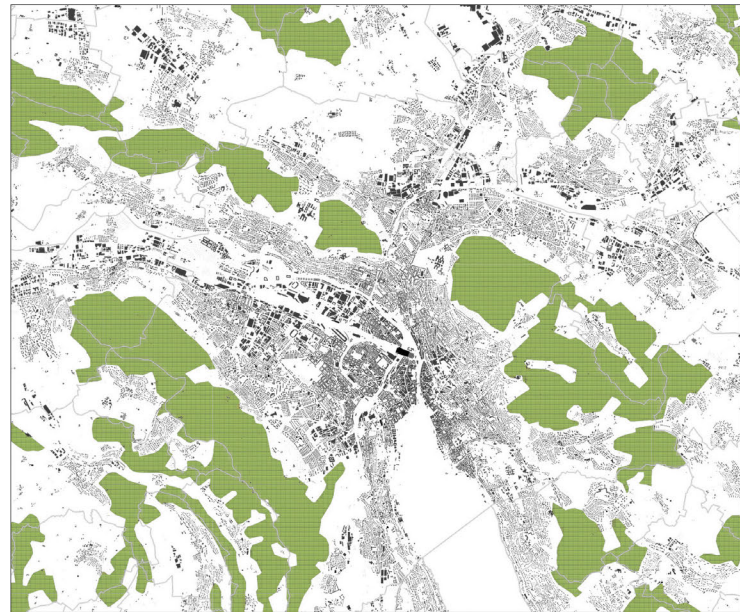


THE PERSISTENCE OF THE FOREST



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Forest areas in Zurich

Prologue

My interest for the forest started with two observations: The first one was the fact that a quarter of the Zurich metropolitan area is covered by forest. Each location within the city of Zurich is a maximum of 3km away from the nearest forest. The image of Zurich's urban landscape is dominated by the wooded moraine hillsides of the Uetli, Käfer, Zürich- and Zimmerberg, they surround the city and define its edge. The second fact that arose my interest for the forest was an article I read in 2015 about the forest, which included a survey about the question if forest protection should be relaxed. 10% were in favour of it, whereas 88% stated, "*The forest is sacred to us.*" The total number of participants in the survey was more than 10'000. What attracted my attention was not only the sheer number of people for whom the forest was important, but also the use of the word "*sacred*". Somehow, it indicated a deeper relation between man and forest, one that wasn't purely pragmatic. I wondered how this perception of the forest influenced the urban development of it. How was it possible, that in a country like Switzerland, where utilizable land has always been seen as a scarce and limited resource, the forest became sacrosanct? The Swiss population has grown noticeable in the past decades, increasing the need for settlement and urban areas. Since the beginning of the 20th century, the population more than doubled. The expansion of urban areas lead to a significant loss of fertile Land (Kulturland), while simultaneously, the overall forest area has been increasing over the last 150 years.

Travel

I started my journey through the city forest of Zurich in Triemli, next to the recently build settlement Sonnengarten. Triemli is one of the places in Zurich, where one can observe the urban development of the city. "*Zürich wird ersatzneugebaut*" is how the magazine Hochparterre¹ describes the development. Bigger buildings are replacing old, smaller ones; a new scale is being implemented in the city with new residential buildings. The housing settlement Sonnengarten in Triemli is situated at the foot of the Uetliberg and marks the geographic endpoint of this kind of development at the Birmensdorferstrasse. Triemli is seen as a threshold between the city and the forest. I took the SZU (Sihltal Zürich Uetliberg) train to Uetliberg, where I was going to start my walk and as soon as we left the station, the train immersed into the forest of Zurich. Strabo, a Greek historian and geographer, once described the densely forested land "*not far from the capital of the Helvetians*" as "*a big incessant forest*".² The forests north of the Alps must have seemed immensely large and dense in the Roman Age. Writers and poets travelling through the area of present day Switzerland reported it while serving under Cesar and especially Augustus. I somehow could relate to this description, although the present situation of the forest is completely different. Maybe it was the fact that all other urban elements became invisible as I stepped inside the forest and suddenly, the city forest seemed far away from Zurich.

