

**A STUDY ON  
URBAN NATURE  
TOWARDS THE  
ENHANCEMENT  
OF REGIONAL  
IDENTITY:  
METROBAS9 L  
AS A CASE  
STUDY**

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This study was conducted as a part of the research at ETH Studio Basel on the recent topic "MetroBasel".

# Contents

## PREFACE 1

0.1 BACKGROUND AND PURPOSE OF THE THESIS 2

0.2 STRUCTURE OF THE THESIS 4

## 1.ISSUE 5

1.1 METROBASEL 8

1.2 URBAN NATURE 10

1.3 EXISTING RESEARCHES AND PROJECTS 14

## 2.APPROACH 19

2.1 JAPANESE TRADITIONAL LITERATURE “HAIKU” AND  
ITS VOCABULARY BOOK “SAIJIKI” 20

2.2 JAPANESE SYMBOLIC FLOWER “SAKURA” AND  
THE EVENT TO CELEBRATE ITS FLOWERING “HANAMI” 24

2.3 METHODOLOGY OF CASE STUDIES  
USING JAPANESE TRADITION AS THE REFERENCE MODEL 30

## 3.METROBASEL SAIJIKI 33

3.1 AIM OF METROBASEL SAIJIKI 34

3.2 PROCESS OF THE SELECTION OF THE SPECIES 35

3.2.1 PHENOLOGY 36

3.2.2 PERCEIVER 38

3.2.3 SPECIFIC SPECIES BASED ON GEOLOGY 39

3.3 HOW TO USE METROBASEL SAIJIKI 41

3.4 METROBASEL SAIJIKI 41

METROBASEL SAIJIKI INDEX SPRING 42

METROBASEL SAIJIKI INDEX SUMMER 44

METROBASEL SAIJIKI INDEX AUTUMN 46

METROBASEL SAIJIKI INDEX WINTER 47

## 4.PROPOSAL 175

4.1 AIM OF THE PROPOSAL 176

4.2 FOUR METROPARKS - INTRODUCTION OF THE SPECIFIC SITES 177

4.2.1 LOCATION 178

4.2.2 POSSIBLE TWO INTERVENTIONS 182

4.3 SITE ANALYSIS 184

4.3.1 MAP ANALYSIS 185

4.3.2 PHOTO DESCRIPTION 210

4.4 PROCESS FOR THE SELECTION OF THE ADEQUATE SPECIES 244

4.5 SPRING METROPARK “LANGE ERLER” X “SPRING FLOWERS” 247

4.6 SUMMER METROPARK “HARDWALD” X “RED POPPY” 271

4.7 AUTUMN METROPARK “BRUDERHOLZ” X “APPLE TREE” 295

4.8 WINTER METROPARK “HALDWALD” X “EUROPEAN SPINDLE” 321

4.9 FOUR METROPARKS FOUR SEASONS 345

## 5.CONCLUSIONS 349

## 6.APPENDIX 353

## BIBLIOGRAPHY 360

ACKNOWLEDGMENT 367

# PREFACE

Nature is one of the most frequent topic discussed across the various disciplines. This thesis is an attempt to describe impressive natural phenomena in and around contemporary city in terms of seasonal indication, and to reflect them to the scale of urban planning with a proposal. I wish that this thesis concerning about aesthetic perceptual issue could help the urban development that will take place in next years as one of the strategies for it.

*It may be true that one has to choose between ethics and aesthetics, but whichever one chooses, one will find the other at the end of the road.*

*Jean-Luc Godard*

# 0.1 BACKGROUND AND PURPOSE OF THE THESIS

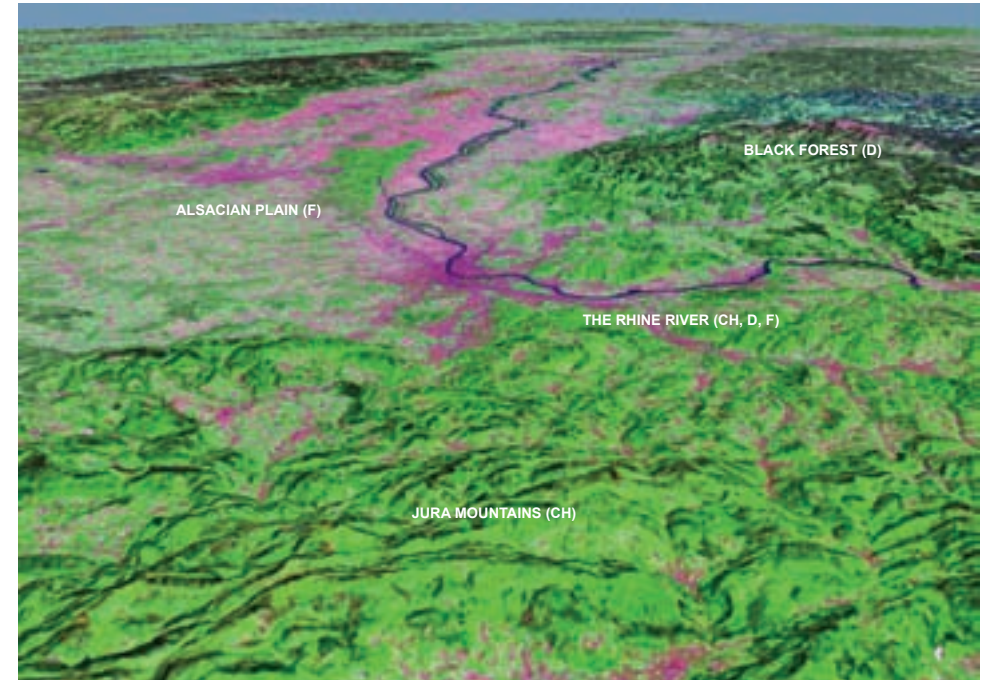
The purpose of this study is to research on the potential of nature to enhance identity of the city. To understand the choice of this issue, it is necessary to depict the background that is involved in the research.

Since when Rem Koolhaas mentioned about “generic city” (\*1) at the end of 90’s, globalization and homogenization of cities has been understood as a plausible vision of near future for many contemporary cities all over the world. Therefore, it is important to establish a regional identity of a city in order to distinguish itself amongst the others, and indeed main historical middle-sized European cities are also not exceptions. The more city develops and enlarges global network to keep its world wide prominence and recognition, the more fear for losing its identity in the process of urban development increases. So, how could a metropolitan region that is expecting an urban development preserve its specificity?

To begin a discussion on identity of the city, I would like to refer “A nascent City?” (\*2) a report on the research of Basel and its surroundings written by Herzog&deMeuron and Remy Zaugg. According to the article, as to how the bend of

the River Rhine had made the city of Basel, many of the cities are as well formed in its current appearance derived by natural forces, and today, still nature is highly influential on the physical shaping of cities.

Next, I would like to introduce ETH Studio Basel, the institute in Basel where I have stayed throughout the whole process of developing this thesis in order to clarify the position of my thesis under the context of researches on contemporary cities. ETH Studio Basel is an institute, which belongs to ETH Zurich (Swiss Federal Institute of Technology Zurich) founded by Jacques Herzog, Pierre de Meuron, Marcel Meili, and Roger Diener and it is a platform for the research on urbanism and contemporary cities, and the investigation on the processes of urban transformation (\*3). After “Switzerland—An Urban Portrait” that shows all the critical examination of Switzerland for three years, the Studio Basel had researched on a series of portraits of different cities to find the mechanisms that gives cities a specific character to be able to maintain it, to enhance it, to change it with future interventions. And this year, in winter semester 2006/2007 the destination came back to Switzerland choosing the metropolitan region



[fig.1-1] World Wind, Landsat 7, pseudo NLT

of Basel, called Metrobasel, as its objective site for the research and proposal. In this time as the second step it is focused on how to apply the mechanism of specificity in practice to enhance the identity of the region. And my thesis is located as one of the challenges for the second step.

That is how Metrobasel was chosen as my objective site for the research. But in fact the natural condition of this metropolitan region of Basel, which is tri-national, shows another interesting aspect. According to the statistics on the land use given in TAB (\*4), it shows only 21.5% of the total surface area is built-up land and 69.1% is in use of forest, farmland/grassland, fruit/vegetable production, vineyard, and no use. The rest of which is 9.4% is in use of park, sport facilities, family

gardens, graveyards, riverbanks, and inaccessible areas. Taking in account of some surfaces that could be vegetated such as in the courtyards of old buildings in old cities, the gardens in villa residences, the total surface of “nature” is likely to be over 80% (\*5). It shows clearly that to transform this region to a metropolis, there is an urgent need of having a strategy to deal with nature that surrounds the core cities.

Finally, considering all the above arguments I propose a hypothesis here that nature could fulfill an important role towards the enhancement of regional identity. And the purpose of this thesis is to study and to visualize the potential of nature with a proposal concerning the case of Metrobasel.

(\*1) Generic city. Rem Koolhaas (1995)

(\*2) Herzog, Jacques/ de Meuron, Pierre/ Zaugg, Remy (1991): A nascent city? In: Herzog & de Meuron 1989-1991: The Complete Works (Volume 2). Birkhäuser, Basel: 153-170

(\*3) Diener, Roger/ Herzog, Jacques/ Meili, Peter/ de Meuron, Pierre/ Schmid, Christian (2006): Switzerland. An Urban Portrait. Birkhäuser, Basel

(\*4) TAB-the Trinationale Agglomeration Basel, TAB is another definition of a territory that include Switzerland, Germany, and France with Basel as its core city. Metrobasel includes whole area of TAB

(\*5) p.127 Tabelle 5.4 Flächenstatistik der Raumeinheiten mit homogenem Erlebnischarakter nach Nutzungs- bzw. Bebauungstyp für die Trinationalen Agglomeration Basel (TAB). Martin Sandtner, Städtische Agglomerationen als Erholungsraum-ein vernachlässigtes Potential Fallbeispiel Trinationale Agglomeration Basel

# 0.2 STRUCTURE OF THE THESIS

## PREFACE

The positioning of my thesis will be set. Also the background of this issue and the hypothesis that nature has a potential as a generator to enhance the identity of the region will be introduced here.

## 1.ISSUE

The main issue and the discussions around it. Metrobasel will be introduced, a tri-national metropolitan region, as the objective site for my thesis. Also the concept "Urban Nature" will be defined in order to keep nature active for planning both in the rural area such as agricultural fields and in the very urban area such as boulevards under its definition.

## 2.APPROACH

In this chapter the subjective point of view will be introduced describing and depicting some Japanese traditional custom and attitude related to Urban Nature. In detail, one of the famous Japanese poetry Haiku, and its vocabulary book Saij ki will be introduced at first. Secondly, the most symbolic flower in Japan, Sakura (cherry blossom in Japanese) and the event in Spring to celebrate its flowering, Hanami will be explained. They are, at the same time, taken account as possible reference models for the research and case study of the thesis. And how to apply them as the reference models to research the Urban Nature of Metrobasel will be briefly described in the end.

## 3.METROBASEL SAJIKI

In this chapter the catalogue of the phenomena of Flora of Urban Natures in Metrobasel will be produced referring to Saij ki. Metrobasel Sa jiki is a description of the specificity of Urban Nature in Metrobasel. Especially paying attention to the natural phenomena which are prominent in changing, the selected species from the criteria of phenology, perceivers, and geological specificity are described in detail to reveal the potential of existing Urban Nature in Metrobasel.

## 4.PROPOSAL

This chapter I will apply the research of the species (Metrobasel Saijiki) and the strategy of Sakura/Hanami over the 4 specific sites. With the new term "Metropark", four Metroparks will be proposed as one possible way that the Urban Nature enhances the identity of Metrobasel. First, I chose four fragmented sites that have the specific conditions in Metrobasel. The proposal will be lead by site analysis based on the fieldwork, and will be described together with the adequate species for each park. The effects or significance of the four Metroparks as one proposal will be considered as well.

## 5.CONCLUSIONS

The summary will come first to have a overview on the thesis. Consideration, significance and perspective will follow to close the discussion.

## 6.APPENDIX

The complementary maps and diagrams that were developed during research, a catalogue of Urban Nature spots, questionnaires, will be attached here.

# 1.ISSUE



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# 1.1 METROBASEL

## Metrobasel®

The influential area of Basel-City is no longer limited within its cantonal and national borders. Under the label of Metrobasel® [fig.1-1] the trina-tional agglomeration region is turning into a met-ropolitan region with Basel as its core city.

The trinational area of Basel sprawls into three countries, eight cantons (in France and Switzer-land) and one Landkreis (in Germany) and counts a total of 900.000 inhabitants. Metrobasel is a shared objective that seeks the successful use of the huge potential of this multilingual space, a promising space where goods, services, people and ideas should circulate as freely as poss ble. Metrobasel has been defined by BAK Basel Eco-nomics (\*1) and geographically involves a part of the territory of the tri-national region, but at the same time it is a global concept that gathers all the projects of promotion and development of the agglomeration.

Metrobasel as a political entity has a series of objectives for the region in terms of shared iden-tity (\*2):

-The habitants of the region consider Metrobasel as their region, and they consider it as one ho-mogeneous entity.

-The habitants of the region are conscious of their belonging to Metrobasel.

-The political border between the three countries should be overlook in daily life by citizens.

-The problems that are found in the region are solved with transnational solutions.

With that aim a transborder planning should be developed. The perspectives of territorial devel-opment include the connection of different zones, the tri-national Eurodistrict (\*3) for the agglom-eration of Basel, the development of links between the green areas, and the regional S-Bahn.

In January of 2007 the Eurodistrict is going to be founded. The aim of the Eurodistrict is to put in practice a shared political structure, because the Eurodistrict is an organization that covers all the projects of cooperation of the different repre-sentatives of the communal and regional govern-ment.

Apart from all above expectation, Metrobasel is just in the beginning of its way to reality. Metro-basel, the fragmented metropolitan region in Eu-rope, confronts problems derived of this complex political condition that slows down those devel-opments.

According to the Metrobasel vision 2020 (\*4), the final resume of recent situation of Metrobasel from the viewpoint of urbanism and society would be following (\*4):

-The region is gifted with climate and landscape.

-The situation of the three borders (language, politics, culture) is a huge potential.

-The historical building in the city centre of Basel gives to the city a unique character and a brand-ing image for the whole Metrobasel region.

-The cultural scene is rich and diverse.

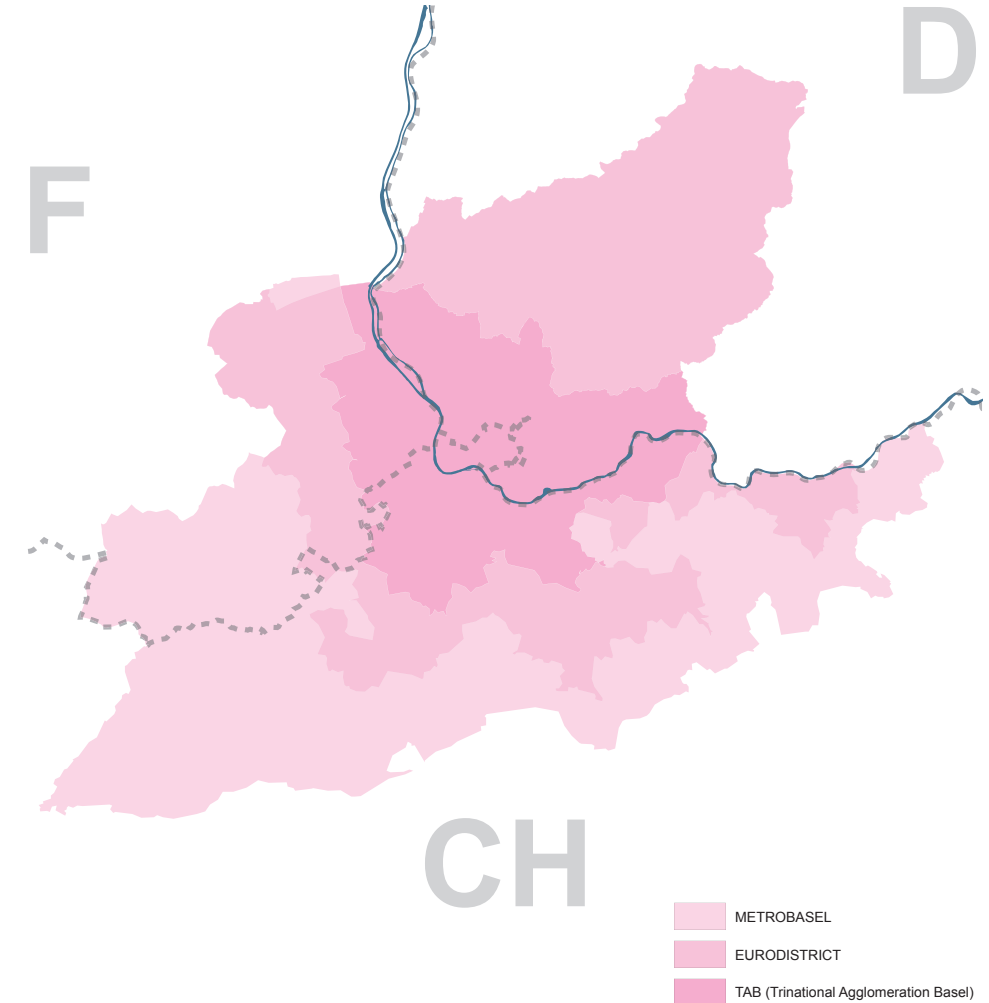
-The infrastructures doesn't work efficiently.

-The potential of Rhine river should be more ex-ploited.

-The fragmentation of the landscapes grows more serious, and they are losing their structure.

Here, the importance/necessity of having clear concept or vision on green surface, the Urban Nature, in the region reveals again.

[fig.1-1] Territorial map of Metrobasel, TAB, Eurodistrict



(\*1) BAK Basel Economics is a private economic research institute based in Basel. It advises governments, administrations, trade associations, founda-tions and companies at the national and regional level throughout Europe on matters of business location quality and economic policy.

(\*2) Metrobasel report 2006. Basler Zeitung and BAK (2006).

(\*3) An Eurodistrict is a European administrative entity that contains urban agglomerations which lie across the border between two or more states. An Eurodistrict offers a program for cooperation and integration of the towns or communes of which it is comprised: for example, improving transport links for people who live and work on different sides of the border. Furthermore, it confers a trans-national regional identity and repre-sents European integration.

(\*4) Vision «metrobasel 2020» 20 novembre 2006 . BAK Basel Economics.



# 1.2

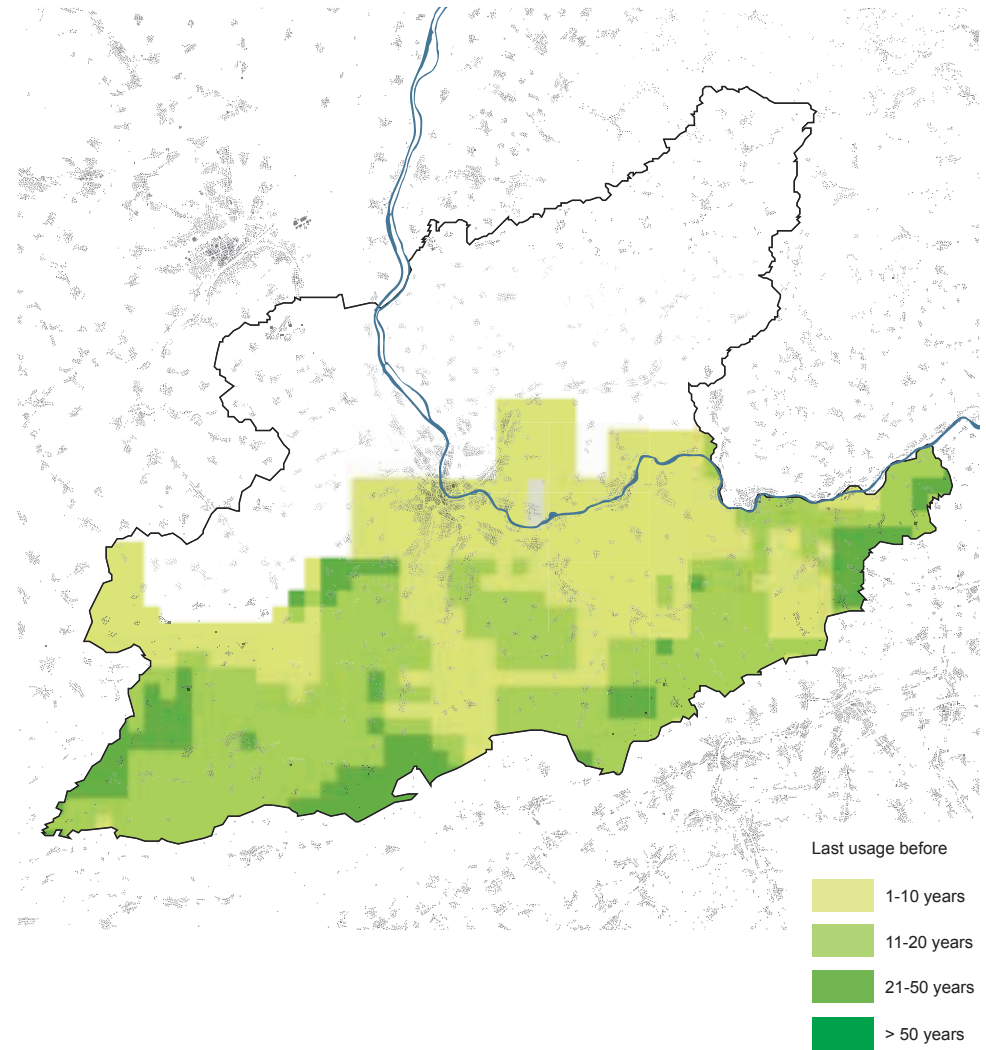
## URBAN NATURE

In the last decades natural spaces are discussed using the terms “protection” and “prohibition”. These terms often give a conservative vision of nature in a context of urban development. But in fact there is so much wild nature with primary ecosystems around cities, and most of these so-called natural protected areas are either planned or perfectly controlled. According to the map of date of the most recent structural interventions in the forests [fig.1-2], in Swiss part of Metrobasel, there is no area that has been without human intervention longer than 50 years. And in fact, in most of the surface it happened less than last 20 years. What is possible to read from this map is that not only vegetated surface in the city such as boulevard trees, family gardens or small parks, but also those surface that are in rural region and not many people use for their recreation, are maintained or controlled with different intentions. In this thesis, in order to deal with those contemporary natural environment surrounding us physically in equally, I define them as “Urban Nature”. The definition enlarges the notion of nature in the sense that there is not need make distinction between nature and city to discuss about them. And Urban Nature could is probably more reliable and proper expression than only “nature” to describe or discuss about the natural environment in this modern age that people can hardly find “nature” (\*5).

**“Urban Nature”**  
**= Contemporary natural environment under control by human intentions**

In next page, Urban Nature typology shows the variety of vegetation and their conditions according to people’s intention/control.

[fig.1-1]



[fig.1-2] Scale 1:500000, Date of the most recent structural interventions in the forests, 1995. *Digital Atlas Switzerland 2*

(\*5) nature:

8. primitive existence: a basic state of existence, untouched and uninfluenced by civilization  
*Encarta® World English Dictionary*

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# URBAN NATURE TYPOLOGY

From the fieldwork  
between 19/05/06 - 31/05/06 in Metrobasel



1 Green facades



2 Boulevard



3 Roof garden



4 Green entrance



6 Agricultural field



7 Animal park



5 Botanical garden



9 Athletic stadium



8 Private courtyard



10 Square



11 Park



13 Green wall



15 Old railway track area



16 Landmark



17 Riverbank



19 Forest



20 Green beside infrastructures



12 Backyard



14 Grave yard



18 Zoo



21 Allotment (Family garden)

# 1.3 EXISTING RESEARCHES AND PROJECTS



[fig.1-3] Switzerland. An Urban Portrait

Here the several researches and projects that, to the best of my knowledge, investigate analogous issues to my thesis will be introduced. First I introduce those which are focused on the exploration of the mechanisms that give and enhance the character of the city, and secondly those that share the geographical site, the region of Metrobasel, and a similar territorial scale. The aim of this section is to understand those considerations, goals and means that emerge from the proposals comparing to the ones of this thesis.

I would like to begin expounding the projects elaborated by Studio Basel. The book "Switzerland, an Urban Portrait" (\*6), is published after all the researches during the semesters between 1999 and 2003 with 141 students. In this book they focus on the perception of Switzerland, the question of the specific urban character of Switzerland, and through statistics, written and visual sources they look for the observation and description of specific locations in Switzerland. The part of the book concerning about the site of my thesis was the Metropolitan region Basel-Mulhouse-Freiburg, where they ask themselves what is the position of the city in the context of the development into a trinational metropolis [fig.1-3].

A key article is "Eine Stadt in Werden?" (\*7) by Jacques Herzog, Pierre de Meuron and Remy Zaugg. In this study on the greater urban district of Basel they detect how the natural space is one of the main factors that define the contours of the urban space, how the natural space is transformed into urban space keeping the form and structure of nature, that means there is a

replacement of one by the other. In the case of Basel, the bend of the Rhine river was the initial natural driving force that formed Basel, and Basel can be understood through the different layers established by the river. The final aim of the study is to design a public city space [fig.1-4], and in the proposal they used the natural structures redrawing the spatial conditions of the Rhine into development lines for the city.

The use of natural structures to sustain further development can be found also in the diploma thesis of Christian Mueller at Studio Basel (\*8). The proposal of his thesis, based on extensive research on the site, is also based on the natural structures of the territory, in this case the hydrology of the region, and more precisely the underground water. Depending on the deepness of the groundwater aquifers, and in connection to the several quarries that take profit of the alluvial soil of the area, he proposes a lake landscape system [fig.1-5]. This system of lakes has the potential to visualize the structure of the nature lying under the territory and give a new structure to its landscape, and to hold free time activities for people.



[fig.1-4] Eine Stadt im Werden?



[fig.1-5] Seellandschaft

(\*6), [fig.1-3] Diener, Roger/ Herzog, Jacques/ Meili, Peter/ de Meuron, Pierre/ Schmid, Christian (2006): Switzerland. An Urban Portrait. Birkhäuser, Basel. p.579 Volume 3

(\*7), [fig.1-4] Herzog, Jacques/ de Meuron, Pierre/ Zaugg, Remy (1991): A nascent city? In: Herzog & de Meuron 1989-1991: The Complete Works (Volume 2). Birkhäuser, Basel: 153-170.

(\*8), [fig.1-5] Müller, Christian (2004): Seellandschaft am Oberrhein Vision für den trinationalen Landschaftsraum Basel-Mulhouse-Freiburg. Freie Diplomarbeit Wintersemester 2003/04. ETH Zürich Departement Architektur. Studio Basel- Institut Stadt der Gegenwart.



# 2.APPROACH

**DRAFT**  
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# 2.1 JAPANESE TRADITIONAL LITERATURE “HAIKU” AND ITS VOCABULARY BOOK “SAIJIKI”

## HAIKU

Haiku (\*1) is a type of Japanese poetry that consists of approximately 17 morae, phonetic units which only partially correspond to the syllables of languages such as English, that are divided to three phases of 5,7, and 5 morae. It also contains a special season word “Kigo” referring to the natural world. Haiku is revised and popularized at the late 19th century by Masaoka Shiki from the older Hokku [fig.2-1], the opening verse of a linked verse form, haikai no renga. Haiku is also known as the shortest poem in the world.

A remarkable characteristic of Haiku in relation to the thesis is that this poetry is a description of natural phenomena around human beings. Haiku should “paint” a mental image in the reader’s mind, in other words to put the poem’s meaning and imagery in the reader’s mind, only with 17 morae using maximum effect of Kigo that is the ability of reminding Japanese people more or less the same image.

## KIGO

Kigos (\*2) are words or phrases which refer to one season and which people use one in a Haiku. In such a short type poetry “Haiku” to tell or describe a phenomena it is very efficient to use words people can easily share its images, and Kigos fulfill exactly the role. (\*3) It is said that the numbers of Kigos over thousands. If their alternatives are added, this number exceeds the 10,000. Several Kigos are now obsolete, however the new ones are born regularly.

## SYSTEM OF KIGO

Each Kigo always belongs to one season. But in some Kigos you may find phenomena which are not specific to one season (ex. the moon). They are classified according to following rules:

1) It is classified to the season when it appears for the first time. (ex. Swallows arrive at Japan at spring.)

2) It is classified to the season when it appears most beautiful. (ex. the moon is more beautiful in autumn when the air is dry and clear.)

3) It is classified to the season when one becomes aware of it most easily.

[fig.2-1]



translation: In complete stillness, the sound of the cicadas soaks into the rocks.  
**Kigo** (season word); “SEMINOKOE” = the sound of the cicadas (SUMMER)

(\*1) Wikipedia/ seach “haiku”, “kigo”, “saijiki (Japanese)”

[fig.2-1] Basho, Matsuo / Okunohosomichi/ 1702  
Hokku or Haiku? (Wikipedia)

Hokku were always written in the wider context of haikai no renga, either actually or theoretically (even when printed individually). At the end of the 19th century, Shiki separated the opening verse from the linked form and applied the term “Haiku” to it. Because it was only after this separation that the term became popular, scholars agree that it is technically incorrect to label hokku by pre-Shiki writers (including Basho Matsuo) “Haiku”, a common practice in the 20th century. They were some of the most popular poems in Japan in the 16th century. To be accurate and objective, Hokku is used for verses that are written, if only theoretically, as opening verses of haikai no renga. Haiku is used for verses by Shiki and later writers, written in the form of hokku but independent of haikai no renga.

(\*2) Introduction au saijiki <http://www.big.or.jp/~loupe/saiji/fshtml/intro.shtml>

(\*3) Konishi, Jinichi (1995)/ Haiku no Sekai/ Kodansha Gakujutsubunko/ p.27  
summerized translation from following part:

『叙述の否定は、叙述する以上に叙述する以上に表現するための否定でなくてははいけません。そこで、句のなかに、たいへん豊かな映像を呼び上げられる語があつてほしい。それによって、叙述の不足を補充し、おつりまで来るならば、叙述の切断など、少しも心配する必要がない。そのはたらきをひき受けるのが、季語なのである。「梅」とあれば、早春の麗らかさや清らかな美しさなど、また「時雨」とあればほのぐらい初冬の光やわびしげなうす寒さなどが、日本人であれば、誰でも目の底に浮かんでくる。二十行や三十行の分は、たちどころに節約できる。それが季語のはたらきである。』

## SAIJIKI AND KIYOSE

The Japanese Haiku poets often refer to the Kiyose or the Saijiki, which is like a dictionary or almanac for Kigo, when they compose Haikus. Kiyose (\*3) contains simply the Kigos and their alternatives whereas a Saijiki contains Kigos and alternatives, explanatory or historical notes and example Haikus with the Kigos. A Pocket Saijiki is in a volume whereas a Saijiki consists four or five volumes divided to spring, at the summer, with the autumn, the winter and sometimes at New Year's day. And in each season's volume, the Kigos are usually divided into six categories: time, stars and atmospheric phenomena, phenomena of the ground, human activities, fauna and flora.

## SAIJIKI TODAY

Today not only traditional Saijiki, but also casual types of Saijiki are easily found in bookstores. For example there are Saijiki with quantities of images(\*4), or only focused on wild birds, or specialized to a specific region. And they give a good opportunity to people who don't compose Haiku to deepen the knowledge on their environment, moreover to get familiar with nature surrounding the people as well as practical use for Haiku poets. To have sensitive eyes on those natural phenomena around you would in the end lead you to be aware of where in the world you are and that is probably an important part of specificity that each city has by nature.

Outside of Japan, although Haiku started as a Japanese poetry form, it is now written around the world in many different languages. William J. Higginson's "Haiku World" (1996), which is the first international Saijiki, has more than 1,000 poems, with over 600 poets from 50 countries writing in 25 different languages. The writing of Haiku around the world has only increased with the advent of the internet, where one can even find examples of Haiku written in Latin, Esperanto, and Klingon, as well as numerous examples in more common languages. These international haiku poets have had to adapt the idea of Kigo to their local conditions and culture. Many phenomena that might be used as Kigo are similar around the world, such as the blooming of flowers and trees in the spring, and the migration of birds in the spring and autumn. Even if the trees and birds are not the same as in Japan, the concepts are still the same.

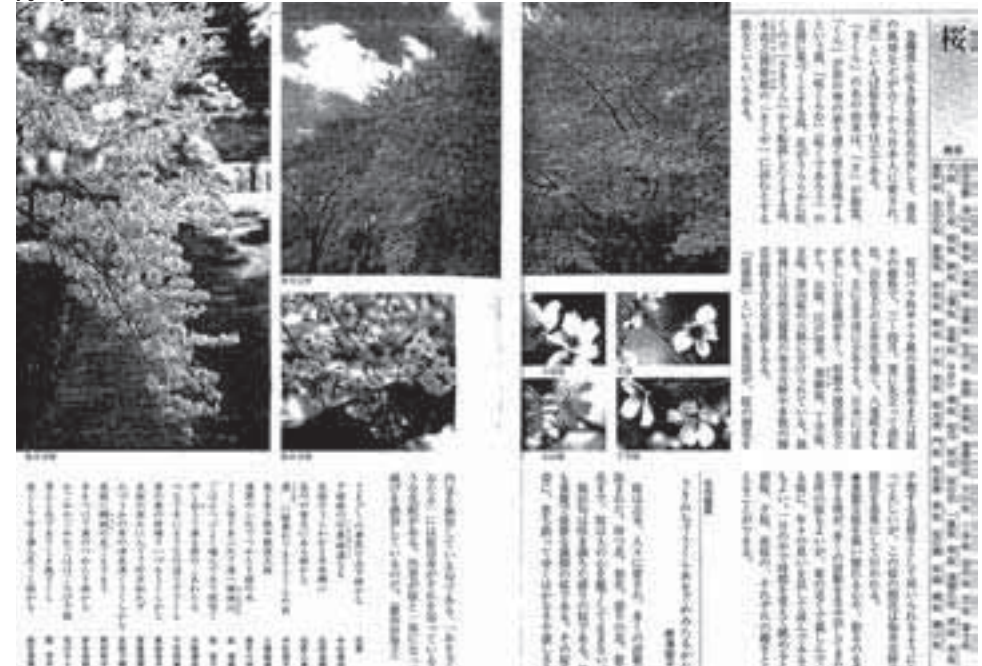
[fig.2-2]

example Haikus with "Sakura" as their season word

discription of "Sakura"



[fig.2-3]



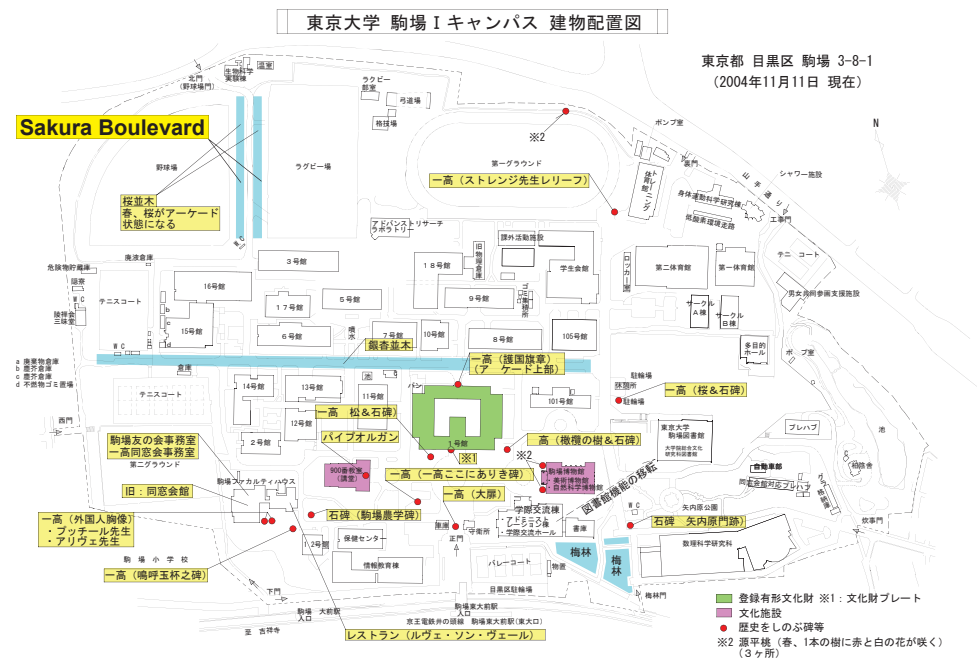
# 2.2 JAPANESE SYMBOLIC FLOWER “SAKURA” AND THE EVENT TO CELEBRATE ITS FLOWERING “HANAMI”

**SAKURA**  
Sakura (\*4) is the Japanese name of Japanese ornamental cherry trees, and their blossoms. Sakura is probably most well-known and ubiquitous trees/blossoms in Japan as the symbol of Spring. It often appears on all manner of consumer goods, including Japanese traditional garment “Kimono”, stationery, and dish ware. Sakura has always been also a symbol of ephemeral beauty and nature of life in Japan. Life was considered brief and beautiful, much like a cherry blossom.

This theme remains alive today, seen often in pop culture. Music also works with the theme, and as such are frequently depicted in art [fig.2-4] and poetry (\*5).  
Most Japanese schools [fig.2-5] and public buildings have Sakura trees outside of them. Since the fiscal and school year both begin from April, in many parts of the main island Honshu, the first day of work or school will coincide with the cherry blossom season.



[fig.2-4]



[fig.2-5]

[fig.2-4] Kitano, Takeshi / Dolls/ 2002

[fig.2-5] Site plan of the University of Tokyo, Komaba I Campus/ 2004

(\*4) Wikipedia/ seach "sakura", "somei yoshino", "hanami"  
(\*5) In the field of Haiku, Sakura has been used for a long time as a Kigo of Spring. Ex.) "Samazamano Kotoomohidasu Sakurakana" / Matsuo, Basho / 1688



### SOMEI YOSHINO and other species

Somei Yoshino (*Prunus × yedoensis*) [fig. 2-6] is the most common and probably the most popular species in Japan. Its flowers are nearly pure white, tinged with the palest pink, especially near the stem. The flowers bloom, and usually fall within a week, before the leaves come out. Therefore, the trees look nearly white from top to bottom. The species takes its name from the village of Somei (now part of Toshima in Tokyo). It was developed in the mid- to late-19th century at the end of the Edo period and the beginning of the Meiji period. And it is also the species referred to forecast when cherry blossoming begins, called Sakura Zensen.

Other species include Yamazakura, Yaezakura, and Shidarezakura [fig. 2-7]. The Yaezakura have large flowers, thick with rich pink petals. The Shidarezakura, or weeping cherry, has branches that fall like those of a weeping willow, bearing cascades of pink flowers.

### SAKURA ZENSEN

Annually, the Japanese Meteorological Agency announces the Sakura Zensen (lit. Cherry-Blossom Front) [fig. 2-8]. It is like contour lines with dates forecasting when the cherry blossoming of the year will begin. And during the season of cherry blossoms everyday you can find the forecasts on newspapers and many TV programs. The blossoming begins in Okinawa in January, and typically reaches Kyoto and Tokyo at the end of March or the beginning of April. Then it proceeds north, arriving in Hokkaido a few weeks later. Japanese pay close attention to these forecasts as the blossoms last only for about a week. Following them they often fix the date to go to parks, shrines and temples with family and friends and to hold a “flower viewing party” known as Hanami.

### HANAMI

Hanami (lit. flower viewing) is the Japanese traditional custom of enjoying the beauty of flowers, “flower” in this case almost always meaning cherry blossoms, or Ume blossoms (*Prunus mume*). In this day and age in Japan, Hanami mostly remains as an outdoor party underneath Sakura, which are considered pretty in daylight [fig. 2-9] and enchanting at night. Hanami at night is called Yozakura (lit. “night sakura”). In many places such as Ueno Park in Tokyo temporary paper lanterns are hung for the purpose of Yozakura [fig. 2-10].



[fig.2-6]



[fig.2-7]



[fig.2-8]



[fig.2-9]



[fig.2-10]

[fig. 2-6] Somei Yoshino/ Wikipedia

[fig. 2-7] Shidarezakura/ Wikipedia

[fig. 2-8] Japan Meteorological Agency/ Cherry Blossom Front/ March, 2006

[fig.2-9] Hanami/ Himeji, Hyogo/ 2005/ Wikipedia

[fig.2-10] Yozakura/ Mito, Ibaraki/ 2006

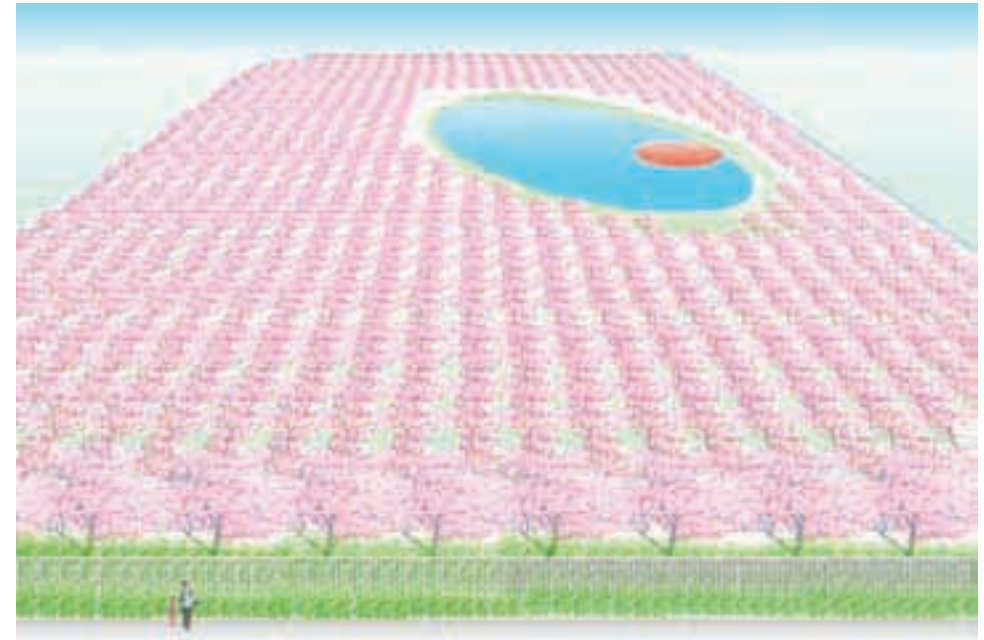
## HISTORY OF SUCCESSFUL INTERVENTION OF SAKURA

As pointed in the paper, Defila & Clot, 2001: Phytophenological trends in Switzerland, "The oldest phenological observation series worldwide is from Japan. They have been observing and noting the dates of the flowering of the cherry trees since 812.", Sakura has an old history as an ornamental species beloved by Japanese. For example the custom of Hanami is said that it has started during the Nara Period (710–784) when the Chinese Tang Dynasty influenced Japan in many ways; one of which was the custom of enjoying flowers. Though it was Ume blossoms that people admired in the beginning, by the Heian Period (794–1185), Sakura came to attract more attention. From then on, in Tanka and Haiku, "flowers" meant "Sakura." The custom was originally limited to the elite of the Imperial Court.

In contrast to its old history from literature [fig. 2-11], in fact, Sakura we find today in Japan is mostly Somei Yoshino, and as in the last page mentioned, that means they have been planted only within last 150 years. Especially many of them have been planted in Meiji period (1868–1912), and when Showa Emperor took the throne (1926), and after World War II, and Sakura spread at an explosive pace all over the country. Today, people continue with the tradition of Hanami, gathering in great numbers wherever the flowering trees are found. Thousands of people fill the parks to hold feasts under the flowering trees, and sometimes these parties go on until late at night. One of the characteristics of the cherry blossoming that attracts Japanese until now seems likely to be here. That is, despite of ephemeral appearance of each flowers, pure multiplication of one species become as a whole one very strong phenomena, and creates an imprint in people. This concept can be found in a recent project of Tadao Ando [fig. 2-12].



[fig.2-11]



[fig.2-12]

[fig.2-11] Hanami in late Heian Period (1053-1184)

[fig.2-12] Ando, Tadao/ Cherry blossom square project in Makuhari, Kadoma JAPAN/ 2006

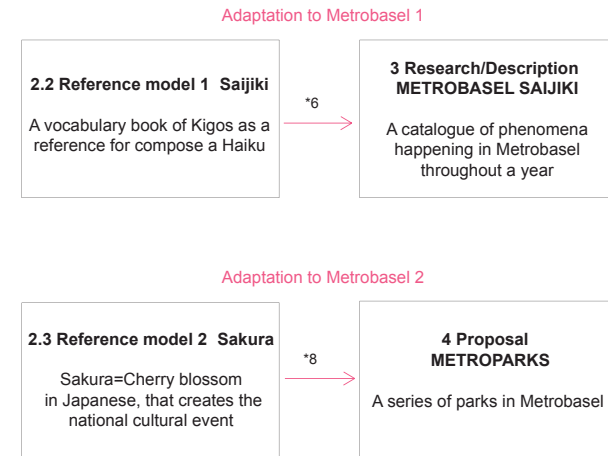
# 2.3 METHODOLOGY OF CASE STUDIES USING JAPANESE TRADITION AS THE REFERENCE MODEL

We surveyed the Urban Nature in Japan with the last three subchapters concerning the attitude of the Japanese towards it. Especially in sub chapter 2, Haiku was referred from traditional Japanese literature to show the sensitivity of Japanese on nature and how familiar Japanese people are with attaching their life to natural phenomena/natural environment/seasons surrounding them. Also Saijiki was picked as an example where those natural phenomena are well described. In sub chapter 3, I held up Sakura, which is in fact regarded as the national flower of Japan, as the example of successful interventions of Urban Nature depicting its history and its simple but strong concept of monotonous multiplications. And Hanami, the annual event which is today one of the most popular in Japan, was introduced as an example of the coexistence with human and Urban Nature.

In fact in order to use the Japanese examples

as the reference models to apply to the Urban Nature of Metrobasel, it is supposed to consider carefully why they should be taken from Japan and what is the relevance for Metrobasel or whether those Japanese models really achieve what I expect to in terms of the influence on the identity of Japan. But since the goal of the thesis is to focus on the close affinity of the Urban Nature and the identity of the city, and to show that Urban Nature can fulfill the important role to enhance the identity of the city in next urban developments, it is essential to develop a proposal with specific site and to give the perceivable verification of the feasibility to the proposal. As the methodology for the perceivable verification in this thesis, I will describe the phenomena of Urban Nature as a part of specificity of Metrobasel and will visualize a possible planning of Urban Nature in Metrobasel in following chapters.

[fig.2-13]



In above discourse there seems to be less importance on reporting the process of the selecting reference models than the visualization of the proposal that would trigger intensive discussions about the above-mentioned role of Urban Nature. Therefore in this thesis, the argument about how to fix the methodology of the research will be skipped and I take the hypothesis that Japanese models are one of those that are successful and available to apply to the case of Metrobasel in order to concentrate on the visualization as the communication tool.

In chapter 3 (\*6), referring Saijiki as the sample model, "Metrobasel Saijiki" will be made in line with the basic policy of Studio Basel, that is "*Just as in painting or photography, the portrait is the best way to come to terms with the specificity of a subject.*" (\*7). Metrobasel Saijiki is the catalogue in which the phenomena of Urban Nature in Metrobasel are described in detail especially in relation to seasons. In sub chapter 2, the process of selecting the natural phenomena (species of plants) will be explained. The catalogue is considered to be comprehensible for local people so that it could give an opportunity to them to be aware of the Urban Nature surrounding them and to be sensitive to Urban Nature's changes. In addition, this catalog also play a role as the pre-research concerning the selective method of

the plants which will be used for the proposal in following chapter 4. Therefore, here the natural phenomena are limited only in the field of flora. And since Metrobasel Saijiki is purely the catalogue of the prominent natural phenomena in Metrobasel, and in other words, I am not focused on the practical use of the catalogue for composing Haikus, the title of natural phenomena will always be the name of the species of the plants independently from how many morae it has.

In chapter 4 (\*8), referring Sakura as the sample model, I will propose four "Metropark"s with the concrete sites and plants. The aim of the concrete proposal will be mentioned together with the definition of "Metropark" in sub chapter 1. The selection of the sites for the case study and the analysis of their current situation will be done in sub chapter 2 and 3. From sub chapter 4 to 8 where the Metropark proposals will be described one by one, first the selection process of the adequate plant to the each site will be introduced, and the spatial implications/arrangements will follow. In the last sub chapter, coming back to the metropolitan scale, four Metroparks will be observed as a whole in terms of one series of annual events, the reciprocal interventions between the city, the links with existing cultural events in the region, the accessibility from the city.

