

Stämpfli AG | Bern

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ISSN 1424-7186