However, the history of the Swiss forest and its persistence begins much earlier. The development of human culture from hunters and fisherman to farmers and herders in the Neolithic period meant a shift from nomadic to sedentary culture. The condition of the forest wasn't much affected by foraging before, however with the turn to farming and animal husbandry, humans were able to store food and liberate themselves from seasonal dependency. Thus the number of people that could be nourished grew leading to an increase of extensively used arable land. The necessitated land was often gained through slash-and-burn.³ The slash-and-burn technique and the extensive use quickly exhausted the soil prompting the Neolithic farmers to change location from time to time. Whole village communities repeatedly relocated only to often return back to the old place.

The shift to sedentary culture marks the beginning of landscape, differentiating settlements, agricultural land and forest areas. Until about 4500 BC, the area north of the Alps resembled dense woodland consisting of a virgin forest. The pastureland, the selective removal of certain tree species and other uses lead to a permanent alteration and influence to the composition of tree species and therefore to the image of the remaining forest. The different landscape types continued to diversify over time and became more and more distinct.

I remembered reading an article about the Sihlwald. In opposition to the Uetliberg forest I was just about to visit, the Sihlwald has been

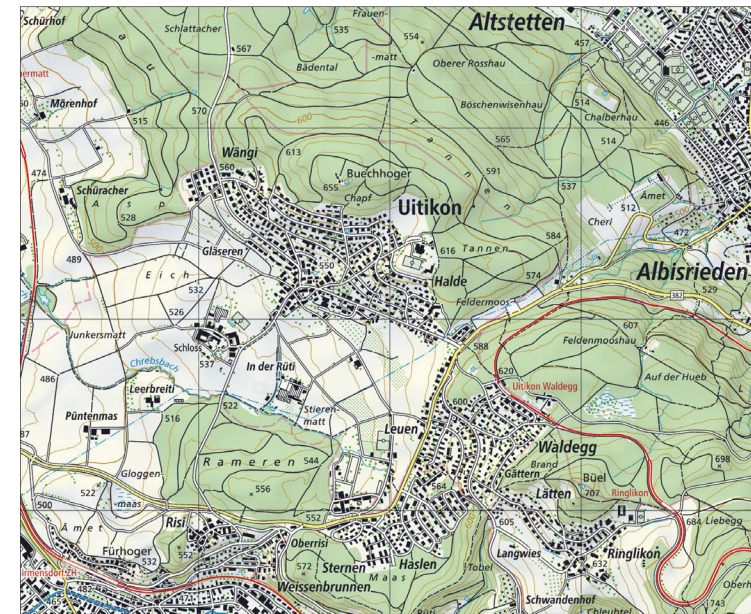
left to nature and no trees have been felled since the year 2000. It is an experiment to re-establish the original composition of the beech forest. The Sihlwald is one of the last remaining, naturally composed forests in the lowlands of Switzerland, which never had been subject to agricultural or pastoral uses. However exploitation of the Sihl forest began at the 14th century, according to legal stipulations. Hence natural structure according to age and space, and also the dynamics of the virgin forest have disappeared since long ago.⁴

The biggest deforestation of the forest in Switzerland took place in the middle ages. In the period between the 9th and the 13th century, the population on the territory of present-day Switzerland drastically increased. The population more than doubled from about 300'000 to at least 600'000 people. Large forest areas were cleared in order to create space for new settlements. The land reclamation took place either by densification of existing settlements or through the foundation of new ones. Densifications of existing settlements are mainly found in western and central Europe. Forest areas were extensively cleared in order to gain additional farmland. Even less suitable areas not apt for permanent buildings, were used as arable land and abandoned after few years so-called failed settlements and deserted medieval towns.⁵

Apart from the modern appearance of large urban agglomerations, the current settlement structures in Switzerland substantially correspond to the result of the medieval expansion. Particularly good examples of medieval clearing chambers (Rodungskammern) are found in the Jura, Appenzell and central Switzerland. Dense forest areas enclose larger and smaller settlements.⁶ As I arrived at the Uitikon-Waldegg station, I wondered if Uitikon-Waldegg corresponds to this category. Located on a hill south of the village center of Uitikon, one can find the former residence of the courtiers of Uitikon and Nieder-Urdorf. Colonel Hans-Jakob Steiner of Hallwil and his successors rebuilt the "house on the Büehl hill" to a new castle and built a church near it. The two buildings stood at the beginning of the urban development of Uitikon-Waldegg. Today the population of Uitikon-Waldegg is of app. 3900. The Cantonal Structure Plan (Richtplan) ensures that the population increment will not exceed 4500 considerably. Considering the history of medieval expansion, this fact could be securing the existence of the nearby forest.