[fig.2-13] diagram of the methodology

(\*7) Towards a Theory of Specificity/ Swiss Federal Institute of Technology Zurich, Year Book 2005

# 3.METROBASEL SAIJKI

# 3.1 AIM OF METROBASEL SAIJIKI

As is written in Chapter 2, Saijiki is not only a vocabulary book but also it is a sensitive description on the phenomena attached to seasons that gives people the opportunity to be aware of the specificity of Japan, and moreover to have a more sensible perception on those changes that are happening around them. Here there is a potential in Saijiki to be interpreted and applied to Metrobasel. It has a potential to be a promoter of local people's awareness of regional natural specificity in terms of seasonal phenomena and sensitivity on them. In addition, Metrobasel Saijiki would be useful to develop the strategy for the urban planning in terms of Urban Nature planting.

The order of Metrobasel Saijiki will follow seasons (time) and each species belongs to one season.

# 3.2 PROCESS OF THE SELECTION OF THE SPECIES

The selection of the species that will be shown in the Metrobasel Saijiki is based on three criteria; Phenology, Perceivers and the Botanical Specificity. The aim of the use of them as three filters instead of a single criterion is to root the Metrobasel Saijiki not to a one-sided understanding of the natural phenomena of Urban Natures.

To achieve them, the detail information and the selective process of phenology, perceivers and specificity is following.

## 3.2.1 PHENOLOGY

### Phenology:

“Phenology is the study of the times of recurring natural phenomena. The word is derived from the Greek Phainomai - to appear, come into view, and indicates that phenology has been principally concerned with the dates of first occurrence of natural events in their annual cycle. Examples include the date of emergence of leaves and flowers, the first flight of butterflies and the first appearance of migratory birds, the date of leaf coloring and fall in deciduous trees, the dates of egg-laying of birds and amphibia, the timing of the developmental cycles of honeybee colonies. Because many such phenomena are very sensitive to small variations in climate, especially to temperature, phenological records can be a useful proxy for temperature in the study of climate change.” *Wikipedia*

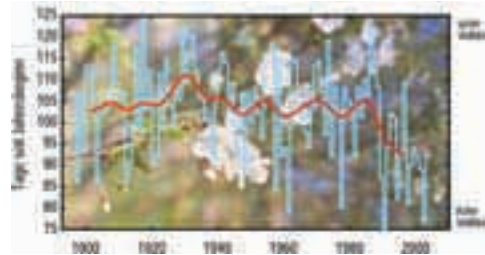
The use of phenology as a filter to select the relevant species of Metrobasel is directed towards the inclusion of time and natural phenomena from the scientific point of view. One of the main character of nature is its changeability. In other words nature has in constant and periodical change. Therefore it is important to take in account the phytosciences of which the seasonal changes are observed in a field of natural science, that is phenology.

Phytophenological observations have been made since the middle ages, and in the case of Metrobasel, it has been observed the flowering trees (*Prunus avium*) in Liestal since 1894. The oldest phenological series world-wide is from Japan, where it has been observed and noting the dates of the flowering of cherry trees since 812. (\*1)

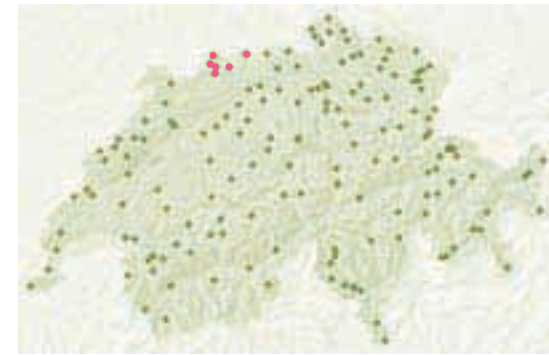
Meteoswiss, Federal Office of Meteorology and climatology, is the official Swiss weather service. As well as providing general weather forecasts, MeteoSwiss research on phenology, and observes the typical phenomena of nature during the years, that are called phenophases. Some examples of phenophases are the appearance of leaves, the blossoming of flowers, or the changing of color of leaves [fig.3-1].

These phenological observations of Meteoswiss, phenological data, the record of some phenophases, exist since 1951, and today they are observed through 160 stations all over Switzerland. There are 6 stations in Swiss part of Metrobasel [fig.3-2].

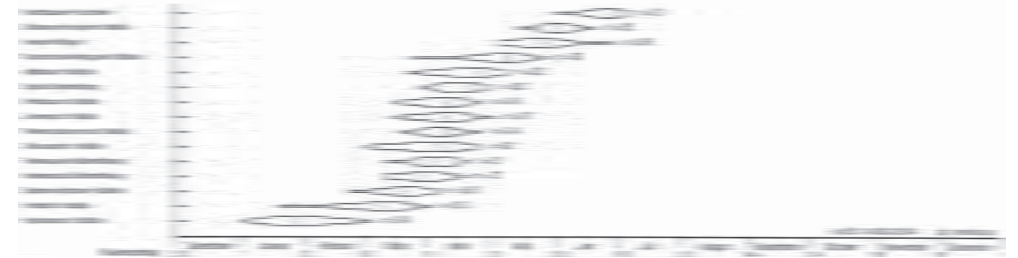
These stations study 69 phenophases over 26 species. The calendars supplied by Meteoswiss show the dates of the phenomena of those species in close proximity to Basel [fig.3-3]. Out of that observations, the list of the species were made [fig.3-4].



[fig. 3-1] The dates of beginning of cherry tree flowering



[fig. 3-2] Six stations in the region of Metrobasel (Basel-Binningen, Liestal, Dornach, Therwil, Grellingen, Möhlin)



[fig. 3-3] Phenological calendar, Station Basel-Binningen, 315m/M (Beobachtungsdauer: 1996 - 2003)

*Aesculus hippocastanum*  
*Anemone nemorosa*  
*Cardamine pratensis*  
*Chrysanthemum segetum*  
*Colchicum autumnale*  
*Corylus avellana*  
*Fraxinus excelsior*  
*Larix decidua*  
*Fagus sylvatica*  
*Malus domestica*  
*Picea abies*  
*Populus tremula*  
*Prunus cerasus*  
*Prunus spinosa*  
*Pyrus communis*  
*Sambucus nigra*  
*Sambucus racemosa*  
*Secale cereale*  
*Syringia vulgaris*  
*Taraxacum officinale*  
*Tilia cordata*  
*Tilia platyphyllos*  
*Tussilago farfara*

[fig. 3-4] List of selected species by phenology

(\*1) Defila, Claudio/ Clot, Bernard (2001): Phytophenological trends in Switzerland.

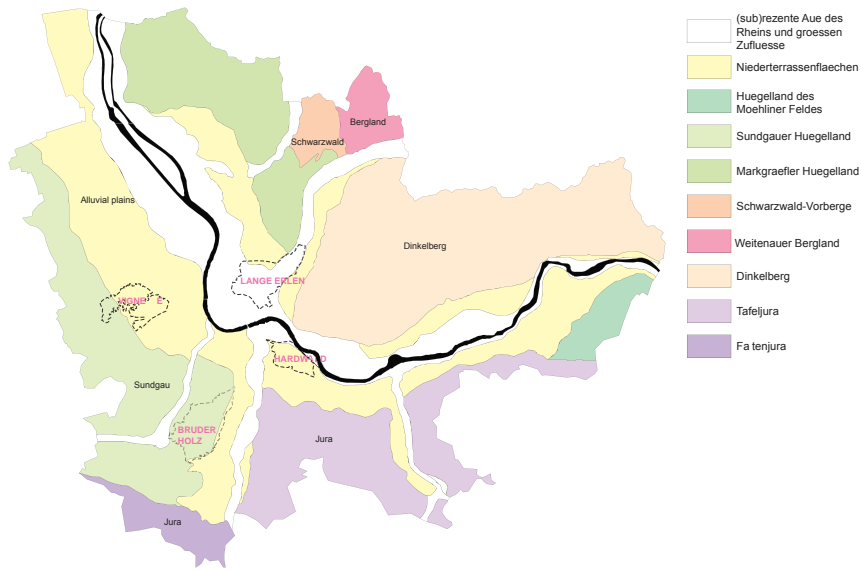
[fig. 3-1] Eintrittsdaten der Blüte der Kirschbäume von Liestal 1894-2004 ©Meteo Schweiz

[fig. 3-2] Die phänologischen Stationen von Meteo Schweiz ©Meteo Schweiz

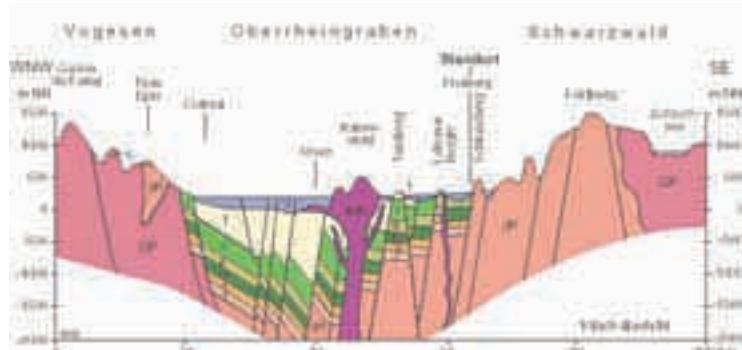
[fig. 3-3] PHÄNOLOGISCHER KALENDER, Station: Basel-Binningen, 315m/M (Beobachtungsdauer: 1996 - 2003) ©Meteo Schweiz

[fig. 3-4] List of selected species for Metrobasel Sajiki





[fig. 3-9] Geographical map of TAB



[fig. 3-10] Section of Oberheingraben

**PHENOLOGY**

- Aesculus hippocastanum
- Chrysanthemum segetum
- Cotichicum autumnale
- Corylus avellana
- Fraxinus excelsior
- Larix decidua
- Populus tremula
- Prunus spinosa
- Syringia vulgaris
- Tilia cordata
- Tilia platyphyllos
- Tussilago farfara
- Sambucus nigra
- Sambucus racemosa
- Secale cereale

**PERCEIVERS**

- Brassica napus
- Crocus vernus
- Salanthus nivalis
- Ilex aquifolium
- Leucanthenum vulgare
- Narcissus pseudonarcissus
- Prunus domestica
- Rhododendron ferrugineum
- Salix caprea
- Tu ipa sylvestris
- Vitis vinifera

**SPECIFICITY**

- Anemone nemorosa
- Cardamine pratensis
- Fagus sylvatica
- Picea abies
- Malus domestica
- Pyrus communis
- Abies alba
- Prunus avium
- Juglans regia
- Ranunculus ficaria
- Mellilotus albus
- Mellilotus officinalis
- Oenothera biennis
- Papaver rhoeas
- Petasites
- Picris hieracioides
- Prunus mahaleb
- Pulmonaria officinalis
- Lamium galeobdolon
- Ligusticum mutellina
- Quercus robur
- Ranunculus auricomus
- Raphanus raphanistrum
- Silene dioica
- Viola reichenbachiana

Selected species for Metrobasel Saijiki

# 3.3 HOW TO USE METROBASEL SAIJIKI

>> English common name: **WOOD ANEMONE** | Criteria of selection: **WOOD ANEMONE**

>> German common name: **BUSCHWINDRÖSCHEN** | >> Latin name (scientific name): **Anemone nemorosa**

>> The season the phenomenon: **SPRING**

>> The number of the among the season: **01**

**Old illustration of the species** (physical characteristics, edible use, cultivation detail...)

**IMPRESSIVE MOMENT**: the description of the phenomenon

**Event information: time, possible programs...**

time: from the beginning of March to the end of May  
possible program: blossom watching

**Calendar of the prominent phenomenon**

A "Poster" of the natural event

Scientific/historical information

Sample page of Metrobasel Saijiki

# 3.4 METROBASEL SAIJIKI

**DRAFT**  
© ETH Studio Basel

[fig. 3-9] p116. Abbildung 5.1 Physisch-geographisch definierte Landschaftsbildeinheiten in der Trinationalen Agglomeration Basel/ Martin Sandtner, Städtische Agglomerationen als Erholungsraum-ein vernachlässigtes Potential Fallbeispiel Trinationale Agglomeration Basel.



# METROBASEL SAIJKI INDEX SPRING

01

*Anemone nemorosa*



02

*Anemone ranunculoides*



03

*Anemone sulphurea*



04

*Cardamine pratensis*



05

*Crocus vernus*



16

*Ranunculus ficaria*



17

*Raphanus raphanistrum*



18

*Salix caprea*



19

*Silene dioica*



20

*Syringia vulgaris*



06

*Corydalis solida*



07

*Narcissus pseudonarcissus*



08

*Petasites*



09

*Populus tremula*



10

*Prunus avium*



21

*Taraxacum officinale*



22

*Tulipa sylvestris*



23

*Viola reichenbachiana*



11

*Prunus cerasus*



12

*Prunus mahaleb*



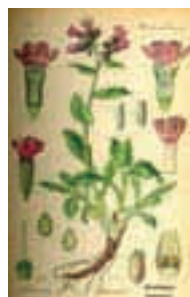
13

*Prunus spinosa*



14

*Pulmonaria officinalis*



15

*Ranunculus auricomus*



# METROBASEL SAIJIKI INDEX

## SUMMER

01

*Brassica napus*



02

*Chrysanthemum sepetum*



03

*Chaerophyllum aureum*



04

*Colchicum autumnale*



05

*Cotoneaster*



16

*Rhododendron ferrugineum*



17

*Sambucus nigra*



18

*Sambucus racemosa*



19

*Secale cereale*



20

*Tilia cordata*



06

*Gentiana lutea*



07

*Gnaphalium uliginosum*



08

*Lamium galeobdolon*



09

*Leucanthemum vulgare*



10

*Ligusticum mutellina*



21

*Tilia platyphyllos*



11

*Mellilotus albus*



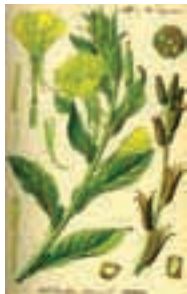
12

*Mellilotus officinalis*



13

*Oenothera biennis*



14

*Papaver rhoeas*



15

*Picris hieracioides*



**DRAFT**  
© ETH Studio Basel

# METROBASEL SAIJKI INDEX AUTUMN

01

*Aesculus hippocastanum*



02

*Alnus*



03

*Carpinus betulus*



04

*Corylus avellana*



05

*Fagus sylvatica*



06

*Fraxinus excelsior*



07

*Juglans regia*



08

*Larix decidua*



09

*Malus domestica*



10

*Pyrus communis*



11

*Prunus domestica*



12

*Quercus robur*



13

*Vitis vinifera*



# METROBASEL SAIJKI INDEX WINTER

01

*Abies alba*



02

*Euonymus europaeus*



03

*Galanthus nivalis*



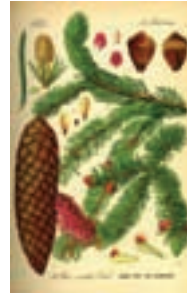
04

*Ilex aquifolium*



05

*Picea abies*



06

*Tussilago farfara*



| WOOD ANEMONE |  
 | BUSCHWINDRÖSCHEN |  
 | *Anemone nemorosa* |  
 | SPRING |  
 | 01 |

PHENOLOGY+SPECIFIC



**IMPRESSIVE MOMENT:** It is a perennial herbaceous plant, growing in early spring and dying back down to the root-like rhizomes by mid summer. The flowers are usually white, but may be pinkish, lilac or blue, and often have a darker tint to the back. The flowers as well as their rhizomes cover the surface of the woodland.

**time:** from the beginning of March to the end of May  
**possible program:** blossom watching



*Anemone nemorosa*

**Physical Characteristics**

Perennial growing to 0.15m by 0.3m at a fast rate. It is in flower from March to May, and the seeds ripen from May to June. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees and flies. The plant is self-fertile.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils. The plant prefers acid, neutral and basic (alkaline) soils and can grow in very alkaline soil. It can grow in full shade (deep woodland) semi-shade (light woodland) or no shade. It requires dry or moist soil and can tolerate drought.

**Habitats and Possible Locations**

Meadow, Woodland, Dappled Shade, Shady Edge, Deep Shade.

**Edible Uses**

None known

**Medicinal Uses**

Disclaimer  
 Antirheumatic; Homeopathy; Rubefacient; Tonic.

**Cultivation details**

Prefers a moist soil but tolerates dry conditions during its summer dormancy. Plants tolerate dry conditions and drought so long as there is plenty of humus in the soil. Prefers a well-drained humus-rich soil. Dislikes very acid soils. Prefers a shady position, growing well on woodland edges, but plants can also be naturalized in thin turf.

Plants seem to be immune to the predations of rabbits. A greedy plant, inhibiting the growth of nearby plants, especially legumes. The plant has a running rootstock and can spread rapidly when well-sited. A very ornamental plant, there are several named varieties.

Calendar



| YELLOW ANEMONE |  
 | GELBES WINDRÖSCHEN |  
 | *Anemone ranunculoides* |  
 | SPRING |  
 | 02

SPECIFIC



**IMPRESSIVE MOMENT:** The plant is herbaceous and grows in forests. The flower is about 1.5 cm diameter, with from five to eight petal-like segments (actually petals) of rich yellow coloring. The plant is widely grown as a garden plant, especially by rock garden and alpine garden enthusiasts.



*Anemone ranunculoides*

**Physical Characteristics**

*Anemone ranunculoides*, the yellow anemone, yellow wood anemone or buttercup anemone, is a species of herbaceous perennial plant. It flowers between March and May. Growing to 5-15 cm tall, the plant is herbaceous, dying back down to its root-like rhizomes by mid summer. The rhizomes spread just below the earth surface and grow quickly, contributing to its rapid spread in woodland conditions. The flower is about 1.5 cm diameter, with from five to eight petal-like segments (actually petals) of rich yellow coloring.

**Habitats and Possible Locations**

It grows in forests across most of Continental Europe, and less frequently in the Mediterranean region.

**Edible Uses**

none known

**Medicinal Uses**

none known

**Cultivation details**

The plant is widely grown as a garden plant, especially by rock garden and alpine garden enthusiasts. It has been awarded an Award of Garden Merit or AGM, H4 (hardy throughout the British Isles) by the Royal Horticultural Society.

**time:** from the beginning of March to the end of May  
**possible program:** blossom watching

Calendar



**DRAFT**  
 © ETH Studio Basel

| ALPINE WINDFLOWER |  
 | SCHWEFEL-ANEMONE |  
 | *Anemone sulphurea* |  
 | SPRING |  
 | 03

SPECIFIC



IMPRESSIVE MOMENT: The plants are perennial herbs with an underground rootstock, and radical, more or less deeply cut, leaves. The elongated flower stem bears one or several yellow flowers; there is an involucre of three leaflets below each flower.



*Anemone sulphurea*

**Physical Characteristics**

It is a species of herbaceous perennial plant. It flowers between May and October. This fairly large yellow flower is striking partly because of its size. One flower grows at the end of each hairy stalk. Growing between 10 to 40 cm tall, the flower is formed by 6-7 petals; 40-70 mm. 6-7 white petals that form a shallow cup.

**Habitats and Possible Locations**

Chalky Alpine soil only; rocky fields, Alpine pastures and open pine forests; usually above 1800 m altitude.

**Edible Uses**

none known

**Medicinal Uses**

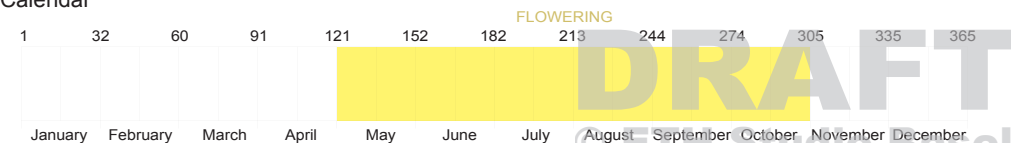
none known

**Cultivation details**

Seed is the best way to increase it. Sow this in November in a rather moist, peaty bed out of doors, and allow the seedlings to remain for two years. When growth begins in spring transplant to where they are to flower. Full exposure, good drainage, and moisture in summer are essential.

time: from the beginning of May to the end of October  
 possible program: blossom watching

Calendar



| CUCKOO FLOWER |  
 | WIESEN-SCHAUMKRAUT |  
 | *Cardamine pratensis* |  
 | SPRING |  
 | 04 |

PHENOLOGY+SPECIFIC



IMPRESSIVE MOMENT: It is herbaceous perennial plant, and the flowers are produced on a spike 10-30 cm long, each flower 1-2 cm diameter with four pale pink (rarely white) petals. It is grown as an ornamental plant in gardens.



*Cardamine pratensis*

**Physical Characteristics**

Perennial growing to 0.45m by 0.3m. It is in flower from April to June, and the seeds ripen from May to July. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees, flies and Lepidoptera (Moths & Butterflies). The plant is self-fertile. It is noted for attracting wildlife.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It requires moist or wet soil.

**Habitats and Possible Locations**

Meadow, Bog Garden, Woodland, Sunny Edge, Dappled Shade, Shady Edge.

**Edible Uses**

Flowers; Leaves.

Leaves and young shoots - raw or cooked. Rich in vitamins and minerals, especially vitamin C, but with a bitter and pungent flavour. The leaves and young shoots are harvested in the spring and taste rather like water cress. The leaves can be available early in the year and when used in small quantities make a very acceptable addition to salads.

Flowers and flower buds - raw. A pungent cress-like flavour. The white flowers are very attractive, they make a pleasant nibble and also add a delicious flavour to salads.

**Medicinal Uses**

Disclaimer

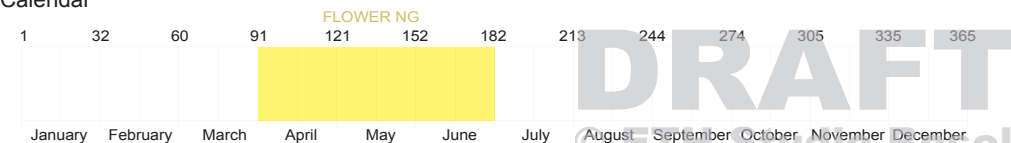
Antirheumatic; Antiscorbutic; Antispasmodic; Carminative; Digestive; Diuretic; Stimulant.

**Cultivation details**

Succeeds in most soils so long as they are moist or wet. Prefers a cool damp soil. Succeeds in full sun or partial shade. Cuckoo flower was at one time much used as a spring salad plant and was often sold in local markets. It has, however, fallen out of favour and is scarcely used at present.

time: from the beginning of April to the end of June  
 possible program: blossom watching

Calendar



DRAFT  
 © ETH Studio Basel

| DUTCH CROCUS |  
 | FRÜHLINGS-KROCUS |  
 | *Crocus vernus* |  
 | SPRING |  
 | 05

PERCEIVERS



**IMPRESSIVE MOMENT:** As one of the first flowers to bloom in spring, the large hybridized and selected „Dutch crocus“ are popular with gardeners. However, in areas where snow and frost occasionally occur in the early spring it is not uncommon for early-flowering crocuses to suddenly wither and die from a unseasonable frost or snowfall.



*Crocus vernus*

**Physical Characteristics**

Crocus grow 5 to 15 cm tall. The leaves are grass-like. This type of plant grow from corms, which are short, compressed stems similar to bulbs. Corms are more flattened and have eyes, or buds, at the top from which shoots emerge. Each year a new corm forms on top of the old one, and tiny corms, called cormels, form around its base. Each corm produces from one to five blooms, that happens from March to June.

**Habitats and Possible Locations**

Preferentially fresh, damp soils, meadows and pastures between 600 and 2.700 m

**Edible Uses**

none known

**Medicinal Uses**

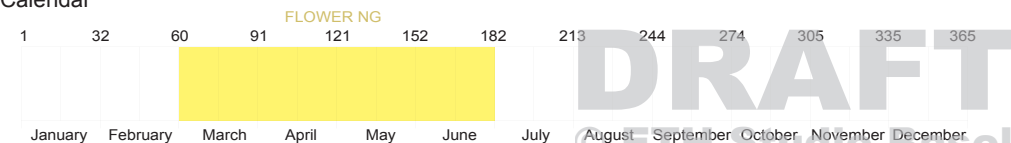
none known

**Cultivation details**

Crocus should be planted in full sun to partial shade. They prefer well-drained soil and have good drought tolerance. The grassy leaves will die back after the plant blooms. When naturalizing in grass, leave the grass uncut for six weeks after flowering to encourage self-seeding. Plant the bulbs 8cm to 10cm (3inch to 4inch) deep in autumn in a sunny position. *C. vernus* can tolerate poor to moderate soil as long as it is well drained.

**time: from the beginning of March to the end of June**  
**possible program: blossom watching**

Calendar



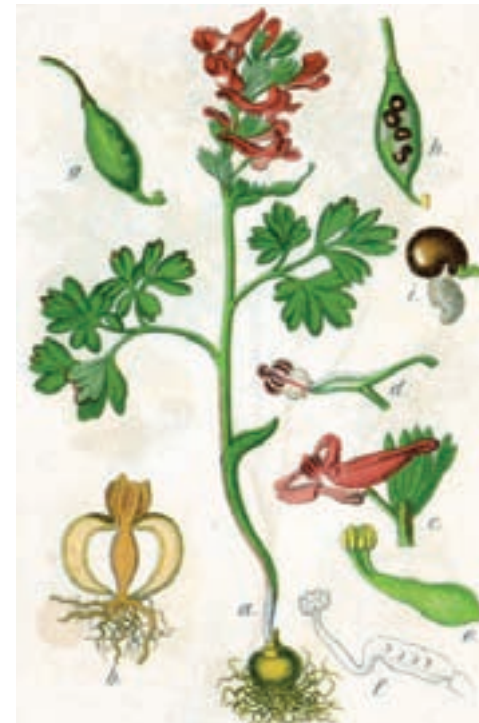


| FUMEWORT |  
 | LERCHENSPORENE |  
 | *Corydalis solida* |  
 | SPRING |  
 | 06

SPECIFIC



IMPRESSIVE MOMENT: It is an annual and perennial herbaceous plant which gray-green foliage is attractive from spring till Autumn. The flowers are borne above the leaves in three different colors at random.



*Corydalis solida*

**Physical Characteristics**

Perennial growing to 0.2m by 0.12m . It is in leaf from March to July, in flower from April to May, and the seeds ripen from May to June. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees. The plant is self-fertile.

The plant prefers light (sandy) and medium (loamy) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland). It requires moist soil.

**Habitats and Possible Locations**

Woodland, Dappled Shade, Shady Edge.

**Edible Uses**

Root.

Root - boiled. Rich in starch. Some caution is advised, there is a report that the plant is toxic.

**Medicinal Uses**

Disclaimer

Anodyne; Antibacterial; Antispasmodic; Hallucinogenic; Nervine; Sedative.

**Cultivation details**

Prefers a moist, well-drained rather light soil, thriving in semi-shade. Grows well in a woodland garden or peat bed. Increases well when grown in a bulb frame, but less freely when grown in the garden.

A very ornamental and easily grown plant. There are some named varieties. Plants seem to be immune to the predations of rabbits.

time: from the beginning of April to the end of May  
 possible program: blossom watching

Calendar



**DRAFT**  
 © ETH Studio Basel

| WILD DAFFODIL |  
 | OSTERGLOCKEN |  
 | *Narcissus pseudonarcissus* |  
 | SPRING |  
 | 07

PERCEIVERS



IMPRESSIVE MOMENT: It is a perennial flowering plant which grows from a bulb. It has pale yellow flowers with a darker central trumpet. The long, narrow leaves are slightly greyish in colour and rise from the base of the stem.



*Narcissus pseudonarcissus*

**Physical Characteristics**

Bulb growing to 0.45m by 0.1m . It is in flower from March to April. The scented flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and can grow in heavy clay soil. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It requires moist soil.

**Habitats and Possible Locations**

Meadow, Lawn, Woodland, Sunny Edge, Dappled Shade.

**Edible Uses**

None known

**Medicinal Uses**

Disclaimer  
 Astringent; Emetic.

**Other Uses**

Dye

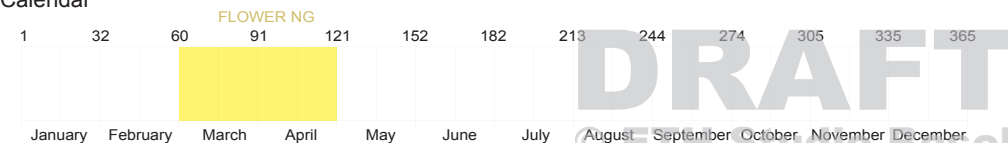
**Cultivation details**

Prefers a deep rather stiff soil but succeeds in most soils. Grows well in heavy clay soils. Succeeds in sun or shade. Grows well on woodland edges.

The flowers have the sweet woodland perfume of the primrose. This is not very discernible when only a few plants are grown, but is quite noticeable in a group of plants.

time: from the beginning of March to the end of April  
 possible program: blossom watching

Calendar



| BUTTERBUR |  
 | PESTWURZ |  
 | *Petasites* |  
 | SPRING  
 | 08

SPECIFIC



**IMPRESSIVE MOMENT:** The flowers are produced in the early spring, before the leaves appear; they are pale pink, with several inflorescences clustered on a 5-20 cm stem. The short spikes of flowers are produced just before these leaves in Spring, emerging with only a few elongated basal bracts and are usually green, fresh colored or dull white depending on species.



*Petasites*

**Physical Characteristics**

The plants commonly referred to as Butterbur are found in the daisy family Asteraceae in the genus *Petasites*. They are mostly quite robust plants with thick, creeping underground rhizomes and large Rhubarb-like leaves during the growing season. Another common name for many species of this genus is Sweet Coltsfoot. The short spikes of flowers are produced just before these leaves in Spring, emerging with only a few elongated basal bracts and are usually green, flesh colored or dull white depending on species. The leaves are large, on stout 80-120 cm tall stems, round, with a diameter of 40-70 cm.

**Habitats and Possible Locations**

Woodland Garden; Dappled Shade; Shady Edge; Deep Shade; Meadow; Bog Garden.

**Edible Uses**

none known

**Medicinal Uses**

Butterbur is widely considered to be an effective cough remedy and recent experiments have shown it to have remarkable antispasmodic and pain-relieving properties. It is used in the treatment of severe and obstinate neuralgia.

**Cultivation details**

Succeeds in ordinary garden soil, but prefers a deep fertile humus-rich soil that is permanently moist but not stagnant, succeeding in shade, semi-shade or full sun. Requires a moist shady position. Plants can be grown in quite coarse grass, which can be cut annually in the autumn. A very invasive plant, too rampant for anything other than the wild garden. Its roots are very difficult to eradicate. It is best to only grow the male form in the garden to prevent unwanted seedlings popping up all over the place. The growth is so dense and vigorous, with large leaves that can be 75cm or more across, that virtually no other plant is able to grow amongst his species.

**time: from the middle of March to the middle of April**  
**possible program: blossom watching**

Calendar



| EURASIAN ASPEN |  
 | ESPE/ZITTERPAPPEL |  
 | *Populus tremula* |  
 | SPRING |  
 | 09

PHENOLOGY



IMPRESSIVE MOMENT: The leaves of many poplars, including the cottonwoods and aspens, have laterally-flattened stems, so that breezes easily cause the leaves to wobble back and forth, giving the whole tree a „twinkling“ appearance in a breeze.

time: from the beginning of May to the middle of May  
 possible program: observation appearance of green



*Populus tremula*

**Physical Characteristics**

A deciduous tree growing to 18m by 10m at a fast rate. It is in flower from February to March, and the seeds ripen from May to June. The flowers are dioecious (individual flowers are either male or female, but only one sex is to be found on any one plant so both male and female plants must be grown if seed is required) and are pollinated by Wind. The plant not is self-fertile. It is noted for attracting wildlife.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and can grow in heavy clay and nutritionally poor soils. The plant prefers acid and neutral soils. It can grow in semi-shade (light woodland) or no shade. It requires moist or wet soil. The plant can tolerates strong winds but not maritime exposure.

**Habitats and Possible Locations**

Bog Garden, Woodland, Canopy.

**Edible Uses**

Inner bark.

Inner bark - dried, ground into a powder then added to flour and used for making bread etc. A famine food, it is only used when all else fails.

**Medicinal Uses**

Disclaimer

Anodyne; Antiinflammatory; Bach; Diuretic; Expectorant; Febrifuge; Stimulant.

The bark and the leaves are mildly diuretic, expectorant and stimulant. The plant is seldom used medicinally, but is sometimes included in propriety medicines for chronic prostate and bladder disorders.

Although no specific men ion has been seen for this species, the bark of most, if not all members of the genus contain salicin, a glycoside that probably decomposes into salicylic acid (aspirin) in the body. The bark is therefore anodyne, anti-inflammatory and febrifuge. It is used especially in treating rheumatism and fevers, and also to relieve the pain of menstrual cramps. The plant is used in Bach flower remedies - the keywords for prescribing it are 'Vague fears of unknown origin', 'Anxiety' and 'Apprehension'.

**Other Uses**

Charcoal; Shelterbelt; Soil conditioner; Wood.

**Cultivation details**

A very easily grown plant, it does well in a heavy cold damp soil, preferring a neutral to acid soil, and avoiding calcareous soils. The sub-species *P. tremula davidiana*. (Dode ) Schneid. is tolerant of extremely alkaline soils. The species generally prefers a deep rich well-drained circumneutral soil, growing best in the south and east of Britain. Growth is much less on wet soils, on poor acid soils and on thin dry soils. This species grows well on poor soils, probably because of its intolerance of competition. Plants are very tolerant of exposure, doing well in cold exposed sites so long as sufficient moisture is present. Plants dislike shade, and are intolerant of root or branch competition.

Calendar



DRAFT  
 © ETH Studio Basel

| WILD CHERRY |  
 | SÜSSKIRSCH |  
 | *Prunus avium* |  
 | SPRING |  
 | 10

PERCEIVERS+ SPECIFIC



IMPRESSIVE MOMENT: In spring the trees have full of white blossoms, and it is culturally very important and popular in Japan as “Hanami” events. In summer, cherries ripen and red dots are everywhere in the tree.



*Prunus avium*

**Physical Characteristics**

A deciduous tree growing to 18m by 7m at a fast rate. It is in flower from April to May, and the seeds ripen from July to August. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees. The plant not self-fertile. It is noted for attracting wildlife.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It requires moist soil.

**Habitats and Possible Locations**

Woodland, Canopy.  
 Cultivar ‘Colt’: Woodland, Sunny Edge. Cultivar ‘Kristin’: Woodland, Sunny Edge, By Walls, By South Wall, By West Wall. Cultivar ‘Stella’: Woodland, Canopy, Secondary, By Walls, By South Wall, By West Wall.

**Edible Uses**

Fruit; Gum; Seed.  
 Fruit - raw or cooked. It can be sweet or bitter but it is not acid. The fruit can be cooked in pies etc or used to make preserves. The fruit contains about 78% water, 8.5 - 14% sugars. The fruit is about 20mm in diameter and contains one large seed.  
 Seed - raw or cooked. Do not eat the seed if it is too bitter - see the notes above on toxicity. An edible gum is obtained by wounding the bark.

**Medicinal Uses**

Disclaimer  
 Antitussive; Astringent; Diuretic; Tonic.

**Other Uses**

Dye; Tannin; Wood; Kirsch.

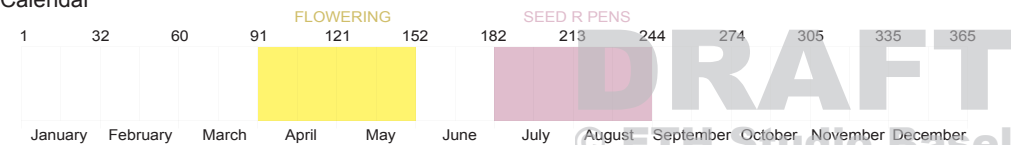
**Cultivation details**

Requires a well-drained moisture retentive soil. Succeeds in light shade but fruits better in a sunny position. Thrives in a loamy soil, doing well on limestone. Prefers some chalk in the soil but apt to become chlorotic if too much is present. A very ornamental plant, it is fast growing on deep moist soils but is shallow rooting. Trees cast a light shade and are themselves intolerant of heavy shade. They produce quite a lot of suckers and can form thickets, especially if the main trunk is felled.

This species is a parent of many cultivated forms of sweet cherries, especially the black fruited forms. Where space is at a premium, or at the limits of their climatic range, sweet cherries can be grown against a wall. Most cultivars will grow well against a sunny south or west facing wall though east or north facing walls are not very suitable. The main problems with growing this species against a wall are firstly that it is usually completely self-sterile and so here needs to be space for at least two different cultivars, secondly it is very vigorous and so is difficult to keep within bounds.

time: from the beginning of April to the end of May  
 possible program: blossom watching

Calendar



| SOUR CHERRY |  
 | SAUERKIRSCH |  
 | *Prunus cerasus* |  
 | SPRING |  
 | 11

PERCEIVERS+PHENOLOGY



IMPRESSIVE MOMENT: During spring, its white flowers should be protected, and trees weeded, mulched and sprayed with seaweed solution. This is also the time when any required pruning should be carried out.

time: from the beginning of May to the end of May  
 possible program: blossom watching



*Prunus cerasus*

**Physical Characteristics**

A deciduous tree growing to 6m. It is in flower in May, and the seeds ripen in July. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees. The plant is self-fertile.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils and can grow in very acid soil. It can grow in semi-shade (light woodland) or no shade. It requires moist soil. The plant can tolerate maritime exposure.

**Habitats and Possible Locations**

Hedge, Woodland, Secondary, Sunny Edge, Dappled Shade. Cultivar 'Montmorency': Hedge, Woodland, Secondary, Sunny Edge, Dappled Shade, By Walls, By North Wall, By East Wall. Cultivar 'Semperflorens': Hedge, Woodland, Secondary, Sunny Edge, Dappled Shade, By Walls, By North Wall, By East Wall. Cultivar 'Morello': Hedge, Woodland, Secondary, Sunny Edge, Dappled Shade, By Walls, By North Wall, By East Wall.

**Edible Uses**

Fruit; Gum; Oil; Seed; Tea.

Fruit - raw or cooked. Pleasantly acid, the fruit can be eaten out of hand, used in pies, preserves etc or dried for later use. The fruit is about 18mm in diameter and contains one large seed.

Seed - raw or cooked. Do not eat the seed if it is too bitter - see the notes above on toxicity.

An edible oil is obtained from the seed. When refined it is used as a salad oil.

The leaves are used as a tea substitute.

A gum obtained from the trunk is used for chewing.

**Medicinal Uses**

Disclaimer

Astringent; Bitter; Febrifuge; Nervine; Salve.

**Other Uses**

Adhesive; Dye; Gum; Hedge; Oil; Wood.

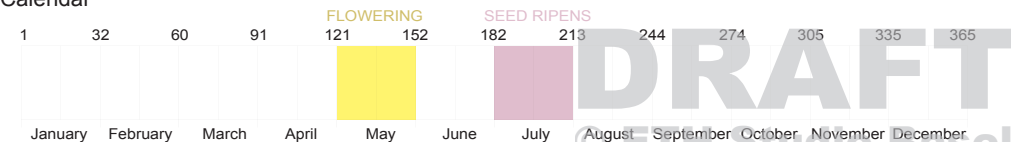
**Cultivation details**

Thrives in a well-drained moisture-retentive loamy soil. Prefers some lime in the soil but is likely to become chlorotic if too much lime is present. Prefers an acid soil according to another report. Succeeds in sun or partial shade though it fruits better in a sunny position. Plants are succeeding in a fairly exposed maritime position at Rosewarne in N. Cornwall. Plants are hardy to about -20°C.

Long cultivated for its edible fruit, there are many named varieties. See separate entries for the various sub-species. It is also a parent, with *P. avium*, of many cultivars of sweet cherries. Many cultivars will succeed on a north or east facing wall.

Most members of this genus are shallow-rooted and will produce suckers if the roots are damaged. Plants produce suckers freely. Plants in this genus are notably susceptible to honey fungus.

Calendar



| MAHALEB CHERRY |  
 | STEINWEICHSEL |  
 | *Prunus mahaleb* |  
 | SPRING |  
 | 12 |



IMPRESSIVE MOMENT: It is covered by white flowers in Spring, like a full snow over the tree. The flowering branchlet consists in flowers in umbel-like short raceme with leaf-like bracts at its base.

SPECIFIC



*Prunus mahaleb*

**Physical Characteristics**

A deciduous tree growing to 9m by 9m . It is in flower from April to May. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Insects.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils, requires well-drained soil and can grow in nutritionally poor soil. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It requires moist soil.

**Habitats and Possible Locations**

Woodland, Canopy, Secondary.

**Edible Uses**

Fruit; Seed.

The fruit might be edible. The fruits of all members of this genus are more or less edible, though not always of very good quality. However, if the fruit is bitter it should not be eaten in any quantity due to the presence of toxic compounds, see the notes above on toxicity. The fruit is about 6mm in diameter and contains one large seed.

Seed - raw or cooked. The dried seed kernels are used as a flavouring in breads, sweet pastries, confectionery etc. They impart an intriguing flavour. Do not eat the seed if it is too bitter - see the notes above on toxicity.

**Medicinal Uses**

Disclaimer

Tonic

**Other Uses**

Dye; Rootstock; Wood.

**Cultivation details**

Thrives in a well-drained moisture-retentive loamy soil, growing best in a poor soil. Prefers some lime in the soil but is likely to become chlorotic if too much lime is present. Succeeds in sun or partial shade though it fruits better in a sunny position. Most members of this genus are shallow-rooted and will produce suckers if the roots are damaged. Plants in this genus are notably susceptible to honey fungus.

**time: from the beginning of April to the end of May**  
**possible program: blossom watching**

Calendar



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| BLACKTHRON |  
 | SCHWARZDORN |  
 | *Prunus spinosa* |  
 | SPRING |  
 | 13 |



IMPRESSIVE MOMENT: It is covered in white flowers in early spring, and is often the first flowering tree in the countryside in its native regions.

time: from the beginning of March to the end of April  
 possible program: blossom watching

PHENOLOGY



*Prunus spinosa*

**Physical Characteristics**

A deciduous shrub growing to 3m at a medium rate. It is in flower from March to April, and the seeds ripen in October. The flowers are hermaphrodite (have both male and female organs) and are pollinated by insects. It is noted for attracting wildlife.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils and can grow in very alkaline soil. It can grow in semi-shade (light woodland) or no shade. It requires moist soil. The plant can tolerate maritime exposure.

**Habitats and Possible Locations**

Hedge, Woodland, Sunny Edge, Dappled Shade.

**Edible Uses**

Flowers; Fruit; Seed; Tea.

Fruit - raw or cooked. Exceedingly astringent, it is normally cooked but once the fruit has been frosted it loses some of its astringency and some people find they can enjoy it raw. The fruit is more usually used in jellies, syrups, conserves etc and as a flavouring for sloe gin and other liqueurs. Some fruits that we ate in December were fairly pleasant raw. In France the unripe fruit is pickled like an olive. The fruit is about 15mm in diameter and contains one large seed.

Seed - raw or cooked. Do not eat the seed if it is too bitter - see the notes above on toxicity. The leaves are used as a tea substitute. The dried fruits can be added to herbal teas. The flowers are edible and can be crystallised or sugared.

**Medicinal Uses**

Disclaimer

Aperient; Astringent; Depurative; Diaphoretic; Diuretic; Febrifuge; Laxative; Stomachic.

**Other Uses**

Cosmetic; Dye; Hedge; Ink; Pioneer; Tannin; Wood.

**Cultivation details**

Requires a well-drained moisture retentive soil. Succeeds in all soils except very acid peats. Succeeds in light shade but fruits better in a sunny position. Thrives in a loamy soil, doing well on limestone. Prefers some chalk in the soil but apt to become chlorotic if too much is present. Thrives on chalk according to another report. Plants are very resistant to maritime exposure.

An important food plant for the caterpillars of several species of butterfly, especially the larvae of the brown and black hairstreak butterflies. A good bee plant. Plants are shallow-rooted and of a suckering habit, they can form dense impenetrable thickets which are ideal for nesting birds, especially nightingales. Flowers are often damaged by late frosts. Plants regenerate quickly after cutting or after fast moving forest fires, producing suckers from below ground level. This species is notably resistant to honey fungus.

Calendar



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| LUNGWORT |  
 | GEFLECKTE LUNGENKRAUT |  
 | *Pulmonaria officinalis* |  
 | SPRING |  
 | 14

SPECIFIC



IMPRESSIVE MOMENT: In spring, it produces small bunches of pink flowers which turn to blue-purple.

time: from the beginning of March to the end of May  
 possible program: blossom watching



*Pulmonaria officinalis*

**Physical Characteristics**

An evergreen perennial growing to 0.3m by 0.3m. It is in leaf all year, in flower from March to May, and the seeds ripen from May to June. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees and flies. It is noted for attracting wildlife.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and can grow in heavy clay soil. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in full shade (deep woodland) or semi-shade (light woodland). It requires moist soil and can tolerate drought.

**Habitats and Possible Locations**

Hedgerow, Woodland, Dappled Shade, Shady Edge, Deep Shade, Ground Cover.

**Edible Uses**

Leaves

Leaves - raw or cooked. They can be added to salads or used as a potherb. A fairly bland flavour but the leaves are low in fibre and make an acceptable addition to mixed salads, though their mucilaginous and slightly hairy texture make them less acceptable when eaten on their own. The young leaves make a palatable cooked vegetable, though we have found the texture to be somewhat slimy. The plant is an ingredient of the drink Vermouth.

**Medicinal Uses**

Disclaimer

Astringent; Demulcent; Diaphoretic; Diuretic; Emollient; Expectorant; Homeopathy; Ophthalmic; Resolvent.

**Other Uses**

Ground cover

**Cultivation details**

Grows well in any moderately good soil including heavy clay soils. Prefers full to part shade in a moist humus rich soil. Succeeds in the sunless shade of buildings. Plants growing in shady positions tolerate drought if the soil is rich in humus. The leaves tend to wilt in hot weather when the plant is grown in full sun. Hardy to about -20°C.

Members of this genus are rarely if ever troubled by browsing deer and rabbits. A valuable early nectar source for bees. There are several named forms, selected for their ornamental value. Hybridizes freely with other members of this genus.

Calendar



| GOLDILOCKS BUTTERCUP |  
 | GOLD-HAHNENFUSS |  
 | *Ranunculus auricomus* |  
 | SPRING |  
 | 15

SPECIFIC



IMPRESSIVE MOMENT: It is a herbaceous perennial plant with bright yellow flowers. An old superstition says that if you hold a buttercup under your face, and yellow light is reflected on your face, it means that you like butter.



*Ranunculus auricomus*

**Physical Characteristics**

It is a biennial herbaceous plant with flowers simple in the shape of cut, made of 5 petals, tightened and brilliant, with the colors sharp, yellows or white, very seldom, reds. Their leaves, generally webbed and very cut out veins, cling to the base of a long stem which carries at its end one or more flowers. Most frequently made up, they have a rough savour which it is related to the various toxic active ingredients which they contain.

**Habitats and Possible Locations**

It occurs particularly in mountain meadows, and rarely also in gardens and parks.

**Edible Uses**

All *Ranunculus* species are poisonous when eaten fresh by cattle, horses, and other livestock, but their acrid taste means they are usually left uneaten. Once dried, the plant is less toxic (in any case for the cattle).

**Medicinal Uses**

The buttercup contains bitter active ingredients, whose indigestion causes a feeling of burn in the throat, then nausea and a violent ignition of the intestine.

**Cultivation details**

The buttercup appreciates the light and rich ground and a semi-shaded place.

time: from the beginning of April to the end of May  
 possible program: blossom watching

Calendar



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| LESSER CELANDINE |  
 | SCHARBOCKSKRAUT |  
 | *Ranunculus ficaria* |  
 | SPRING |  
 | 16

PERCEIVERS+SPECIFIC



IMPRESSIVE MOMENT: It is sometimes called the „spring messenger“. The flowers are yellow, turning white as they age. The flowers do not open in dull weather and even on sunny days do not open before about 9 o'clock in the morning and are closed by 5 o'clock in the evening.

time: from the beginning of March to the end of May  
 possible program: blossom watching



*Ranunculus ficaria*

**Physical Characteristics**

Perennial growing to 0.2m by 0.2m at a fast rate. It is not frost tender. It is in leaf from January to June, in flower from March to May. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees, flies and bee les.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It requires moist soil.

**Habitats and Possible Locations**

Meadow, Woodland, Dappled Shade, Shady Edge, Ground Cover.

**Edible Uses**

Condiment; Leaves; Root.

Young leaves in spring - raw or cooked as a po herb. The first leaves in spring make an excellent salad. The leaves, stalks and buds can be used like spinach, whilst the blanched stems are also eaten. The leaves turn poisonous as the fruit matures. Caution is advised regarding the use of this plant for food, see the notes above on toxicity.