In Switzerland, the clearing activity ebbed away in the 14th century and gradually came to its end around the year 1500 (with few exceptions). The end of the massive deforestation period didn't happen naturally, but was in fact a very conscious process, controlled mainly by the cities.

From the Uetliberg station it took me 10 minutes to walk to the viewing platform and the restaurant. Uetliberg is the place that almost every tourist visits to get a view over the whole city. From up there,



Map Uitikon-Waldegg

one can see the other forest surrounding the city. Unlike other cities, Zurich missed the opportunity to establish an inner-city green belt when the city walls were demolished. That's one reason why the forest areas surrounding the city are as relevant as they are; they are Zurich's only green belt.

In the Middle Ages, the cities were the main local consumer of the forest. Although medieval society was predominantly rural, cities began to grow driven by the upturn in trade and commerce. The existence of large forest areas was crucial for the development of the cities. The numerous fires in the medieval cities devastated a significant amount of timber. Local business consumed large amounts of wood, while citizens needed firewood to cook and heat. Considering the value of the forest, cities secured their demand for wood either in the form of city forests or as a sovereign in their subject territories. Arrangements had to be made, restrictions and even bans on use had to be issued leading to several conflicts between villages and towns, landlords and farmers.⁷ Zurich already held in the town's records of 1292 that timber (Zimmerholz) gained from the Sihlwald could not be exported out of the city.⁸

Zurich was in many respects a pioneer in forest legislation and far ahead of time. Already in 1650 it had some kind of anti-deforestation law, including a ban for cattle to pasture in areas where young forests grew. However, these and other prohibitions remained largely unnoticed, due to insufficient supervision and low penalties and fines.

A new era for Zurich's forest policy began in the 18th century: a new mandate was adopted, collecting many former single decrees and prohibitions, while simultaneously the forestry office was created to secure its compliance. In it, the value of the forest was described as follows: *"There is nothing more precious and advantageous for a country than having enough wood and forests, to supply the inhabitants with enough wood."*⁹

The floods in the first half of the 19th century caused extreme damage to the Swiss landscape. The relation between deforestation, erosion and the following floods had already been identified in the 18th century. The fact, that the location of damage wasn't identical with the location of cause and that neither the cities nor the alpine villages could solve the problem by themselves, activated the subsidiary and solidarity system and lead to the creation of a Federal Act on Forest.

Today, approximately a third of Switzerland's surface is covered with forest. A particularly dense forest can be found in the Southern Alps with over 51% of land coverage. The densely populated Central Plateau has an average of 25 percent. With its 32%, the Swiss forest

921.0 Federal Act on Forest

Chapter 1: General Provisions

Art. 1 Aim

¹ This Act is intended to:

- a. conserve the forest in its area and spatial distribution;
- b. protect the forest as a near-natural community;
- c. ensure that the forest can fulfil its functions, in particular its protective, social and economic functions (forest functions);
- d. promote and maintain the forestry sector.

² It is furthermore intended to contribute to the protection of human life and important material assets against avalanches, landslides, erosion and rockfall (natural events).

Art. 2 Definition of forest

¹ Forest is defined as any area that is covered with forest trees or forest shrubs and can fulfil forest functions. Origin, type of use and land registry designation are not decisive.

² Also defined as forest are:

- a. grazing forests, wooded pastures and chestnut and walnut groves;
- b. unstocked or unproductive areas of a forest plot, such as clearings, forest roads and other forest structures and installations;
- c. plots subject to compulsory afforestation.

³ Isolated groups of trees and shrubs, hedges, avenues, gardens, planted areas and parks, tree plantations established on open ground for short-term use and trees and bushes on check dams and in the immediate foreground of such installations are not defined as forest.