Bulbils - cooked and used as a vegetable. The bulbils are formed at the leaf axils and also at the roots. Caution is advised, see the notes above on toxicity. The flower buds make a good substitute for capers.

**Medicinal Uses**

Disclaimer  
 Astringent.

**Other Uses**

Ground cover; Teeth.

**Cultivation details**

Prefers a moist loamy neutral to alkaline soil in full sun or shade. A very common and invasive weed, especially when growing in the shade because this encourages formation of bulbils at the leaf bases. You would regret introducing it into your garden, though it might have a place in the wild garden. This is, however, a polymorphic species and there are a number of named forms selected for their ornamental value. These are normally less invasive than the type species.

The plant flowers early in the year when there are few pollinating insects and so seed is not freely produced. The plant, however, produced tubercles (small tubers) along the stems and each of these can grow into a new plant.

Grows well along woodland edges, and in the deeper shade of the woodland where it often forms dense carpets.

The flowers do not open in dull weather and even on sunny days do not open before about 9 o'clock in the morning and are closed by 5 o'clock in the evening. A greedy plant, inhibiting the growth of nearby plants, especially legumes.

Calendar



DRAFT  
 © ETH Studio Basel

| WILD RADISH |  
 | ACKER-RETTICH |  
 | *Raphanus raphanistrum* |  
 | SPRING |  
 | 17

SPECIFIC



IMPRESSIVE MOMENT: Wild radish grows as an annual or biennial plant, with attractive four-petalled flowers 15-20 mm across and varying in colour, usually from white to purple but sometimes yellow, often with colour shading within a single petal. It flowers in early spring to late summer.



*Raphanus raphanistrum*

**Physical Characteristics**

Annual growing to 1.2m. It is not frost tender. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees and flies.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It requires moist soil.

**Habitats and Possible Locations**

Cultivated Beds.

**Edible Uses**

Condiment; Flowers; Leaves; Oil; Seed; Seedpod.

Young leaves - raw or cooked. A somewhat hot taste, they are finely cut and added to salads or used as a potherb. It is best to use just the young leaves in spring, older leaves soon become bitter.

Seed - raw or cooked. A very pungent flavour, the seed can be ground into a powder and made into a paste when it is an excellent substitute for mustard. The sprouted seeds have a somewhat hot spicy flavour and are a tasty addition to salads.

Flowers - raw. A nice addition to salads. The flower buds are used as a broccoli substitute, they should be lightly steamed for no more than 5 minutes.

Young seedpods - raw. Crisp and juicy, they must be eaten when young because they quickly become tough and fibrous. An edible oil is obtained from the seed.

**Medicinal Uses**

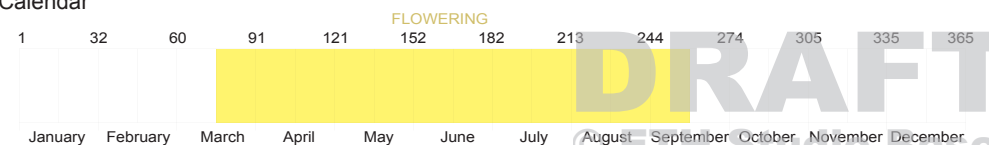
Disclaimer  
 Antirheumatic.

**Cultivation details**

Prefers a rich soil with ample moisture. Dislikes very heavy soils. This plant is a host of an eelworm that attacks cultivated crops. This species is possibly the original source of the cultivated radish, *R. sativus*. The flowers are very attractive to bees.

time: from the middle of March to the middle of September  
 possible program: blossom watching

Calendar



| GOAT WILLOW |  
 | SALWEIDE |  
 | *Salix caprea* |  
 | SPRING |  
 | 18

PERCEIVERS



IMPRESSIVE MOMENT: The flowers are down-like 3-7 cm long white and showy catkins in early spring.



*Salix caprea*

**Physical Characteristics**

A deciduous tree growing to 10m by 8m at a fast rate. It is in flower from March to April, and the seeds ripen in May. The flowers are dioecious (individual flowers are either male or female, but only one sex is to be found on any one plant so both male and female plants must be grown if seed is required) and are pollinated by Bees. The plant not is self-fertile.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and can grow in heavy clay soil. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It requires dry moist or wet soil. The plant can tolerate maritime exposure. It can tolerate atmospheric pollution.

**Habitats and Possible Locations**

Hedge, Woodland, Canopy, Secondary, Ground Cover.

**Edible Uses**

Inner bark; Leaves; Manna.

Inner bark - raw or cooked. It can be dried, ground into a powder and then added to cereal flour for use in making bread etc. A very bitter flavour, it is a famine food that is only used when all else fails.

Young shoots - raw or cooked. They are not very palatable. The source of an edible manna. No further details.

**Medicinal Uses**

Disclaimer

Anodyne; Aphrodisiac; Astringent; Febrifuge; Ophthalmic; Stimulant.

**Other Uses**

Basketry; Charcoal; Ground cover; Hedge; Leather; Pioneer; Shelterbelt; Tannin; Wood.

**Cultivation details**

Succeeds in most soils, including wet, ill-drained or intermittently flooded soils, but prefers a damp, heavy soil in a sunny position. Grows in drier soils than any other British species of Salix. Rarely thrives on chalk. Plants are found most frequently on basic soils in the wild. Tolerates atmospheric pollution and exposed positions, including maritime exposure.

A fast growing tree, it establishes well. The tree has an untidy habit. A light demanding tree, it becomes tall and drawn when grown in woodland, though it grows well along the sunnier edges.

Hybridizes freely with other members of this genus. Although the flowers are produced in catkins early in the year, they are pollinated by bees and other insects rather than by the wind. Trees are very tolerant of cutting, they coppice well. Plants in this genus are notably susceptible to honey fungus. Dioecious. Male and female plants must be grown if seed is required.

time: from the beginning of March to the end of April  
 possible program: blossom watching

Calendar



DRAFT  
 © ETH Studio Basel

| RED CAMPION |  
 | ROTE LICHTNELKE |  
 | *Silene dioica* |  
 | SPRING |  
 | 19

SPECIFIC



IMPRESSIVE MOMENT: It is a herbaceous biennial or perennial plant, with dark pink to red flowers, each 1.8-2.5 cm across. The petals are divided, and all go into a slightly inflated calyx.



*Silene dioica*

**Physical Characteristics**

Biennial/Perennial growing to 0.5m by 0.25m . It is in flower from May to July, and the seeds ripen from June to August. The flowers are dioecious (individual flowers are either male or female, but only one sex is to be found on any one plant so both male and female plants must be grown if seed is required) and are pollinated by Bees and flies. The plant not is self-fertile.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland). It requires moist soil.

**Habitats and Possible Locations**

Woodland, Dappled Shade, Shady Edge.

**Edible Uses**

None known

**Medicinal Uses**

Disclaimer

**Other Uses**

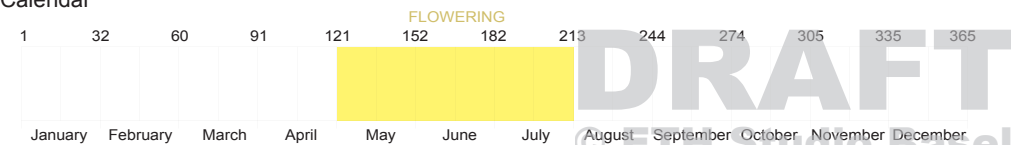
Soap.

**Cultivation details**

Prefers a well-drained nitrogen-rich soil in light shade. Succeeds in any position that is not hot and dry. Hardy to about -25°C. Hybridizes readily with *S. latifolia*. Some named forms have been selected for their ornamental value. Dioecious. Male and female plants must be grown if seed is required.

time: from the beginning of May to the end of July  
 possible program: blossom watching

Calendar



DRAFT  
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| COMMON LILAC |  
 | GEMEINER FLIEDER |  
 | *Syringa vulgaris* |  
 | SPRING |  
 | 20

PHENOLOGY



**IMPRESSIVE MOMENT:** The four-petaled flowers are cup-shaped with a four-lobed corolla, usually lilac to mauve. They are arranged in a dense, terminal panicle 8-18 cm long. Common Lilac is a very common ornamental plant in gardens and parks, because of the attractive, sweet smell of its flowers. Most garden plants are cultivars with flowers varying in color from white to dark lilac.



*Syringa vulgaris*

**Physical Characteristics**

A deciduous shrub growing to 6m at a medium rate. It is in flower in May, and the seeds ripen in August. The scented flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees and Lepidoptera (Moths & Butterflies). It is noted for attracting wildlife.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and can grow in heavy clay soil. The plant prefers neutral and basic (alkaline) soils and can grow in very alkaline soil. It cannot grow in the shade. It requires moist soil.

**Habitats and Possible Locations**

Hedge, Woodland, Sunny Edge, Dappled Shade.

**Edible Uses**

Flowers.

Flowers - raw or folded into batter and fried to make fritters.

**Medicinal Uses**

Disclaimer

Antiperiodic; Febrifuge; Mouthwash; Tonic; Vermifuge.

**Other Uses**

Dye; Essential; Hedge; Rootstock.

**Cultivation details**

Succeeds in most soils, including chalk, but dislikes acid soils. Prefers a deep, stiff, well-drained loam in a warm sunny position. A very ornamental plant, it does tend to sucker quite freely though. There are many named varieties, developed for their ornamental value. The flowers attract butterflies and moths. Plants in this genus are notably susceptible to honey fungus.

**time:** from the beginning of May to the end of May  
**possible program:** blossom watching

Calendar



**DRAFT**  
 © ETH Studio Basel

| DANDELION |  
 | LÖWENZAHN |  
 | *Taraxacum officinale* |  
 | SPRING |  
 | 21

PERCEIVERS+PHENOLOGY



**IMPRESSIVE MOMENT:** The bright yellow flower is a natural sign of Spring arrival. The flower matures into a globe of fine filaments that are usually distributed by wind, carrying away the seed-containing achenes. Its seeds floating in the air is an impressive phenomenon as well. This globe (receptacle) is called the “dandelion clock”, and blowing it apart is a popular pastime for children.

**time:** from the beginning of April to the end of May  
**possible program:** blossom watching



*Taraxacum officinale*

**Physical Characteristics**

Perennial growing to 0.45m by 0.3m . It is in flower from April to May, and the seeds ripen from May to June. The scented flowers are hermaphrodite (have both male and female organs) and are pollinated by Insects and Apomictic (reproduce by seeds formed without sexual fusion). The plant is self-fertile. It is noted for attracting wildlife.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils and can grow in very alkaline soil. It can grow in semi-shade (light woodland) or no shade. It requires moist soil. The plant can tolerate maritime exposure.

**Habitats and Possible Locations**

Meadow, Lawn, Cultivated Beds.

Cultivar 'Broad Leaved': Meadow, Cultivated Beds.

**Edible Uses**

Coffee; Flowers; Leaves; Root; Tea.

Leaves - raw or cooked. When used in salads, they are rather bitter, though less so in the winter. Tender young leaves are considerably less bitter than older leaves. The leaves are often blanched (by excluding light from the growing plant) before use]. This will make them less bitter, but they will also contain less vitamins and minerals. A very nutritious food, 100g of the raw leaves contain about 2.7g. protein, 9.2g. carbohydrate, 187mg Calcium, 66mg phosphorus, 3.1mg iron, 76mg sodium, 397mg potassium, 36mg magnesium, 14000iu vitamin A, 0.19mg vitamin B1, 0.26mg vitamin B2, 35mg vitamin C.

Root - raw or cooked. Bitter. A turnip-like flavour.

Flowers - raw or cooked. A rather bitter flavour, the unopened flower buds can be used in fritters and they can also be preserved in vinegar and used like capers. Both the leaves and the roots are used to flavour herbal beers and soft drinks such as 'Dandelion and Burdock'. The roots of 2 year old plants are harvested in the autumn, dried and roasted to make a very good coffee substitute. It is caffeine-free. A pleasant tea is made from the flowers. They are also used to make wine - all green parts should be removed when making wine to prevent a bitter flavour. The leaves and the roots can also be used to make tea.

**Medicinal Uses**

Disclaimer

Aperient; Cholagogue; Depurative; Diuretic; Hepatic; Laxative; Stomachic; Tonic; Warts.

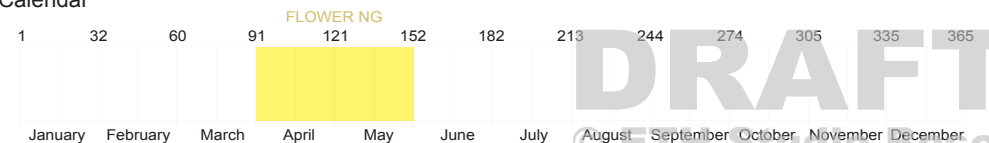
**Other Uses**

Compost; Cosmetic; Dye; Fruit ripening; Latex; Miscellany.

**Cultivation details**

A very easily grown plant, it succeeds in most soils, though it prefers a well-drained humus-rich neutral to alkaline soil in full sun or light shade. A very hardy plant, tolerating temperatures down to at least -29°C. The dandelion is a common weed of lawns and grassy places. Though it has a bitter flavour, the plant is often cultivated as a salad crop and as a medicinal plant, especially in parts of Europe. There are some named varieties with larger, more tender and less bitter leaves.

**Calendar**



**DRAFT**  
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| WILD TULIP |  
 | WILD-TULPE |  
 | *Tulipa sylvestris* |  
 | SPRING |  
 | 22

PERCEIVERS



IMPRESSIVE MOMENT: They are perennial bulbous plants growing to 10–70 centimetres tall, with a small number of strap-shaped, waxy-textured, usually glaucous green leaves and large flowers with six petals.



*Tulipa sylvestris*

**Physical Characteristics**

Bulb growing to 0.25m. It is in flower from April to May. The scented flowers are hermaphrodite (have both male and female organs) and are pollinated by Insects. The plant is self-fertile. The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It requires moist soil.

**Habitats and Possible Locations**

Lawn, Cultivated Beds.

**Edible Uses**

None known

**Medicinal Uses**

Disclaimer

**Cultivation details**

Easily grown in a well-drained soil. It can be naturalized in short grass. The plant is often found growing in chalk pits in the wild and so should do well on alkaline soils. The plant can increase quite rapidly by means of underground stolons and can be difficult to eradicate.

Bulbs can be harvested after the plants have died down in July, stored in a cool dry place and then replanted in October. The flowers have a most pronounced perfume. This species is in cultivation in Britain under the name 'Tabriz'.

time: from the beginning of April to the end of May  
 possible program: blossom watching

Calendar



DRAFT  
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| EARLY DOG VIOLETS |  
 | WALDVEILCHEN |  
 | *Viola reichenbachiana* |  
 | SPRING |  
 | 23

SPECIFIC



**IMPRESSIVE MOMENT:** A small perennial. It has heart-shaped leaves, and asymmetrical flowers with four upswept or fan-shaped petals, two each side, and one broad, lobed lower petal pointing downward. Flower colors is violet as its name suggests. Flowering is often profuse, and may last for much of the spring and summer.



*Viola reichenbachiana*

**Physical Characteristics**

Perennial growing to 0.15m. It is in flower from March to May. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Insects.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid and neutral soils. It can grow in semi-shade (light woodland) or no shade. It requires moist soil.

**Habitats and Possible Locations**

**Edible Uses**

Flowers; Leaves; Tea.

Young leaves and flower buds - raw or cooked. When added to soup they thicken it in much the same way as okra. Some caution is advised if the plant has yellow flowers since these can cause diarrhoea if eaten in large quantities. A tea can be made from the leaves.

**Medicinal Uses**

Disclaimer  
 Pectoral; Poultice; Stings; TB.

**Cultivation details**

Prefers a cool moist well-drained humus-rich soil in partial or dappled shade and protection from scorching winds. Tolerates sandstone and limestone soils but becomes chlorotic if the pH is too high. Prefers a pH between 6 and 6.5. Closely related to *V. riviniana*. All members of this genus have more or less edible leaves and flower buds, though those species with yellow flowers can cause diarrhoea if eaten in large quantities.

**time:** from the beginning of March to the end of May  
**possible program:** blossom watching

Calendar



| RAPESEED |  
 | RAPS |  
 | *Brassica napus* |  
 | SUMMER |  
 | 01

PERCEIVERS



IMPRESSIVE MOMENT: The Rapeseed flower can cover large extension of agriculture fields, displaying an intense yellow carpet in the field.



*Brassica napus*

**Physical Characteristics**

Annual/Biennial growing to 1.2m. It is in flower from May to August. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees. The plant is self-fertile.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils, requires well-drained soil and can grow in heavy clay soil. The plant prefers acid, neutral and basic (alkaline) soils and can grow in very acid and very alkaline soils. It can grow in semi-shade (light woodland) or no shade. It requires moist soil.

**Habitats and Possible Locations**

Cultivated Beds.

**Edible Uses**

Condiment; Leaves; Oil; Seed; Stem.

Leaves - raw or cooked. Added to salads or used as a pot-herb.

Immature flowering stems - cooked in much the same way as broccoli. An edible oil is obtained from the seed, it is used mainly for cooking purposes, but can also be used raw in salad dressings. Some caution is advised, however, see the notes above on toxicity. The sprouted seed is often used as the mustard part of mustard and cress. Eaten in salads.

The seed is used as a mustard flavouring.

**Medicinal Uses**

Disclaimer

Diuretic; Emollient.

**Other Uses**

Green manure; Oil.

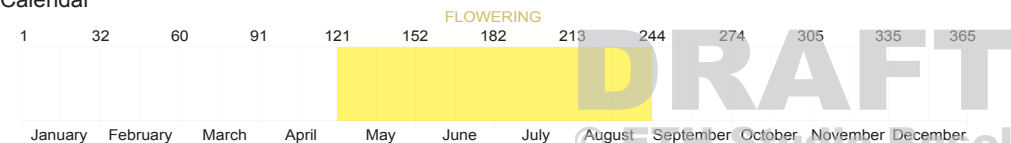
**Cultivation details**

Succeeds in full sun in a well-drained fertile preferably alkaline soil. Succeeds in any reasonable soil. Prefers a heavy soil and cool moist conditions. Sunny days and cool nights are favourable for plant growth whilst dry weather at harvest time is essential. Colza is reported to tolerate an annual precipitation of 30 to 280cm, an annual average temperature range of 5 to 27°C and a pH in the range of 4.2 to 8.2. Very young plants are susceptible to cold damage, -4°C either killing or injuring seedlings, whereas -2°C has no effect when the plants are more than one month old.

*Brassica napus* is an aggregate species, probably derived through cultivation. It is thought that crosses of *Brassica oleracea* subsp. *oleracea* with *B. rapa* gave rise to the subsp. *B. napus pabularia*, from which subsp. *napus* and subsp. *rapifera* and other cvs were derived. The aggregate species includes forms with swollen edible roots (*B. napus napobrassica*, the garden swede), forms grown for their oil-rich seeds (*B. napus napus*, the oilseed rape), forms grown for their edible leaves (*B. napus pabularia*, the rape kales) whilst the form grown as a green manure is *B. napus arvensis*. All these forms are treated separately here.

time: from the beginning of May to the end of August  
 possible program: blossom watching

Calendar



DRAFT  
 © ETH Studio Basel

| CORN MARIGOLD |  
 | WUCHERBLUME |  
 | *Chrysanthemum segetum* |  
 | SUMMER |  
 | 02

PHENOLOGY



IMPRESSIVE MOMENT: It is a herbaceous perennial plant growing to 80 cm tall. The flowers are bright yellow, produced in capitulae (flower heads) 3.5-5.5 cm diameter, with a ring of ray florets and a centre of disc florets.



*Chrysanthemum segetum*

**Physical Characteristics**

Annual growing to 0.45m. It is in flower from June to August, and the seeds ripen from July to September. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees, flies, beetles and Lepidoptera (Moths & Butterflies). The plant is self-fertile.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid and neutral soils. It can grow in semi-shade (light woodland) or no shade. It requires moist soil.

**Habitats and Possible Locations**

Cultivated Beds.

**Edible Uses**

Leaves.

Young shoots - cooked. Strongly aromatic, they contain coumarin. Caution is advised, see the notes above on toxicity.

**Medicinal Uses**

Disclaimer

None known

**Other Uses**

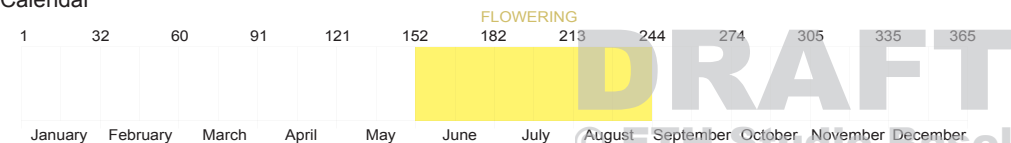
Dye.

**Cultivation details**

Succeeds in ordinary garden soil, though it prefers a well-drained fertile soil in full sun. Grows well in sandy soils. Dislikes lime. Cultivated as a vegetable in China and Japan. There are several named varieties selected for their ornamental value.

time: from the beginning of June to the end of August  
 possible program: blossom watching

Calendar



| GOLDEN CHERVIL |  
 | GOLD-KÄLBERKROPF |  
 | *Chaerophyllum aureum* |  
 | SUMMER |  
 | 03

SPECIFIC



IMPRESSIVE MOMENT: The small flowers are radially symmetrical with 5 small sepals, 5 petals and 5 stamens.



*Chaerophyllum aureum*

**Physical Characteristics**

It is a biennial herbaceous plant, from 60 to 130 cm height with hollow stems. The small flowers are radially symmetrical with 5 small sepals, 5 petals and 5 stamens. It has umbels in groups from 10 to 15. The fruits are longer than the handle, oblong and somehow bulgy, yellow brown and smell spicy.

**Habitats and Possible Locations**

It prefers mountain steppes. It is successful in fresh weed areas, meadows.

**Edible Uses**

none known

**Medicinal Uses**

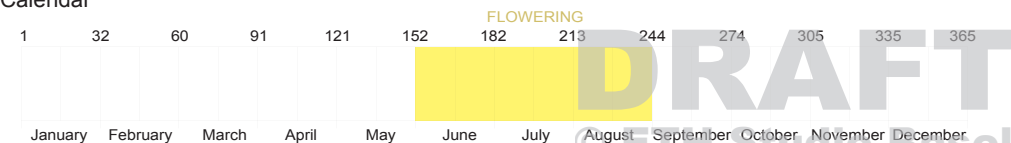
none known

**Cultivation details**

An easily grown plant, succeeding in almost any soil.

time: from the beginning of June to the end of August  
 possible program: blossom watching

Calendar



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| AUTUMN CROCUS |  
 | HERBSTZEITLOSE |  
 | *Colchicum autumnale* |  
 | SUMMER  
 | 04

PHENOLOGY



IMPRESSIVE MOMENT: It is a flower which resembles the true crocuses, but flowering in autumn. The name „naked lady“ comes from the fact that the flowers emerge from the ground long after the leaves have died back.



*Colchicum autumnale*

**Physical Characteristics**

Bulb growing to 0.15m by 0.15m . It is in leaf from February to July, in flower from August to October, and the seeds ripen from April to June. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees and flies. The plant is self-fer ile. It is noted for attrac ing wildlife.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It requires moist soil.

**Habitats and Possible Locations**

Meadow, Lawn, Woodland, Sunny Edge, Dappled Shade.

**Edible Uses**

None known

**Medicinal Uses**

Disclaimer

Analgesic; Antirheumatic; Ca hartic; Eme ic; Homeopathy.

**Other Uses**

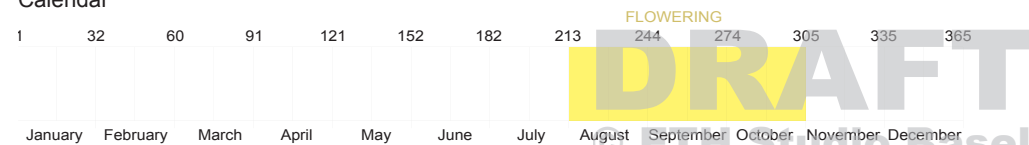
Plant breeding.

**Cultivation details**

Prefers a rich well-drained loam in a sunny position. Tolerates par ial shade but dislikes dry soils. Tolerates a pH in he range 4.5 to 7.5. Plants are hardy to about -20°C. The dormant bulbs are fairly hardy and will wi hstand soil temperatures down to at least -5°C. The autumn crocus is easily grown in grass and can be naturalized there. It also grows well amongst shrubs and by woodland edges. Plant the corms about 7 - 10cm deep in July. Plants seem to be immune to the predations of rabbits, though slugs may attack the corms. The flowers are very attrac tive to bees and butterflies.

time: from the beginning of August to the end of October  
 possible program: blossom watching

Calendar



| COTONEASTER |  
 | ZWERGMISPELN |  
 | Cotoneaster |  
 | SUMMER |  
 | 05

SPECIFIC



**IMPRESSIVE MOMENT:** The flowers are produced in late spring, solitary or in corymbs of up to 100 together; they are 5-10 mm diameter, and have five petals, creamy white to light pink, 10-20 stamens and up to five styles. The fruit is a small pome 5-12 mm diameter, bright red when mature, containing one to three (rarely up to five) seeds.



## Cotoneaster

### Physical Characteristics

Cotoneaster (Cotoneaster) is a genus of woody plants in the rose family Rosaceae. The majority of species are shrubs from 0.5-5 m tall, varying from ground-hugging prostrate plants to erect shrubs; a few, notably *C. frigidus*, are small trees up to 15 m tall and 75 cm trunk diameter. The shoots are dimorphic, with long shoots (10-40 cm long) producing structural branch growth, and short shoots (0.5-5 cm long) bearing the flowers; this pattern often developing a 'herringbone' form of branching. The leaves are arranged alternately, 0.5-15 cm long, ovate to lanceolate, entire; both evergreen and deciduous species occur. The flowers are produced in late spring, solitary or in corymbs of up to 100 together; they are 5-10 mm diameter, and have five petals, creamy white to light pink, 10-20 stamens and up to five styles. The fruit is a small pome 5-12 mm diameter, bright red when mature, containing one to three (rarely up to five) seeds.

### Habitats and Possible Locations

The larger species occur in scrub and woodland gaps at lower altitudes. Woodland Garden; Dappled Shade; Shady Edge; Deep Shade; Hedge are good places to be found.

### Edible Uses

none known

### Medicinal Uses

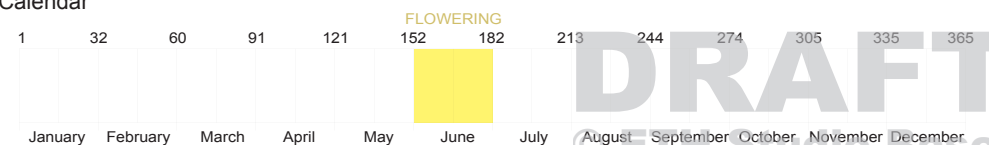
none known

### Cultivation details

An easily grown plant, succeeding in almost any soil. It thrives in lime and is also happy in peaty soils. It succeeds in any soil that is not marshy or waterlogged. Succeeds in dry soils. Grows well in heavy clay soils. Succeeds in full sun or semi-shade but does not fruit so freely in a shady position. Plants also succeed in quite deep shade.

**time: from the beginning of June to the end of June**  
**possible program: blossom watching**

### Calendar



**DRAFT**  
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| GREAT YELLOW GENTIAN |  
 | GELBER ENZIAN |  
 | *Gentiana lutea* |  
 | SUMMER |  
 | 06 |



**IMPRESSIVE MOMENT:** The blossoms of Great Yellow Gentian is outstanding among the mountain range area in summer. It is remarkable for the intensely bitter properties residing in the root and every part of the herbage, and because of its inedibility for cattle it spreads to large areas.

SPECIFIC



*Gentiana lutea*

**Physical Characteristics**

Perennial growing to 1.2m by 0.6m. It is in flower from July to August. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees, flies, beetles and Lepidoptera (Moths & Butterflies).

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It requires moist soil.

**Habitats and Possible Locations**

Cultivated Beds.

**Edible Uses**

Condiment.

The root is sometimes used in the manufacture of gentian bitters. The root contains sugar and mucilage (this is probably a reference to its medicinal properties). The root was occasionally used as a flavouring in beer before the use of hops (*Humulus lupulus*) became widespread.

**Medicinal Uses**

Disclaimer

Anthelmintic; An inflammatory; Antiseptic; Bitter; Cholagogue; Emmenagogue; Febrifuge; Refrigerant; Stomachic; Tonic.

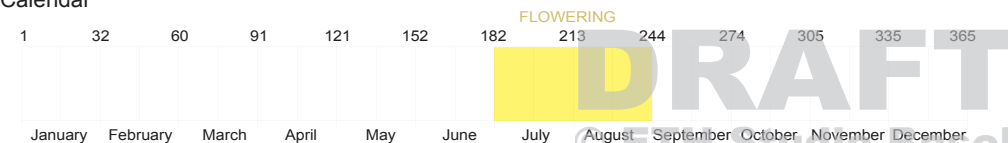
**Cultivation details**

In general, gentians require a moist well-drained soil in a sheltered position, a certain minimum of atmospheric humidity, high light intensity but a site where temperatures are not too high. They are therefore more difficult to grow in areas with hot summers and in such a region they appreciate some protection from the strongest sunlight. Most species will grow well in the rock garden. This species is easily grown in any good garden soil so long as it is deep enough to accommodate its roots, though it prefers alkaline conditions. It prefers full sun but succeeds in partial shade. A slow-growing plant, it takes many years to reach its full stature.

A moisture loving plant, growing well by water, it prefers to grow with full exposure to the sun but with plenty of underground moisture in the summer and it grows better in the north and west of Britain. Plants are very deep-rooted and are intolerant of root disturbance. They are very long lived, to 50 years or more. A very ornamental plant, it takes about 3 years to reach flowering size from seed. Cultivated as a medicinal plant in Europe.

**time:** from the beginning of July to the end of August  
**possible program:** blossom watching

Calendar





| MARSH CUDWEED |  
 | SUMPF-RUHRKRAUT |  
 | *Gnaphalium uliginosum* |  
 | SUMMER |  
 | 07 |

SPECIFIC



IMPRESSIVE MOMENT: Brownish flower. Small clusters of 3 to 10 whitish to brownish green or straw colored flower heads can be found in terminal or axillary positions. Floral bracts are scale like and pale brown with white tips.



*Gnaphalium uliginosum*

**Physical Characteristics**

Annual growing to 0.2m by 0.2m . It is in flower from July to August. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Insects.

The plant prefers light (sandy) and medium (loamy) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils and can grow in very acid soil. It can grow in semi-shade (light woodland) or no shade. It requires moist soil.

**Habitats and Possible Locations**

Cultivated Beds.

**Edible Uses**

None known

**Medicinal Uses**

Disclaimer

Antiinflammatory; Aphrodisiac; Astringent; Diaphoretic; Diuretic.

**Other Uses**

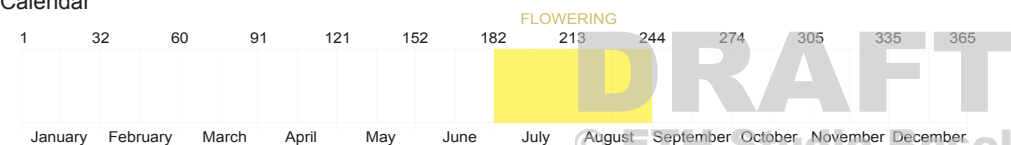
Dye.

**Cultivation details**

Prefers a position in full sun or partial shade in a moist to wet light acid soil.

time: from the beginning of July to the end of August  
 possible program: blossom watching

Calendar



| YELLOW ARCHANGEL |  
 | GOLDNESSEL |  
 | *Lamium galeobdolon* |  
 | SUMMER |  
 | 08

SPECIFIC



IMPRESSIVE MOMENT: The flowers are lemon-yellow, strongly lipped or divided into an upper hood and a lower portion; about 10 flowers are congested at each pair of leaves on flowering shoots a foot or two tall. Sweet nectar in the flowers attracts pollinators.



*Lamium galeobdolon*

**Physical Characteristics**

Perennial growing to 0.3m by 1m at a fast rate. It is in flower from May to June. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils, requires well-drained soil and can grow in heavy clay soil. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in full shade (deep woodland) semi-shade (light woodland) or no shade. It requires moist soil and can tolerate drought.

**Habitats and Possible Locations**

Hedgerow, Woodland, Dappled Shade, Shady Edge, Deep Shade, Ground Cover.

**Edible Uses**

Flowers; Leaves.

**Medicinal Uses**

Disclaimer

Antispasmodic; Astringent; Diuretic; Expectorant; Styptic; Vasoconstrictor.

**Other Uses**

Ground cover.

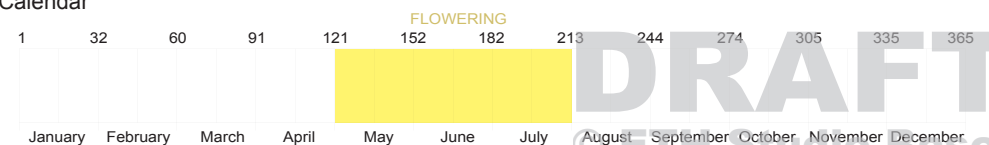
**Cultivation details**

A very easily grown plant, it tolerates most soils and conditions. It grows well in heavy clay soils, though it prefers a light calcareous soil. Dislikes dry soils. This species succeeds even in dense shade, growing well under trees. Once established, it can also succeed in drought conditions under the shade of trees, providing there is plenty of humus in the soil.

There are at least four sub-species, *L. galeobdolon montanum* is the form generally found wild in Britain and it is a triploid. *L. galeobdolon luteum* and *L. galeobdolon flavidum* are both diploids. *L. galeobdolon argentatum* is the more rampant form, its clone 'Variegatum' is a commonly used ground cover plant for shady places. Plants seem to be immune to the predations of rabbits. A very invasive plant, sending out long prostrate shoots that root at intervals along the stems.

time: from the beginning of May to the end of July  
 possible program: blossom watching

Calendar



| OXEYE DAISY |  
 | WIESEN-MARGERITE |  
 | *Leucanthemum vulgare* |  
 | SUMMER |  
 | 09

PERCEIVERS



IMPRESSIVE MOMENT: The oxeye daisy is also known as the marguerite is a widespread flowering plant native to Europe. It is one of a number of plants to be called by the common name daisy. It is a perennial prostrate herb with small flower head (not larger than 5 cm) that consists of about 20 white ray flowers and numerous yellow disc flowers, growing on the end of the stem.



*Leucanthemum vulgare*

**Physical Characteristics**

Perennial growing to 0.6m. It is in flower from June to August. The scented flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees, flies, beetles and Lepidoptera (Moths & Butterflies). The plant is self-fertile.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers neutral and basic (alkaline) soils. It cannot grow in the shade. It requires moist soil. The plant can tolerate strong winds but not maritime exposure.

**Habitats and Possible Locations**

Meadow.

**Edible Uses**

Leaves; Root.

**Medicinal Uses**

Disclaimer

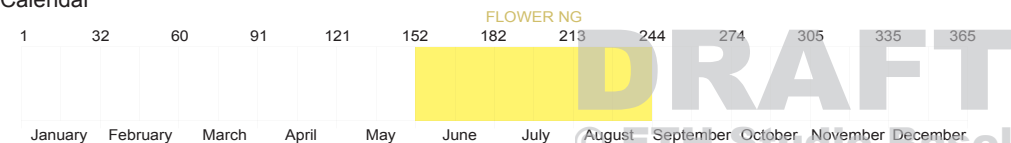
Antispasmodic; Antitussive; Diaphoretic; Diuretic; Emmenagogue; Tonic; Vulnerary.

**Cultivation details**

Easily grown in a good garden soil in a sunny position. Prefers a rich soil. Plants are hardy to at least -20°C. The whole plant is permeated with an acrid juice, making it obnoxious to insects. The flowers have a smell like stale perspiration. Grows well in the summer meadow but may need some help in maintaining itself.

time: from the beginning of June to the end of August  
 possible program: blossom watching

Calendar



| ALPINE LOVAGE |  
 | ALPEN MUTTERWURZ |  
 | *Ligusticum mutellina* |  
 | SUMMER  
 | 10

SPECIFIC



*Ligusticum mutellina*

**Physical Characteristics**

Perennial growing to 0.5m. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Insects. The plant is self-fertile.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It requires moist soil.

**Habitats and Possible Locations**

Cultivated Beds.

**Edible Uses**

Leaves; Tea.

**Medicinal Uses**

Disclaimer  
 Stomachic.

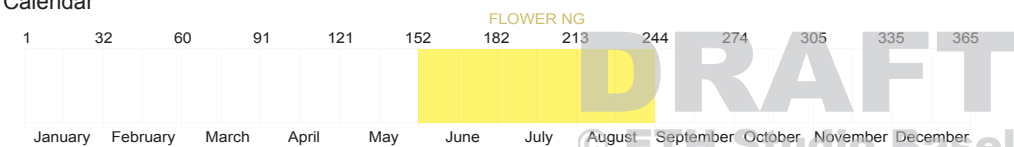
**Cultivation details**

Succeeds in any well-drained soil in a sunny position.

IMPRESSIVE MOMENT: This aromatic smelling plant of several grows up to 50 cm high. The sheets are in outlined triangular, with two to three pinnated. Between June and August the white to pink/red blooms. The aromatic smell is contained even in hay. The alps Mutterwurz belongs to the best fodder plants of the alps.

time: from the beginning of June to the end of August  
 possible program: blossom watching

Calendar



| WHITE MELIOT |  
 | WEISSER STEINKLEE |  
 | *Melilotus albus* |  
 | SUMMER  
 | 11

SPECIFIC



*Melilotus albus*

**Physical Characteristics**

Annual/Biennial growing to 1.2m at a fast rate. It is not frost tender. It is in flower from July to August. The scented flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees. It can fix Nitrogen. It is noted for attracting wildlife.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers neutral and basic (alkaline) soils. It cannot grow in the shade. It requires dry or moist soil.

**Habitats and Possible Locations**

**Edible Uses**

Condiment; Flowers; Leaves; Seed; Seedpod.  
 Leaves and seedpods - cooked as a 'bean soup'. The pea-like seeds are used as a seasoning for bean and split-pea soups.  
 Young shoots - raw or cooked. Added to salads or used as a potherb. Only fresh shoots should be used, the dried leaves contain coumarin.  
 Flowers - raw or cooked. Used as a vanilla-like flavouring. The dried leaves are said to be used as a vanilla flavouring but this is probably unwise, see notes at top of the page.

**Medicinal Uses**

Disclaimer  
 Anticoagulant; Aromatic; Carminative; Emollient; Poultice.

**Other Uses**

Green manure; Oil; Repellent.

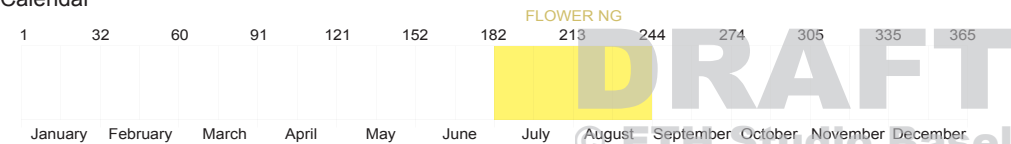
**Cultivation details**

A fast growing plant, it dislikes shade. A good bee plant. The dried plant has a sweet smell of newly mown hay. This species has a symbiotic relationship with certain soil bacteria, these bacteria form nodules on the roots and fix atmospheric nitrogen. Some of this nitrogen is utilized by the growing plant but some can also be used by other plants growing nearby.

IMPRESSIVE MOMENT: Its characteristic sweet odor, intensified by drying, is derived from coumarin.

time: from the beginning of July to the end of August  
 possible program: blossom watching

Calendar



| YELLOW MELILOT |  
 | GELBER STEINKLE |  
 | *Melilotus officinalis* |  
 | SUMMER |  
 | 12 |

SPECIFIC



**IMPRESSIVE MOMENT:** The upper stems terminate in narrow racemes of white flowers. The small floppy flowers have a tendency to hang downward from the central stalk of the raceme, and they sometimes appear on only 1 or 2 sides. Each flower consists of 5 white petals and a light green calyx with 5 teeth. The flower is tubular at the base, become broader toward the outer edges of the petals. The blooming period reaches a peak during mid-summer. Both the foliage and flowers are mildly fragrant.



*Melilotus officinalis*

**Physical Characteristics**

Annual/Biennial growing to 1.2m by 0.7m . It is not frost tender. It is in flower from July to September. The scented flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees. It can fix Nitrogen.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils, requires well-drained soil and can grow in heavy clay soil. The plant prefers neutral and basic (alkaline) soils and can grow in saline soil. It cannot grow in the shade. It requires dry or moist soil and can tolerate drought.

**Habitats and Possible Locations**

Cultivated Beds.

**Edible Uses**

Condiment; Flowers; Leaves; Root; Seedpod.

Root. Consumed as a food by the Kalmuks.

Young shoots - cooked. Used like asparagus. Young leaves are eaten in salads. The leaves and seedpods are cooked as a vegetable. They are used as a flavouring. Only fresh leaves should be used, see the notes above on toxicity. The crushed dried leaves can be used as a vanilla flavouring in puddings, pastries etc. Cau ion is advised, see the notes above on toxicity.

Flowers - raw or cooked. The flowers and seeds are used as a flavouring. The flowers also give an aromatic quality to some tisanes.

**Medicinal Uses**

Disclaimer

Antispasmodic; Aromatic; Carminative; Diuretic; Emollient; Expectorant; Ophthalmic; Vulnerary.

**Other Uses**

Green manure; Repellent.

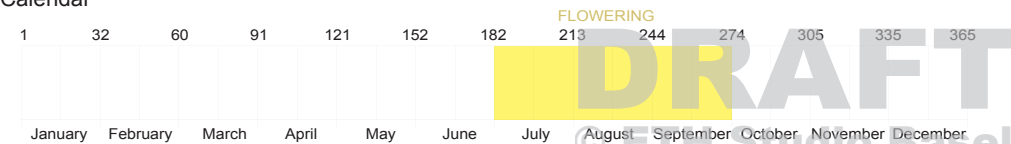
**Cultivation details**

Prefers a well-drained to dry neutral to alkaline soil in a sunny position. Prefers a clay or a saline soil. Dislikes shade. Established plants are drought tolerant. The flowers are rich in pollen making this a good bee plant. If they are cut back before flowering, the plants will grow on for at least another year before dying. The dried plant has a sweet aromatic fragrance like newly mown hay.

This species has a symbiotic relationship with certain soil bacteria, these bacteria form nodules on the roots and fix atmospheric nitrogen. Some of this nitrogen is utilized by the growing plant but some can also be used by other plants growing nearby.

**time:** from the beginning of July to the end of September  
**possible program:** blossom watching

Calendar



| EVENING PRIMROSE |  
 | GEMEINE NACHTKERZE |  
 | *Oenothera biennis* |  
 | SUMMER |  
 | 13

SPECIFIC



IMPRESSIVE MOMENT: It has pale yellow flowers that bloom for most of the summer, from June to September. They open in the evening, hence the name „evening primrose“, and are pollinated by Lepidoptera (Moths and Butterflies) and bees.

time: from the beginning of June to the end of September  
 possible program: blossom watching



*Oenothera biennis*

**Physical Characteristics**

Biennial growing to 1.2m. It is in flower from June to September, and the seeds ripen from August to October. The scented flowers are hermaphrodite (have both male and female organs) and are pollinated by Lepidoptera (Moths & Butterflies) and bees. The plant is self-fertile. It is noted for attracting wildlife.

The plant prefers light (sandy) and medium (loamy) soils, requires well-drained soil and can grow in nutritionally poor soil. The plant prefers acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It requires dry or moist soil and can tolerate drought.

**Habitats and Possible Locations**

Meadow, Cultivated Beds.

**Edible Uses**

Flowers; Leaves; Oil; Root; Seedpod.

Root - cooked. Boiled and eaten like salsify. Fleshy, sweet and succulent. Wholesome and nutritious. A peppery taste. The taste somewhat resembles salsify or parsnips.

Young shoots - raw or cooked. Mucilaginous, with a peppery flavour, they are best used sparingly. Another source suggests that the shoots should not be eaten.

Flowers - sweet. Used in salads or as a garnish.

Young seedpods - cooked. Steamed. The seed contains 28% of a drying oil. It is edible and a very good source of gamma-linolenic acid, an essential fatty acid that is not found in many plant sources and has numerous vital functions in the body. The seed, however, is very small and difficult to harvest, it has to be done by hand. Overall yields are low, making the oil very expensive to produce.

**Medicinal Uses**

Disclaimer

Anticholesterolemic; Astringent; Hypotensive; Miscellany; Sedative.

**Other Uses**

Cosmetic; Dye.

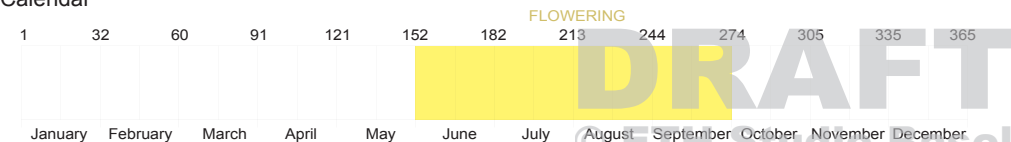
**Cultivation details**

Prefers a dryish well-drained sandy loam and a warm sunny position, though it is tolerant of most soils. Heavy clay soils may induce winter rots. Grows well on very poor soils. Established plants are drought resistant.

Formerly cultivated for its edible roots, the evening primrose is being increasingly cultivated for the oil contained in its seed which contains certain essential fatty acids and is a very valuable addition to the diet. See the notes on medicinal uses for more details.

The flowers open in the evening and are strongly scented with a delicious sweet perfume, attracting pollinating moths. The seeds are a good food source for birds. Plants usually self-sow freely if they are growing in a suitable position, they can naturalize in the wild garden.

Calendar



| RED POPPY |  
 | MOHNBLUME |  
 | *Papaver rhoeas* |  
 | SUMMER  
 | 14

SPECIFIC



**IMPRESSIVE MOMENT:** The four petals are vivid red, most commonly with a black spot at their base. In the northern hemisphere it generally flowers in late spring, but if the weather is warm enough other flowers frequently appear at the beginning of autumn. It has had an old symbolism and association with agricultural fertility.



*Papaver rhoeas*

**Physical Characteristics**

Annual growing to 0.6m by 0.15m . It is in flower from June to August, and the seeds ripen from August to September. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees, flies and beetles. The plant is self-fertile. It is noted for attracting wildlife.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It requires moist soil.

**Habitats and Possible Locations**

Cultivated Beds.

**Edible Uses**

Coloring; Flowers; Leaves; Oil; Seed.

Seed - raw or cooked. Much used as a flavouring in cakes, bread, fruit salads etc, it imparts a very nice nutty flavour. The seeds are rather small, but they are contained in fairly large seed pods and so are easy to harvest. The seeds are perfectly safe to eat, containing none of the alkaloids associated with other parts of the plant.

Leaves - raw or cooked. Used like spinach or as a flavouring in soups and salads. The leaves should not be used after the flower buds have formed. Some caution is advised, see the notes above on toxicity. An edible oil is obtained from the seed. Said to be an excellent substitute for olive oil, it can be used in salad dressings or for cooking. A syrup can be prepared from the scarlet flower petals, it is used in soups, gruels etc. A red dye from the petals is used as a food flavouring, especially in wine.

**Medicinal Uses**

Disclaimer

Anodyne; Cancer; Emmenagogue; Emollient; Expectorant; Hypnotic; Sedative; Tonic.

**Other Uses**

Dye; Ink; Pot-pourri.

**Cultivation details**

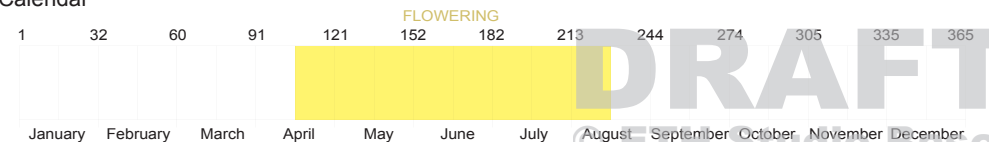
Prefers a well-drained sandy loam in a sunny position. Does not do well on wet clay soils but succeeds in most other soils. Plants usually self-sow freely when growing in suitable conditions so long as the soil surface is disturbed.

There are several named varieties selected for their ornamental value.

A polymorphic species, varying in leaf shape and flower colour. When growing in cereal fields, poppies decrease the yields of nearby cereal plants. Members of this genus are rarely if ever troubled by browsing deer or rabbits.

**time: from the middle of April to the middle of August**  
**possible program: blossom watching**

Calendar





| HAWKWEED OX-TONGUE |  
 | GEWÖHNLICHES BITTERKRAUT |  
 | *Picris hieracioides* |  
 | SUMMER |  
 | 15

SPECIFIC



*Picris hieracioides*

**Physical Characteristics**

Biennial/Perennial growing to 0.9m by 0.3m . It is in flower from July to October, and the seeds ripen from July to October. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees, flies and Apomictic (reproduce by seeds formed without sexual fusion). The plant is self-fer ile.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils and can grow in very alkaline soil. It cannot grow in he shade. It requires dry or moist soil.

**Habitats and Possible Locations**

Meadow, Hedgerow.

**Edible Uses**

Leaves.

Young leaves - raw or cooked as a pot-herb. Not wonderful raw, they are slightly better cooked. A ra her bitter flavour.

**Medicinal Uses**

Disclaimer

Febrifuge.

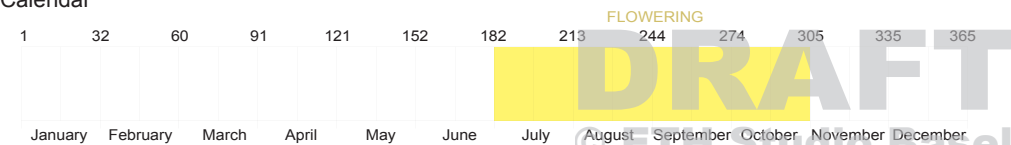
**Cultivation details**

Prefers a dryish soil but succeeds in most soils. Dislikes shade. Wild plants are an indicator of calcareous soils. Seed is often produced apomictically. Any seedlings from this seed will be genetically identical to the parent plant.

IMPRESSIVE MOMENT: In the open fields it is possible to find this delicate yellowish flower during the summer.

time: from the beginning of July to the end of October  
 possible program: blossom watching

Calendar



| ALPENROSE |  
 | ROSTBLÄTTRIGE ALPENROSE |  
 | *Rhododendron ferrugineum* |  
 | SUMMER |  
 | 16

PERCEIVERS



*Rhododendron ferrugineum*

**Physical Characteristics**

An evergreen shrub growing to 1.5m. It is in leaf all year, in flower in June. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Insects.

The plant prefers light (sandy) and medium (loamy) soils and requires well-drained soil. The plant prefers acid soils and can grow in very acid soil. It can grow in semi-shade (light woodland) or no shade. It requires moist soil.

**Habitats and Possible Locations**

Woodland, Dappled Shade, Shady Edge, Ground Cover.

**Edible Uses**

None known

**Medicinal Uses**

Disclaimer

Antirheumatic; Diaphoretic; Diuretic; Homeopathy.

**Other Uses**

Ground cover; Herbicide.

**Cultivation details**

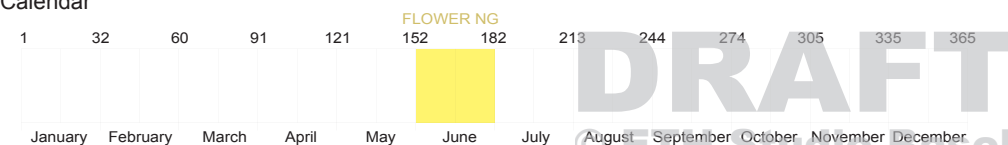
Succeeds in a most humus-rich lime-free soils except those of a dry arid nature or those that are heavy or clayey. Prefers a peaty or well-drained sandy loam. Succeeds in sun or shade, the warmer the climate the more shade a plant requires. A pH between 4.5 and 5.5 is ideal. This species grows better in the midlands and north Britain, disliking the hotter conditions in the south.

Succeeds in a woodland though, because of its surface-rooting habit, it does not compete well with surface-rooting trees. Plants need to be kept well weeded, they dislike other plants growing over or into their root system, in particular they grow badly with ground cover plants, herbaceous plants and heathers. Plants form a root ball and are very tolerant of being transplanted, even when quite large, so long as the root ball is kept intact. Plants in this genus are notably susceptible to honey fungus.

IMPRESSIVE MOMENT: Its flower has a fragrant smell, and a lively pink colour. In the fields it could form a carpet the summer display can be extremely attractive.

time: from the beginning of June to the end of June  
 possible program: blossom watching

Calendar



**DRAFT**  
 © ETH Studio Basel

| BLACK ELDER |  
 | SCHWARZER HOLUNDER |  
 | *Sambucus nigra* |  
 | SUMMER  
 | 17

PHENOLOGY



IMPRESSIVE MOMENT: The flowers are borne in large corymbs 10-25 cm diameter in mid summer, the individual flowers white, 5-6 mm diameter, with five petals. The flower heads are commonly used in infusions, giving a very common refreshing drink in Northern Europe.

time: from the beginning of July to the end of August  
 possible program: blossom watching



*Sambucus nigra*

**Physical Characteristics**

A deciduous shrub growing to 6m by 6m at a fast rate. It is in leaf from March to November, in flower from June to July, and the seeds ripen from August to September. The scented flowers are hermaphrodite (have both male and female organs) and are pollinated by Flies. It is noted for attracting wildlife.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and can grow in heavy clay soil. The plant prefers acid, neutral and basic (alkaline) soils and can grow in very alkaline soil. It can grow in semi-shade (light woodland) or no shade. It requires moist soil. The plant can tolerate maritime exposure. It can tolerate atmospheric pollution.

**Habitats and Possible Locations**

Hedge, Woodland, Sunny Edge, Dappled Shade, Shady Edge. Cultivar 'Alba': Hedge, Woodland, Sunny Edge, Dappled Shade, Shady Edge.

**Edible Uses**

Coloring; Flowers; Fruit; Tea.

Fruit - raw or cooked. The flavour of the raw fruit is not acceptable to many tastes, though when cooked it makes delicious jams, preserves, pies and so forth. It can be used fresh or dried, the dried fruit being less bitter. The fruit is used to add flavour and colour to preserves, jams, pies, sauces, chutneys etc, it is also often used to make wine. The fruit is about 8mm in diameter and is borne in large clusters. Some caution is advised, see the notes above on toxicity.

Flowers - raw or cooked. They can also be dried for later use. The flowers are crisp and somewhat juicy, they have an aromatic smell and flavour and are delicious raw as a refreshing snack on a summers day, though look out for the insects. The flowers are used to add a muscatel flavour to stewed fruits, jellies and jams (especially gooseberry jam). They are often used to make a sparkling wine. A sweet tea is made from the dried flowers. The leaves are used to impart a green coloring to oils and fats.

**Medicinal Uses**

Disclaimer

Antiinflammatory; Aperient; Diaphoretic; Diuretic; Emetic; Emollient; Expectorant; Galactagogue; Haemostatic; Laxative; Ophthalmic; Purgative; Salve; Stimulant.

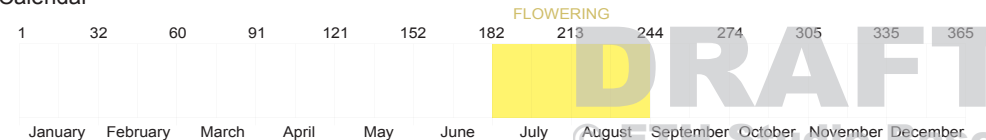
**Other Uses**

Compost; Cosmetic; Dye; Fungicide; Hedge; Insecticide; Litmus; Microscope; Musical; Pioneer; Pipes; Repellent; Wood.

**Cultivation details**

A very easily grown plant, it tolerates most soils and situation, growing well on chalk, but prefers a moist loamy soil. Grows well in heavy clay soils. Tolerates some shade but fruits better in a sunny position. Tolerates atmospheric pollution and coastal situations. Another report says that it is intolerant of very smoky atmospheres. The elder is very occasionally cultivated for its edible fruit, there are some named varieties though most of these have been developed for their ornamental value. The sub-species *S. nigra alba* has white/green fruits that are nicer than the type species and are quite nice raw.

Calendar



| RED-BERRIED |  
 | ROTER HOLUNDER |  
 | *Sambucus racemosa* |  
 | SUMMER |  
 | 18

PHENOLOGY



IMPRESSIVE MOMENT: They bear large clusters of small white coloured flowers in the late spring, that are followed by clusters of small red berries. the berries are bright red and they are a very valuable food resource for many birds



*Sambucus racemosa*

**Physical Characteristics**

A deciduous shrub growing to 3m by 3m . It is in flower from April to May, and the seeds ripen from June to July. The scented flowers are hermaphrodite (have both male and female organs) and are pollinated by insects.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and can grow in heavy clay soil. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It requires moist soil. The plant can tolerate strong winds but not maritime exposure. It can tolerate atmospheric pollution.

**Habitats and Possible Locations**

Woodland, Sunny Edge, Dappled Shade, Shady Edge.

**Edible Uses**

Flowers; Fruit.

Fruit - raw or cooked. This species is said to have the tastiest fruit in this genus, it is somewhat reminiscent of red currants though the fruit is considerably smaller and contains many seeds. Rich in vitamin C, the seed can be removed and the fruit used in jellies, preserves etc. The fruit is about 5mm in diameter and is borne in large clusters, making it easy to harvest. Some caution is advised with one report saying the seeds should be removed before the fruit is eaten. See also the notes above on toxicity.

Flowers - raw or cooked.

**Medicinal Uses**

Disclaimer

Anodyne; Carminative; Depurative; Diaphoretic; Diuretic; Laxative; Purgative; Resolvent; Vulnerary.

**Other Uses**

Repellent; Straw; Wood.

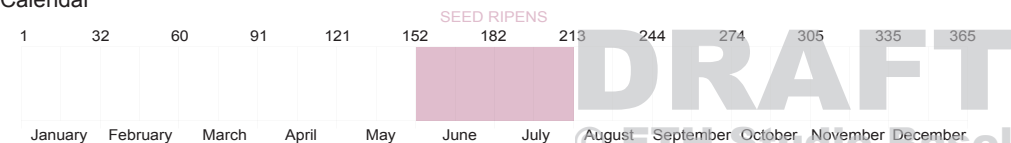
**Cultivation details**

Tolerates most soils, including chalk, but prefers a moist loamy soil. Grows well in heavy clay soils. Tolerates some shade but is best in a sunny position. Prefers cool moist conditions. Tolerates atmospheric pollution and coastal situations. Hardy to about -25°C. Plants self-sow in N. Britain but they rarely fruit well in S. Britain. There are some named varieties developed for their ornamental value.

The flowers have a sweet smell, free from the fishy undertones found in some other members of the genus. The subspecies *S. racemosa kamtschatica* (E.Wolf.). Hult has larger fruits and seeds. Plants in this genus are notably resistant to honey fungus.

time: from the beginning of June to the end of July  
 possible program: fruit ripening watching

Calendar



| RYE |  
 | ROGGEN |  
 | *Secale cereale* |  
 | SUMMER |  
 | 19

PHENOLOGY



IMPRESSIVE MOMENT: During the season of hay mowing, people can perceive one voluminous layer of the field peeled off by farming machine. The spatial perception on its field changes before and after....



*Secale cereale*

**Physical Characteristics**

Annual growing to 1.8m by 0.1m . It is in flower from May to July, and the seeds ripen from August to September. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Wind.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It requires moist soil and can tolerate drought. The plant can tolerate strong winds but not maritime exposure.

**Habitats and Possible Locations**

Cultivated Beds.

**Edible Uses**

Coffee; Seed; Sweetener.

Seed - cooked. A common cereal, it is used especially in N. Europe to make bread. The seed contains about 13% protein. The grain also contains some gluten, though not as much as wheat, so it makes a heavier bread than wheat. It can also be used to make cakes etc. The seed can be sprouted and added to salads. A nutritional analysis is available. Malt, a sweet substance produced by germinating the seed, is extracted from the roasted germinated seed and used as a sweetening agent and in making beer etc. The roasted (ungerminated) seed is used as a coffee substitute.

**Medicinal Uses**

Disclaimer  
 Poultice.

**Other Uses**

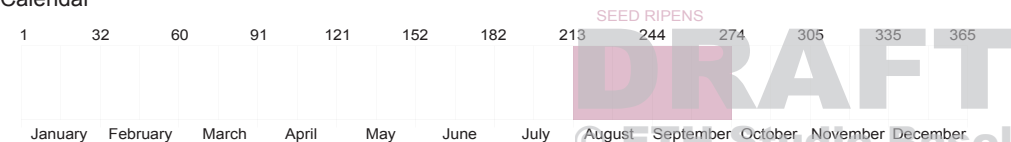
Biomass; Green manure; Oil; Soil stabilization; Thatching.

**Cultivation details**

Succeeds in most soils but prefers a well-drained light soil in a sunny position. Established plants are drought tolerant. Rye is a widely cultivated temperate zone cereal crop. It is able to withstand severe climatic conditions and can be grown much further north and at higher altitudes than wheat. There are many named varieties. Rye is a rather variable species and botanists have divided it into a number of sub-species, all of which could be of value in breeding programmes. These sub-species are briefly listed below:-

*S. cereale afghanicum* (Vavilov.) K.Hammer. Native to the Caucasus, western Asia and India. *S. cereale ancestrale* Zhuk. Native to western Asia. *S. cereale dighoricum* Vavilov. Native to the Caucasus and Eastern Europe. *S. cereale segetale* Zhuk. Native to temperate Asia. Rye grows well with cornflowers and pansies, though it inhibits the growth of poppies and couch grass.

Calendar



time: from the beginning of August to the end of September  
 possible program: seed ripening watching

| SMALL-LEAVED LINDEN |  
 | WINTERLINDE |  
 | *Tilia cordata* |  
 | SUMMER  
 | 20

PHENOLOGY



IMPRESSIVE MOMENT: The small yellow-green flowers are produced in early summer, having a rich and heavy scent. Lime trees are culturally linked to public open spaces in the urban areas. Historically the first city-tree in Basel Stadt was a lime tree (Gerichtslinde).

**time: from the beginning of June to the end of July**  
**possible program: observation and smell of the flowers**



*Tilia cordata*

**Physical Characteristics**

A deciduous tree growing to 30m by 12m at a medium rate. It is in flower from June to July, and the seeds ripen in October. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees. It is noted for attracting wildlife.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It requires moist soil. The plant can tolerate strong winds but not maritime exposure.

**Habitats and Possible Locations**

Woodland, Canopy.

**Edible Uses**

Chocolate; Leaves; Sap; Tea.

Young leaves - raw. They make an excellent salad or sandwich filling, they are mild tasting and somewhat mucilaginous. The leaves can be available from spring until early autumn from the young growths at the base of the tree. A very acceptable chocolate substitute can be made from a paste of the ground-up flowers and immature fruit. Trials on marketing the product failed because the paste is very apt to decompose. A popular herb tea is made from the flowers, it has a sweet, fragrant pleasant flavour. Some caution is advised, see the notes above on toxicity.

Sap - harvested in the spring, it is sweet and can be used as a drink or concentrated into a syrup.

**Medicinal Uses**

Disclaimer

Antispasmodic; Diaphoretic; Expectorant; Hypotensive; Laxative; Sedative; Skin.

**Other Uses**

Charcoal; Fibre; Paper; Wood.

**Cultivation details**

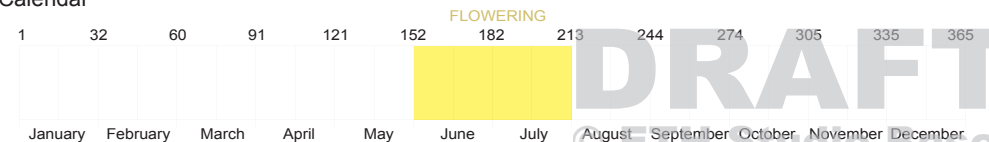
Prefers a good moist loamy alkaline to neutral soil but it also succeeds on slightly acid soils. Grows poorly on any very dry or very wet soil. Tolerates considerable exposure. Succeeds in sun or semi-shade. Plants can be transplanted quite easily, even when large, trees up to 60 years old have been moved successfully.

Trees are very amenable to coppicing or pollarding. They produce numerous suckers from the base. Suckers are produced but not freely according to another report. This species produces far less suckers than *T. platyphyllos* or *T. x vulgaris*. This species grows well in Britain, but it rarely produces viable seed in areas with cool summers.

Lime trees tend to hybridise freely if other members of the genus are growing nearby. If growing plants from seed it is important to ensure the seed came from a wild source or from an isolated clump of the single species.

Grows best in a woodland situation, young plants tolerate a reasonable level of side shade. Mature trees cast a dense shade.

Calendar



| LARGE-LEAVED LINDEN |  
 | SOMMERLINDE |  
 | *Tilia platyphyllos* |  
 | SUMMER  
 | 21



IMPRESSIVE MOMENT: The small, fragrant, yellowish-white flowers are arranged in drooping, cymose clusters in groups of 3 to 4.

time: from the beginning of June to the end of July  
 possible program: observation smell of the flowers

PHENOLOGY



*Tilia platyphyllos*

**Physical Characteristics**

A deciduous tree growing to 30m by 20m at a medium rate. It is in flower from June to July, and the seeds ripen in October. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees. It is noted for attracting wildlife.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It requires moist soil.

**Habitats and Possible Locations**

Woodland, Canopy.

**Edible Uses**

Chocolate; Leaves; Sap; Tea.

Young leaves - raw. A delicious addition to salads and sandwiches, the young leaves are mild and tender with a somewhat mucilaginous texture.

A very acceptable chocolate substitute can be made from a paste of the ground-up flowers and immature fruit. Trials on marketing the product failed because the paste is very apt to decompose. A popular herb tea is made from the flowers, it has a sweet, fragrant pleasant flavour. Some caution is advised, see notes above on toxicity.

Sap - harvested in the spring, it is sweet and can be used as a drink or concentrated into a syrup.

**Medicinal Uses**

Disclaimer

Antispasmodic; Diaphoretic; Diuretic; Expectorant; Hypotensive; Laxative; Sedative.

**Other Uses**

Charcoal; Fibre; Paper; Wood.

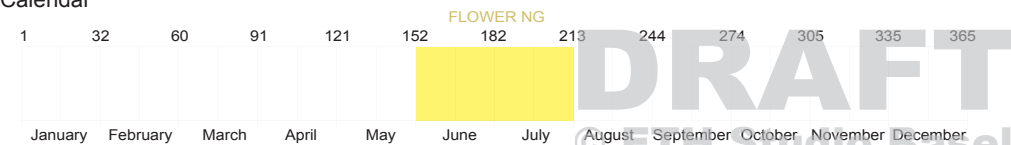
**Cultivation details**

Prefers a good moist loamy alkaline to neutral soil but succeeds on slightly acid soils. Grows poorly on any very dry or very wet soils. Succeeds in sun or semi-shade. Plants can be transplanted quite easily, even when quite large, trees up to 60 years old have been moved successfully.

Lime trees are very long-lived and are amenable to coppicing or pollarding. This species does not produce many suckers. Grows well in Britain, it is the only species that reliably produces viable seed in areas with cool summers. Lime trees tend to hybridise freely if other members of the genus are growing nearby]. If growing plants from seed it is important to ensure the seed came from a wild source or from an isolated clump of the single species.

Grows best in a woodland situation, young plants tolerate a reasonable level of side shade. Mature trees cast a dense shade. A very valuable bee plant, producing an abundance of nectar. A valuable tree for wildlife, there are 31 species of insects associated with this tree. A food plant for the caterpillars of many butterfly and moth species. Trees are usually attacked by aphids which cover the ground and the leaves with a sticky honeydew. There are some named varieties selected for their ornamental value.

Calendar



**DRAFT**  
 © ETH Studio Basel

| HORSE-CHESTNUT |  
 | GEWÖHNLICHE ROSSKASTANIE |  
 | *Aesculus hippocastanum* |  
 | AUTUMN |  
 | 01



PHENOLOGY



*Aesculus hippocastanum*

**Physical Characteristics**

A deciduous tree growing to 30m by 15m at a fast rate. It is in flower in May, and the seeds ripen in September. The scented flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils, requires well-drained soil and can grow in nutritionally poor soil. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It requires dry or moist soil. The plant can tolerate strong winds but not maritime exposure. It can tolerate atmospheric pollution.

**Habitats and Possible Locations**

Woodland, Canopy.

**Edible Uses**

Coffee; Seed.

The roasted seed is used as a coffee substitute.

Seed - cooked. It can be dried, ground into a powder and used as a gruel. The seed is quite large, about 3cm in diameter, and is easily harvested. It is usually produced in abundance in Britain. Unfortunately the seed is also rich in saponins, these must be removed before it can be used as a food and this process also removes many of the minerals and vitamins, leaving behind mainly starch. See also the notes above on toxicity. The seed contains up to 40% water, 8 - 11% protein and 8 - 26% toxic saponins. The following notes apply to *A. californica*, but are probably also relevant here. The seed needs to be leached of toxins before it becomes safe to eat - the Indians would do this by slow-roasting the nuts (which would have rendered the saponins harmless) and then cutting them into thin slices, putting them into a cloth bag and rinsing them in a stream for 2 - 5 days.

**Medicinal Uses**

Disclaimer

Alterative; Analgesic; Antiinflammatory; Astringent; Bactericidal; Diuretic; Expectorant; Febrifuge; Haemostatic; Narcotic; Tonic; Vasoconstrictor; Vulnerary.

**Other Uses**

Dye; Soap; Starch; Tannin; Wood.

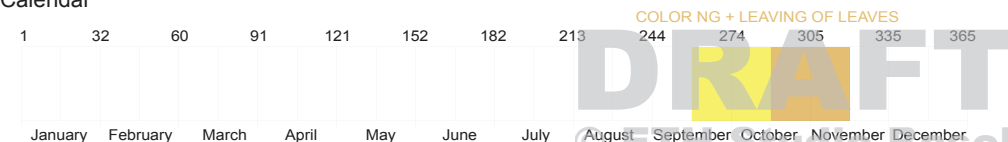
**Cultivation details**

Prefers a deep loamy well-drained soil but is not too fussy tolerating poorer drier soils. Tolerates exposed positions and atmospheric pollution. A very ornamental and fast-growing tree, it succeeds in most areas of Britain but grows best in eastern and south-eastern England. Trees are very hardy when dormant, but the young growth in spring can be damaged by late frosts. The flowers have a delicate honey-like perfume.

Trees are tolerant of drastic cutting back and can be severely lopped. They are prone to suddenly losing old heavy branches. The tree comes into bearing within 20 years from seed. Most members of this genus transplant easily, even when fairly large.

time: from the middle of September to the middle of November  
 possible program: observation changing colour of leaves

Calendar





| ALDER |  
 | ERLE |  
 | *Alnus* |  
 | AUTUMN |  
 | 02

SPECIFIC



IMPRESSIVE MOMENT: As with some other plants growing near water it keeps its leaves longer than do trees in drier situations, the glossy green foliage lasting after other trees have put on the red or brown of autumn, which renders it valuable for landscape effect.



## *Alnus*

### Physical Characteristics

A deciduous Tree growing to 25m by 10m at a fast rate. It is in leaf from March to November, in flower from March to April, and the seeds ripen from September to November. The flowers are monoecious (individual flowers are either male or female, but both sexes can be found on the same plant) and are pollinated by Wind. It can fix Nitrogen. It is noted for attracting wildlife.

The plant prefers medium (loamy) and heavy (clay) soils and can grow in heavy clay and nutritionally poor soils. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It requires moist or wet soil. The plant can tolerate maritime exposure.

### Habitats

Woodland Garden; Canopy; Hedge; Bog Garden;

### Edible Uses

None known

### Medicinal Uses

Alterative; Astringent; Cathartic; Emetic; Febrifuge; Galactagogue; Haemostatic; Parasiticide; Skin; Tonic; Vermifuge.

### Other Uses

Charcoal; Dye; Hedge; Ink; Insecticide; Pioneer; Shelterbelt; Soil reclamation; Tannin; Teeth; Wood.

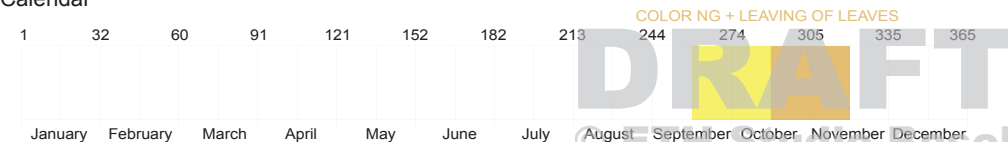
### Cultivation details

Prefers a heavy soil and a damp situation, tolerating prolonged submergence of its roots and periods with standing water to 30cm deep. Plants can also grow quickly in much drier sites, though they will usually not live for so long in such a position. Alders grow well in heavy clay soils, they also tolerate lime and very infertile sites. Tolerates a wide range of soils but prefers a pH above 6. Very tolerant of maritime exposure. Alder is estimated to tolerate an annual precipitation of 40 to 200cm, an annual average temperature of 8 to 14°C and a pH of 6 to 8. The leaves often remain green on the tree until November, or even later on young seedlings. The seeds contain a margin of air-filled tissue and are capable of floating in water for 30 days before becoming waterlogged.

This enables distribution of the seed by water. The alder has a very rapid early growth, specimens 5 years old from seed were 4 metres tall even though growing in a very windy site in Cornwall. This species has a symbiotic relationship with certain soil micro-organisms, these form nodules on the roots of the plants and fix atmospheric nitrogen. Some of this nitrogen is utilized by the growing plant but some can also be used by other plants growing nearby. Nitrogen-fixation by trees up to 8 years old has been put at 125 kg/ha/yr., for 20 years at 56 - 130 kg/ha/yr.. Trees often produce adventitious roots from near the base of the stem and these give additional support in unstable soils. Trees are very tolerant of cutting and were at one time much coppiced for their wood which had a variety of uses. Alders are an important food plant for the caterpillars of many butterfly and moth species and also for small birds in winter. There are 90 insect species associated with this tree. There are some named varieties, selected for their ornamental value.

time: from the middle of September to the middle of November  
 possible program: observation changing colour of leaves

### Calendar



| EUROPEAN HORNBEAM |  
 | HAINBUCHE |  
 | *Carpinus betulus* |  
 | AUTUMN |  
 | 03

SPECIFIC



IMPRESSIVE MOMENT: *Carpinus betulus* is a good representative of the deciduous trees that change the color of the leaves in Autumn. The leaves are alternate, 4-9 cm long, with prominent veins giving a distinctive corrugated texture, and a serrated margin.



*Carpinus betulus*

**Physical Characteristics**

A deciduous tree growing to 25m by 20m at a medium rate. It is in flower from April to May, and the seeds ripen in November. The flowers are monoecious (individual flowers are either male or female, but both sexes can be found on the same plant) and are pollinated by Wind. It is noted for attracting wildlife.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and can grow in heavy clay soil. The plant prefers acid, neutral and basic (alkaline) soils and can grow in very alkaline soil. It can grow in full shade (deep woodland) semi-shade (light woodland) or no shade. It requires moist soil.

**Habitats and Possible Locations**

Hedge, Woodland, Canopy, Deep Shade.

**Edible Uses**

None known

**Medicinal Uses**

Disclaimer  
 Bach; Haemostatic; Ophthalmic.

**Other Uses**

Dye; Fuel; Hedge; Wood.

**Cultivation details**

Thrives in any good loam, including chalk, it does not demand much light. Prefers a deep open loam and does well on damp clays. Succeeds in all but the most acid soils. Dormant trees are very cold tolerant, the young growth is not usually damaged by late spring frosts. The trees cast a deep shade. A very ornamental plant. Trees are shallow-rooted. The hornbeam has 28 species of associated insects. Trees take 10 - 20 years from seed before they produce seed and about 100 years to reach maturity. At one time his tree was commonly pollarded or coppiced for its wood and for fuel.

time: from the middle of September to the middle of November  
 possible program: observation changing colour of leaves

Calendar



| COMMON HAZEL |  
 | HASELSTRAUCH |  
 | *Corylus avellana* |  
 | AUTUMN |  
 | 04

PHENOLOGY



IMPRESSIVE MOMENT: The leaves are deciduous, rounded, 6-12 cm long and across, softly hairy on both surfaces, and with a double-serrate margin.



*Corylus avellana*

**Physical Characteristics**

A deciduous tree growing to 6m by 3m at a medium rate. It is in flower from January to April, and the seeds ripen from September to October. The flowers are monoecious (individual flowers are either male or female, but both sexes can be found on the same plant) and are pollinated by Wind. The plant is self-fertile. It is noted for attracting wildlife.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils. The plant prefers acid, neutral and basic (alkaline) soils and can grow in very acid and very alkaline soils. It can grow in semi-shade (light woodland) or no shade. It requires moist soil. The plant can tolerate strong winds but not maritime exposure.

**Habitats and Possible Locations**

Hedge, Woodland, Secondary, Sunny Edge, Dappled Shade. Cultivar 'Waterloo': Hedge, Woodland, Secondary, Sunny Edge, Dappled Shade. Cultivar 'Cosford Cob': Hedge, Woodland, Secondary, Sunny Edge, Dappled Shade. Cultivar 'Duke of York': Hedge, Woodland, Secondary, Sunny Edge, Dappled Shade. Cultivar 'Heterophylla': Hedge, Woodland, Secondary, Sunny Edge, Dappled Shade. Cultivar 'Nottingham Cob': Hedge, Woodland, Secondary, Sunny Edge, Dappled Shade.

**Edible Uses**

Milk; Oil; Seed.

Seed - raw or roasted and used in breads, cakes, biscuits, sweets etc. An excellent nut for raw eating. They can also be liquidized and used as a plant milk. Rich in oil. The seed ripens in mid to late autumn and will probably need to be protected from squirrels. When kept in a cool place, and not shelled, the seed should store for at least 12 months. A clear yellow edible oil is obtained from the seed. It is used in salad dressings, baking etc.

**Medicinal Uses**

Disclaimer

Anthelmintic; Astringent; Diaphoretic; Febrifuge; Nutritive; Stomachic; Tonic.

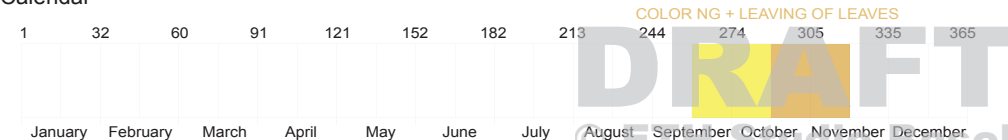
**Other Uses**

Basketry; Charcoal; Cosmetic; Hedge; Miscellany; Oil; Plant support; Polish; Tannin; Wood.

**Cultivation details**

An easily grown plant, it succeeds in most soils, but is in general more productive of seeds when grown on soils of moderate fertility. It does less well in rich heavy soils or poor ones. Does well in a loamy soil. Very suitable for an alkaline soil, but it dislikes very acid soils. Succeeds in a pH range 4.5 to 8.5, but prefers a range of 5 to 7. Plants are fairly wind tolerant. A very hardy plant, succeeding in all areas of Britain. The flowers, however, are produced in late winter and early spring and can be damaged by heavy frosts at this time. A parent, together with *C. maxima*, of many cultivated forms of filberts and cob nuts. There are many named varieties. Plants are self-fertile but a more certain crop is obtained if more than one cultivar is grown.

Calendar



time: from the middle of September to the middle of November  
 possible program: observation changing colour of leaves

| EUROPEAN BEECH |  
 | ROTBUCHHE |  
 | *Fagus sylvatica* |  
 | AUTUMN |  
 | 05

PHENOLOGY+ SPECIFIC



IMPRESSIVE MOMENT: Changing the color of the leaves. From the phenological point of view it indicates the beginning of Autumn. Often together with other type of deciduous trees, its intensive leaf release covers the ground surface and create a soft-textured “brown carpet of leaves”.

time: from the middle of September to the middle of November  
 possible program: observation changing colour of leaves



*Fagus sylvatica*

**Physical Characteristics**

A deciduous tree growing to 30m by 15m at a medium rate. It is hardy to zone 5 and is frost tender. It is in flower from April to May, and the seeds ripen from September to October. The flowers are monoecious (individual flowers are either male or female, but both sexes can be found on the same plant) and are pollinated by Wind. It is noted for attracting wildlife.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils and can grow in very acid and very alkaline soils. It can grow in full shade (deep woodland) semi-shade (light woodland) or no shade. It requires dry or moist soil. The plant can tolerate strong winds but not maritime exposure. It can tolerate atmospheric pollution.

**Habitats and Possible Locations**

Hedge, Woodland, Canopy.

**Edible Uses**

Coffee; Leaves; Oil; Seed.

Young leaves - raw. A very nice mild flavour, they go well in a mixed salad. However, the leaves quickly become tough so only the youngest should be used. New growth is usually produced for 2 periods of 3 weeks each year, one in spring and one in mid-summer.

Seed - raw or cooked. A pleasant sweet flavour, though rather small and fiddly. The seed can also be dried and ground into a powder and then used with cereal flours when making bread, cakes etc. The seed is rich in oil. The seed should not be eaten in large quantities because it contains a deleterious principle.

The seed contains 17 - 20% of an edible semi-drying oil. This stores well without going rancid and is said to be equal in delicacy to olive oil. It is used as a dressing for salads and also for cooking. The seed residue is poisonous. The roasted seed is used as a coffee substitute.

**Medicinal Uses**

Disclaimer

Antacid; Antipyretic; Antiseptic; Antitussive; Balm; Expectorant; Odontalgic; Skin.

**Other Uses**

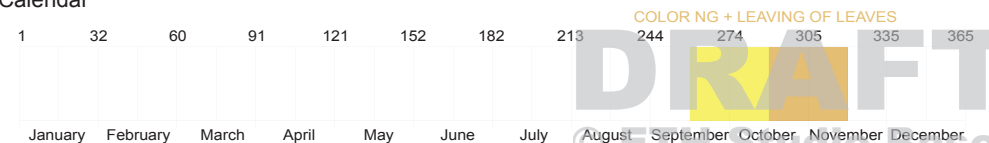
Charcoal; Fuel; Hedge; Stuffing; Teeth; Wood.

**Cultivation details**

Thrives on a light or medium soil, doing well on chalk, but ill-adapted for a heavy wet soil. Prefers a calcareous soil but succeeds in acid soils though it does not make such a fine tree in such a situation. Succeeds in almost any soil and any pH, it is also very tolerant of a wide range of climatic conditions so long as there is sufficient rainfall. Established trees are drought tolerant. Very wind tolerant but dislikes salt. Trees are shallow rooted and this might make them less wind resistant.

Trees have two growth periods a year, each of about 3 weeks in duration. The first is in spring around the end of April, the second is in summer, around the end of July.

Calendar



| EUROPEAN ASH |  
 | GEMEINE ESCHE |  
 | *Fraxinus excelsior* |  
 | AUTUMN |  
 | 06

PHENOLOGY



IMPRESSIVE MOMENT: The leaves of the European Ash are often the first to fall in autumn if an early frost strikes.

time: from the middle of September to the middle of November  
 possible program: observation changing colour of leaves



*Fraxinus excelsior*

**Physical Characteristics**

A deciduous tree growing to 30m by 20m at a fast rate. It is in leaf from May to October, in flower from April to May, and the seeds ripen from September to January. The flowers are dioecious (individual flowers are either male or female, but only one sex is to be found on any one plant so both male and female plants must be grown if seed is required) and are pollinated by Wind. The plant is not self-fertile. It is noted for attracting wildlife.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils. The plant prefers acid, neutral and basic (alkaline) soils and can grow in very acid soil. It cannot grow in the shade. It requires moist or wet soil. The plant can tolerate maritime exposure. It can tolerate atmospheric pollution.

**Habitats and Possible Locations**

Bog Garden, Woodland, Canopy.

**Edible Uses**

Manna; Oil; Seed; Tea.

Immature seed - usually pickled by steeping in salt and vinegar, and then used as a condiment for other foods. The leaves are sometimes used as an adulterant for tea. A manna is obtained from the tree. No further details are given. An edible oil similar to sunflower (*Helianthus annuus*) oil is obtained from the seed.

**Medicinal Uses**

Disclaimer

Antiperiodic; Astringent; Carminative; Cathartic; Diaphoretic; Diuretic; Laxative; Purgative; Tonic.

**Other Uses**

Dye; Fuel; Shelterbelt; String; Tannin; Wood.

**Cultivation details**

Prefers a deep loamy soil, even if it is on the heavy side. Most members of this genus are gross feeders and require a rich soil. Plants can succeed in very exposed positions, including maritime exposure, though they can become wind-shaped. Thrives in alkaline soils but not in shallow soils over chalk. Tolerates a pH as low as 4.5, but prefers a base-rich soil above 5.5. Trees are surprisingly tolerant of seasonally water-logged soils. Dislikes dryness at the roots, especially in late spring. Very intolerant of shade, young plants fail to develop properly in such a position and often die.

Although the dormant plant is very cold-hardy, the young growth in spring, even on mature plants, is frost-tender and so it is best to grow the plants in a position sheltered from the early morning sun. A fast growing tree, it is sometimes cultivated for its valuable timber. Very tolerant of cutting, ash was also at one time frequently coppiced for its wood. However, modern use of plastics have reduced its economic values. There are many named varieties, selected for their ornamental value. Trees have a light canopy and cast little shade. A food plant for many insect species, there are 41 associated insect species.

Calendar



| PERSIAN WALNUT |  
 | ECHE WALNUSS/BAUMNUSS |  
 | *Juglans regia* |  
 | AUTUMN |  
 | 07

PERCEIVERS+ SPECIFIC



**IMPRESSIVE MOMENT:** In autumn the leaves change the color to brown. The leaves are spirally arranged, 25-40 cm long, odd-pinnate with 5-9 leaflets, the largest leaflets the three at the apex, 10-18 cm long and 6-8 cm broad; the basal pair of leaflets much smaller, 5-8 cm long.

**time:** from the beginning of October to the end of October  
**possible program:** observation ripen of seeds



*Juglans regia*

**Physical Characteristics**

A deciduous tree growing to 20m by 20m at a medium rate. It is in flower in June, and the seeds ripen in October. The scented flowers are monoecious (individual flowers are either male or female, but both sexes can be found on the same plant) and are pollinated by Wind. The plant is self-fertile.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils. It cannot grow in the shade. It requires moist soil.

**Habitats and Possible Locations**

Woodland, Canopy.  
 Cultivar 'Broadview': Woodland, Canopy.  
 Cultivar 'Franquette': Woodland, Canopy.

**Edible Uses**

Oil; Sap; Seed; Sweetener; Tea.  
 Seed - eaten raw or used in confections, cakes, ice cream etc. A delicious flavour. The seed can also be ground into a meal and used as a flavouring in sweet and savoury dishes. The unripe fruits are pickled in vinegar.  
 An edible oil is obtained from the seed, it should not be stored for any length of time since it tends to go rancid quickly. The oil has a pleasant flavour and is used in salads or for cooking. The sap is tapped in spring and used to make a sugar. The finely ground shells are used in the stuffing of 'agnolot i' pasta. They have also been used as adulterant of spices.  
 The dried green husks contain 2.5 - 5% ascorbic acid (vitamin C) - this can be extracted and used as a vitamin supplement. The leaves are used as a tea.

**Medicinal Uses**

Disclaimer  
 Alterative; Anodyne; Antiinflammatory; Astringent; Bach; Blood purifier; Cancer; Depurative; Detergent; Diuretic; Laxative; Lithontripic; Pectoral; Skin; Stimulant; Vermifuge.

**Other Uses**

Dye; Herbicide; Miscellany; Oil; Paint; Polish; Repellent; Tannin; Teeth; Wood.

**Cultivation details**

Requires a deep well-drained loam and a sunny position sheltered from strong winds. Prefers a slightly alkaline heavy loam but succeeds in most soils. The walnut tree is reported to tolerate an annual precipitation of 31 to 147cm, an annual temperature in the range of 7.0 to 21.1°C and a pH in the range of 4.5 to 8.2. The dormant plant is very cold tolerant, tolerating temperatures down to about -27°C without serious damage, but the young spring growth is rather tender and can be damaged by late frosts. Some late-leaving cultivars have been developed, these often avoid damage from spring frosts and can produce a better quality timber tree.

Calendar



| EUROPEAN LARCH |  
 | EUROPÄISCHE LÄRCH |  
 | *Larix decidua* |  
 | AUTUMN |  
 | 08

PHENOLOGY



IMPRESSIVE MOMENT: The leaves are needle-like, light green, 2-4 cm long which turn bright yellow before they fall in the autumn, leaving the pale yellow-buff shoots bare until the next spring.

time: from the beginning of October to the end of November  
 possible program: observation ripen of seeds



*Larix decidua*

**Physical Characteristics**

A deciduous tree growing to 45m by 15m at a fast rate. It is in flower from April to May, and the seeds ripen from October to November. The scented flowers are monoecious (individual flowers are either male or female, but both sexes can be found on the same plant) and are pollinated by Wind.

The plant prefers light (sandy) and medium (loamy) soils, requires well-drained soil and can grow in nutritionally poor soil. The plant prefers acid, neutral and basic (alkaline) soils and can grow in very acid soil. It cannot grow in the shade. It requires moist soil. The plant can tolerate maritime exposure. It cannot tolerate atmospheric pollution.

**Habitats and Possible Locations**

Woodland, Canopy.

**Edible Uses**

Inner bark; Manna.  
 Inner bark - it can be eaten raw or can be dried, ground into a powder and used with cereal flours in making bread etc. A sweet-tasting manna is obtained from the trunk, it can be eaten raw but is mainly used medicinally. Another report says that 'Briancon manna' is exuded from the leaves in the summer. It is white, sweet and almost odourless.

**Medicinal Uses**

Disclaimer  
 Anthelmintic; Antidote; Antiseptic; Astringent; Bactericidal; Balsamic; Diuretic; Expectorant; Haemostatic; Laxative; Rubefacient; Stimulant; Vermifuge; Vulnerary.

**Other Uses**

Pioneer; Resin; Tannin; Wood.

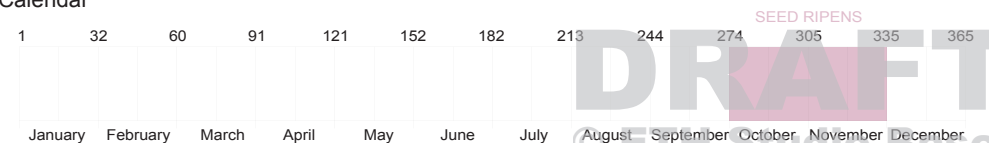
**Cultivation details**

Prefers an open airy position in a light or gravelly well-drained soil. It tolerates acid and infertile soils, though it dislikes very peaty or very chalky soils. Another report says that it tolerates chalky soils. Succeeds on rocky hill or mountain sides and slopes. Tolerates salt-laden gales according to one report whilst another says that it dislikes exposed positions.

The larch dislikes atmospheric pollution and so does not grow well in towns. A north or east aspect is more suitable than west or south. It dislikes growing in wet ground or frost pockets, and grows best in areas with abundant rainfall.

The larch is a very ornamental tree that is widely grown for forestry. It is very fast growing with new annual growth of 1.5 metres often found and trees can average 60cm or more for many years. The dormant trees are very cold hardy, but they are often excited into premature growth in Britain by mild spells during the winter, the plants are then subject to damage by late frosts and cold winds. The young shoots have a delicate mossy fragrance as the leaves unfold. Hybridizes freely with other members of this genus.

Calendar



| APPLE TREE |  
 | APFELBAUM |  
 | *Malus domestica* |  
 | AUTUMN |  
 | 09

PERCEIVERS+PHENOLOGY+ SPECIFIC



IMPRESSIVE MOMENT: Maturity process. There is not a specific date at which you can expect to harvest your apples. Instead, you can observe apples as they grow and inspect the fruit for certain changes which indicate maturity. The "ground" or base skin color of the apples changes from green to yellow as the fruit matures.

time: from the middle of September to the middle of November  
 possible program: apple picking



*Malus domestica*

**Physical Characteristics**

A deciduous tree growing to 9m. It is in flower from April to June. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Insects. It is noted for attracting wildlife.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils, requires well-drained soil and can grow in heavy clay soil.

The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It requires moist soil.

**Habitats and Possible Locations**

Woodland, Secondary, Sunny Edge, Dappled Shade, By Walls, By North Wall, By South Wall, By East Wall, By West Wall.

**Edible Uses**

Fruit; Oil; Pectin.

Fruit - raw, cooked or dried for later use. Apples are one of the most common and widely grown fruits of the temperate zone. There are a great many named varieties with differing flavours ranging from sour to sweet and textures from dry and mealy to crisp and juicy. There is also a wide range in the seasons of ripening with the first fruits being ready in late July whilst other cultivars are not picked until late autumn and will store for 12 months or sometimes more. See individual records for more details.

The fruit of some cultivars is rich in pectin and can be used in helping other fruits to set when making jam etc. Pectin is also said to protect the body against radiation. An edible oil can be obtained from the seed. It would only really be viable to use these seeds as an oil source if the fruit was being used for some purpose such as making cider and then the seeds could be extracted from the remaining pulp.

**Medicinal Uses**

Disclaimer

Antibacterial; Astringent; Laxative; Stomachic.

**Other Uses**

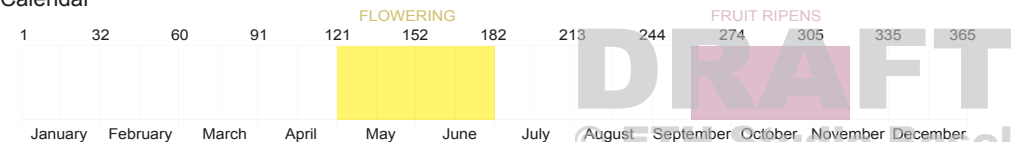
Wood.

**Cultivation details**

An easily grown plant, it succeeds in most fertile soils, preferring a moisture retentive well-drained loamy soil. Grows well in heavy clay soils, though if these are poorly drained there could be problems with diseases such as canker. Prefers a sunny position but succeeds in partial shade though it fruits less well in such a situation. Tolerates a pH range from 6 to 7, preferring a range of 6.5 to 6.8.

Primary climatic requirements for the production of good quality apples are warm summer temperatures, relative freedom from spring frosts, reasonable protection from the wind (especially cold north and east winds) and an evenly distributed rainfall of about 600 - 800mm per annum. However good quality apples can still be produced in other areas with careful management and choice of cultivars. Where space is at a premium, or at the limits of their climatic range, apples can be grown against a wall.

Calendar





| EUROPEAN PEAR |  
 | KULTUR-BIRNE |  
 | *Pyrus communis* |  
 | AUTUMN |  
 | 10

PERCEIVERS+PHENOLOGY+ SPECIFIC



IMPRESSIVE MOMENT: One of the most beautiful sights in spring is a flowering pear tree covered in snowy white blooms. It is also impressive the changing of the color of the leaves. From the phenological point of view it indicates the beginning of Autumn. Often together with other type of deciduous trees, its intensive leaf release covers the ground surface and create a soft-textured "brown carpet of leaves".



*Pyrus communis*

**Physical Characteristics**

A deciduous tree growing to 13m. It is in flower from April to May, and the seeds ripen from October to December. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Insects.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils, requires well-drained soil and can grow in heavy clay soil. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It requires moist soil and can tolerate drought. It can tolerate atmospheric pollution.

**Habitats and Possible Locations**

Woodland, Secondary, Sunny Edge, Dappled Shade.

**Edible Uses**

Fruit.

Fruit - raw or cooked. The fruit of wild pears often remains very hard unless bletted. It is more suitable for use in pies etc. The fruit is up to 5cm long.

**Medicinal Uses**

Disclaimer

Astringent; Febrifuge; Sedative.

**Other Uses**

Dye; Shelterbelt; Wood.

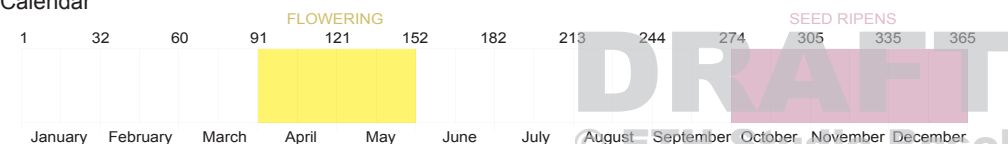
**Cultivation details**

Prefers a good well-drained loam in full sun. Grows well in heavy clay soils. Tolerates light shade but does not fruit so well in such a position. Tolerates atmospheric pollution, excessive moisture and a range of soil types, if they are moderately fertile, avoiding only the most acid soils. Dislikes very exposed positions. Established plants are drought tolerant.