⁴ Within the framework defined by the Federal Council, the cantons may determine the width, area and age, from which an area newly colonised by forest shall be defined as forest, and the width and area from which other wooded areas shall be defined as forest. If the wooded area fulfils social or protective functions, in particular, the cantonal criteria are not definitive.

percentage is comparable with the German (32%), Austrian (47%), France (29%) and Italian (31%) and lies in the European average.¹⁰

From the Uetliberg viewing platform I started walking on the path of planets (Planetenweg) Uetliberg-Felsenegg, which is a hiking trail on the Albis. Its aim is to combine hiking and education. Laid out in a scale of 1:1 billion, the path of the planets enables a comparison of the sizes and distances in the solar system. It was designed by Arnold von Rotz and opened on April 1979.¹¹ I wondered how the meaning and the role of the forest for society had changed over time. Perhaps this was the most important result from the study of forest history, the insight that a single and constant definition of the forest did not exist. It appeared, as if the definition of forest had always been dependent on the utilization demands of those social groups consuming it. I thought that maybe the persistence of the forest had something to do with the perception of it as "sacred", as something that has been there from "the beginning". Anyhow, the perception of the forest changed drastically over time. The demands of the Middle Ages defined a rural, multifunctional forest predominantly destined for wood supply and agricultural use. In the industrialisation period its significance as an energy supplier for the cities increased, diminishing its agricultural use. The floods of the 19th century shifted the definition of the forest towards a protection forest, focused on absorbing much of the danger in alpine regions. Simultaneously, its role as energy supplier declined since the 19th century, due to the emergence of other energy sources such as coal. The following devaluation of wood deprived the forest of one of its key qualities.

However, population growth after the Second World War increased the value of wood as a construction material once again. At that time, the situation of the forest was very positive. The Act on Forest protected its surface and the demand of timber guaranteed a good wood quality. In the fifties, with the raise of alpine mass tourism, protection forests such as avalanche protection forests become more relevant. From the eighties on, tourism and cities increasingly see the forest as a recreational area, as "intact nature". Since 1993, with the Revision of the Forest Act, the forest is not only secured in its area, but also includes all of its new functions such as a regulator for biodiversity and climate change. These new demands raised in the 90ies due to climate and biodiversity conventions.

The hike from the Uto Kulm hotel to the Felsenegg is mainly on a 3m wide path. Two times I had to step aside to let cars pass. I supposed they were bringing supplies for one of the several restaurants on the trail. Suddenly, I was again completely aware of the proximity to the city. The demands of the cities on their forest are manifold and as shown by its history, a collection of all past needs. Today, I think that the demand for forests territory as settlement space and the demand for the forests recreational qualities are the two most important factors for its future development. As a result of the settlement develop-

ment, cities are trying to limit the expansion of the forest and diminish its surface in some areas. At the same time, the increasing need for recreational spaces in urban areas is confronted with an increment in leisure infrastructure in the forest and with a differentiated offer for each forest visitor.

As already mentioned, usable land has always been considered a scarce and limited resource in Switzerland. Therefore, the forest has always been endangered by population growth and the increasing need for agricultural land and settlement areas. Since the beginning of the 20th century, the population more than doubled. Nowadays, the demand for agricultural areas has mainly been outsourced to foreign countries, but the demand for settlement and urban areas remains unchanged. Between 1979/85 and 2004/09 the settlement and urban area expanded by almost 25% (585km²). The increment is not only induced by population growth, but also caused by the increased demand for personal mobility, leading to a higher road and infrastructure construction activity. The increasing degree of affluence results in a need for more living space, putting additional pressure on the land.¹²

The expansion of urban areas led to a significant loss of fertile land (Kulturland). At the same time, thanks to the Act on Forest, the forest area has increased over the last 150 years. In the light of the above mentioned, many people are now questioning Switzerland's unique forestry law.