A very hardy plant, tolerating temperatures down to below -15°C. Plants often sucker and can form dense thickets. A parent of the cultivated pear, possibly by crossing with *P. nivalis* and *P. cordata*. There are many hundreds of varieties of cultivated pears and they are widely cultivated in the temperate zone for their edible fruits. By selection of varieties fresh fruits can be obtained from late July to April or May of the following year.

time: from the beginning of April to the end of May  
 possible program: blossom watching

Calendar



| DAMSON |  
 | ZWETSCHGE |  
 | *Prunus domestica* |  
 | AUTUMN |  
 | 11

PERCEIVERS



IMPRESSIVE MOMENT: It flowers in the early spring, a plum tree will be covered in blossom, and in a good year approximately 50% of the flowers will be pollinated and become plums. When autumn arrives, you can find them in supermarkets.

time: from the end of August  
 possible program: fruits tasting



*Prunus domestica*

**Physical Characteristics**

A deciduous tree growing to 12m by 10m at a medium rate. It is in flower in April, and the seeds ripen from July to November. The flowers are hermaphrodite (have both male and female organs) and are pollinated by insects. The plant is self-ferile.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils, requires well-drained soil and can grow in heavy clay soil. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It requires moist soil.

**Habitats and Possible Locations**

Woodland, Secondary, Sunny Edge, Dappled Shade, By Walls, By South Wall, By East Wall, By West Wall.

**Edible Uses**

Flowers; Fruit; Gum; Oil; Seed; Tea.

Fruit - raw or cooked. The fruit varies considerably from cultivar to cultivar, but it is generally somewhat mealy, soft and juicy with a delicious flavour ranging from very sweet to acid. The more acid fruits are usually only used for cooking purposes. The fruit varies widely in size according to cultivar but can be 8cm long and contains a single large seed.

Seed - raw or cooked. Do not eat the seed if it is too bitter - see the notes above on toxicity. An edible gum is obtained from points of damage on the trunk. The seed contains about 20% of an edible semi-drying oil. It has an agreeable almond smell and flavour. The flowers are eaten. They are used as a garnish for salads and ice cream or brewed into a tea.

**Medicinal Uses**

Disclaimer

Febrifuge; Laxative; Stomachic.

**Other Uses**

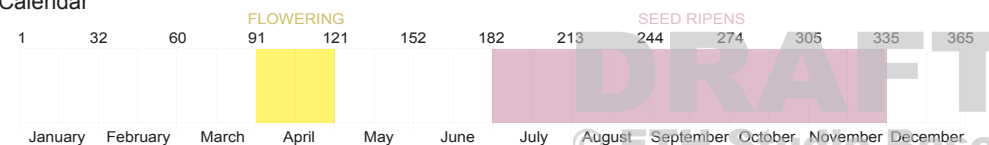
Adhesive; Dye; Oil; Wood.

**Cultivation details**

Requires a well-drained moisture retentive soil and a sheltered position. Succeeds in light shade but fruits better in a sunny position. Thrives in a loamy soil, doing well on limestone. Grows well in heavy clay soils. Prefers some chalk in the soil but it is apt to become chlorotic if too much is present. Prefers a pH between 6 and 6.5.

The plum is widely cultivated for its edible fruit in temperate zones, there are many named varieties able to supply fresh fruits from late July to November or December. Many cultivars are fully self-ferile, though some are partially self-sterile and others require cross-pollination. Where space is at a premium, or at the limits of their climatic range, plums can be grown against a wall. Most cultivars will grow well against a sunny south or west facing wall, whilst an east facing wall will suit some of the tougher cultivars, a north facing wall is not really suitable. This species is probably a hybrid of ancient origin between *P. spinosa* and *P. cerasifera*, coupled with **chromosome doubling**. It does not cross-pollinate with the Japanese plum, *P. salicina*.

Calendar



| PEDUNCULATE OAK |  
 | STIELEICHE |  
 | *Quercus robur* |  
 | AUTUMN |  
 | 12

SPECIFIC



IMPRESSIVE MOMENT: As a deciduous tree, the leaves change of color in Autumn. Pedunculate Oak is distinguished by its leaves having only a very short stalk 3–8 mm long, and by its pendunculate acorns.



*Quercus robur*

**Physical Characteristics**

A deciduous tree growing to 30m by 30m at a slow rate. It is in flower from April to May, and the seeds ripen from September to October. The flowers are monoecious (individual flowers are either male or female, but both sexes can be found on the same plant) and are pollinated by Wind. It is noted for attracting wildlife.

The plant prefers medium (loamy) and heavy (clay) soils and can grow in heavy clay soil. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It requires moist or wet soil and can tolerate drought. The plant can tolerate strong winds but not maritime exposure.

**Habitats and Possible Locations**

Bog Garden, Woodland, Canopy.

**Edible Uses**

Coffee; Gum; Seed.

Seed - cooked. Nourishing but indigestible. Chopped and roasted, the seed is used as an almond substitute. It can be dried, ground into a powder and used as a thickening in stews etc or mixed with cereals for making bread. The seed contains bitter tannins, these can be leached out by thoroughly washing the seed in running water though many minerals will also be lost. Either the whole seed can be used or the seed can be dried and ground it into a powder. It can take several days or even weeks to properly leach whole seeds, one method was to wrap them in a cloth bag and place them in a stream. Leaching the powder is quicker. A simple taste test can tell when the tannin has been leached. The traditional method of preparing the seed was to bury it in boggy ground overwinter. The germinating seed was dug up in the spring when it would have lost most of its astringency.

The roasted seed is a coffee substitute. An edible gum is obtained from the bark. Another report says that an edible manna is obtained from the plant and that it is used instead of butter in cooking. This report probably refers to the gum.

**Medicinal Uses**

Disclaimer

Antiseptic; Astringent; Bact; Decongestant; Haemostatic; Tonic.

**Other Uses**

Basketry; Charcoal; Compost; Fuel; Ink; Repellent; Tannin; Wood.

**Cultivation details**

Prefers a good deep fertile loam which can be on the shade side. Young plants tolerate reasonable levels of shade. Succeeds in heavy clay soils and in wet soils so long as the ground is not water-logged for long periods. Dislikes dry or shallow soils but is otherwise drought tolerant once it is established. Tolerant of exposed sites though it dislikes salt-laden winds.

The oak is a very important timber tree in Britain, it is also a very important food plant for the caterpillars of many species of butterfly, here are 284 insect species associated with this tree.

time: from the middle of September to the middle of November  
 possible program: observation changing colour of leaves

Calendar



| WINE GRAPES |  
 | WEINREBE |  
 | *Vitis vinifera* |  
 | AUTUMN |  
 | 13

PERCEIVERS



IMPRESSIVE MOMENT: Normally several different types of grapes are planted in a same vineyard, and in Autumn as their grapes ripen the colorful patchwork appears on the vineyard.

time: from the beginning of September to the end of October  
 possible program: harvesting



*Vitis vinifera*

**Physical Characteristics**

A deciduous climber growing to 15m at a fast rate. It is in flower from May to July, and the seeds ripen from September to October. The scented flowers are hermaphrodite (have both male and female organs) and are pollinated by Insects.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland) or no shade. It requires dry or moist soil.

**Habitats and Possible Locations**

Woodland, Sunny Edge, Dappled Shade, By Walls, By South Wall, By West Wall.

Cultivar 'Fiesta': Woodland, Sunny Edge, Dappled Shade, By Walls, By South Wall, By West Wall.

**Edible Uses**

Flowers; Fruit; Leaves; Oil.

Fruit - raw or dried for winter use. The dried fruits are the raisins, sultanas and currants of commerce, different varieties producing the different types of dried fruit. A fully ripened fresh fruit is sweet, juicy and delicious. The fruit juice can be concentrated and used as a sweetener. This fruit is widely used in making wine.

Leaves - cooked. Young leaves are wrapped around other foods and then baked, they impart a pleasant flavour.

Young tendrils - raw or cooked. The flower clusters are used as a vegetable. An edible oil similar to sunflower oil is obtained from the seed. It needs to be refined before it can be eaten. A polyunsaturated oil, it is suitable for mayonnaise and cooking, especially frying.

Sap - raw. Used as a drink, it has a sweet taste. The sap can be harvested in spring and early summer, though it should not be taken in quantity or it will weaken the plant. The roasted seed is a coffee substitute. Cream of tartar, also known as potassium bitartrate, a crystalline salt, is extracted from the residue of pressed grapes, and from the sediment of wine barrels. It is used in making baking powder.

**Medicinal Uses**

Disclaimer

Analgesic; Antiinflammatory; Astringent; Bact; Demulcent; Diuretic; Hepatic; Laxative; Lihotropic; Skin; Stomachic.

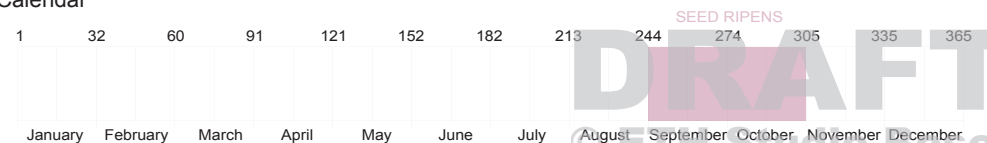
**Other Uses**

Dye; Miscellany.

**Cultivation details**

Prefers a deep rich moist well-drained moderately fertile loam. Grows best in a calcareous soil, but dislikes excessively chalky soils. Prefers a pH in the range 6.5 to 7 but tolerates a range from 4.3 to 8.6. Succeeds in sun or partial shade though a warm sunny sheltered position is required for the fruit to ripen. Very commonly grown in the temperate zones of the world for its edible fruit, there are many named varieties, some of which have been developed for their use as a dried fruit, others for dessert use and others for wine.

Calendar



DRAFT  
 © ETH Studio Basel

| EUROPEAN SILVER FIR |  
 | WEISSTANNE |  
 | *Abies alba* |  
 | WINTER  
 | 01

PERCEIVERS+ SPECIFIC



IMPRESSIVE MOMENT: The leaves are needle-like, flattened, 1.8-3 cm long and 2 mm wide by 0.5 mm thick, glossy dark green above, and with two greenish-white bands of stomata below. The tip of the leaf is usually slightly notched at the tip. Silver Fir is the species first used as a Christmas tree.

time: from the middle of November to the end of February  
 program: exceptional green color during the winter



*Abies alba*

**Physical Characteristics**

An evergreen tree growing to 45m by 15m at a fast rate. It is in leaf all year, in flower from April to May, and the seeds ripen from September to October. The scented flowers are monoecious (individual flowers are either male or female, but both sexes can be found on the same plant) and are pollinated by Wind.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and can grow in heavy clay soil. The plant prefers acid and neutral soils. It can grow in full shade (deep woodland) semi-shade (light woodland) or no shade. It requires moist soil. It cannot tolerate atmospheric pollution.

**Habitats and Possible Locations**

Woodland, Canopy.

**Edible Uses**

Inner bark.

Inner bark - cooked. It is dried, ground into a powder and then used as a thickening in soups etc or mixed with cereals when making bread.

**Medicinal Uses**

Disclaimer

Antibiotic; Antirheumatic; Antiseptic; Astringent; Balsamic; Diuretic; Expectorant; Vasoconstrictor; Vulnerary.

**Other Uses**

Essential; Lacquer; Paint; Resin; Tannin; Wood.

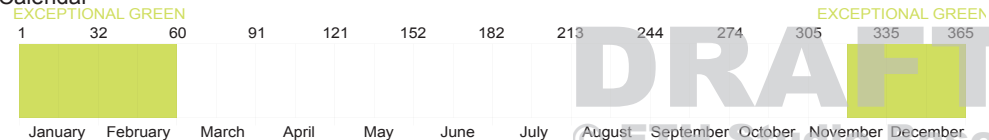
**Cultivation details**

Prefers a good moist but not water-logged soil though it tolerates most soils except infertile sands and peats. Grows well in heavy clay soils. Prefers a slightly acid soil, with a pH down to about 5, and a north-facing slope. Plants are very shade tolerant and this species has often been used to underplant in forests, but growth is slower in dense shade. Intolerant of atmospheric pollution. Requires a generous rainfall and a sheltered position. Intolerant of windy sites.

The silver fir is a very hardy plant when dormant but it comes into growth in April and is then susceptible to damage by late frosts and aphids. This species is particularly subject to aphid infestation in many parts of the country, and is also prone to dieback and rust caused by fungal infections. Trees are slow growing for the first few years but from the age of around 6 years growth accelerates and height increases of 1 metre a year are not uncommon.

Grows best in moist valleys in Scotland and in S.W. England where it often self-sows. This species also thrives in E. Anglia. Another report says that this species is not happy in the hot, dry, Lower Thames Valley, and does not thrive in many low-lying and frosty parts of southern England. It has been planted as a timber tree in northern and western Europe. It is also commonly used as a 'Christmas tree'.

Calendar



| EUROPEAN SPINDLE |  
 | GEWÖHNLICHER SPINDELSTRAUCH |  
 | *Euonymus europaeus* |  
 | WINTER  
 | 02

SPECIFIC



**IMPRESSIVE MOMENT:**The capsular fruit ripens in autumn, and is red to purple or pink in colour and approximately 1-1.5 cm wide. When ripe, the four lobes split open to reveal the orange seeds. It is a popular ornamental plant in gardens and parks due to its bright pink or purple fruits and attractive autumn coloring, in addition to its resistance to frost and wind.



*Euonymus europaeus*

**Physical Characteristics**

A deciduous shrub growing to 6m. It is in flower from May to June, and the seeds ripen from September to November. The flowers are hermaphrodite (have both male and female organs) and are pollinated by insects.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils and can grow in very alkaline soil. It can grow in semi-shade (light woodland) or no shade. It requires dry or moist soil.

**Habitats and Possible Locations**

Woodland, Sunny Edge, Dappled Shade, Shady Edge.

**Edible Uses**

Coloring; Manna.

An edible yellow dye is obtained from the fruit and seed. Pink from the fruit case, orange from the seed. These reports should be treated with some caution since many members of this genus are poisonous. One report suggests that the plant is a source of a manna, there are no further details.

**Medicinal Uses**

Disclaimer

Alterative; Cholagogue; Hepatic; Laxative; Purgative; Stimulant; Tonic.

**Other Uses**

Charcoal; Dye; Insecticide; Latex; Oil; Parasiticide; Wood.

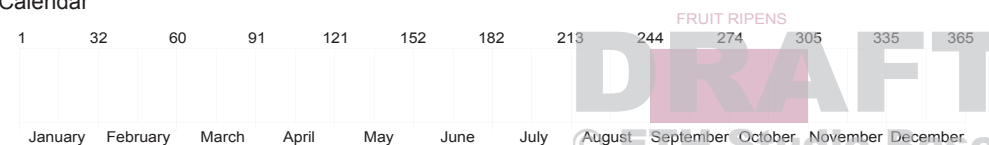
**Cultivation details**

An easily grown plant, it thrives in almost any soil, including chalk, and is particularly suited to dry shaded areas. Prefers a well-drained loamy soil. If cultivated for its latex it is best grown in a dry open position. A very cold-hardy plant, tolerating temperatures down to about -25°C. A very ornamental plant, there are many named varieties.

This species is often damaged by caterpillars during the flowering season. It is a favoured home for black fly, so should not be grown near broad beans.

**time:** from the beginning of September to the end of October  
**program:** seed ripening watching

Calendar



| SNOWDROP |  
 | SCHNEEGLÖCKCHEN |  
 | *Galanthus nivalis* |  
 | WINTER  
 | 03

PERCEIVERS



*Galanthus nivalis*

**Physical Characteristics**

Bulb growing to 0.2m by 0.08m . It is in leaf from January to June, in flower from February to March, and the seeds ripen from May to June. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees.

The plant prefers medium (loamy) and heavy (clay) soils. The plant prefers acid, neutral and basic (alkaline) soils. It can grow in semi-shade (light woodland). It requires moist soil.

**Habitats and Possible Locations**

Meadow, Woodland, Dappled Shade, Shady Edge.

**Edible Uses**

None known

**Medicinal Uses**

Disclaimer  
 Emmenagogue.

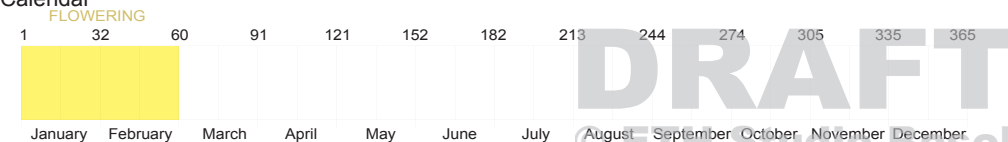
**Cultivation details**

Prefers a moist heavy loam, growing well in grass or amongst shrubs. Prefers a shady position. The dormant bulbs are fairly hardy and will withstand soil temperatures down to at least -5°C. A very ornamental plant, it grows well on the woodland edge. The bulbs should be planted about 5 - 7cm deep as early in the spring as possible. A good bee plant, providing an early source of pollen and nectar.

IMPRESSIVE MOMENT: The Common Snowdrop is the best-known representative of a small genus of about 20 species in the family Amaryllidaceae that are among the first bulbs to bloom in spring. It tells people that the coming of Spring is soon.

time: from the beginning of January to the end of February  
 program: blossom watching

Calendar



| EUROPEAN HOLLY |  
 | EUROPÄISCHE STECHPALME |  
 | *Ilex aquifolium* |  
 | WINTER  
 | 04

PERCEIVERS



IMPRESSIVE MOMENT: the fruit is a red berry 6-10 mm diameter, containing four seeds; although mature in late autumn, they are very bitter so are rarely touched by birds until late winter after frost has made them softer and more palatable. It is also a very popular ornamental tree in its native range. Female clones are particularly popular, with the shoots with berries being used as a traditional Christmas decoration.

time: from the beginning of November to the end of March  
 program: seed ripening watching



*Ilex aquifolium*

**Physical Characteristics**

An evergreen shrub growing to 9m by 5m at a slow rate. It is in leaf all year, in flower from May to June, and the seeds ripen from November to March. The scented flowers are dioecious (individual flowers are either male or female, but only one sex is to be found on any one plant so both male and female plants must be grown if seed is required) and are pollinated by Bees. The plant is not self-fertile. It is noted for attracting wildlife.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and can grow in heavy clay and nutritionally poor soils. The plant prefers acid, neutral and basic (alkaline) soils and can grow in very acid soil. It can grow in full shade (deep woodland) semi-shade (light woodland) or no shade. It requires dry or moist soil and can tolerate drought. The plant can tolerate maritime exposure. It can tolerate atmospheric pollution.

**Habitats and Possible Locations**

Hedge, Woodland, Secondary, Sunny Edge, Dappled Shade, Shady Edge, Deep Shade, Ground Cover.

**Edible Uses**

Tea.  
 The leaves have been used as a tea substitute. The roasted fruit has been used as a coffee substitute. Some caution is advised here, since the fruit can be purgative and emetic.

**Medicinal Uses**

Disclaimer  
 Astringent; Bactericidal; Diaphoretic; Diuretic; Emetic; Expectorant; Febrifuge; Purgative.

**Other Uses**

Fuel; Ground cover; Hedge; Wood.

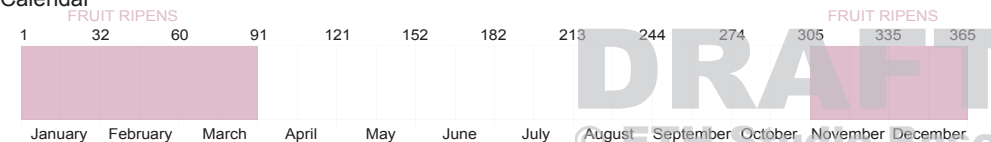
**Cultivation details**

Succeeds in most soils, including peat, chalk, gravels, sand and shales, so long as they are not water-logged, though wild plants are occasionally found in situations with standing winter water. Grows well in heavy clay soils. Established plants are fairly drought tolerant. Dislikes dry soils according to one report whilst another says that it succeeds in dry shade. Tolerates a pH range from 3.5 to 7.2. Succeeds in full sun or fairly dense shade, self-sown seedlings from woods and shady places making the most shade tolerant plants. Tolerant of maritime exposure though in such a situation it may lose some or all its leaves in the winter.

Plants require a minimum July temperature of 12°C for good fruit production. They tolerate short periods in winter down to -15°C. Severe frosts can kill whole branches, especially if they are open to the sky. The young growth in spring can be damaged by late frosts.

A very ornamental plant, there are many named varieties. Flowers and fruits are formed on wood of the previous year's growth. A good bee plant, the minute flowers are sweetly scented. The fruit is a valuable winter food source for birds.

Calendar



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| NORWAY SPRUCE |  
 | GEMEINE FICHTE |  
 | *Picea abies* |  
 | WINTER  
 | 05

PHENOLOGY+ SPECIFIC



**IMPRESSIVE MOMENT:** The leaves are needle-like, 12-24 mm long, quadrangular in cross-section (not flattened), and dark green on all four sides with inconspicuous stomatal lines. The cones are 9-17 cm long (the longest of any spruce), and have triangular-pointed scale tips. They are green or reddish, maturing brown 5-7 months after pollination.



*Picea abies*

**Physical Characteristics**

An evergreen tree growing to 30m by 10m at a fast rate. It is in leaf all year, in flower from May to June, and the seeds ripen from October to November. The scented flowers are monoecious (individual flowers are either male or female, but both sexes can be found on the same plant) and are pollinated by Wind. It is noted for attracting wildlife.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and can grow in nutritionally poor soil. The plant prefers acid and neutral soils and can grow in very acid soil. It cannot grow in the shade. It requires moist or wet soil. The plant can tolerate maritime exposure. It cannot tolerate atmospheric pollution.

**Habitats and Possible Locations**

Bog Garden, Woodland, Canopy, Ground Cover.

**Edible Uses**

Flowers; Inner bark; Seed; Tea.

Young male catkins - raw or cooked. Used as a flavouring. Immature female cones - cooked. The central portion, when roasted, is sweet and syrupy.

Inner bark - dried, ground into a powder and used as a thickener in soups etc or added to cereals when making bread. An emergency food, used when all else fails.

Seed - raw. Rich in oil and with a pleasant slightly resinous flavour, but too small and fiddly to be worthwhile unless you are desperate. A refreshing tea, rich in vitamin C, can be made from the young shoot tips. These tips are also used in making spruce beer.

**Medicinal Uses**

Disclaimer

Antibiotic; Antiseptic; Balsamic; Expectorant; Poultice; Sedative.

**Other Uses**

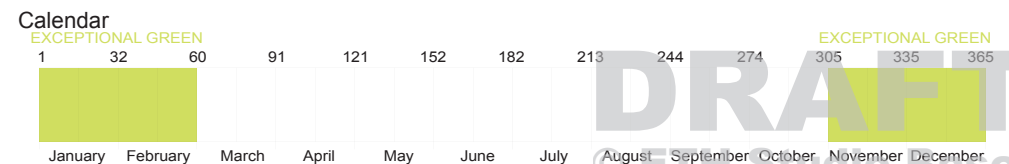
Adhesive; Essential; Ground cover; Pitch; Shelterbelt; Tannin; Varnish; Wood.

**Cultivation details**

Likes abundant moisture at the roots, if grown in drier areas it must be given a deep moist soil. Succeeds in most soils including those that are wet cold and shallow, but it is not very wind-firm in shallow soils. Intolerant of chalky or poor acid soils. Tolerates poor peaty soils. Prefers a pH between 4 to 6. Dislikes shade according to one report whilst another says that it is moderately shade tolerant. Intolerant of atmospheric pollution. Resists wind exposure to some degree and is tolerant of saline winds.

A very cold-hardy tree when fully dormant, though the young shoots are subject to injury by late frosts, though less so than *P. sitchensis*. A fast growing tree, it is widely planted in cool temperate zones for its wood. Young trees often grow 1 metre or more a year and can sustain an average of 60cm for at least the first 60 years though growth tails off as they grow older. Probably not that long-lived in Britain, about 200 years seems the absolute maximum.

**time:** from the beginning of November to the end of February  
**program:** exceptional green color during the winter



| COLTSFOOT |  
 | HUFLATTICH |  
 | *Tussilago farfara* |  
 | WINTER  
 | 06

PHENOLOGY



**IMPRESSIVE MOMENT:** The flowers, which superficially resemble dandelions, appear in early spring before dandelions. Leaves do not appear usually until after the seeds are set. Crushed flowers supposedly cured skin conditions, and the plant has been consumed as a food item.

**time:** from the beginning of February to the end of April  
**program:** blossom watching



*Tussilago farfara*

**Physical Characteristics**

Perennial growing to 0.22m by 1m at a fast rate. It is in flower from February to April, and the seeds ripen from March to May. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Bees and flies. The plant is self-fertile.

The plant prefers light (sandy), medium (loamy) and heavy (clay) soils and can grow in heavy clay soil. The plant prefers acid, neutral and basic (alkaline) soils and can grow in very alkaline soil. It can grow in semi-shade (light woodland) or no shade. It requires moist soil. The plant can tolerate maritime exposure.

**Habitats and Possible Locations**

Meadow, Hedgerow, Woodland, Sunny Edge, Dappled Shade.

**Edible Uses**

Flowers; Leaves; Salt; Tea.

Flower buds and young flowers - raw or cooked. A pleasant aniseed flavour, they add a distinct aromatic flavour to salads.

Young leaves - raw or cooked. They can be used in salads, added to soups, or cooked as a vegetable. The leaves have a bitter taste unless they are washed after being boiled. An aromatic tea is made from the fresh or dried leaves and flowers. It has a liquorice-like flavour. The dried and burnt leaves are used as a salt substitute. The slender rootstock is candied in sugar syrup.

**Medicinal Uses**

Disclaimer

Antitussive; Astringent; Bitter; Demulcent; Diaphoretic; Emollient; Expectorant; Skin; Stimulant; Tonic.

**Other Uses**

Compost; Oil; Soil stabilization; Stuffing; Tinder.

**Cultivation details**

A very easily grown plant, it succeeds in most soils when grown in full sun. It prefers a moist neutral to alkaline soil and will also succeed in partial shade. Plants are hardy to about -29°C.

Coltsfoot is a very tough plant that is more than capable of looking after itself. When well sited its roots will spread very freely sending up new shoots at some distance from the clump even if growing amongst dense weed competition. This can make it a problem weed in gardens, so either choose your site with care or find some means of restraining it such as by planting in a large tub that is buried in the ground. The rhizomes can lay dormant in the soil for many years, emerging when the soil is disturbed.

Calendar



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# 4.PROPOSAL

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# 4.1 AIM OF THE PROPOSAL

The aim of this chapter is to explain the proposal for Metrobasel, a series of parks in Metrobasel that enhance the identity of the region.

In sub chapter 4.2 SITE INTRODUCTION, the site of the parks in the territory will be located, and an overall view on the potential of these parks will be indicated in relation to the big natural elements and the city.

In sub chapter 4.3 SITE ANALYSIS, the locations of the 4 parks will be studied with maps in terms of area, political border, soil, topography, zoning, and use. And with photos from the fieldworks the recent situation will be described. The selective process of the prominent species for each park will be explained in sub chapter 4.4. The concrete proposals about each park will be developed in sub chapters 4.5 to 4.8.

And in sub chapter 4.9, looking at all parks as an entity, the meanings of four parks will be considered with mapping possible links to cultural events, transportations from the city and intervention to the urbanized areas.

# 4.2 FOUR METROPARKS - INTRODUCTION OF THE SPECIFIC SITES

## 4.2.1 LOCATION

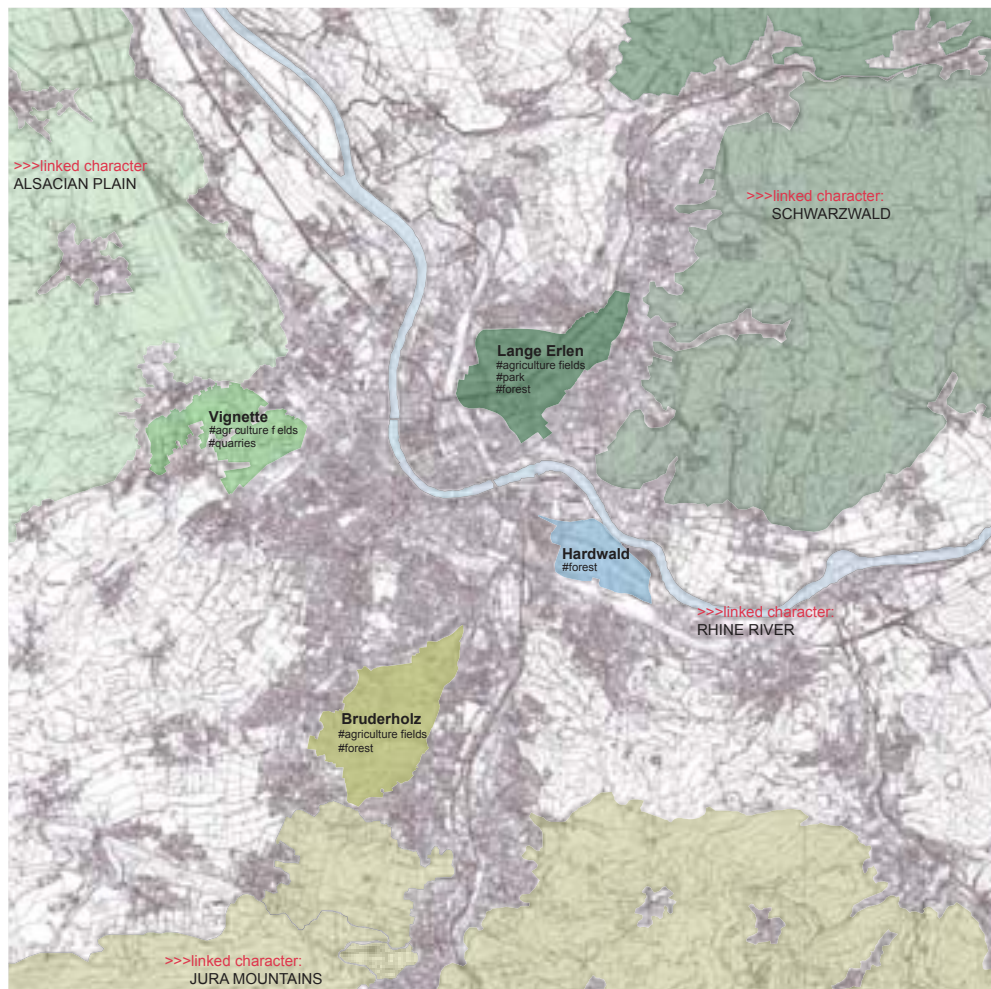
When we take careful look at a standard black and white vector map, we can clearly perceive 4 voids that are surrounded by urbanized area in the periphery of the city of Basel.



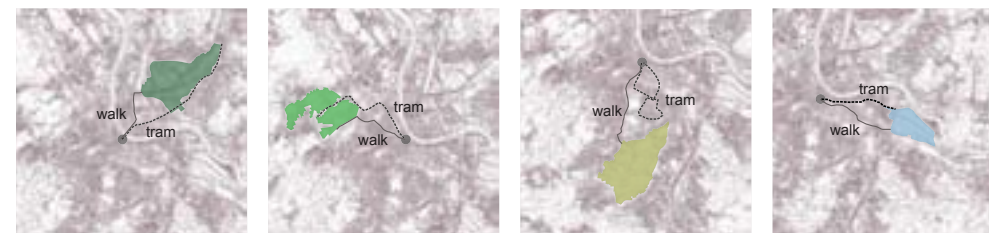
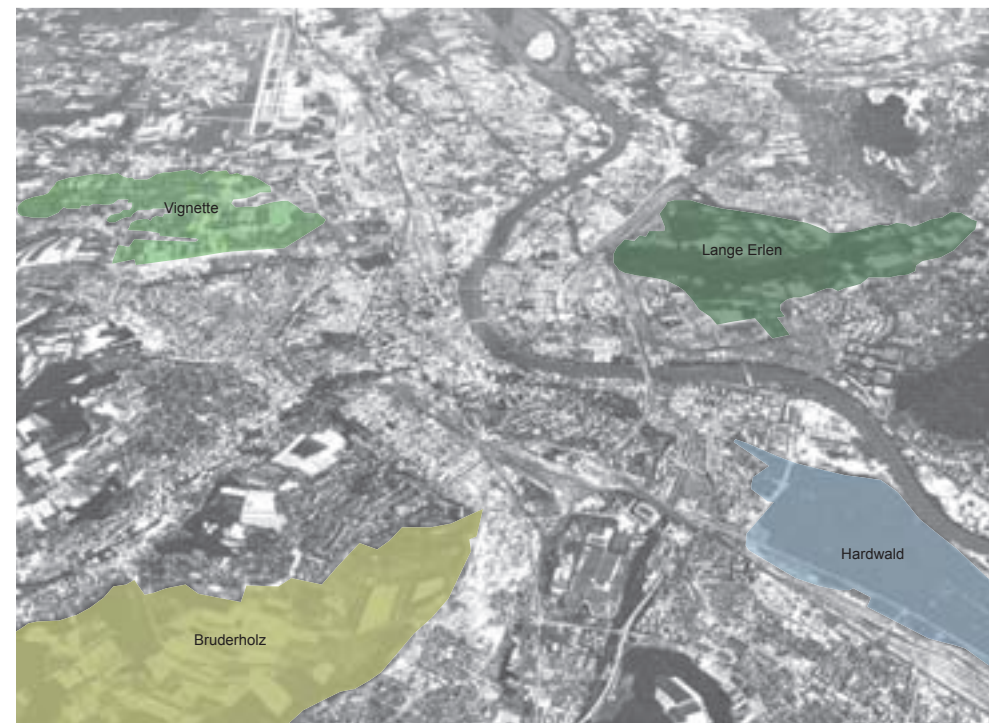
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As is shown at the last two pages, these four void voids are the areas that have much less density than Basel City [fig. 4-2] and they are encompassed with the urbanized area of Basel City. In fact, this edge location of four parks provides the other edge-condition that they are in the edge of Big Natural Elements which surround and identify Metrobasel. In the case of Lange Erlen, the park is on the edge of Black Forest (Germany). Vignette area is part of the Alsacian Plain (France). Bruderholz area is on the edge of Jura mountains (Switzerland), and Hardwald is part of the alluvial plains from the Rhine river (International) [fig. 4-1].

[fig. 4-1] FOUR METROPARKS AT THE EDGE OF THE BIG NATURAL ELEMENTS



[fig. 4-2] AERIAL MAGE



**LANGE ERLER**  
 >>>BVB tram 6 Schifflande to Eglisee (south part Lange Erlen). 11mins.  
 >>> walking trip. 35 mins.

**VIGNETTE**  
 >>>DISTRIBUS bus line 4 Schifflande to Carrefour Central + DISTRIBUS bus line 2 Carrefour Central to Vignette. 20 mins.  
 >>> walking trip. 40 mins.

**BRUDERHOLZ**  
 >>>BVB tram 15 Schifflande to Bruderholz. 22 mins.  
 >>>BVB tram 16 Schifflande to Bruderholz. 22 mins.  
 >>> walking trip. 40 mins.

**HARDWALD**  
 BVB tram 3 Barfusserplatz to Birsfelden hard. 14 mins.  
 >>> walking trip. 30 mins.

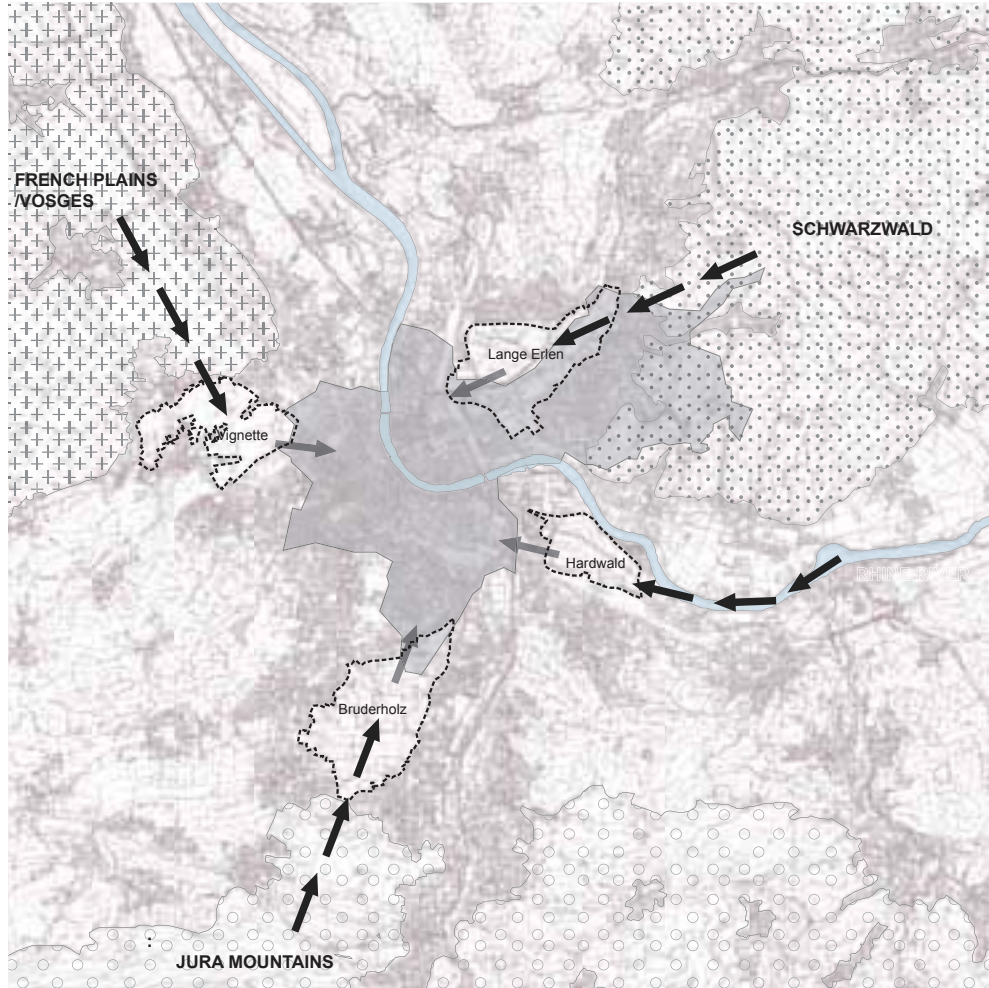
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## 4.2.2 POSSIBLE TWO INTERVENTIONS

The edge condition of the four areas has the potential to give a character to those areas. Because of their location, the four areas can be seen as a media between

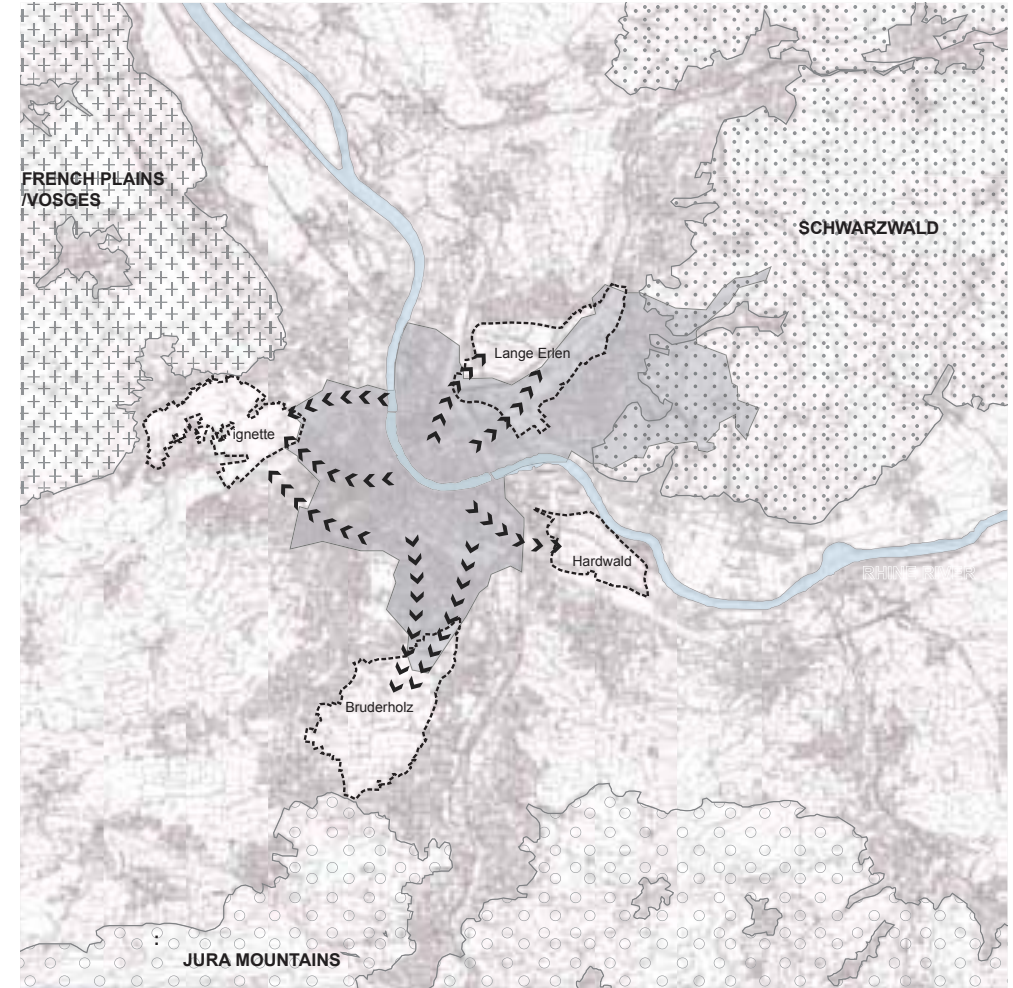
the Big Natural Elements and the city Basel for the necessary intermediate step from one to the other.

In that sense, Schwarzwald, Jura mountains, Alsacian plain, and the Rhine river can use these four parks as a media to reach the city, to bring to the city the character of these Big Natural Elements, and that way, to enhance the identity of the city and the rooting to its environment in a larger scale. [fig.4-3]



[fig.4-3] INTERVENTION 1: "BIG NATURAL ELEMENTS"

Because of the close access to the four parks from Basel City, it is also possible to cover the opposite direction, to bring the events of the city to the four Metroparks, and that way, to intensify the understanding of these parks as with the links to the urban situation. [fig.4-4]



[fig.4-4] INTERVENTION 2: "CITY"

# 4.3 SITE ANALYSIS

## 4.3.1 MAP ANALYSIS

The aim of map analysis is to value the current conditions of the areas previous to the proposal itself, and to evaluate those criteria that should be influential for the development of the vegetation.

The criteria are "AREA", "POLITICAL BORDER", "SOIL", "TOPOGRAPHY", "ZONING", "USE(SATELLITE)", and the scale of the maps are all in 1/ 40000.



**AREA**

The 4 Metroparks consist of a total surface 18.7 km<sup>2</sup>. To have an idea of the dimension of this areas it is useful to make a comparison to the surface of prominent parks in other cities. As a selection of cities, those cities widely used as a reference in the Metrobasel report, are used for the comparison.