The Swiss parliament adopted two further revisions. The goal of the revision from 2013 was to implement a "static timber-line" even for areas outside building zones, enabling the clearing of new forest areas. Normally, the forester is allowed to declare wood areas to forests, but since 2013, the cantons have the possibility to measure and determine their "timber-line" allowing their farmers to clear newly wooded areas. However, the economic use of this policy remains limited, since forest only grows on land that's not being currently used or cultivated. The aim of the revision of 2016 was a relaxation of the ban on forest clearance. From now on, the authority is allowed to approve projects of equal national interest and more explicitly, constructions concerning renewable energy facilities including its transport and distribution system. Whether the relaxation of the protection against deforestation will be expanded to other national concerns such as settlement development, is not clear yet. However, cities and cantons are commissioning legal opinions on this issue.¹³

I thought of Triemli and that maybe in some years, it wouldn't be the endpoint of the development at the Birmensdorferstrasse. I imagined a new housing settlement between Triemli and Uitikon-Waldegg: "Waldstadt Uetliberg". Would this new level of meaning, of the forest as a place to live, be accepted into the definition of the forest? And would the forest still be identified as sacred? I decided to leave the

trail at Mädikon and to continue my travel of the main path. The increasing demand on the forests recreational value, especially in urban areas, had somehow reduced the "forestness" of the forest, making it feel more like a park. Anyhow, the perception of the forest as a place of longing, as "intact nature" has increased since the eighties and is still very present in the perception of the urban population. In an interview realized by SRF concerning the emotional value of the forest, a visitor responded: "*The forest provides strength for the daily routine. Actually, nature as a whole is a place for recovery and recreation, a place for psychological and emotional nourishment. The forest means a lot to me, nature and animals anyway.*"¹⁴

The allusion to this image of "intact nature" derives from its initial appearance and is still transmitted through the words Wald, Forst and forest. Wald is derived from the Indo-European term walpus (wild mountain), walthus (wilderness) or waltus (land not subjected to civilization). Wald described vast areas covered by trees and bushes, sparsely populated and away from built-up areas. A Wald always had at least a partial virgin forest like character. The Middle High German associates the term with inefficient, not built-up fields, with natural grasslands as well as game species and fishery.

On the other hand, the word Forst derives from the Germanic word forhist, describing a pine forest. From the 7th and 8th century, the term foresta starts to appear in Latin written Merovingian and Frankish documents. Deriving from foris "outside", a foresta describes something beyond the enclosed, domestic space. The English word forest has the same etymological background.¹⁵ The reference to "intact nature" traces from two characteristics that all three concepts have in common: the "wildness" of their character and their (physical) distance to civilization.

However, the physical reality of Zurich's forest is completely different. The distance to civilization has been entirely removed, leaving the forest enclosed by urban areas. The forest became the biggest local recreational area for the city. Today, half of the urban population visits the forest at least once a week. Supported by the Federal Act on Forest that guarantees free accessibility, the Canton and the City of Zurich are continuously improving their leisure infrastructure. More than 230km of walking paths and trails, 1016 benches, 146 fireplaces with included grill and several fountains and picnic areas compose the recreational infrastructure throughout the city forests.¹⁶ Taking these numbers under account, "wildness" seems a rather unsuitable quality to describe the forest. Strabo's perception of the forest when travelling through present day Switzerland was diametrically opposed to today's reality.

The Authority of the City of Zurich is interested in regulating the consumption of the forest at all levels through the formulation of goals and strategies for the forest in the WEP 2011.¹⁷ Concerning

recreational functions, the city lists the following goals: Develop intervention measures, clarify type of recreation, inform population, determine economic value of recreational function and compensate services.

Within a research project at the Swiss Federal Research Institute WSL, the city of Zurich investigated the economic valuation of recreational benefits provided by forests. Additionally, the project analyzed how citizens of Zurich use urban forests. Forest visitors value the use of Zurich's forests for recreational activities at 110 Swiss Francs per person and year. By extrapolating this amount to the residents of Zurich visiting the forest at least once a year, the recreational benefit of the city forest is estimated at 30 million Swiss Francs per year. The survey also showed an interesting picture concerning the infrastructure in the forest. In the assessment it became apparent that for recreation seekers there is a slight oversupply in infrastructure in the forest.

Considering the widening discrepancy between the word "forest" and the domesticated reality of it, I wondered how far the consumption of the forest can go until it stops being perceived as a forest? Or will the conception of the forest change that far, that the allusion to "wilderness" stops being a required quality of it? I arrived at Stallikon, the end of my travel. There I took the Postauto back to the city.

Epilogue

I started my travel through the city forest wondering how they had managed to persist despite the constant needs of society on its territory and goods. Now, after the travel, I think that as soon as humanity began to see the forest as a landscape and therefore as an exploitable good, overconsumption and the waste of it became an issue. In this sense, to waste the forest means to mismanage an area of land, but it also means putting the forest-ness of the forest in jeopardy.¹⁸ However, society managed to create a system protecting the persistence of the forest. The word persistence derives from the French *persistant*, meaning "*lasting, enduring, permanent*" that again derives from the Latin *persistere*, from *per* – "*thoroughly*" and *sistere* – "*come to stand, cause to stand still*".¹⁹ With this in mind, does the persistence of the forest refer to the standstill of the forest? In my opinion, there are two different ways of persistence represented by the image of the sequoia and the image of the Ise-shrine. On the one hand, the sequoia represents the standstill of the single tree, defying by itself as "nature" all threats caused by society. On the other hand, the Ise-shrine represents the man-made ritual persistence. At first sight, the forest might be associated with the sequoia, but what the history of the forest made clearly visible was the dependency of the forest on the system of protection established by society. This ritual of constantly redefining what "forest" means for the current society ensures its persistence. The ritual is acted out both, in politics and as a singular experience when visiting the forest. From a distance, I experienced the forest as a space-forming element; the forest had a cross-border linking quality. Its expansion ignored municipal and regional boundaries. The city was invisible inside the forest, but the illusion of wilderness did never last long.

¹ Axel, S. (2011) Zürich wird ersatzneugebaut: 29 mal Abriss und Neubau. Das Beispiel Triemli zeigt die alten und neuen Volumen. Nicht alle sind glücklich damit. *Hochparterre: Zeitschrift für Architektur und Design*, 24 (9).

² Drack, & Fellmann. (1988). Römer.

³ Küster. (1998). *Geschichte des Waldes*.

⁴ Speich, A. (July 1994). Natural Forests of eastern Europe, a treasure for conservationists, a lesson for foresters and a new standard for the forest of Zurich. *Conservation of Forest in Central Europe*.

⁵ Duby. (1983). *Landwirtschaft*.

⁶ Grosjean. (1984). *Faktoren*.

⁷ Imiger, M. (1991). *Der Sihlwald und sein Umland* (Vol. 58). Zürich: Antiquarische Gesellschaft Zürich.

⁸ Imiger. (1991). *Sihlwald*. Zürich, Schweiz. P.45

⁹ Forstpolitik, Z. Hoch-Obrigkeithliche Mandat betreffend Versorg- und Beschirmung der Holz- und Waldungen. Zürich.

¹⁰ Federal Office for the Environment FOEN. (n.d.). Core indicator Forest Area. Retrieved 30. August 2016 from <http://www.bafu.admin.ch/umwelt/indikatoren/08606/08625/index.html?lang=en>

¹¹ Federal Office for the Environment FOEN. (n.d.). Retrieved 30. August 2016 from <http://www.bafu.admin.ch/umwelt/indikatoren/08612/12915/index.html?lang=de>

¹² VLP-ASPAN. (2013). *Raum & Umwelt: Waldrodung für Siedlungszwecke?* Kanton Zürich, Zürich.

¹³ Brändli, M. (n.d.). SRF Kontext: Zankapfel Wald. Retrieved 30. August 2016 from SRF: <http://www.srf.ch/sendungen/kontext/zankapfel-wald>

¹⁴ Kluge, F. (1978). *Etymologisches Wörterbuch der deutschen Sprache*. Berlin, New York.

¹⁵ Grün Stadt Zürich. *Wald in der Stadt Zürich*. Zürich: Stadt Zürich.

¹⁶ Grün Stadt Zürich. (2011). *Waldentwicklungsplan Stadt Zürich*. Zürich: Stadt Zürich.

¹⁷ Palma, V. D. (2014). *WASTELAND, A HISTORY*. New Haven: Yale University Press.

¹⁸ Harper, D. (n.d.). online etymology dictionary. Retrieved 16. September 2016 from http://www.etymonline.com/index.php?term=persist&allowed_in_frame=0