“THE FAMOUS CITY PARKS IN THE WORLD”

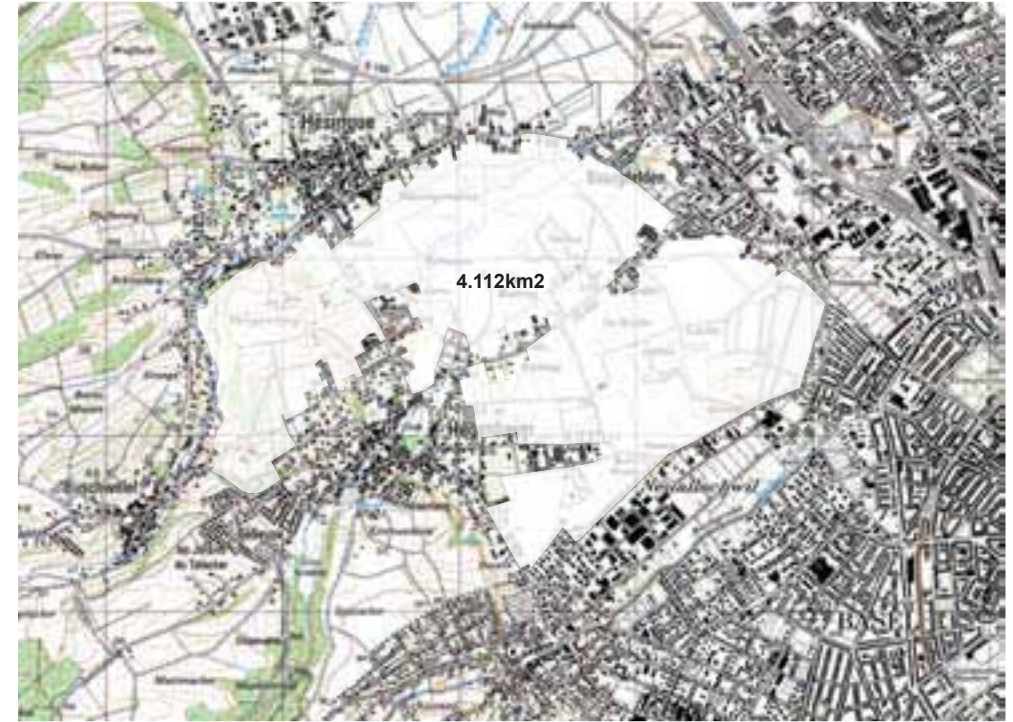
- BOSTON >>>Park: Boston Common, 0,2 km<sup>2</sup>
- NEW YORK >>>Park: Central Park, 3.2 km<sup>2</sup>
- PARIS >>>Park: Parc de la Villette, 0.25 km<sup>2</sup>
- SAN FRANCISCO >>>Park: Golden Gate Park, 4.1 km<sup>2</sup>

- NEW JERSEY >>>Jersey City, Park: Liberty State Park, 4.9 km<sup>2</sup>
- OXFORD >>>Park: Oxford University Parks, 0.3 km<sup>2</sup>
- LONDON >>>Park: Hyde Park, 1.4 km<sup>2</sup>
- ØRESUND >>>Copenhagen, Park: Ørstedsparken, 0.065 km<sup>2</sup>
- ZURICH >>>Park: Irchelpark, 0.32 km<sup>2</sup>

- MUNICH >>>Park: Englischer Garten, 3.7 km<sup>2</sup>
- GENEVA >>>Park: Parc des Bastions, 0.064 km<sup>2</sup>
- VIENNA >>>Park: Wiener Prater, 6 km<sup>2</sup>
- MILAN >>>Park: Giardini Pubblici, 0.16 km<sup>2</sup>



LANGE ERLN



VIGNETTE

**SURFACE COMPARISON**



Lange Erlen  
5.7 km<sup>2</sup>

Vignette  
4.1 km<sup>2</sup>

Bruderholz  
6.4 km<sup>2</sup>

Hardwald  
2.4 km<sup>2</sup>



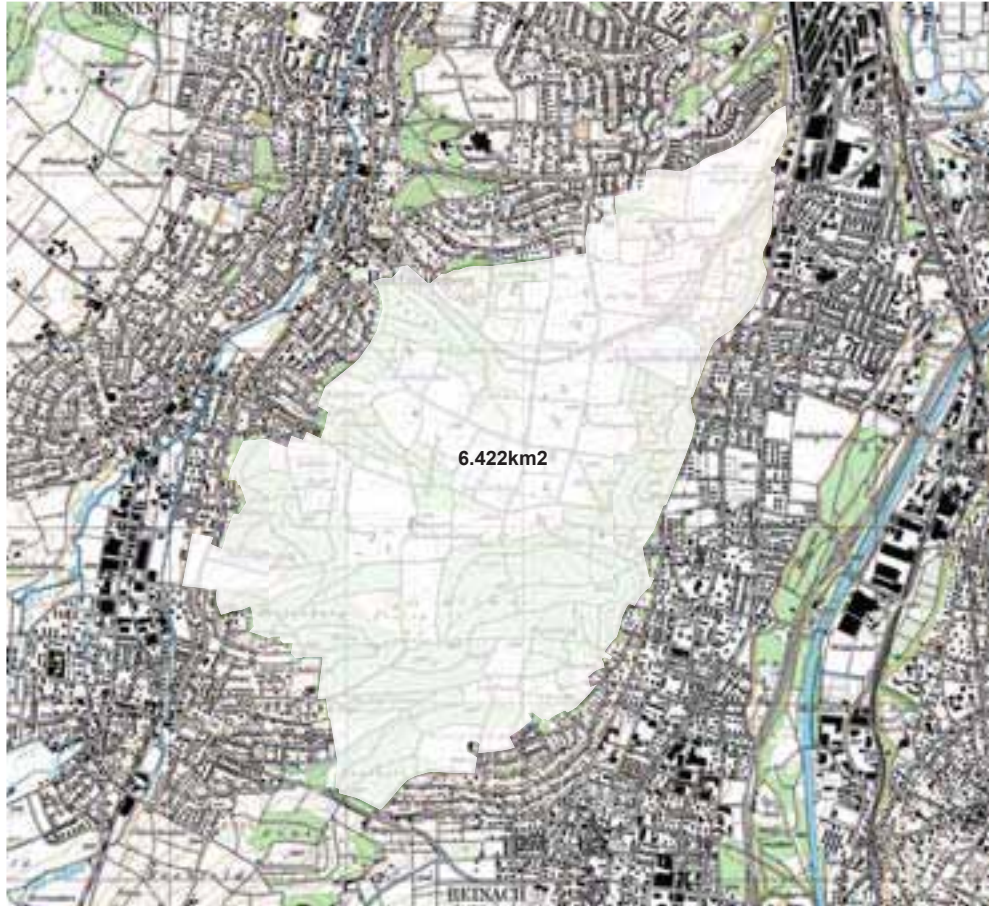
Boston Commons  
0.2 km<sup>2</sup>

Central Park NYC  
3.2 km<sup>2</sup>

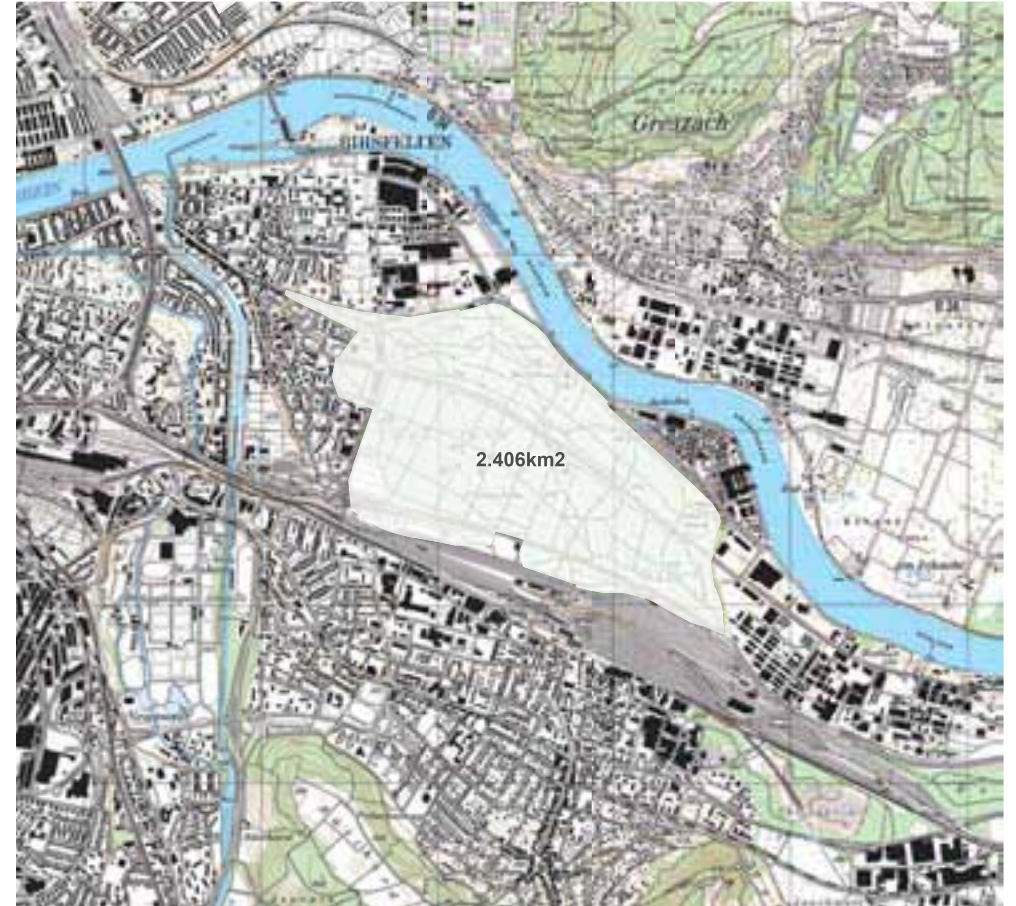
La Villette Paris  
0.25 km<sup>2</sup>

Golden Gate Park San Francisco  
4.1 km<sup>2</sup>

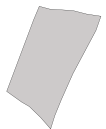
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BRUDERHOLZ



HARDWALD



Liberty State Park Jersey City  
4.9 km<sup>2</sup>



Oxford University Park  
0.3 km<sup>2</sup>



Hyde Park London  
1.4 km<sup>2</sup>



Oresund Copenhagen  
0.07 km<sup>2</sup>



Irchelpark Zurich  
0.32 km<sup>2</sup>



Englischer Garten Munich  
3.7 km<sup>2</sup>



Parc de Bastions Geneva  
0.06 km<sup>2</sup>



Wiener Prater Vienna  
6 km<sup>2</sup>



Giardini Pubblici Milan  
0.16 km<sup>2</sup>

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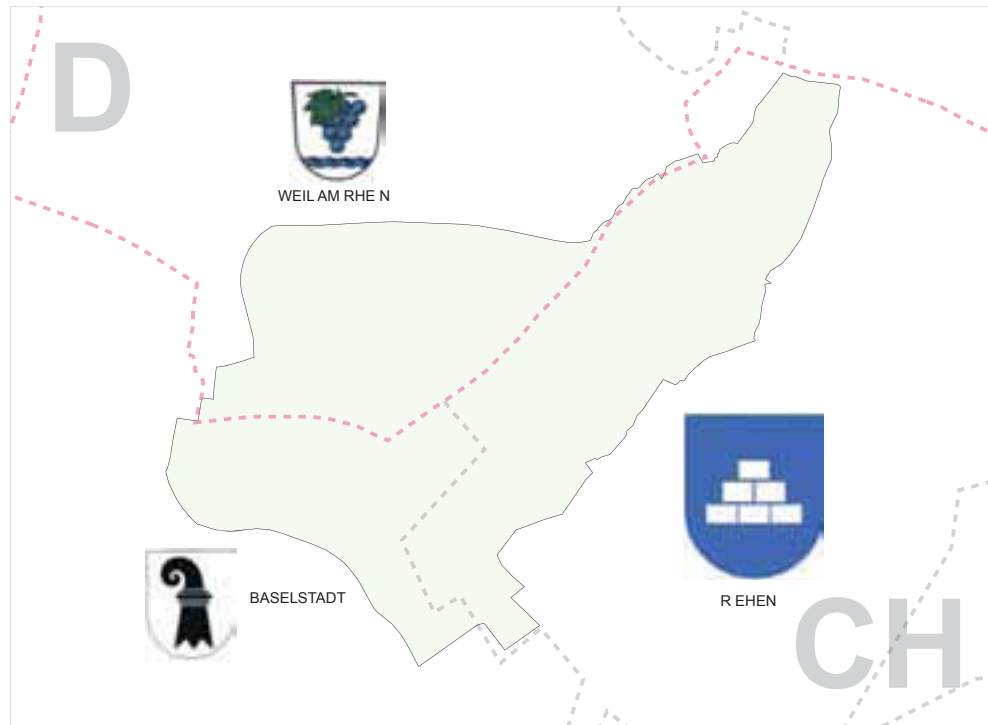
**POLITICAL BORDER**

The areas of these parks are shared by several communities, in Switzerland, in France and in Germany. The communities are very strong entities, and their opinion has to be taken in count for any decision or plan done on the areas they own. Therefore, the future development of the 4 Metroparks will be highly linked to the

interests of the communities involved on the location.

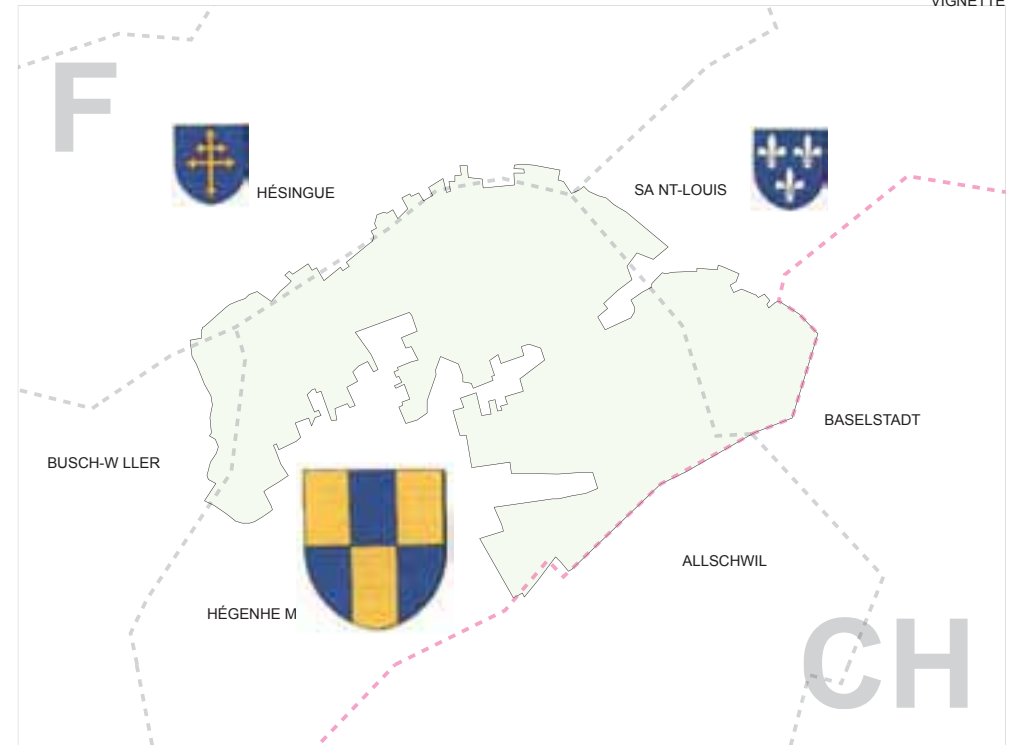
4 Metroparks are not only in Switzerland but crosses the borders to Germany and France. It is important first that each Metropark is understood as one area despite of the political fragmentation.

LANGE ERLÉN



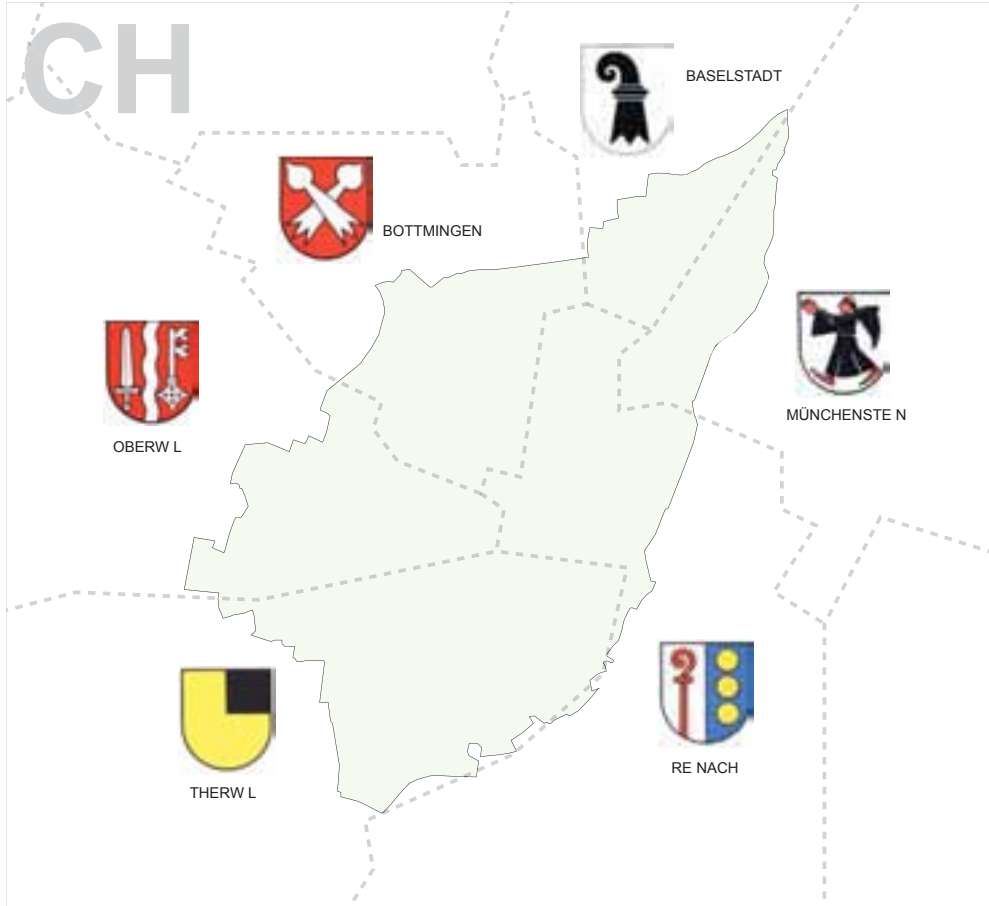
Lange Erlen is on the border between Switzerland and Germany, with a bigger proportion of the area in the Swiss side. Lange Erlen belongs to Basel-stadt to the south, to Riehen in Switzerland to the East, and finally to the city of Weil am Rhein in Germany to the Northwest.

VIGNETTE



In Vignette, all the area belongs to France, to the communities of Saint-Louis, Hésingue, Busch-Willer, and Hégenheim, being the latest the community that owns most of the area.

BRUDERHOLZ



Bruderholz is shared in a similar proportion by the communities of Basel-Stadt, Münchenstein, Reinach, Therwil, Oberwil and Bottmingen.



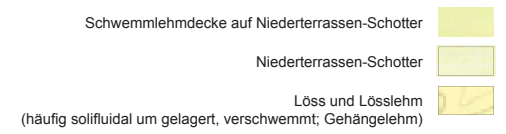
Hardwald is shared between the communities of Birsfelden and Muttenz, though most of the area belongs to Muttenz.

**SOIL**

Three of the 4 parks, Lange Erlen, Vignette and Hardwald, lay in the alluvium plain of the Rhine River. This big geological area is very young, from the last 15.000 years after the last glacial period. Despite this initial homogeneity there are some differences among them. These three areas also have the influence of other 3 big natural elements, the Vogesen, Sundgau and Schwarzwald. Vogesen and Schwarzwald are very old mountain structures, made of silicat rocks. Schwarzwald has an impact in Lange Erlen, that is in the proximity of these

elements. This has a result in the mineralogy of the soil, that is an acid soil. Vignette it is in the alluvial plain, but also it is situated nearby Sundgau, that is a hilly region with loess soil, a sandy soil full of minerals and especially good for agriculture. Hardwald, because of its situation along the river Rhine, has a miscellaneous type of soil, different soils that are brought all together by the river from the Alps. Bruderholz is over the Sundgau area, and it is also in the geological area of influence of Jura mountain system. Jura mountains are made of limestones, and as a

consequence the soil in the area is alcalic. At the same time the rivers that come towards the Rhine from the Jura mountains brings those limestones, like river Birs. These differences between silicium and limestones are very important for vegetation. There is a lot of vegetation living only in Limestone or only in Silicium. In the case of the Rhine it is possible to find all kind of plants because of the heterogeneous minerals that the river is bringing from the Alps.

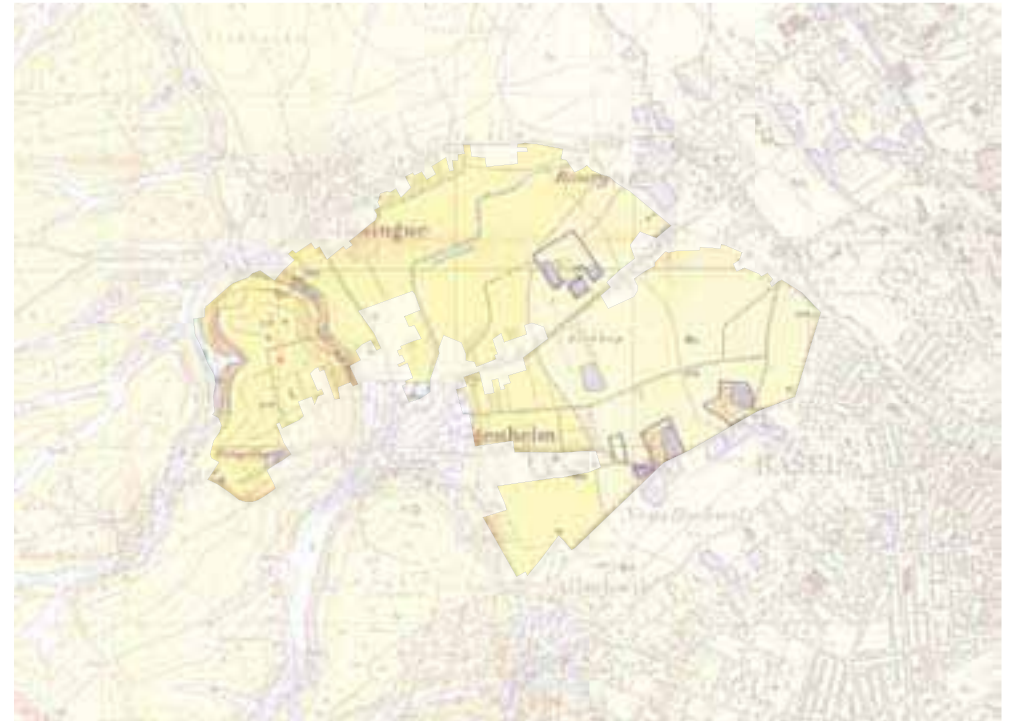


LANGE ERLER



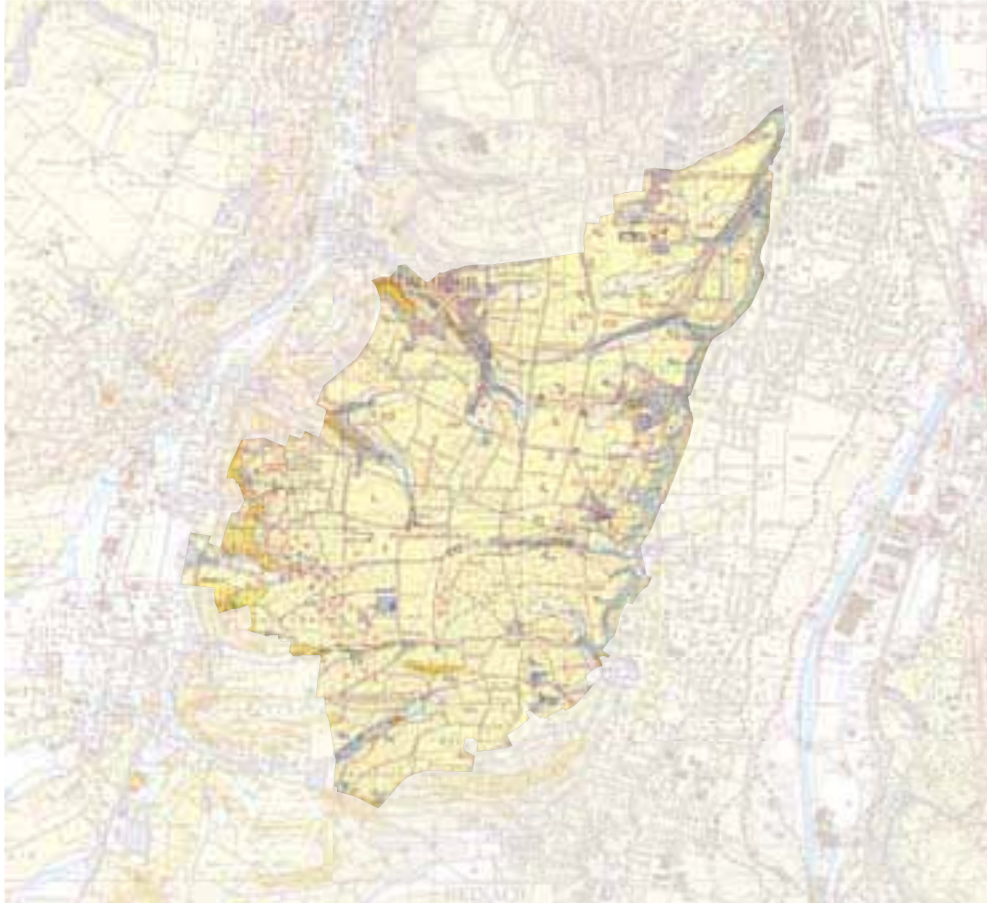
Lange Erlen. The river Wiese brings material from Schwarzwald, Feldberg. Felberg is a very old geological region, Hercynic, with a silicium mineralogy.

VIGNETTE



In all larger scale the soil reference for Vignette is not only the Rhine but also the Vogesen and Sundgau. Vogesen, as Schwarzwald, is a old geological region with silicium soil. Next to Vignette we also find Sundgau, hilly sandy region with loess soil, that blows because of the wind from the hills towards the plain, improving the properties of the soil for agriculture..

BRUDERHOLZ

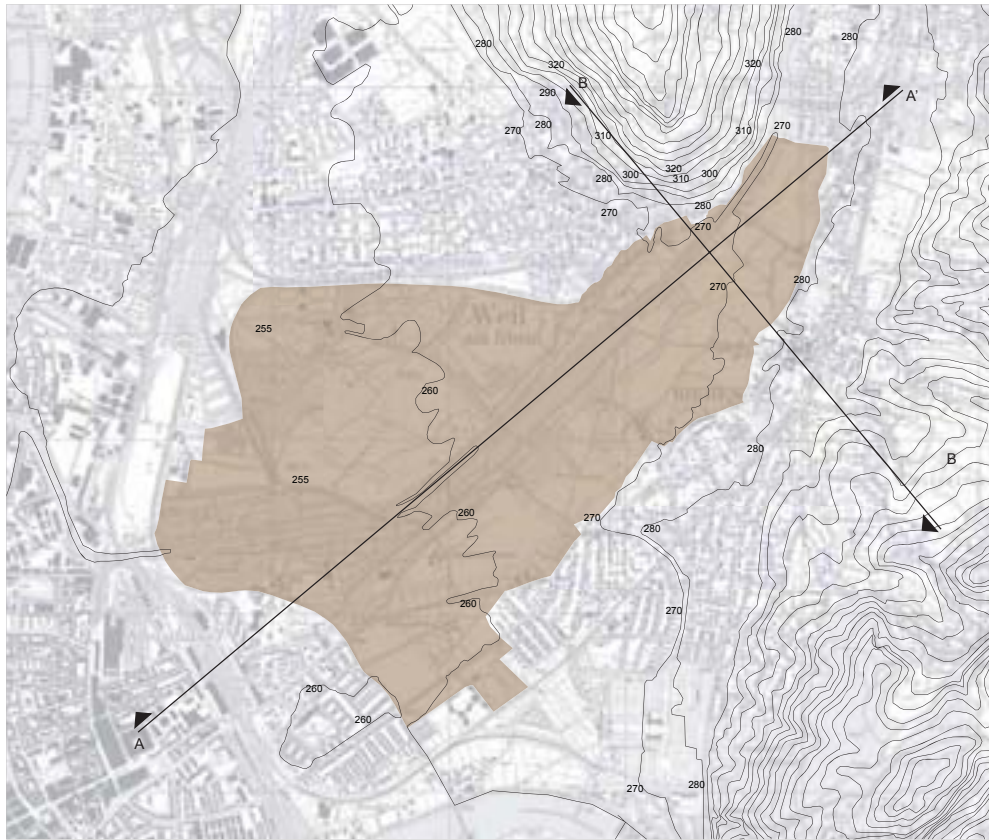


Bruderholz is the most different situation it is the only one of the areas that is not directly situated over the alluvial plain but on the Sundgau area.

HARDWALD



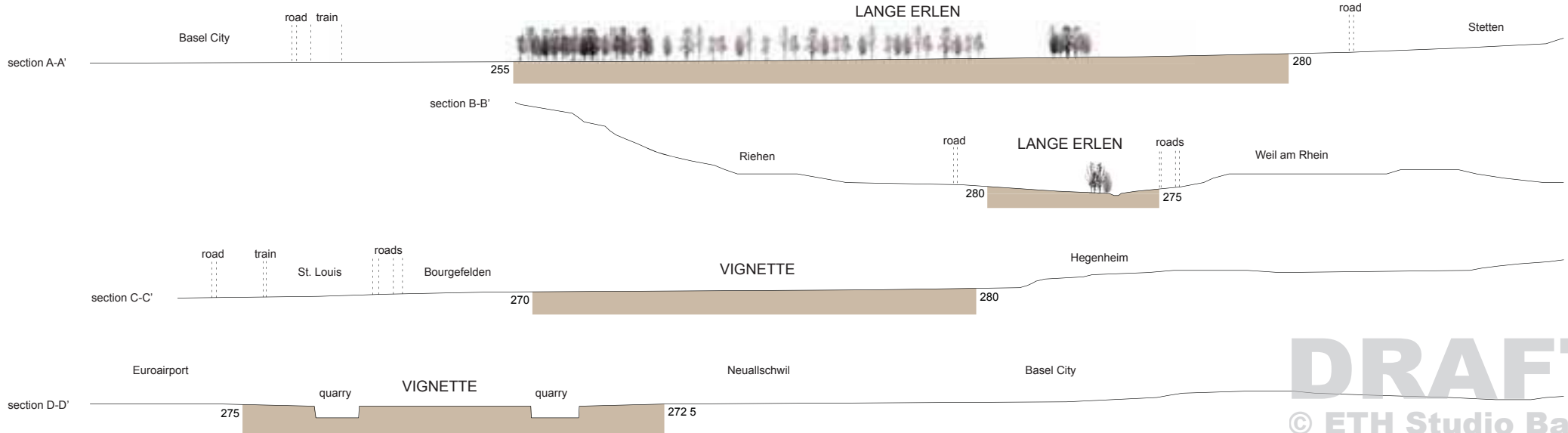
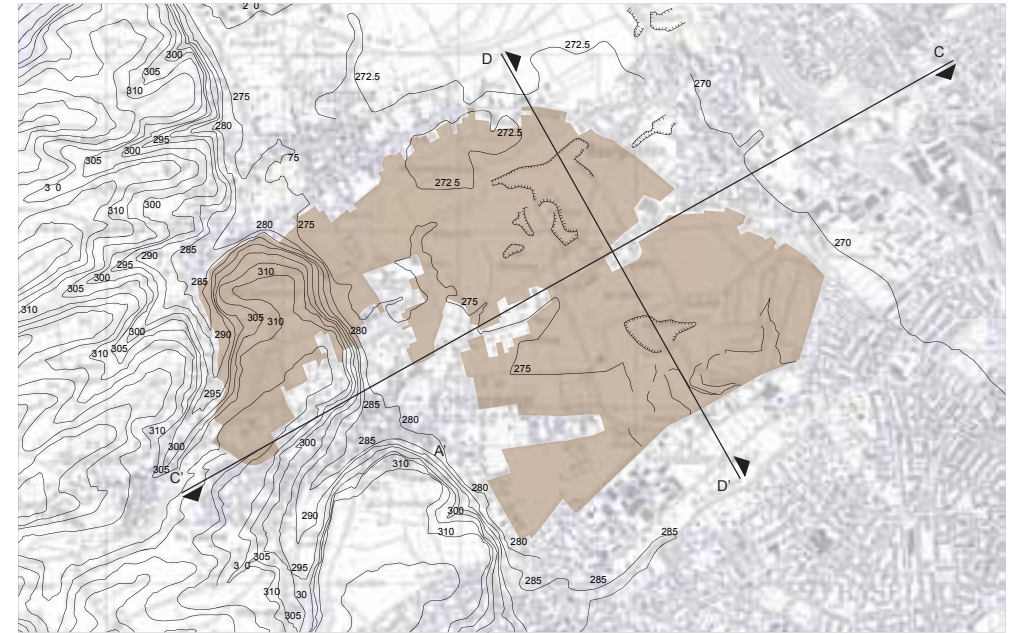
Hardwald. It is directly influenced by the Rhine, that brings heterogeneous materials to the area.



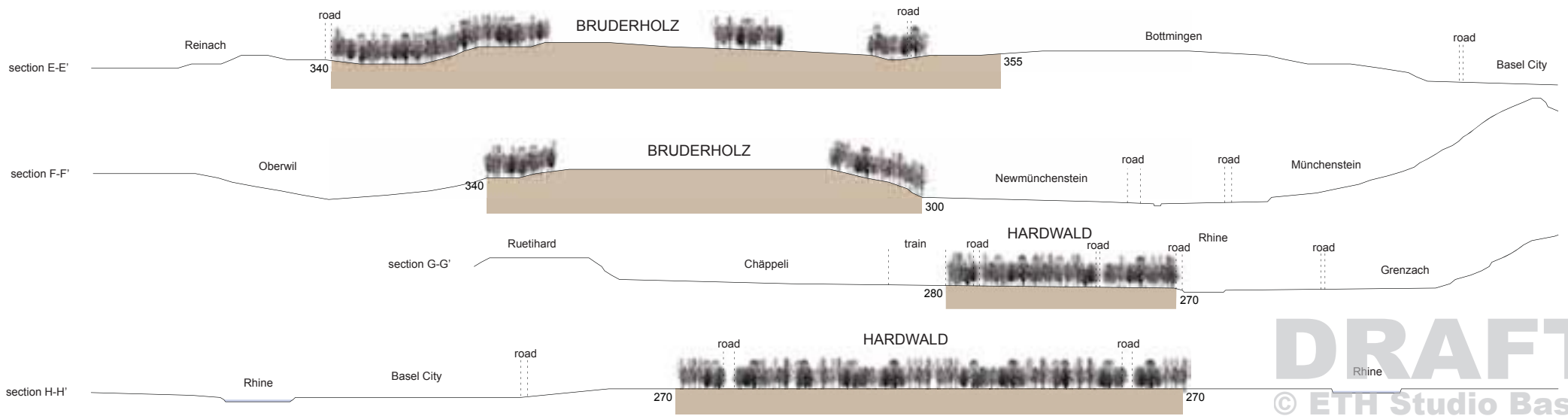
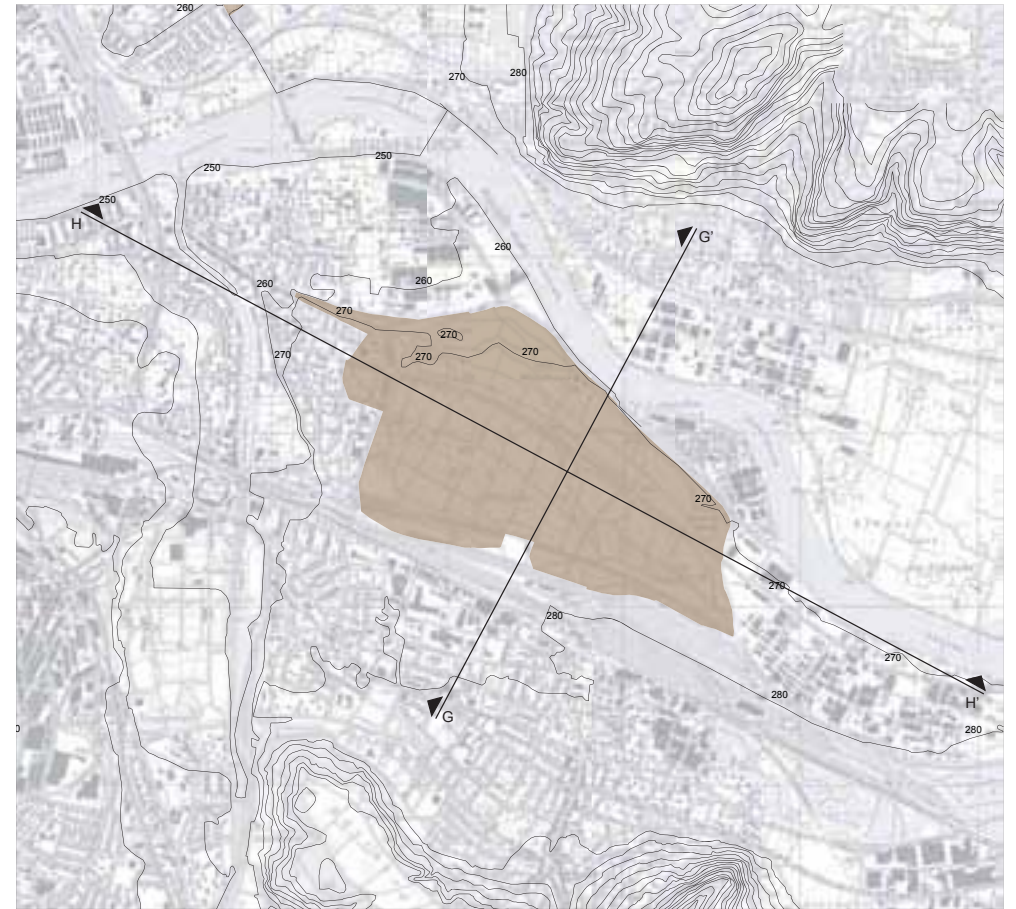
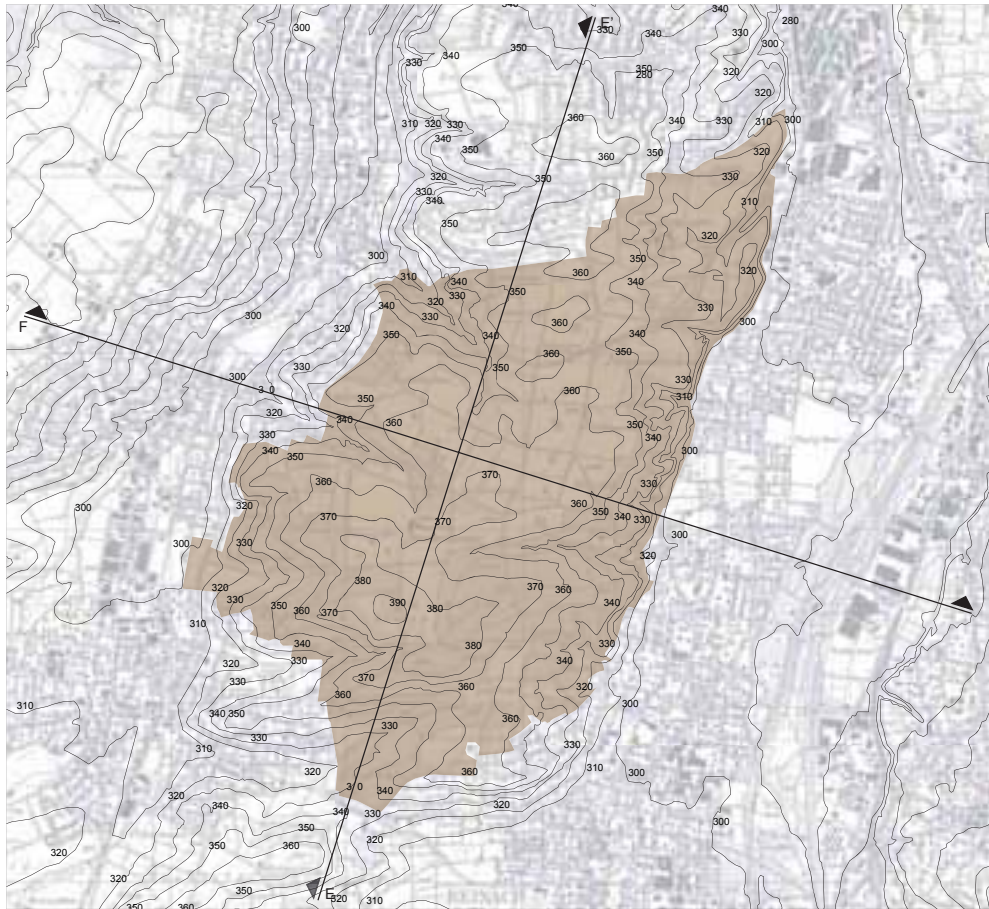
### TOPOGRAPHY

The topography of four Metroparks are basically derived from the Rhine river. The whole area is in the valley of the Rhine river, but especially Hardwald is in the alluvial plain of the Rhine river, with heights close to those of the Rhine on that point. The area of Vignette is also influenced by the alluvial plain and the topography is very flat, but a part of the territory belongs to a

plateau of Sundgau. The area of Lange Erlen is also mainly flat but the altitude is lower than Hardwald or Vignette. That flatness is related to the alluvial plain of the Wiese river. Bruderholz has the most distinguished character in topography that the area is itself the shape of a plateau of Sundgau and is in the highest altitude amongst four Metroparks.



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













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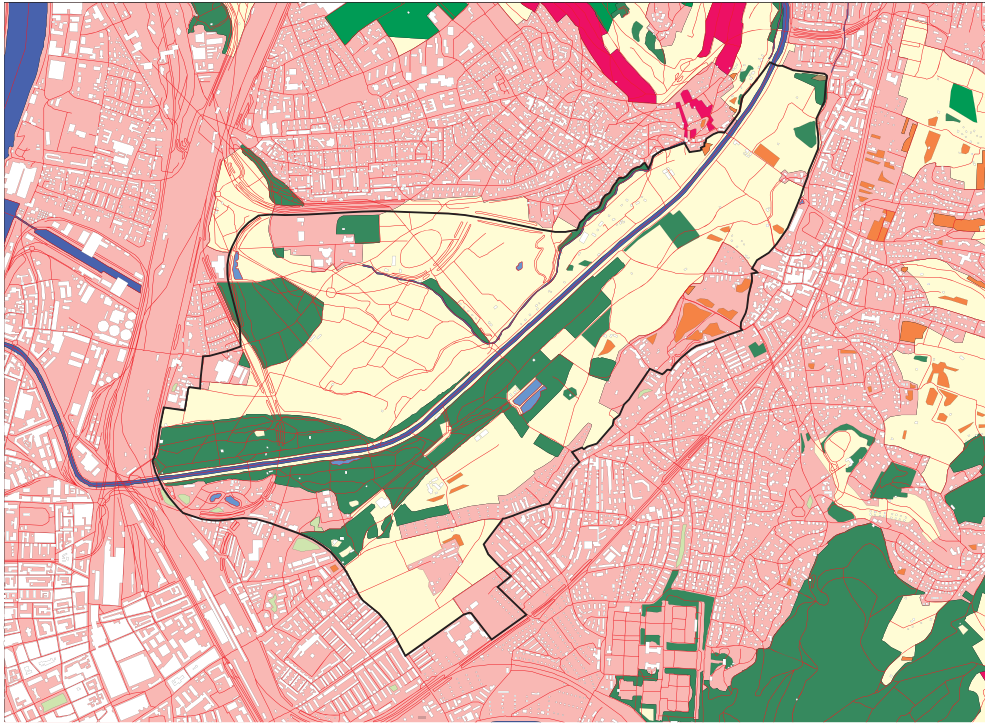


## ZONING

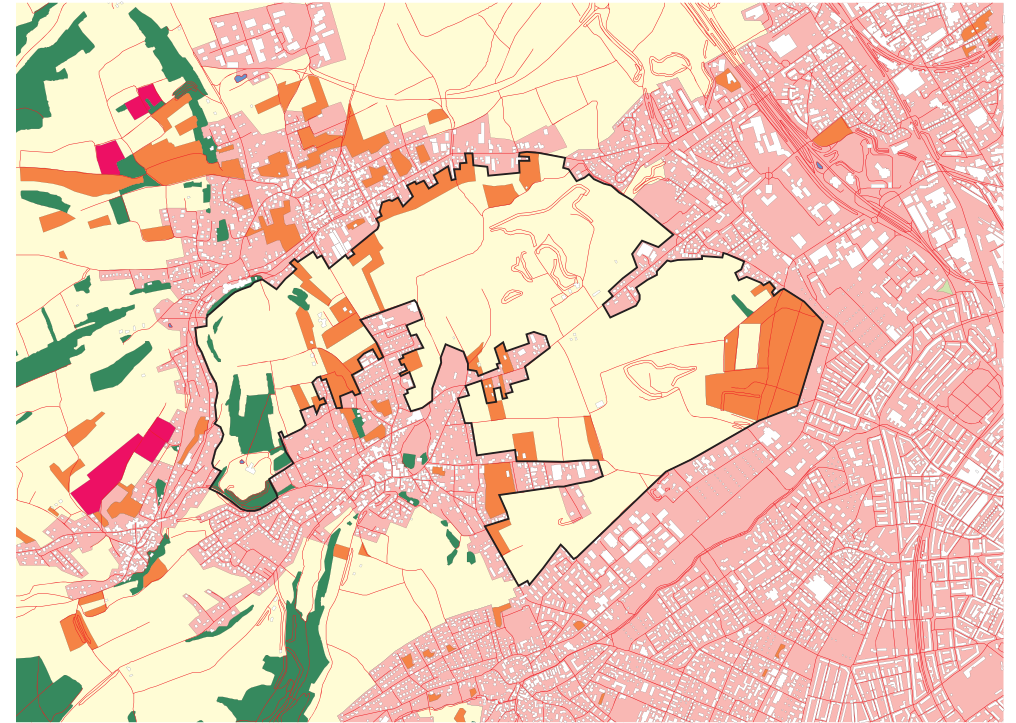
This map analysis is based on the Swisstopo vector data. This data offers a clearer image of the character of these areas, and the relation of these voids that shape the proposed metroparks with the urban areas. Because of these maps we are aware that the proposed Metroparks are completely surrounded by Urban built areas. An additional information supplied by these maps is the existence of trees/forests in the areas. In

that sense there are two extreme situations, Vignette with no forest, and Hardwald, where the forest occupies all its surface. Bruderholz and Lange Erlen have forest in a high proportion, but these forest are situated in a different way. The forest of Lange Erlen occupies mainly the stretch that follows the river Wiese. The forest in Bruderholz occupies a big proportion of the southern part of the area, and it is mainly distributed on the edge to the urban areas.

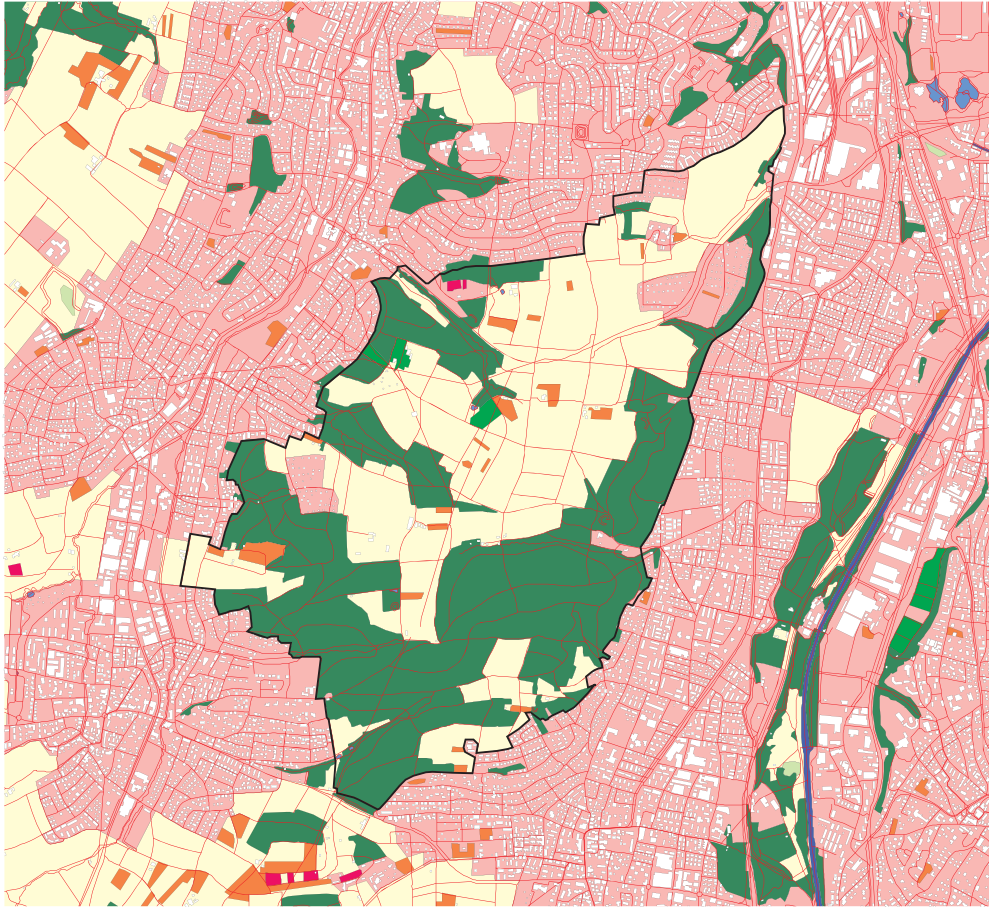
RES DENTIAL AREA		SWAMP	
LEFT OVER AREA		WETLAND	
BUILDING		BUSH	
FRUIT GARDEN		TREES	
W NE		OPEN FORREST	
HARD STRATUM		FORREST	
GRAVEL PIT		LAKE	
ROCK		RIVER	



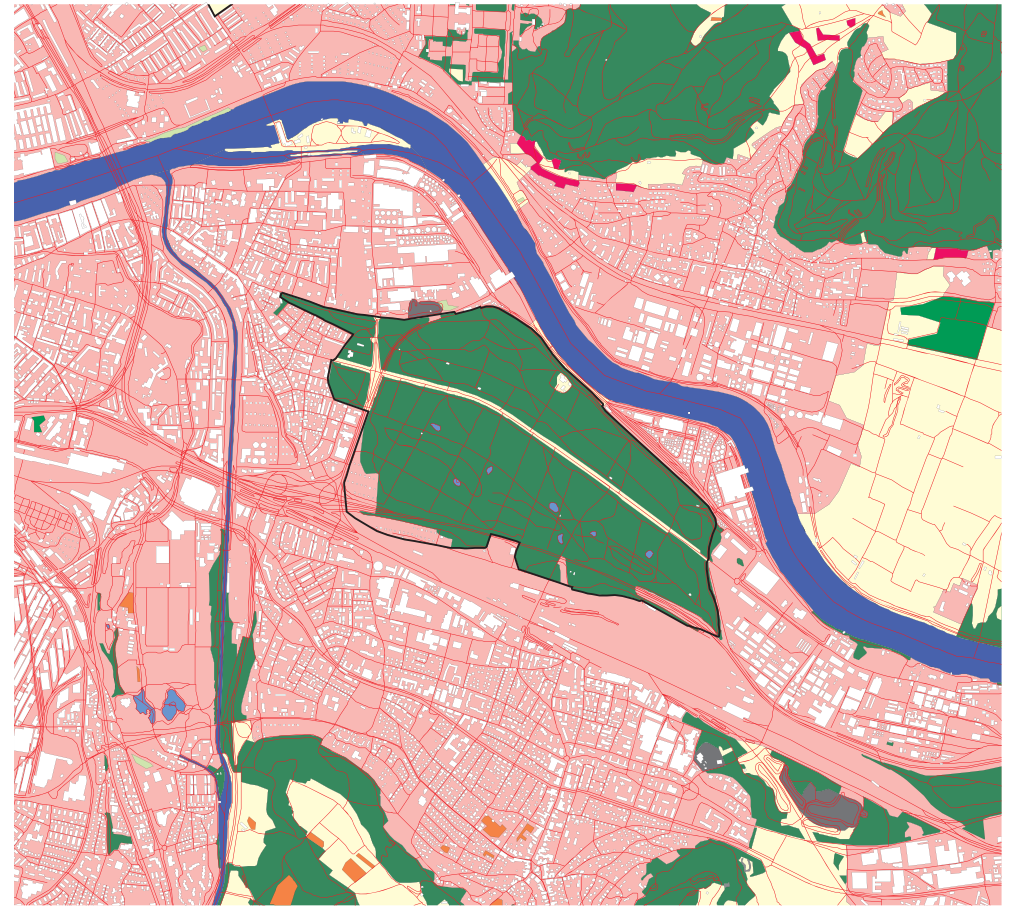
LANGE ERLER



VIGNETTE



BRUDERHOLZ



HARDWALD

## USE

The study of the current uses and existing programs on the sites will be done using aerial pictures and through fieldwork. The aim is also to explain how these areas are perceived by people. It will be described the present values of four Metroparks, and their current condition as recreational parks. Another issue will be not only the current situation but also the foreseen plans to make a park for those areas. (e.g. Landschaftspark Wiese).



LANGE ERLER



VIGNETTE



BRUDERHOLZ



HARDWALD

## 4.3.2 PHOTO DESCRIPTION

### LANGE ERLÉN

It is working already as a park, people use it as a recreational area near the city. It is the most heterogeneous of the 4 sites, with areas of forest, agriculture fields, small zoo, and riverside together with water management facilities. In a regional level it is already thought as a metropolitan park, through the concept

Landschaftpark Wiese. Its heterogeneity makes difficult to understand it as a whole at first sight. It could be said that there are many different parks inside a big, with different character and a high diversity.



Agriculture field



Inside the forest



Livestock



Water management facilities



Family gardens



Amusement park



The Wiese river is at the present time a straight channel that connects the beginning of Schwarzwald with the city of Basel. It is perceived as an artificial infrastructure because of its straightness and because of the monotonous rhythm of waterfalls. Despite of its evident artificial aspect, its riversides are widely used as recreational areas in Spring and Summer.



The Wiese river is the main element that organizes the territory of Lange Erlen.



Pathways open the views towards to the Wiese river.



**DRAFT**  
© ETH Studio Basel

Inside the area there are different levels of Maintenance. It is possible to find places apparently wild and also parks more maintained and closer to the urban condition of other parks in the inner city. This different level of maintenance for the recreational sites increase the heterogeneity of the area, and unfortunately also increases its lack of identity.

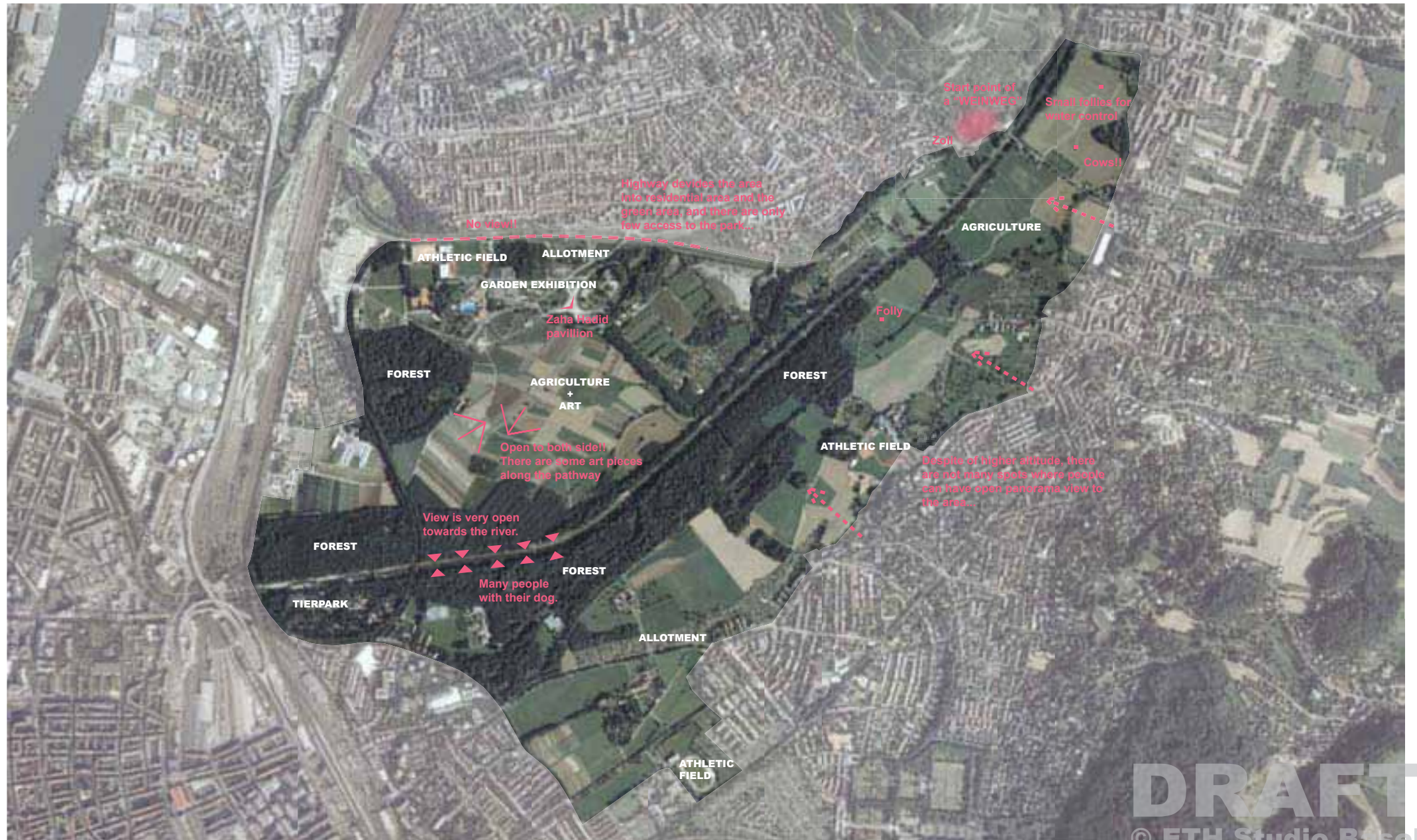


Here we have another evidence of its diversity, a piece of LandArt made up through the arrangement of trees.

Perception of Lange Erlen:

(13.11.2006)

This page is displayed as a small resume of the spatial perceptions that can be found in Lange Erlen, and the experiences lived in fieldwork. It is specially relevant the openness of the channel of Wiese that crosses the full area.





## VIGNETTE

The uses of Vignette are linked to agriculture and quarries. The area is not recognized by people as a park in any sense. It is a big flat space where urbanization is not possible anymore due to the airport restrictions.



One of the quarries in Vignette. The interior of quarries are often difficult to see because the perimeter is blocked with vegetation, mainly bushes and shrubs.



The way that connects Vignette and Basel, and therefore Switzerland and France, is full of big areas of family gardens.



Many fields are in use for agriculture, due to the high fertility of the soils of the area.



The lack of use in some areas related to former quarries gives the change to some other programs to emerge. This is the case of the Golf players training area, one of the little uses apart of agriculture. There is a low diversity of uses.

Because of the flatness of the area the urban areas configures the perimeters and barriers to perceive a full panorama of the landscape. The housing follows the narrow line of the roads, building the perimeter of the void area.



Along the roads the housing configures a narrow urban band.



The edges of the park are often build, sometimes with housing but also with vegetation.



Because of the flatness even medium height bushes can easily block the views. The vegetation that closes the edges of the Metropark sometimes give the chance to take a look into the flat panorama.



Flatness is the most important visual character of the area. A panorama that shows the openness of the area.

Perception of Vignette:

(15.10.2006 / 05.11.2006 / 18.11.2006)

A resume of the visual perceptions in the area obtained during the fieldwork. The most relevant aspect are the views available from the edges and perimeters of the area.



## BRUDERHOLZ

It is situated in the backyard of a rich residential area of Villas. It is understood by people as a agriculture fields, though there exists pathways to walk around and even benches and some resting areas.



In the residential area is possible to find horticulture flower production and flower picking "buffet"



As many other places in Basel, often in the limits between urban areas and agricultures field we can find family gardens.



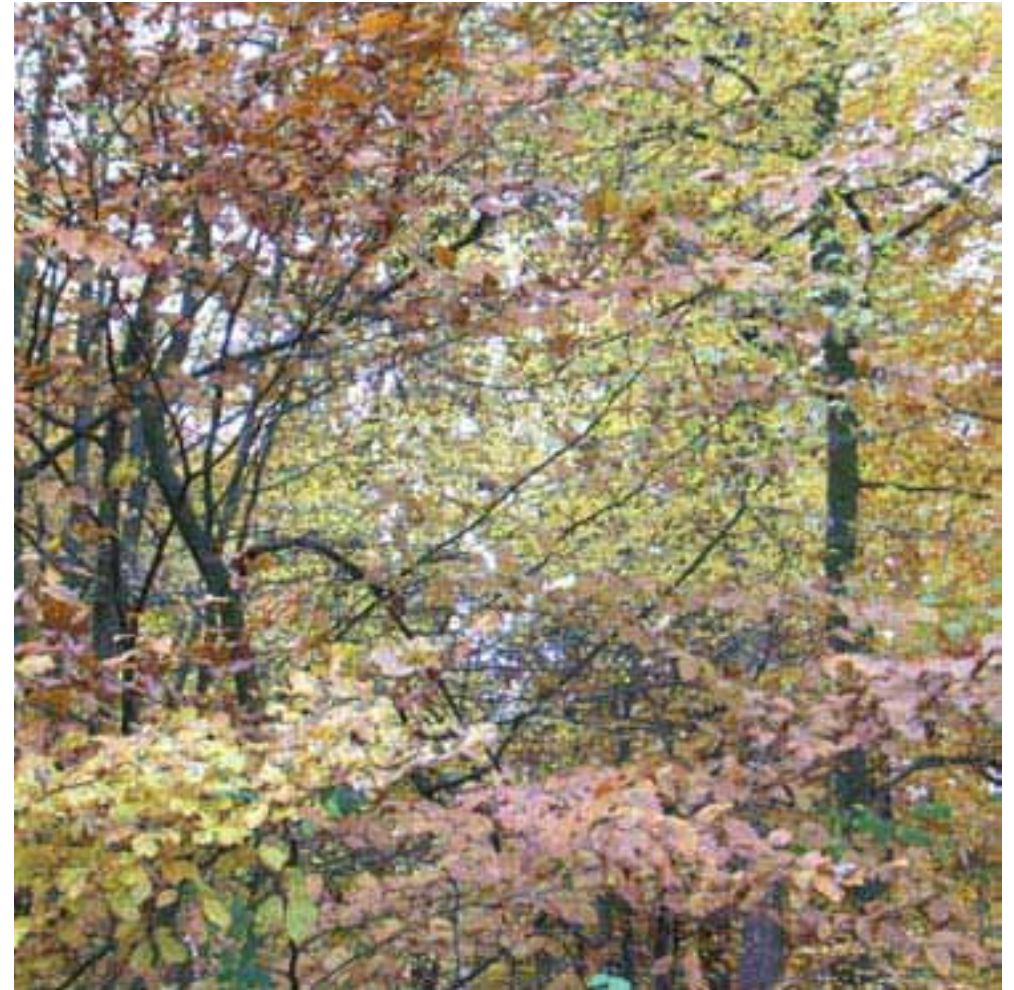
livestock in the area



agriculture fields

There are several forest in the area, and they are mainly in the border to the urban areas. From the agriculture fields, instead of perceiving the urban areas behind you first perceive the forests that build the perimeter, specially in the south area.

Inside the forest, in direction to an urban settlement. The forest areas are in a lower level than the central agriculture fields.



The dense forest offers a beautiful view when the leaves begin to change of colour.



The forest that builds the perimeter is often perceived as a dense volume.

360° Panorama:

In the middle of the fields, we can get a panorama of the area, which shows that the area is almost covered with the layer of forest and disconnection from residential area around.

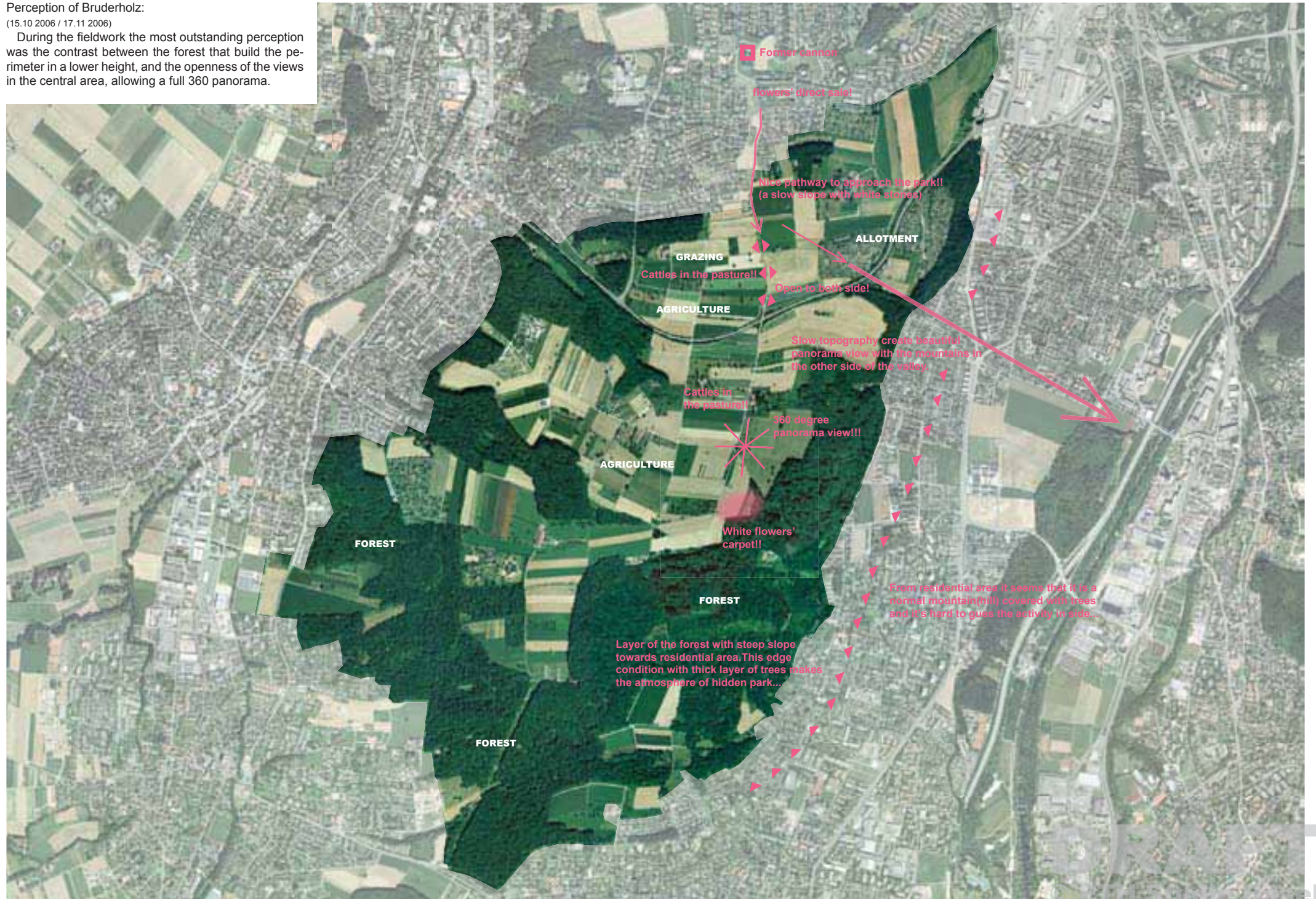




Perception of Bruderholz:

(15.10 2006 / 17.11 2006)

During the fieldwork the most outstanding perception was the contrast between the forest that build the perimeter in a lower height, and the openness of the views in the central area, allowing a full 360 panorama.



## HARDWALD

The Hardwald is perceived as a forest. There are Ground water facilities in the area and some protected areas.



Inside the forest

water facilities



The surface water is artificially organized.



There is a natural preservation in the area.

There is a big difference in the perception depending on the season. During spring and summer the forest builds a closed volume, while autumn and winter the views open to a larger distance.



closed volume of forest



open volume of forest



summer



winter

**DRAFT**  
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360° Panorama:  
During winter, with the complete fall of leaves, the forest  
is open to its maximum range.



**DRAFT**  
© ETH Studio Basel

Perception of Hardwald:

(15.10.2006 / 10.12.2006)

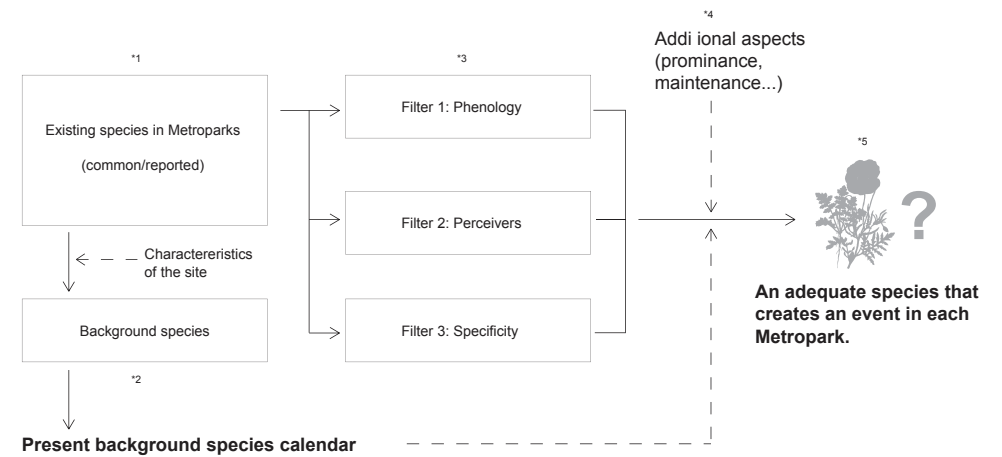
The perception inside the forest is impressive because of the high density of trees. It is perceived as a big continuous volume where eventual visitors get inside for jogging or to walk with the dogs. It is difficult to perceive the edges when you are inside the forest, and at the

moment you get to the border of the forest, you are often stopped by an infrastructure or an industrial area, which disturbs its better accessibility from the city.



# 4.4 PROCESS FOR THE SELECTION OF THE ADEQUATE SPECIES

In the sub chapter 4.4, it will be described that the concrete proposals for the 4 sites, and the criteria and processes that follow to get to that proposals. The first part of the sub chapter will explain the process of the selection of the adequate species in relation to Sakura's concept explained in the previous chapters. In the second part of this sub chapter, the criteria of selection of the adequate species will be applied to the 4 sites, and as a result a proposal of intervention will emerge from that process.



The process of the selection of the adequate species shows where the species are more suitable to be used as the impressive phenomena for the Metroparks.

The Metroparks are not conventional parks but temporal parks, they are a kind of park that can attract people and enhance the identity of the region due to the ephemeral phenomena that is taking place in them for a period of time, and after this event is finished, they fade off to their previous condition. This ephemeral condition follows the model of Sakura, that we understand as the selection of some phenomena that through an extensive multiplication in a precise location provide an impressive perceptive event. Therefore, the success of the proposal depends on the selection of species that have enough potential to hold the blooming of such a phenomena.

The process is not a general law, but it is adapted to each of the sites, with different inputs and parameters depending on the location, and with a strong relation to the surrounding environment, including the big natural elements like Rhine, Jura, Schwarzwald and French plains. The adaptability of the process has the aim to increase the rooting to the region, and that way to increase the success of the enhancement of the identity of Metrobasel.

Therefore, the species can not be selected a priori but have to be the result of a meticulous research on the site and on the existing vegetation.

The vegetation that exists in a precise location is the consequence of several parameters, like soil conditions, height, maintenance, climate, etc. They exist on a place not by chance, and therefore it has been made a botanical research on the species existing in the four sites, to show which of them are most common for the area and which are reported. These lists of common and reported species (\*1) will be the grounds to initiate the process of selection of the phenomenological species for the proposal.

There are two further steps once the list of common and reported species is full fit. One is to extract from that list those species that will be the background of

the proposal. This background list of species (\*2) is not a catalogue of the most common species of the site, but a selection of those that represent in a best way the identity of the place. The aim of that list is to have a successful overlapping of the proposed species over the site, in a way that the phenomena is enhanced by its surrounding environment.

The second step is to apply over the list of common and reported species 3 filters (\*3). These filters, phenology, perceivers and specificity bring up to the list different considerations about the scientific perception and the perception by the people in the region. In fact this 3 filters conform the list of species of Metrobasel's Saijiki.

The filter Phenology scan for those species that are studied by meteorologists and other scientist as a source of data of first occurrence of natural events in their annual cycle. Examples include the date of emergence of leaves and flowers, the date of leaf colouring and fall in deciduous trees or the timing of the developmental cycles of honeybee colonies. These data is relevant for the understanding of the calendar of nature. The filter Perceivers brings the perception of the people of the region about outstanding natural phenomena that they link to the changing of seasons. The filter Specificity depicts those species that are pointed as a reference for the region by botanists.

Once these filters are applied we have a better understanding of which of the species that appear in the list of common and reported are at the same time relevant from a perceptive point of view in the Nature calendar of phenomena.

The next step is to put this information together, the background species and the phenomenological relevant species together, and to contrast them to the site, its characteristics, prominence, maintenance issues and the events that could be set there during a precise season (\*4). From that comparative analysis it will emerge an adequate specie that suits to the geographical, geological, botanical and perceptive conditions of a precise location (\*5).

**4.5  
SPRING  
METROPARK**

**“LANGE ERLEN”  
X  
“FUMEWORT”**

## LANGE ERLÉN. MOST COMMON + REPORTED

Huperzia selago / Lycopodium clavatum / Lycopodium annotinum / **Equisetum arvense** / **Equisetum telmateia** / Equisetum palustre / Equisetum sylvaticum / Equisetum fluviatile / Equisetum hyemale / Equisetum variegatum / Equisetum ramosissimum / Equisetum x moorei / Pteridium aquilinum / Phegopteris connectilis / Oreopteris limbosperma / Gymnocarpium dryopteris / **Gymnocarpium robertianum** / Dryopteris affinis / **Dryopteris filix-mas** / Dryopteris dilatata / Dryopteris carthusiana / Polystichum setiferum / Polystichum aculeatum / **Athyrium filix-femina** / Cystopteris fragilis / Asplenium viride / **Asplenium trichomanes** / Asplenium fontanum / **Asplenium ruta-muraria** / Ceterach officinarum / Phyllitis scolopendrium / Blechnum spicant / Polypodium vulgare / Polypodium interjectum / Abies alba / **Pseudotsuga menziesii** / Picea abies / Larix decidua / Pinus strobus / Pinus nigra / **Pinus sylvestris** / Juniperus communis / **Thuja occidentalis** / Thuja orientalis / **Taxus baccata** / Asarum europaeum / **Aristolochia clematitis** / **Nymphaea alba** / **Nuphar lutea** / Actaea spicata / **Ceratophyllum demersum** / Helleborus foetidus / Helleborus orientalis / **Eranthis hymalis** / **Aquilegia vulgaris** / **Caltha palustris** / Trollius europaeus / **Nigella damascena** / Aconitum altissimum / **Consolida regalis** / **Consolida ajacis** / Thalictrum aquilegifolium / Thalictrum minus / Thalictrum flavum / **Anemone ranunculoides** / **Anemone nemorosa** / **Anemone blanda** / Pulsatilla vulgaris / Hepatica nobilis / **Clematis vitalba** / **Ranunculus ficaria** / **Ranunculus aquatilis** / **Ranunculus penicillatus** / Ranunculus fluitans / Ranunculus trichophyllus / **Ranunculus acrifolius** / **Ranunculus lingua** / Ranunculus flammula / Ranunculus arvensis / Ranunculus sceleratus / Ranunculus pseudocassubicus / **Ranunculus biflorus** / Ranunculus alsaticus / **Ranunculus lyratus** / **Ranunculus alnetorum** / **Ranunculus kunzii** / Ranunculus argoviensis / Ranunculus sphinx / Ranunculus stellaris / Ranunculus lunaris / Ranunculus gratiosus / **Ranunculus macrotis** / Ranunculus quinatus / **Ranunculus acer** / **Ranunculus bulbosus** / **Ranunculus repens** / Ranunculus tuberosus / Berberis julianae / **Berberis vulgaris** / **Berberis thunbergii** / Mahonia aquifolium / Chelidonium majus / **Papaver somniferum** / **Papaver rhoeas** / Papaver dubium / Papaver dubium lecoquii / Papaver argemone / Corydalis lutea / **Corydalis cava** / **Corydalis solida** / **Fumaria officinalis** / **Fumaria officinalis wirtgenii** / Fumaria vaillantii / Platanus hispanica / **Ulmus laevis** / **Ulmus minor** / Ulmus minor suberosa / **Ulmus glabra** / Celtis occidentalis / **Humulus lupulus** / **Cannabis sativa** / Ficus carica / **Urtica urens** / **Urtica dioica** / Parietaria officinalis / Juglans regia / Juglans nigra / **Fagus sylvatica** / Castanea sativa / Quercus pubescens / **Quercus robur** / **Quercus petraea** / **Quercus robra** / **Alnus glutinosa** / **Alnus incana** / Betula pendula / Betula pubescens / **Carpinus betulus** / **Corylus avellana** / Phytolacca esculenta / Chenopodium botrys / Chenopodium pulmilio / Chenopodium bonus-henricus / **Chenopodium hybridum** / **Chenopodium polysperum** / Chenopodium murale / **Chenopodium opulifolium** / Chenopodium ficifolium / Chenopodium strictum / **Chenopodium album** / Chenopodium album borbasii / Chenopodium pratense / Chenopodium glaucum / Chenopodium rubrum / **Atriplex patula** / **Atriplex prostrata** / **Beta vulgaris** / Bassia scoparia / Salsola ruthenica / Polycnemum majus / Amaranthus cruentus / Amaranthus quitensis / **Amaranthus powellii** / Amaranthus bouchonii / **Amaranthus retroflexus** / **Amaranthus spinosus** / Amaranthus albus / Amaranthus bioloites / Amaranthus graecizans / **Amaranthus blitum** / Amaranthus emarginatus / Amaranthus deflexus / Amaranthus palmeri / **Portulaca oleracea** / Herniaria glabra / Herniaria hirsuta / Corrigiola litoralis / Spergula arvensis / Spergularia rubra / Polycarpon tetraphyllum / Scleranthus perennis / Scleranthus annuus / Minuartia fastigiata / Minuartia hybrida / **Sagina procumbens** / **Sagina apetala erecta** / **Sagina apetala** / **Arenaria serpyllifolia** / **Arenaria leptocladus** / Moehringia muscosa / Moehringia trinervia / Holosteum umbellatum / **Stellaria media** / **Stellaria neglecta** / **Stellaria pallida** / **Stellaria nemorum** / **Stellaria holostea** / **Stellaria alsine** / **Stellaria graminea** / Myosoton aquaticum / **Cerastium arvense** / **Cerastium tomentosum** / **Cerastium glomeratum** / **Cerastium brachypetalum** / **Cerastium fontanum** / **Cerastium semidecandrum** / **Cerastium pumilum** / **Cerastium pumilum pallens** / Gypsophila muralis / Gypsophila elegans / **Saponaria officinalis** / **Petrorhagia prolifera** / Petrorhagia saxifraga / Dianthus superbus / **Dianthus superbus sylvestris** / Dianthus armeria / Dianthus barbatus / Dianthus carthusianorum / Dianthus deltoides / Dianthus gratianopolitanus / Silene noctiflora / Silene dioica / **Silene pratensis** / **Silene vulgaris** / Silene gallica / Silene nutans / Silene armeria / **Lychnis coronaria** / **Lychnis flos-cuculi** / **Agrostemma githago** / **Rumex acetosella** / **Rumex scutatus** / **Rumex acetosa** / **Rumex thysiflorus** / **Rumex obtusifolius** / **Rumex conglomeratus** / **Rumex sanguineus** / **Rumex hydrolapathum** / **Rumex crispus** / **Rumex patientia** / **Rumex tharbarum** / **Rumex tharbarum** / **Fallopia convolvulus** / **Fallopia dumetorum** / Fallopia aubertii / **Reynoutria japonica** / **Polygonum aviculare** / **Polygonum aequale** / **Polygonum calcatum** / **Polygonum heterophyllum** / Polygonum monspeliense / Polygonum polystachyum / **Polygonum bistorta** / **Polygonum amphibium** / **Polygonum amphibium aquaticum** / **Polygonum persicaria** / Polygonum pennsylvanicum / Polygonum lapathifolium / **Polygonum lapathifolium ssp.** / Polygonum hydropiper / **Polygonum mite** / Polygonum minus / **Fagopyrum esculentum** / Paeonia officinalis / Hypericum androsaemum / **Hypericum calycinum** / Hypericum humifusum / Hypericum hirsutum / Hypericum montanum / **Hypericum perforatum** / Hypericum perforatum veronense / Hypericum perforatum angustifolium / Hypericum perforatum latifolium / **Hypericum maculatum s.l.** / Hypericum maculatum s.str. / **Hypericum maculatum ssp.** / **Obtusiusculum** / Hypericum desetangii / **Hypericum tetrapterum** / **Tilia cordata** / Tilia platyphyllos / Tilia vulgaris / Abutilon theophrasti / **Althaea hirsuta** / **Alcea rosea** / **Malva alcea** / **Malva moschata** / **Malva sylvestris** / Malva sylvestris mauritiana / Malva neglecta / Malva pusilla / Sida spinosa / Anoda cristata / Helianthemum nummularium / Helianthemum nummularium obscurum / Viola tricolor / **Viola arvensis** / Viola wittrockiana / Viola alba / Viola alba scotophylla / **Viola odorata** / Viola hirta / Viola mirabilis / **Viola reichenbachiana** / Viola riviniana / Viola canina / Viola scabra / **Viola x dubia** / **Bryonia dioica** / Cucumis sativus / Cucurbita pepo / **Populus tremula** / Populus canescens / **Populus alba** / **Populus nigra** / Populus nigra italica / Populus canadensis / Salix x sepulcralis / **Salix alba s.str.** / **Salix alba vitellina** / **Salix fragilis** / **Salix x rubens** / Salix triandra / Salix elaeagnos / Salix daphnoides / **Salix purpurea** / **Salix viminalis** / Salix nigricans / **Salix caprea** / **Salix aurita** / Salix cinerea / Sisymbrium altissimum / **Sisymbrium officinale** / Sisymbrium orientale / **Scoraria sophia** / **Alliaria petiolata** / **Arabis thaliana** / **Isatis tinctoria** / Bunias orientalis / Erysimum cheiranthoides / Cheiranthus cheiri / Hesperis matronalis / **Barbarea vulgaris** / Barbarea intermedia / **Armoracia rusticana** / **Rorippa palustris** / **Rorippa x anceps** / **Rorippa austriaca** / Rorippa amphibia / **Rorippa sylvestris** / Nasturtium officinale / Nasturtium microphyllum / **Cardamine amara** / **Cardamine pratensis** / **Cardamine impatiens** / **Cardamine flexuosa** / **Cardamine hirsuta** / Dentaria bulbifera / Dentaria heptaphylla / Cardaminopsis arenosa / Cardaminopsis arenosa borbasii / Turritis glabra / Arabis turrita / Arabis alpina s. str. / Arabis alpina caucasica / Arabis hirsuta / Aubrieta deltoidea / Lunaria rediviva / Lunaria annua / Alyssum alyssoides / Alyssum montanum / Alyssum saxatile / Lobularia maritima / **Berteroa incana** / Draba aizoides / **Draba muralis** / **Erophila verna** / **Erophila praecox** / Kerneria saxatilis / Camelina microcarpa / Neslia paniculata / **Capsella bursa-pastoris** / **Capsella rubella** / **Thlaspi arvense** / **Thlaspi perfoliatum** / Thlaspi montanum / **Iberis umbellata** / Lepidium campestre / Lepidium latifolium / Lepidium graminifolium / Lepidium ruderale / **Lepidium virginicum** / Lepidium neglectum / **Cardaria draba** / Coronopus squamatus / Coronopus didymus / **Diplotaxis tenuifolia** / **Diplotaxis muralis** / Brassica nigra / **Brassica rapa** / **Brassica napus** / Brassica oleracea / Brassica juncea / **Sinapis arvensis** / **Sinapis alba** / Eruca sativa / Erucastrum nasturtifolium / Erucastrum gallicum / Coicyca cheiranthos / Hirschfeldia incana / Rapistrum rugosum / Rapsitrum rugosum orientale / Raphanus raphanistrum / Raphanus raphanistrum (gelbbl. Formen) / **Reseda luteola** / **Reseda lutea** / Vaccinium myrtillus / Calluna vulgaris / Orthilia secunda / Pyrola rotundifolia / Pyrola minor / Monotropa hypopitys / Monotropa hypophega / **Lysimachia nummularia** / **Lysimachia nemorum** / **Lysimachia vulgaris** / Lysimachia punctata / **Lysimachia thyrsoiflora** / **Anagallis arvensis** / **Anagallis foemina** / Centunculus minimus / Primula acaulis / Primula auricula / **Primula elatior** / Primula veris / Primula veris columnae / **Hottonia palustris** / Philadelphus coronarius / Ribes uva-crispa / Ribes alpinum / **Ribes rubrum** / Sedum telephium / Sedum spurium / **Sedum rupestre** / **Sedum acre** / **Sedum sexangulare** / Sedum hispanicum / Sedum album / Sempervivum tectorum / Saxifraga paniculata / Saxifraga granulata / Saxifraga tridactylites / Chrysosplenium alternifolium / Chrysosplenium oppositifolium / Parnassia palustris / Aruncus dioicus / **Filipendula ulmaria** / Filipendula vulgaris / Rubus saxatilis / **Rubus idaeus** / **Rubus caesius** / **Rubus fruticosus** / Rubus laciniatus / Rubus canescens / Rosa pendulina / Rosa pimpinellifolia / Rosa rugosa / Rosa multiflora / Rosa arvensis / **Rosa rubiginosa** / Rosa micrantha / **Rosa agrestis** / Rosa glauca / Rosa jundzillii / **Rosa tomentosa** / Rosa corymbifera / Rosa corymbifera platyphylla / Rosa corymbifera thuileri / Rosa corymbifera hemitricha / Rosa stylosa / **Rosa canina** / Rosa canina lutetiana / Rosa canina transitoria / Rosa canina hispidula / Rosa canina diversiglandulosa / Rosa canina dumalis / Rosa vosagiaca / Rosa vosagiaca subcanina / **Agrimonia eupatoria** / **Sanguisorba officinalis** / **Sanguisorba minor s.str.** / **Sanguisorba minor polygama** / **Geum urbanum** / **Geum rivale** / Potentilla fruticosa / **Potentilla sterilis** / Potentilla supina / **Potentilla anserina** / Potentilla erecta / **Potentilla norvegica** / **Potentilla reptans** / Potentilla recta / **Potentilla argentea** / Potentilla inclinata / Potentilla intermedia / Potentilla heptaphylla / **Potentilla neumanniana** / Potentilla arenaria / Fragaria moschata / Fragaria vesca / **Duchesnea indica** / **Aphanes arvensis** / Alchemilla glaucescens / Alchemilla filicaulis / **Alchemilla xanthochlora** / **Alchemilla monticola** / Alchemilla micans / Alchemilla subcrenata / **Alchemilla glabra** / Chaenomeles japonica / Pyrus pyraeaster / Malus sylvestris / **Malus domestica** / Sorbus aucuparia / Sorbus domestica / Sorbus torminalis / Sorbus x latifolia / Sorbus aria / Sorbus mougeotii / Sorbus intermedia / Amelanchier ovalis / Cotoneaster horizontalis / **Cotoneaster divaricatus** / Cotoneaster integriflorus / Cotoneaster tomentosus / Cotoneaster salicifolius / Cotoneaster dammeri / Pyracantha coccinea / Mespilus germanica / **Crataegus laevigata** / **Crataegus lindmanii** / **Crataegus monogyna** / Crataegus x macrocarpa / Prunus persica / **Prunus spinosa s.str.** / Prunus spinosa fruticosans / Prunus domestica / **Prunus avium** / Prunus cerasus / Prunus mahaleb / **Prunus padus** / Prunus serotina / Prunus laurocerasus / Gleditsia triacanthos / Cercis siliquastrum / Cassia obtusifolia / Lupinus polyphyllus / Genista germanica / Genista tinctoria / Genista pilosa / Genista sagittalis / Cytisus scoparius / **Robinia pseudoacacia** / Colutea arborescens / Astragalus glycyphyllos / Anthyllis vulneraria s.l. / Anthyllis vulneraria s.str. / Anthyllis vulneraria carpatica / Lotus tenuis / **Lotus corniculatus** / Lotus corniculatus hirsutus / **Lotus uliginosus** / Tetragonolobus maritimus / Ornithopus perpusillus / Coronilla varia / Coronilla emerus / Coronilla coronata / Coronilla vaginalis / Hippocrepis comosa / **Onobrychis vicifolia** / Ononis spinosa / Ononis spinosa austriaca / Ononis repens / Medicago falcata / **Medicago sativa** / **Medicago varia** / **Medicago lupulina** / **Medicago minima** / **Melilotus albus** / Melilotus altissimus / Melilotus officinalis / Trifolium fragiferum / Trifolium resupinatum / Trifolium rubens / Trifolium medium / **Trifolium arvense** / **Trifolium incarnatum** / Trifolium alpestre / **Trifolium pratense** / Trifolium ochroleucum / Trifolium scabrum / **Trifolium repens** / Trifolium montanum / Trifolium hybridum / Trifolium aureum / **Trifolium campestre** / **Trifolium dubium** / **Vicia hirsuta** / **Vicia Trapesera** / Vicia dumetorum / **Vicia cracca** / Vicia villosa / **Vicia villosa varia** / Vicia narbonensis / Vicia pannonica / **Vicia sepium** / **Vicia lutea** / **Vicia angustifolia s.str.** / **Vicia angustifolia s.l.** / Lathyrus aphaca / Lathyrus hirsutus / Lathyrus pratensis / Lathyrus tuberosus / **Lathyrus sylvestris** / Lathyrus latifolius / Lathyrus linifolius / Lathyrus niger / Lathyrus vernus / Glycine max / Hippophae rhamnoides / Myriophyllum verticillatum / Myriophyllum spicatum / **Lythrum salicaria** / Lythrum hyssopifolia / Peplis portula / Thymelaea passerina / Daphne mezereum / Daphne laureola / **Epilobium angustifolium** / Epilobium dodonaei / **Epilobium hirsutum** / **Epilobium parviflorum** / **Epilobium montanum** / Epilobium roseum / Epilobium palustre / Epilobium obscurum / Epilobium ciliatum / Epilobium tetragonum / Epilobium tetragonum lamyi / Oenothera biennis / Oenothera suaveolens / Oenothera oehlkersii / Oenothera pycnocarpa / Oenothera erythrosepala / Oenothera x fallax / Oenothera issleri / Oenothera parviflora / **Circaea lutetiana** / **Cornus sanguinea** / Cornus alba / Cornus mas / Thesium pyrenaicum / Thesium alpinum / Viscum album / Viscum album abietis / Viscum album austriacum / **Euonymus europaeus** / Ilex aquifolium / Buxus sempervirens / **Mercurialis annua** / Mercurialis perennis / Euphorbia nutans / Euphorbia maculata / Euphorbia humifusa / Euphorbia lathyris / **Euphorbia helioscopia** / Euphorbia seguieriana / Euphorbia palustris / **Euphorbia platyphyllos** / Euphorbia stricta / Euphorbia dulcis / Euphorbia verrucosa / Euphorbia amygdaloides / **Euphorbia cyparissias** / Euphorbia virgata / **Euphorbia peplus** / **Euphorbia exigua** / Rhamnus cathartica / Rhamnus alpina / Frangula alnus / Vitis silvestris / Vitis vinifera / Parthenocissus inserta / Linum catharticum / Linum tenuifolium / Linum usitatissimum / Polygala amarella / Polygala vulgaris / Polygala comosa / Staphylea pinnata / Koeleruteria paniculata / **Aesculus hippocastanum** / Acer negundo / **Acer pseudoplatanus** / **Acer platanoides** / **Acer campestre** / Acer opalus / Cofinus cogggyria / Rhus typhina / Ailanthus altissima / Ruta graveolens / Dictamnus albus / Oxalis acetosella / **Oxalis fontana** / Oxalis corniculata / Oxalis dillenii / Geranium robertianum / Geranium purpureum / Geranium rotundifolium / Geranium plaustrum / Geranium sylvaticum / Geranium pratense / Geranium sanguineum / Geranium columbinum / Geranium dissectum / Geranium molle / Geranium pusillum / Geranium pyrenaicum / Erodium cicutarium / Tropaeolum majus / **Impatiens glandulifera** / Impatiens balfourii / Impatiens noli-tangere / **Impatiens parviflora** / **Hedera helix** / Hydrocotyle vulgaris / Sanicula europaea / Eryngium campestre / Chaerophyllum hirsutum / Chaerophyllum temulum / **Chaerophyllum aureum** / Anthriscus sylvestris / Anthriscus nitida / Anthriscus caucalis / Torilis japonica / Torilis arvensis / Caulis platycarpus / Orlaya grandiflora / Bifora radians / Conium maculatum / Blueprium rotundifolium / Blueprium falcatum / Trinia glauca / Petroselinum crispum / Cicuta virosa / Ammi majus / Falcaria vulgaris / Carum carvi / Pimpinella major / Pimpinella saxifraga / Pimpinella peregriana / **Aegopodium podagraria** / Berula erecta / Seseli libanotis / Seseli annuum / Oenanthe lachenali / **Aethusa cynapium** / Aethusa cynapioides / Athamanta cretensis / Foeniculum vulgare / Silaum silaus / **Angelica sylvestris** / Peucedanum carviifolia / Peucedanum oreoselinum / Peucedanum cervaria / **Pastinaca sativa** / **Heracleum mantegazzianum** / **Heracleum sphondylium** / Laserpitium latifolium / Laserpitium siler / **Daucus carota** / Centaurium erythraea / Centaurium pulchellum / Blackstonia perfoliata / Gentiana lutea / Gentiana cruciata / Gentiana pneumonanthe / Gentiana verna / Gentianella ciliata / Gentianella germanica / **Vinca minor** / **Vinca major** / Asclepias syriaca / Vincetoxicum hirundinaria / Nicandra physalodes / Lycium barbarum / Atropa bella-donna / Physalis alkekengi / **Physalis franchetti** / **Solanum dulcamara** / **Solanum nigrum** / **Solanum nigrum ssp.** / Schultesia / Solanum carolinense / Lycopersicon esculentum / **Datura stramonium** / **Datura stramonium tubata** / Petunia x Atkinsiana / **Convolvulus arvensis** / **Calystegia sepium** / Ipomoea hederacea / Ipomoea lacunosa / Cuscuta europaea / Cuscuta epithymum / **Menyanthes trifoliata** / **Nymphoides peltata** / **Phacelia tanacetifolia** / Heliotropium europaeum / Lithospermum officinale / Buglossoides purpurocaerulea / Buglossoides arvensis / **Echium vulgare** / Echium plantagineum / Pulmonaria obscura / **Symphytum officinale** / Anchusa arvensis / Brunnera macrophylla / Borago officinalis / Myosotis nemorosa / **Myosotis scorpioides** / Myosotis alpestris / **Myosotis sylvatica** / **Myosotis ramosissima** / **Myosotis arvensis** / Myosotis discolor / Cynoglossum officinale / **Verbena officinalis** / Verbena bonariensis / **Caryopteris x clandonensis** / Teucrium scorodonia / Teucrium montanum / Teucrium botrys / Teucrium chamaedrys / **Ajuga reptans** / **Ajuga reptans** / **Ajuga reptans** / Ajuga genevensis / **Lavandula angustifolia** / Mentha pulegium / **Mentha arvensis** / **Mentha aquatica** / Mentha spicata glabrata / Mentha x verticillata / **Mentha x dumetorum** / **Mentha x piperita** / Mentha x villosa / Mentha x 249



rotundifolia / **Lycopus europaeus** / **Origanum vulgare** / **Thymus pulegioides** / Thymus froelichianus / Thymus praecox / **Melissa officinalis** / **Satureja hortensis** / Clinopodium vulgare / Calamintha methifolia / **Acinos arvensis** / Nepeta cataria / **Glechoma hederacea** / Melittis melissophyllum / **Ballota nigra** / Stachys alpina / Stachys germanica / Stachys annua / **Stachys recta** / Stachys arvensis / **Stachys sylvatica** / **Stachys palustris** / Stachys officinalis / **Lamium maculatum** / Lamium album / Lamium amplexicaule / **Lamium purpureum** / Lamium hybridum / **Lamium galeobdolon montanum** / **Lamium galeobdolon argentatum** / Galeopsis segetum / Galeopsis angustifolia / Galeopsis tetrahit / Prunella grandiflora / **Prunella vulgaris** / Prunella lacinata / **Salvia glutinosa** / **Salvia pratensis** / Salvia verticillata / **Scutellaria galericulata** / **Hippuris vulgaris** / Callitriche palustris / Plantago arenaria / **Plantago media** / **Plantago major** / **Plantago intermedia** / **Plantago lanceolata** / Plantago lanceolata sphaerostachya / **Buddleja davidii** / **Forsythia sp.** / **Fraxinus excelsior** / Fraxinus ornus / **Syringa vulgaris** / **Ligustrum vulgare** / **Ligustrum sinense** / Ligustrum ovalifolium / **Verbascum blattaria** / **Verbascum nigrum** / **Verbascum lychnitis** / **Verbascum lychnitidis album** / Verbascum pulverulentum / Verbascum thapsus / **Verbascum densiflorum** / **Verbascum phlomoides** / Scrophularia canina / Scrophularia umbrosa / **Scrophularia nodosa** / **Chaenorhynchus minus** / **Cymbalaria muralis** / **Kickxia spuria** / **Kickxia elatine** / **Linaria vulgaris** / Linaria repens / Linaria purpurea / **Antirrhinum majus** / **Misopates orontium** / **Digitalis purpurea** / **Digitalis grandiflora** / **Digitalis lutea** / **Erinus alpinus** / **Veronica serpyllifolia** / Veronica officinalis / **Veronica montana** / **Veronica Chamaedrys** / Veronica urticifolia / Veronica prostrata / Veronica teucrium / **Veronica beccabunga** / **Veronica anagalis-aquatica** / Veronica catenata / Veronica spicata / **Veronica arvensis** / **Veronica peregrina** / Veronica acinifolia / Veronica triphyllus / Veronica praecox / **Veronica hederifolia** / **Veronica hederifolia lucorum** / **Veronica persica** / **Veronica filiformis** / Veronica agrestis / **Veronica polita** / Euphrasia rostkoviana / Euphrasia salisburgensis / Euphrasia stricta / Odontites vernus / Odontites vulgaris / Odontites luteus / Rhinanthus minor / **Rhinanthus alectorolophus** / Melampyrum cristatum / Melampyrum arvense / Melampyrum sylvaticum / Melampyrum pratense / Lathraea squamaria / Globularia punctata / Globularia cordifolia / Orobanche lutea / Orobanche hederaceae / **Orobanche caryophyllacea** / Orobanche teucrii / Orobanche alba / **Orobanche minor** / **Paulownia tomentosa** / Catalpa bignonioides / Piniguiacul vulgaris / **Utricularia vulgaris** / Utricularia australis / Utricularia intermedia / Campanula glomerata / **Campanula rapunculus** / **Campanula patula** / Campanula cochlearifolia / **Campanula rotundifolia** / Campanula persicifolia / Campanula rapunculoides / **Campanula trachelium** / Campanula poscharskyana / Legousia speculum-veneris / Phyteuma orbiculare / Phyteuma nigrum / Phyteula spicatum / Jasione laevis / Lobelia erinus / **Sherardia arvensis** / Asperula cynanchica / **Cruciata Laevipes** / **Galium verum s.str.** / Galium verum ssp. wirtgenii / Galium odoratum / Galium glaucum / Galium palustre / Galium uliginosum / **Galium aparine** / Galium spurium / Galium parisiense / Galium sylvaticum / **Galium album** / Galium pumilum / Lonicera periclymenum / Lonicera caprifolium / Lonicera alpigena / **Lonicera xylosteum** / **Lonicera nitida** / **Symphoricarpos albus** / **Symphoricarpos chenaultii** / **Viburnum lantana** / **Viburnum rhytidophyllum** / **Viburnum opulus** / Sambucus ebulus / **Sambucus nigra** / Sambucus racemosa / **Adoxa moschatellina** / **Valeriana locusta** / **Valeriana carinata** / Valeriana dentata / Valeriana nobilis / Valeriana dentata var. eriosperma / Valeriana rimosa / **Valeriana officinalis** / **Valeriana officinalis ssp. excelsa** / Valeriana officinalis ssp. tenuifolia / Valeriana dioica / Valeriana tripteris / Valeriana montana / **Centranthus ruber** / **Dipsacus fullonum** / **Dipsacus laciniatus** / **Dipsacus pilosus** / Succisa pratensis / **Knautia arvensis** / **Knautia dipsacifolia** / Scabiosa caespescens / Scabiosa columbaria / Ageratum houstonianum / **Eupatorium cannabinum** / Solidago virgaurea / **Solidago canadensis** / **Solidago gigantea** / **Bellis perennis** / Callistephus chinensis / Aster bellidiastrum / Aster linostris / Aster amellus / Aster novae-angliae / **Aster novi-belgii** / Aster x versicolor / Aster lanceolatus / **Aster salignus** / **Erigeron acer** / **Erigeron annuus s.l.** / Erigeron annuus s.str. / **Erigeron annuus ssp. septentrionalis** / Erigeron annuus ssp. strigosus / Erigeron karvinskianus / **Conyza canadensis** / Conyza bonariensis / Filago vulgaris / Antennaria dioica / **Gnaphalium uliginosum** / Gnaphalium luteoalbum / Gnaphalium sylvaticum / Inula conyza / Inula graveolens / Inula salicina / **Pulicaria dysenterica** / Bupththalmum salicifolium / **Guizotia abyssinica** / Bidens cernua / Bidens connata / **Bidens tripartita** / Bidens frondosa / Cosmos bipinnatus / Rudbeckia hirta / **Helianthus annuus** / **Helianthus tuberosus** / Helianthus laetiflorus / Iva xanthifolia / Ambrosia artemisiifolia / Ambrosia trifida / Xanthium strumarium / Galinsoga parviflora / **Galinsoga ciliata** / Tagetes patula / Anthemis cotula / **Anthemis arvensis** / **Anthemis tinctoria** / **Achillea ptarmica** / **Achillea millefolium** / Achillea nobilis / Achillea dentata / **Matricaria recutita** / **Matricaria discoidea** / **Tripleurospermum perforatum** / Chrysanthemum segetum / **Leucanthemum ictuatum** / Leucanthemum adustum / Leucanthemum vulgare / Leucanthemum maximum / **Tanacetum vulgare** / Tanacetum corymbosum / **Tanacetum parthenium** / Artemisia vulgaris / Artemisia verlotiorum / Artemisia absinthium / Artemisia campestris / **Tussilago farfara** / **Petasites hybridus** / Petasites albus / Adenostyles alliariae / Adenostyles glabra / Senecio inaequidens / Senecio paludosus / Senecio hercynicus / **Senecio ovatus** / Senecio cineraria / **Senecio erucifolius** / **Senecio jacobaea** / **Senecio aquaticus** / Senecio squalidus / **Senecio vulgaris** / **Senecio viscosus** / Senecio vernalis / **Calendula officinalis** / Calendula arvensis / **Arcium tomentosum** / **Arctium lappa** / Arctium nemorosum / **Arctium minus** / Carduus nutans / Carduus defloratus / Carduus crispus / **Cirsium vulgare** / **Cirsium arvense** / **Cirsium palustre** / Cirsium acaule / Cirsium tuberosum / **Cirsium oleraceum** / Cirsium x rigens / Onopordum acanthium / Silybum marianum / Serratula tinctoria / Centaurea solstitialis / **Centaurea cyanus** / **Centaurea montana** / **Centaurea scabiosa** / Centaurea stoebe / **Centaurea jacea s.l.** / **Centaurea jacea s.str.** / **Centaurea jacea ssp. angustifolia** / Centaurea nemoralis / Carlina vulgaris / Carlina acaulis ssp. caulescens / Echinops sphaerocephalus / Cichorium intybus / Cichorium endivia / Tragopogon dubius / Tragopogon pratensis ssp. orientalis / Tragopogon pratensis ssp. minor / **Hypochoeris radicata** / Leontodon saxatilis / **Leontodon autumnalis** / **Leontodon hispidus s.l.** / Leontodon hispidus ssp. hastilis / **Picris hieracioides** / **Picris echioides** / **Sonchus oleraceus** / **Sonchus asper** / Sonchus arvensis / Prenanthes purpurea / Mycelis muralis / Lactuca virosa / **Lactuca serriola** / Lactuca sativa / **Lapsana communis** / **Taraxacum officinale** / Taraxacum laevigatum / Chondrilla juncea / Crepis paludosa / Crepis praemorsosa / Crepis biennis / Crepis tectorum / **Crepis capillaris** / **Crepis pulchra** / **Crepis foetida** / Crepis taraxacifolia / **Crepis setosa** / **Hieracium pilosella** / **Hieracium lactucella** / **Hieracium aurantiacum** / **Hieracium caespitosum** / **Hieracium piloselloides** / Hieracium visianii / Hieracium zizianum / Hieracium calodum / Hieracium auriculoides / Hieracium scorzonerifolium / Hieracium glaucinum / Hieracium murorum / Hieracium maculatum / Hieracium lachenalii / Hieracium humile / Hieracium amplexicaule / Hieracium laevigatum / Hieracium umbellatum / Hieracium sabaudum / Hieracium lycopifolium / **Butomus umbellatus** / **Alisma plantago-aquatica** / Alisma lanceolatum / **Sagittaria sagittifolia** / Stratiotes aloides / Elodea densa / **Elodea canadensis** / Elodea nuttallii / Trilochin palustre / **Potamogeton crispus** / Potamogeton nodosus / **Potamogeton natans** / Potamogeton lucens / **Potamogeton gramineus** / Potamogeton pectinatus / **Potamogeton bercholdii** / Groenlandia densa / Najas marina / **Zannichellia palustris** / **Acorus calamus** / **Arum maculatum** / **Spirodela polyrhiza** / Lemna trisulca / Lemna minor / Lemna minuta / Tradescantia virginiana / Commelina communis / Juncus inflexus / Juncus conglomeratus / **Juncus effusus** / **Juncus tenuis** / **Juncus compressus** / **Juncus bufonius** / **Juncus bulbosus** / **Juncus subnodulosus** / **Juncus alpinoarticulatus** / **Juncus articulatus** / **Juncus acutiflorus** / Luzula pilosa / Luzula forsteri / Luzula luzuloides / Luzula sylvatica / **Luzula campestris** / Luzula multiflora / **Scirpus sylvaticus** / Bolboschoenus maritimus / Isoplepis setacea / **Schoenoplectus lacustris** / Schoenoplectus tabernaemontani / Schoenoplectus mucronatus / Eleocharis unguilumis / **Eleocharis palustris** / Eleocharis mamillata / **Eriophorum angustifolium** / Eriophorum latifolium / **Cladium mariscus** / Schoenus nigricans / Cyperus fuscus / Carex davalliana / Carex disticha / **Carex brizoides** / Carex praecox / Carex otrubae / **Carex muricata aggr.** / **Carex spicata** / Carex muricata ssp. lamprocarpa / **Carex polyphylla** / **Carex paniculata** / **Carex remota** / Carex leporina / Carex elongata / Carex echinata / **Carex acuta** / Carex nigra / Carex elata / Carex umbrosa / Carex montana / Carex fritschii / Carex pilulifera / Carex tomentosa / **Carex caryophyllea** / Carex pilosa / Carex pallescens / **Carex pendula** / Carex hallerana / Carex flacca / Carex panicea / Carex alba / Carex humilis / Carex digitata / Carex ornithopoda / **Carex sylvatica** / Carex strigosa / Carex flava / Carex lepidocarpa / Carex demissa / Carex viridula / **Carex distans** / Carex hostiana / **Carex pseudocyperus** / **Carex hirta** / Carex rostrata / Carex vesicaria / **Carex acutiformis** / Carex riparia / **Festuca gigantea** / Festuca altissima / **Festuca pratensis** / **Festuca arundinacea** / **Festuca rubra s. str.** / Festuca heterophylla / **Festuca brevipila** / **Festuca ovina aggr.** / Festuca guestfalica / Festuca pallens / Festuca tenuifolia / Lolium multiflorum / **Lolium perenne** / Lolium rigidum / Vulpia ciliata / Vulpia myuros / Catapodium rigidum / Poa bulbosa / **Poa annua** / **Poa compressa** / Poa chaixii / **Poa trivialis** / **Poa pratensis** / Poa angustifolia / Poa humilis / **Poa nemoralis** / **Poa palustris** / Puccinella distans / **Dactylis glomerata** / **Dactylis polygama** / Cynosurus cristatus / **Briza media** / Sesleria albicans / Melica ciliata / Melica nutans / Melica uniflora / Glyceria maxima / Glyceria striata / Glyceria declinata / Glyceria fluitans / Glyceria notata / Glyceria x pedicellata / **Bromus sterilis** / **Bromus tectorum** / Bromus madritensis / Bromus ramosus / Bromus benekenii / **Bromus erectus** / Bromus inermis / Bromus secalinus / **Bromus hordeaceus** / Bromus arvensis / Bromus racemosus / Bromus racemosus commutatus / Bromus japonicus / Bromus catharticus / **Brachypodium pinnatum** / **Brachypodium sylvaticum** / **Elymus caninus** / Elymus elongatus / **Elymus repens** / Elymus repens aristatus / Elymus repens glaucus / Elymus campestris / Aegilops cylindrica / Triticum durum / **Triticum aestivum** / **Secale cereale** / **Hordeum murinum** / Hordeum distichon / Hordeum vulgare / Hordelymus europaeus / Avena fatua / **Avena sativa** / **Helictotrichon pubescens** / Helictotrichon pratense / Arrhenatherum elatius / Koeleria macrantha / Koeleria pyramidata / **Trisetum flavescens** / Deschampsia caespitosa / Avenella flexuosa / Aira caryophylla / **Anthoxanthum odoratum** / **Holcus lanatus** / **Holcus mollis** / **Agrostis capillaris** / **Agrostis gigantea** / **Agrostis stolonifera s.l.** / **Agrostis stolonifera ssp. prorepens** / Agrostis canina / **Apera spica-venti** / Calamagrostis varia / Calamagrostis epigejos / Calamagrostis canescens / Phleum pleioides / Phleum paniculatum / **Phleum pratense** / Phleum bertolonii / **Alopecurus myosuroides** / **Alopecurus pratensis** / Alopecurus aequalis / **Phalaris arundinacea** / **Phalaris canariensis** / Milium effusum / Stipa eriocalis ssp. lutetiana / Achnatherum calamagrostis / **Phragmites australis** / Danthonia decumbens / Molinia arundinacea / Eragrostis pilosa / Eragrostis multicaulis / **Eragrostis minor** / Eragrostis cilianensis / Eleusine indica / Cynodon dactylon / **Leersia oryzoides** / **Panicum miliaceum** / **Panicum capillare** / **Panicum dichotomiflorum** / **Echinochloa cym-balli** / Echinochloa colona / **Digitaria sanguinalis** / Digitaria ischaemum / **Setaria verticillata** / **Setaria verticilliformis** / Setaria geniculata / **Setaria pumilla** / **Setaria viridis s.l.** / Setaria italica / Setaria italica moharia / Setaria faberi / **Sorghum halepense** / Sorghum bicolor s.l. / Bothriochloa / ischaemum / **Sparganium erectum** / Sparganium erectum neglectum / Sparganium emersum / Sparganium minimum / **Typha angustifolia** / **Typha latifolia** / **Pontederia cordata** / Anthericum ramosum / Anthericum liliago / Hemerocallis fulva / Colchicum autumnale / Gagea villosa / **Gagea lutea** / **Tulipa sylvestris** / Tulipa gesneriana / Liliium martagon / **Ornithogalum umbellatum** / Ornithogalum nutans / Ornithogalum pyrenaicum / **Scilla bifolia** / **Scilla siberica** / Chionodoxa sp. / **Hyacinthoides sp.** / Mucari comosum / **Muscari racemosum** / **Muscari armeniacum** / Allium vineale / Allium sphaerocephalon / **Allium scorodoprasum** / **Allium schoenoprasum** / Allium ursinum / Allium paradoxum / Allium oleraceum / Allium carinatum / Allium senescens montanum / Convallaria majalis / Maianthemum bifolium / Polygonatum verticillatum / **Polygonatum multiflorum** / Polygonatum odoratum / Paris quadrifolia / **Asparagus officinalis** / Leucojum vernum / **Galanthus nivalis** / **Narcissus pseudonarcissus** / Iris germanica / **Iris pseudacorus** / Iris sibirica / **Crocus sp.** / Tamus communis / Cephalanthera rubra / Cephalanthera damasonium / Cephalanthera longifolia / Epipactis palustris / Epipactis atrorubens / Epipactis helleborine / Epipactis muelleri / Epipactis leptochila / Epipactis purpurata / Limodorum abortivum / **Listera ovata** / Neottia nidus-avis / Goodyera repens / Spiranthes spiralis / Gymnadenia conopsea / Gymnadenia odoratissima / Coeloglossum viride / Platanthera bifolia / Platanthera chlorantha / Ophrys insectifera / Ophrys apifera / Ophrys sphegodes / Ophrys sphegodes litigiosa / Ophrys holoserica / Ophrys holoserica elatior / Orchis morio / Orchis ustulata / Orchis purpurea / Orchis militaris / Orchis simia / Orchis pallens / Orchis mascula / **Dactylorhiza fuchsii** / Dactylorhiza incarnata / Dactylorhiza majalis / Aceras anthropophorum / Himantoglossum hircinum / **Anacamptis pyramidalis**

## LANGE ERL. PHENOLOGY

**Equisetum arvense** / Equisetum telmateia / Gymnocarpium robertianum / Dryopteris filix-mas / Athyrium filix-femina / Asplenium trichomanes / Asplenium ruta-muraria / Pseudotsuga menziesii / Pinus sylvestris / Thuja occidentalis / Taxus baccata / Aristolochia clematidis / Nymphaea alba / Nuphar lutea / Ceratophyllum demersum / Eranthis hyemalis / Aquilegia vulgaris / Caltha palustris / Consolida regalis / Consolida ajacis / Anemone ranunculoides / **Anemone nemorosa** / Anemone blanda / Clematis vitalba / **Ranunculus ficaria** / Ranunculus aquatilis / Ranunculus penicillatus / Ranunculus aconitifolius / Ranunculus lingua / **Ranunculus biformis** / Ranunculus alnetorum / Ranunculus kunzii / Ranunculus macrotis / **Ranunculus acer** / Ranunculus bulbosus / **Ranunculus repens** / Berberis vulgaris / Berberis thunbergii / Mahonia aquifolium / Chelidonium majus / Papaver somniferum / **Papaver rhoeas** / Papaver argemone / Corydalis cava / **Corydalis solida** / Fumaria officinalis / Fumaria officinalis wirtgenii / Ulmus laevis / **Ulmus minor** / **Ulmus glabra** / **Humulus lupulus** / Cannabis sativa / Urtica urens / **Urtica dioica** / Parietaria officinalis / Juglans regia / Juglans nigra / **Fagus sylvatica** / **Quercus robur** / Quercus petraea / Quercus rubra / **Alnus glutinosa** / Alnus incana / Betula pendula / **Carpinus betulus** / **Corylus avellana** / Phytolacca esculenta / Chenopodium hybridum / **Chenopodium polyspermum** / Chenopodium opulifolium / **Chenopodium album** / Atriplex patula / Atriplex prostrata / Beta vulgaris / **Amaranthus powellii** / **Amaranthus retroflexus** / Amaranthus spinosus / Amaranthus albus / Amaranthus blitum / Portulaca oleracea / Sagina procumbens / Sagina apetala erecta / **Arenaria serpyllifolia** / Arenaria leptoclados / **Stellaria media** / Stellaria nemorum / Stellaria holostea / Stellaria graminea / Myosoton aquaticum / Cerastium arvense / **Cerastium glomeratum** / Cerastium brachypetalum / **Cerastium fontanum** / Cerastium semidecandrum / Cerastium pumilum / **Saponaria officinalis** / **Petrohragia prolifera** / Dianthus superbus sylvestris / Dianthus armeria / Dianthus carthusianorum / Dianthus deltoides / Silene noctiflora / Silene dioica / **Silene pratensis** / **Silene vulgaris** / Lychnis coronaria / Lychnis flos-cuculi / Agrostemma githago / **Rumex acetosella** / **Rumex acetosa** / **Rumex thyrsoiflorus** / **Rumex obtusifolius** / Rumex conglomeratus / Rumex sanguineus / Rumex hydrolapathum / **Rumex crispus** / **Fallopia convolvulus** / Fallopia dumetorum / **Reynoutria japonica** / **Polygonum aviculare** / Polygonum aequale / **Polygonum heterophyllum** / Polygonum bistorta / Polygonum amphibium / Polygonum amphibium aquaticum / **Polygonum persicaria** / Polygonum lapathifolium / Polygonum lapathifolium ssp. / Polygonum hydropiper / **Polygonum mite** / Fagopyrum esculentum / Hypericum calycinum / **Hypericum perforatum** / Hypericum maculatum s.l. / Hypericum maculatum ssp. Obtusiusculum / Hypericum tetrapterum / **Tilia cordata** / Althaea hirsuta / Alcea rosea / Malva alcea / **Malva moschata** / Malva sylvestris / Malva neglecta / **Viola arvensis** / Viola alba / **Viola odorata** / Viola hirta / **Viola reichenbachiana** / Viola x dubia / Bryonia dioica / Cucumis sativus / Populus tremula / Populus alba / Populus nigra / Populus canadensis / **Salix alba s.str.** / Salix alba vitellina / Salix fragilis / Salix x rubens / Salix purpurea / Salix viminalis / **Salix caprea** / Salix aurita / Salix cinerea / **Sisymbrium officinale** / Descurainia sophia / **Alliaria petiolata** / **Arabidopsis thaliana** / Isatis tinctoria / Bunias orientalis / Erysimum cheiranthoides / Hesperis matronalis / Barbarea vulgaris / Armoracia rusticana / **Rorippa palustris** / Rorippa x anceps / Rorippa austriaca / **Rorippa sylvestris** / Nasturtium officinale / Cardamine amara / **Cardamine pratensis** / Cardamine impatiens / Cardamine flexuosa / **Cardamine hirsuta** / Aubrieta deltoidea / Lunaria annua / Berteroa incana / Draba muralis / Erophila verna / Erophila praecox / **Capsella bursa-pastoris** / Capsella rubella / **Thlaspi arvense** / Thlaspi perfoliatum / beris umbellata / Lepidium campestre / **Lepidium virginicum** / Cardaria draba / Coronopus didymus / Diplotaxis tenuifolia / Brassica rapa / Brassica napus / **Sinapis arvensis** / Sinapis alba / Raphanus raphanistrum Reseda luteola / Reseda lutea / Lysimachia nummularia / Lysimachia nemorum / **Lysimachia vulgaris** / Lysimachia thyrsoiflora / **Anagallis arvensis** / Anagallis foemina / Primula elatior / Hottonia palustris / Ribes uva-crispa / **Ribes rubrum** / Sedum telephium / Sedum spurium / **Sedum rupestre** / Sedum acre / **Sedum sexangulare** / Sedum hispanicum / Sedum album / Saxifraga triadactylites / Chrysosplenium oppositifolium / **Filipendula ulmaria** / Filipendula vulgaris / Rubus idaeus / **Rubus caesius** / **Rubus fruticosus** / Rubus laciniatus / Rosa rubiginosa / Rosa agrestis / Rosa tomentosa / Rosa canina / **Agrimonia eupatoria** / Sanguisorba officinalis / **Sanguisorba minor s.str.** / Sanguisorba minor polygama / **Geum urbanum** / Geum rivale / Potentilla sterilis / **Potentilla anserina** / Potentilla norvegica / **Potentilla reptans** / Potentilla recta / **Potentilla argentea** / **Potentilla neumanniana** / Fragaria vesca / **Duchesnea indica** / Aphanes arvensis / **Alchemilla xanthochlora** / Alchemilla monticola / Alchemilla glabra / **Malus domestica** / Sorbus intermedia / Cotoneaster divaricatus / Crataegus laevigata / Crataegus monogyna / **Prunus spinosa s.str.** / Prunus avium / Prunus mahaleb / **Prunus padus** / Prunus laurocerasus / Gleditsia triacanthos / Lupinus polyphyllus / **Robinia pseudoacacia** / Astragalus glycyphyllos / Anthyllus vulneraria s.l. / Anthyllus vulneraria s.str. / Anthyllus vulneraria carpatica / **Lotus corniculatus** / Lotus uliginosus / Coronilla varia / **Onobrychis viciifolia** / **Medicago sativa** / Medicago x varia / **Medicago lupulina** / Medicago minima / **Melilotus albus** / Melilotus officinalis / Trifolium resupinatum Trifolium arvense / Trifolium incarnatum / **Trifolium pratense** / **Trifolium repens** / Trifolium hybridum / **Trifolium campestre** / **Trifolium dubium** / **Vicia hirsuta** / Vicia Tetrasperma / Vicia cracca / Vicia villosa varia / **Vicia sepium** / Vicia angustifolia s.str. / **Vicia angustifolia s.l.** / Lathyrus pratensis / **Lathyrus sylvestris** / Lathyrus latifolius / Hippophae rhamnoides / Myriophyllum verticillatum / Myriophyllum spicatum / **Lythrum salicaria** / Epilobium angustifolium / **Epilobium hirsutum** / **Epilobium parviflorum** / Epilobium roseum / Epilobium obscurum / Epilobium tetragonum / Oenothera erythrosepala / Oenothera parviflora / Circaea lutetiana / **Cornus sanguinea** / Cornus mas / Viscum album / **Euonymus europaeus** / Buxus sempervirens / **Mercurialis annua** / Euphorbia maculata / Euphorbia lathyris / **Euphorbia helioscopia** / **Euphorbia platyphyllus** / **Euphorbia cyparissias** / **Euphorbia peplus** / **Euphorbia exigua** / Parthenocissus inserta / Linum catharticum / Linum usitatissimum / **Aesculus hippocastanum** / **Acer pseudoplatanus** / **Acer platanoides** / **Acer campestre** / Rhus typhina / Ailanthus altissima / **Oxalis fontana** / Oxalis corniculata / Oxalis dillenii / Geranium robertianum / **Geranium rotundifolium** / Geranium pratense / Geranium sanguineum / Geranium columbinum / Geranium dissectum / Geranium molle / **Geranium pusillum** / **Geranium pyrenaicum** / Erodium cicutarium / **Impatiens glandulifera** / Impatiens noli-tangere / **Impatiens parviflora** / **Hedera helix** / Chaerophyllum hirsutum / Chaerophyllum temulum / **Chaerophyllum aureum** / Anthriscus sylvestris / Torilis japonica / Cicuta virosa / Pimpinella major / Pimpinella saxifraga / **Aegopodium podagraria** / **Aethusa cynapium** / **Angelica sylvestris** / Pastinaca sativa / Heracleum mantegazzianum / **Heracleum sphondylium** / **Daucus carota** / Vinca minor / Vinca major / Physalis franchetti / Solanum dulcamara / **Solanum nigrum** / Lycopersicon esculentum / Datura stramonium / Datura stramonium tatula / **Convolvulus arvensis** / **Calystegia sepium** / Menyanthes trifoliata / Nymphoides peltata / Phacelia tanacetifolia / **Echium vulgare** / Pulmonaria obscura / **Symphytum officinale** / Anchusa arvensis / Borago officinalis / Myosotis scorpioides / Myosotis ramosissima / **Myosotis arvensis** / **Verbena officinalis** / Caryopteris x clandonensis / Teucrium scorodonia / **Ajuga reptans** / Lavandula angustifolia / **Mentha arvensis** / **Mentha aquatica** / **Mentha longifolia** / Mentha x dumetorum / Mentha x piperita / Lycopus europaeus / **Origanum vulgare** / **Thymus pulegiodes** / Melissa officinalis / Satureja hortensis / Acinos arvensis / **Glechoma hederacea** / Ballota nigra / Stachys recta / **Stachys sylvatica** / Stachys palustris / **Lamium maculatum** / Lamium amplexicaule / **Lamium purpureum** / Lamium hybridum / **Lamium galeobdolon montanum** / Lamium galeobdolon argentatum / Galeopsis tetrahit / **Prunella vulgaris** / Salvia glutinosa / **Salvia pratensis** / Scutellaria galericulata / Hippuris vulgaris / **Plantago media** / **Plantago major** / Plantago intermedia / **Plantago lanceolata** / Buddleja davidii / Forsythia sp. / **Fraxinus excelsior** / Siringa vulgaris / **Ligustrum vulgare** / Ligustrum sinense / Verbascum blattaria / **Verbascum nigrum** / Verbascum lychnitis / Verbascum lychnitis album / Verbascum thapsus / **Verbascum densiflorum** / Verbascum phlomoides / **Scrophularia nodosa** / **Chaenorhinum minus** / Cymbalaria muralis / Kickxia spuria / Kickxia elatine / **Linaria vulgaris** / Antirrhinum majus / Misopates orontium / Digitalis purpurea / Veronica serpyllifolia / Veronica montana / **Veronica Chamaedrys** / **Veronica beccabunga** / Veronica anagalis-aquatica / **Veronica 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perennis** / Aster novi-belgii / Aster salignus / Erigeron acer / **Erigeron annuus s.l.** / **Erigeron annuus ssp. septentrionalis** / **Conyza canadensis** / Inula conyza / Inula graveolens / Inula salicina / Pulicaria dysenterica / Guizotia abyssinica / Bidens tripartita / Helianthus annuus / Helianthus tuberosus / **Galinoga ciliata** / Anthemis arvensis / Anthemis tinctoria / **Achillea ptarmica** / **Achillea millefolium** / **Matricaria recutita** / **Matricaria discoidea** / Tripleurospermum perforatum / **Leucanthemum ircutianum** / **Tanacetum vulgare** / Tanacetum parthenium / Artemisia vulgaris / Artemisia verlotiorum / **Tussilago farfara** / **Petasites hybridus** / Senecio ovatus / **Senecio erucifolius** / **Senecio jacobaea** / Senecio aquaticus / **Senecio vulgaris** / Senecio viscosus / Calendula officinalis / Arctium tomentosum / Arctium lappa / Arctium crispus / **Cirsium vulgare** / **Cirsium arvense** / Cirsium palustre / **Cirsium oleraceum** / Onopordum acanthium / Silybum marianum / Centaurea cyanus / Centaurea montana / Centaurea scabiosa / **Centaurea jacea s.l.** / **Centaurea jacea s.str.** / Centaurea jacea ssp. angustifolia / Cichorium intybus / Cichorium endivia / Tragopogon dubius / Tragopogon pratensis ssp. orientalis / Tragopogon pratensis ssp. minor / **Hypochaeris radicata** / **Leontodon autumnalis** / **Leontodon hispidus s.l.** / **Picris hieracioides** / Picris echioides / **Sonchus oleraceus** / **Sonchus asper** / Sonchus arvensis / **Lactuca serriola** / **Lapsana communis** / **Taraxacum officinale** / Crepis biennis / **Crepis capillaris** / Crepis pulchra / Crepis foetida / **Crepis setosa** / **Hieracium pilosella** / Hieracium lactucella / Hieracium aurantiacum / Hieracium caespitosum / Hieracium piloselloides / Hieracium maculatum / Hieracium lachenalii / Hieracium laevigatum / Hieracium sabaudum / Butomus umbellatus / Alisma plantago-aquatica / Sagittaria sagittifolia / Stratiotes aloides / Elodea canadensis / Potamogeton crispus / Potamogeton natans / Potamogeton gramineus / Potamogeton berchtoldii / Zannichellia palustris / Acorus calamus / **Arum maculatum** / Spirodela polyrhiza / Lemna trisulca / Lemna minor / **Juncus effusus** / **Juncus tenuis** / **Juncus compressus** / Juncus bufonius / Juncus subnodulosus / Juncus articulatus / **Luzula campestris** / Scirpus sylvaticus / Schoenoplectus lacustris / Eleocharis palustris / Eriophorum angustifolium / Cladium mariscus / **Carex brizoides** / **Carex muricata agr.** / Carex spicata / Carex polyphylla / Carex paniculata / Carex remota / Carex acuta / Carex caryophyllaea / **Carex pendula** / Carex sylvatica / Carex distans / Carex pseudocyperus / **Carex hirta** / Carex rostrata / **Carex acutiformis** / **Festuca gigantea** / **Festuca pratensis** / **Festuca arundinacea** / **Festuca rubra s. str.** / Festuca brevipila / **Festuca ovina agr.** / Lolium multiflorum / **Lolium perenne** / Vulpia myuros / Poa bulbosa / **Poa annua** / **Poa compressa** / **Poa trivialis** / **Poa pratensis** / Poa angustifolia / **Poa nemoralis** / Poa palustris / **Dactylis glomerata** / Dactylis polygama / Cynosurus cristatus / Briza media / Glyceria maxima / Glyceria fluitans / Glyceria notata / Glyceria x pedicellata / **Bromus sterilis** / Bromus tectorum / **Bromus erectus** / Bromus inermis / **Bromus hordeaceus** / **Brachypodium pinnatum** / Brachypodium sylvaticum / Elymus caninus / **Elymus repens** / Elymus repens glaucus / **Triticum aestivum** / Secale cereale / **Hordeum murinum** / Avena sativa / **Helictotrichon pubescens** / Arrhenatherum elatius / **Trisetum flavescens** / Anthoxantum odoratum / **Holcus lanatus** / **Holcus mollis** / Agrostis capillaris / Agrostis gigantea / **Agrostis stolonifera s.l.** / Agrostis stolonifera ssp. prorepens / **Apera spica-venti** / **Pheum pratense** / Alopecurus myosuroides / **Alopecurus pratensis** / **Phalaris arundinacea** / Phalaris canariensis / Milium effusum / **Phragmites australis** / Eragrostis minor / Leersia oryzoides / Panicum miliaceum / **Panicum capillare** / **Echinochloa crus-galli** / **Digitaria sanguinalis** / Setaria verticillata / Setaria verticilliformis / Setaria pumilla / **Setaria viridis s.l.** / Sorghum halepense / Sparganium erectum / Typha angustifolia / Typha latifolia / Pontederia cordata / Gagea lutea / Tulipa sylvestris / **Ornithogalum umbellatum** / Scilla bifolia / Scilla siberica / Hyacinthoides sp. / Muscari racemosum / Muscari armeniacum / Allium vineale / **Allium scorodoprasum** / Allium schoenoprasum / Allium ursinum / Allium oleraceum / Polygonatum multiflorum / Asparagus officinalis / Galanthus nivalis / Narcissus pseudonarcissus / **Iris pseudacorus** / Crocus sp. / Listera ovata / Dactylorhiza fuchsii / Anacamptis pyramidalis

## LANGE ERL. PERCEIVERS

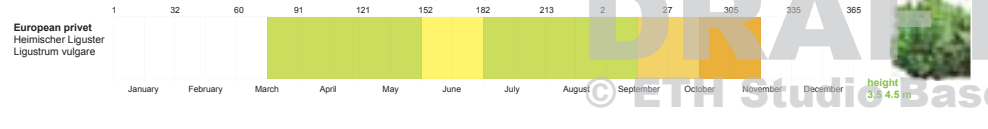
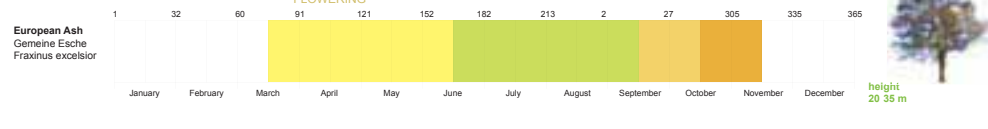
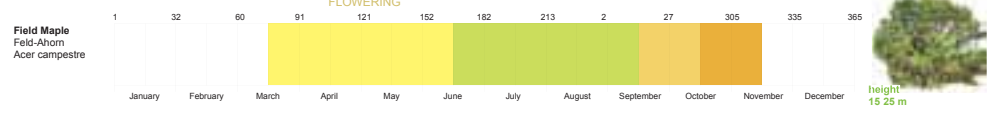
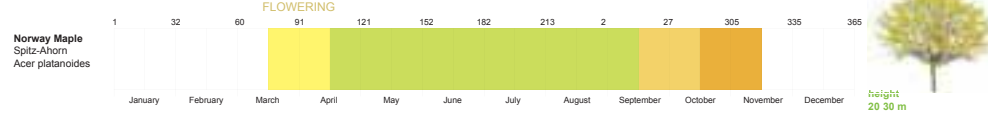
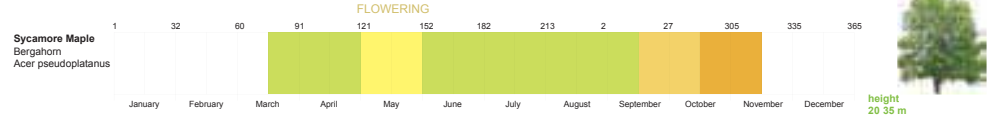
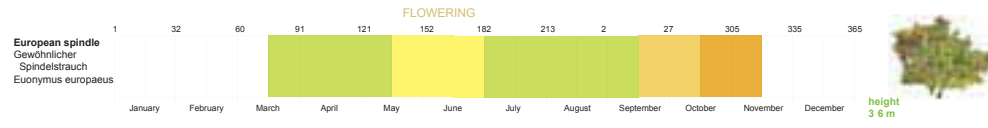
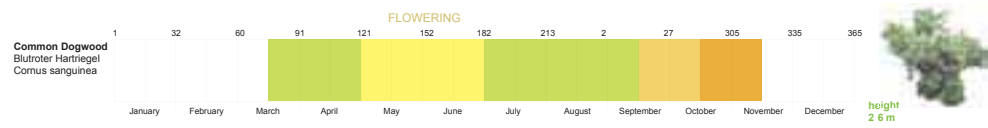
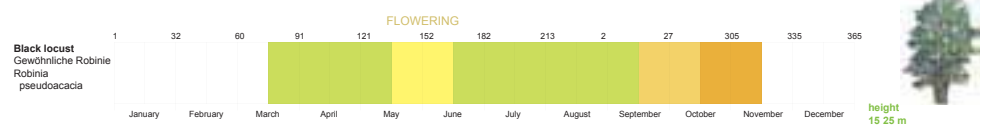
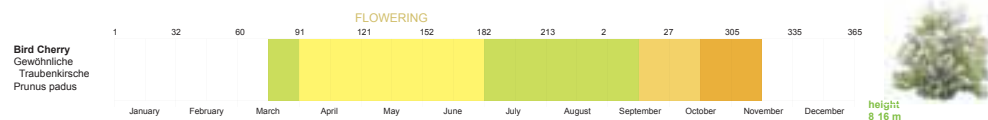
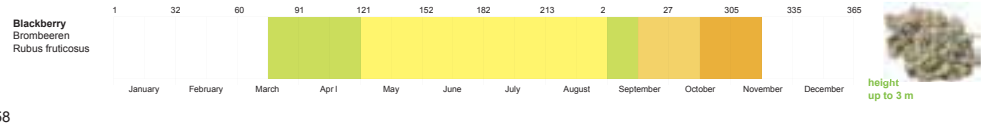
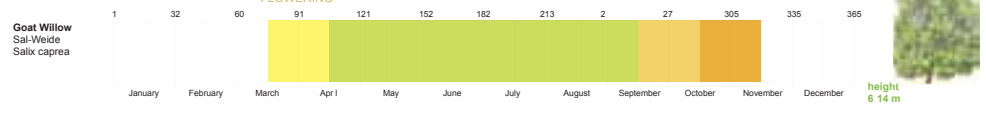
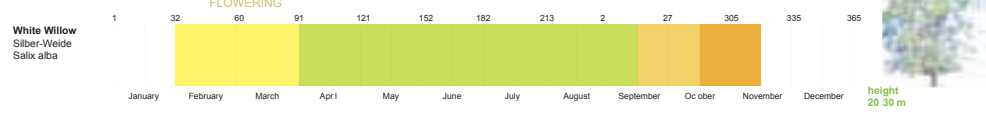
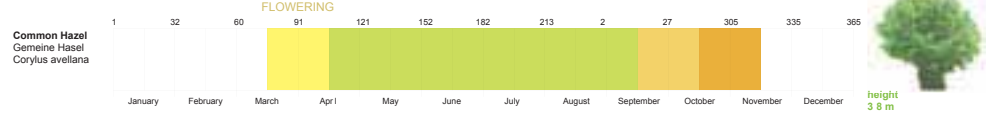
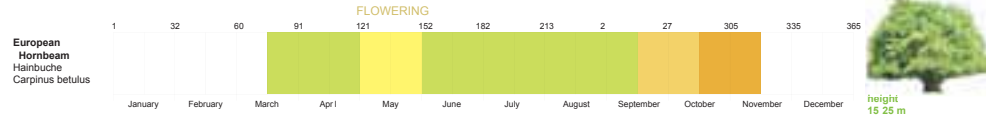
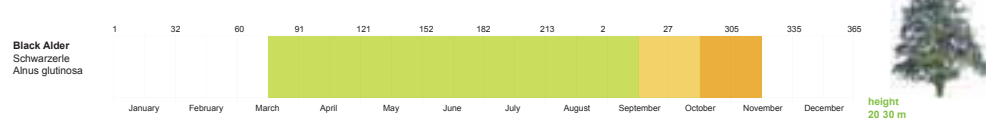
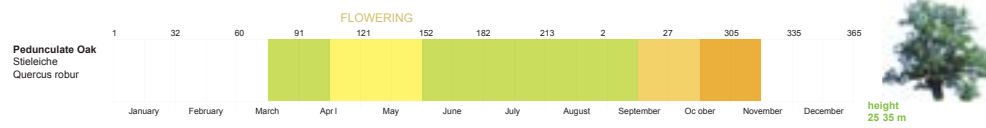
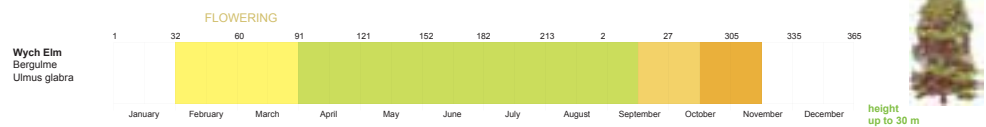
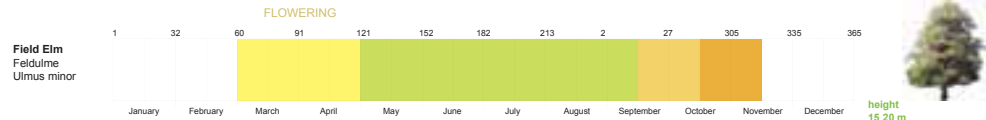
**Equisetum arvense** / Equisetum telmateia / Gymnocarpium robertianum / Dryopteris filix-mas / Athyrium filix-femina / Asplenium trichomanes / Asplenium ruta-muraria / Pseudotsuga menziesii / Pinus sylvestris / Thuja occidentalis / Taxus baccata / Aristolochia clematidis / Nymphaea alba / Nuphar lutea / Ceratophyllum demersum / Eranthis hyemalis / Aquilegia vulgaris / Caltha palustris / Consolida regalis / Consolida ajacis / Anemone ranunculoides / **Anemone nemorosa** / Anemone blanda / Clematis vitalba / **Ranunculus ficaria** / Ranunculus aquatilis / Ranunculus penicillatus / Ranunculus aconitifolius / Ranunculus lingua / **Ranunculus biformis** / Ranunculus alnetorum / Ranunculus kuzii / Ranunculus macrotis / **Ranunculus acer** / Ranunculus bulbosus / **Ranunculus repens** / Berberis vulgaris / Berberis thunbergii / Mahonia aquifolium / Chelidonium majus / Papaver somniferum / **Papaver rhoeas** / Papaver argemone / Corydalis cava / **Corydalis solida** / Fumaria officinalis / Fumaria officinalis wirtgenii / Ulmus laevis / **Ulmus minor** / **Ulmus glabra** / **Humulus lupulus** / Cannabis sativa / Urtica urens / **Urtica dioica** / Parietaria officinalis / **Juglans regia** / Juglans nigra / Fagus sylvatica / **Quercus robur** / Quercus petraea / Quercus rubra / **Alnus glutinosa** / Alnus incana / Betula pendula / **Carpinus betulus** / **Corylus avellana** / Phytolacca esculenta / Chenopodium hybridum / **Chenopodium polyspermum** / Chenopodium opulifolium / **Chenopodium album** / Atriplex patula / Atriplex prostrata / Beta vulgaris / **Amaranthus powellii** / **Amaranthus retroflexus** / Amaranthus spinosus / Amaranthus albus / Amaranthus blitum / Portulaca oleracea / Sagina procumbens / Sagina apetala erecta / **Arenaria serpyllifolia** / Arenaria leptoclados / **Stellaria media** / Stellaria nemorum / Stellaria holostea / Stellaria graminea / Myosoton aquaticum / Cerastium arvense / **Cerastium glomeratum** / Cerastium brachypetalum / **Cerastium fontanum** / Cerastium semidecandrum / Cerastium pumilum / **Saponaria officinalis** / **Petrorhagia prolifera** / Dianthus superbus / Dianthus sylvestris / Dianthus armeria / Dianthus carthusianorum / Dianthus deltoideus / Silene noctiflora / Silene dioica / **Silene pratensis** / **Silene vulgaris** / Lychnis coronaria / Lychnis flos-cuculi / Agrostemma githago / **Rumex acetosella** / **Rumex acetosa** / **Rumex thyrsoiflorus** / **Rumex obtusifolius** / Rumex conglomeratus / Rumex sanguineus / Rumex hydrolapathum / **Rumex crispus** / **Fallopia convolvulus** / Fallopia dumetorum / **Reynoutria japonica** / **Polygonum aviculare** / Polygonum aequale / **Polygonum heterophyllum** / Polygonum bistorta / Polygonum amphibium / Polygonum amphibium aquaticum / **Polygonum persicaria** / Polygonum lapathifolium / Polygonum lapathifolium ssp. / Polygonum hydropiper / **Polygonum mite** / Fagopyrum esculentum / Hypericum calycinum / **Hypericum perforatum** / Hypericum maculatum s.l. / Hypericum maculatum ssp. Obtusiusculum / Hypericum tetrapterum / Tilia cordata / Althaea hirsuta / Alcea rosea / Malva alcea / **Malva moschata** / Malva sylvestris / Malva neglecta / **Viola arvensis** / Viola alba / **Viola odorata** / Viola hirta / **Viola reichenbachiana** / Viola x dubia / Bryonia dioica / Cucumis sativus / Populus tremula / Populus alba / Populus nigra / Populus canadensis / **Salix alba s.str.** / Salix alba vitellina / Salix fragilis / Salix x rubens / Salix purpurea / Salix viminalis / **Salix caprea** / Salix aurita / Salix cinerea / **Sisymbrium officinale** / Descurainia sophia / **Alliaria petiolata** / **Arabidopsis thaliana** / Isatis tinctoria / Bunias orientalis / Erysimum cheiranthoides / Hesperis matronalis / Barbarea vulgaris / Armoracia rusticana / **Rorippa palustris** / Rorippa x anceps / Rorippa austriaca / **Rorippa sylvestris** / Nasturtium officinale / Cardamine amara / **Cardamine pratensis** / Cardamine impatiens / Cardamine flexuosa / **Cardamine hirsuta** / Aubrieta deltoidea / Lunaria annua / Berteroa incana / Draba muralis / Erophila verna / Erophila praecox / **Capsella bursa-pastoris** / Capsella rubella / **Thlaspi arvense** / Thlaspi perfoliatum / beris umbellata / Lepidium campestre / **Lepidium virginicum** / Cardaria draba / Coronopus didymus / Diplotaxis tenuifolia / Brassica rapa / Brassica napus / **Sinapis arvensis** / Sinapis alba / Raphanus raphanistrum Reseda luteola / Reseda lutea / Lysimachia nummularia / Lysimachia nemorum / **Lysimachia vulgaris** / Lysimachia thyrsoiflora / **Anagallis arvensis** / Anagallis foemina / Primula elatior / Hottonia palustris / Ribes uva-crispa / **Ribes rubrum** / Sedum telephium / Sedum spurium / **Sedum rupestre** / Sedum acre / **Sedum sexangulare** / Sedum hispanicum / Sedum album / Saxifraga triadactylites / Chrysosplenium oppositifolium / **Filipendula ulmaria** / Filipendula vulgaris / Rubus idaeus / **Rubus caesius** / **Rubus fruticosus** / Rubus laciniatus / Rosa rubiginosa / Rosa agrestis / Rosa tomentosa / Rosa canina / **Agrimonia eupatoria** / Sanguisorba officinalis / **Sanguisorba minor s.str.** / Sanguisorba minor polygama / **Geum urbanum** / Geum rivale / Potentilla sterilis / **Potentilla anserina** / Potentilla norvegica / **Potentilla reptans** / Potentilla recta / **Potentilla argentea** / **Potentilla neumanniana** / Fragaria vesca / **Duchesnea indica** / Aphanes arvensis / **Alchemilla xanthochlora** / Alchemilla monticola / Alchemilla glabra / **Malus domestica** / Sorbus intermedia / Cotoneaster divaricatus / Crataegus laevigata / Crataegus monogyna / Prunus spinosa s.str. / **Prunus avium** / Prunus mahaleb / **Prunus padus** / Prunus laurocerasus / Gleditsia triacanthos / Lupinus polyphyllus / **Robinia pseudoacacia** / Astragalus glycyphyllos / Anthyllus vulneraria s.l. / Anthyllus vulneraria s.str. / Anthyllus vulneraria carpatica / **Lotus corniculatus** / Lotus uliginosus / Coronilla varia / **Onobrychis vicifolia** / **Medicago sativa** / Medicago x varia / **Medicago lupulina** / Medicago minima / **Melilotus albus** / Melilotus officinalis / Trifolium resupinatum Trifolium arvense / Trifolium incarnatum / **Trifolium pratense** / **Trifolium repens** / Trifolium hybridum / **Trifolium campestre** / **Trifolium dubium** / **Vicia hirsuta** / Vicia Tetrasperma / Vicia cracca / Vicia villosa varia / **Vicia sepium** / Vicia angustifolia s.str. / **Vicia angustifolia s.l.** / Lathyrus pratensis / **Lathyrus sylvestris** / Lathyrus latifolius / Hippophae rhamnoides / Myriophyllum verticillatum / Myriophyllum spicatum / **Lythrum salicaria** / Epilobium angustifolium / **Epilobium hirsutum** / **Epilobium parviflorum** / Epilobium montanum / Epilobium roseum / Epilobium obscurum / Epilobium tetragonum / Oenothera erythrosepala / Oenothera parviflora / Circaea lutetiana / **Cornus sanguinea** / Cornus mas / Viscum album / **Euonymus europaeus** / Buxus sempervirens / **Mercurialis annua** / Euphorbia maculata / Euphorbia lathyris / **Euphorbia helioscopia** / **Euphorbia platyphyllos** / **Euphorbia cyparissias** / **Euphorbia peplus** / **Euphorbia exigua** / Parthenocissus inserta / Linum catharticum / Linum usitatissimum / Aesculus hippocastanum / **Acer pseudoplatanus** / **Acer platanoides** / **Acer campestre** / Rhus typhina / Ailanthus altissima / **Oxalis fontana** / Oxalis corniculata / Oxalis dillenii / Geranium robertianum / **Geranium rotundifolium** / Geranium pratense / Geranium sanguineum / Geranium columbinum / Geranium dissectum / Geranium molle / **Geranium pusillum** / **Geranium pyrenaicum** / Erodium cicutarium / **Impatiens glandulifera** / Impatiens noli-tangere / **Impatiens parviflora** / **Hedera helix** / Chaerophyllum hirsutum / Chaerophyllum temulum / **Chaerophyllum aureum** / Anthriscus sylvestris / Torilis japonica / Cicuta virosa / Pimpinella major / Pimpinella saxifraga / **Aegopodium podagraria** / **Aethusa cynapium** / **Angelica sylvestris** / Pastinaca sativa / Heracleum mantegazzianum / **Heracleum sphondylium** / **Daucus carota** / Vinca minor / Vinca major / Physalis franchetti / Solanum dulcamara / **Solanum nigrum** / Lycopersicon esculentum / Datura stramonium / Datura stramonium tatula / **Convolvulus arvensis** / **Calystegia sepium** / Menyanthes trifoliata / Nymphoides peltata / Phacelia tanacetifolia / **Echium vulgare** / Pulmonaria obscura / **Symphytum officinale** / Anchusa arvensis / Borago officinalis / Myosotis scorpioides / Myosotis ramosissima / **Myosotis arvensis** / **Verbena officinalis** / Caryopteris x clandonensis / Teucrium scorodonia / **Ajuga reptans** / Lavandula angustifolia / **Mentha arvensis** / **Mentha aquatica** / **Mentha longifolia** / Mentha x dumetorum / Mentha x piperita / Lycopus europaeus / **Origanum vulgare** / **Thymus pulegiodes** / Melissa officinalis / Satureja hortensis / Acinos arvensis / **Glechoma hederacea** / Ballota nigra / Stachys recta / **Stachys sylvatica** / Stachys palustris / **Lamium maculatum** / Lamium amplexicaule / **Lamium purpureum** / Lamium hybridum / **Lamium galeobdolon montanum** / Lamium galeobdolon argentatum / Galeopsis tetrahit / **Prunella vulgaris** / Salvia glutinosa / **Salvia pratensis** / Scutellaria galericulata / Hippuris vulgaris / **Plantago media** / **Plantago major** / Plantago intermedia / **Plantago lanceolata** / Buddleja davidii / Forsythia sp. / **Fraxinus excelsior** / Syringa vulgaris / **Ligustrum vulgare** / Ligustrum sinense / Verbascum blattaria / **Verbascum nigrum** / Verbascum lychnitis / Verbascum lychnitis album / Verbascum thapsus / **Verbascum densiflorum** / Verbascum phlomooides / **Scrophularia nodosa** / **Chaenorhinum minus** / Cymbalaria muralis / Kickxia spuria / Kickxia elatine / **Linaria vulgaris** / Antirrhinum majus / Misopates orontium / Digitalis purpurea / Veronica serpyllifolia / Veronica montana / **Veronica Chamaedrys** / **Veronica beccabunga** / Veronica anagalis-aquatica / **Veronica arvensis** / **Veronica peregrina** / **Veronica hederifolia** / Veronica hederifolia lucorum / **Veronica persica** / **Veronica filiformis** / Veronica polita / Rhinanthus alectorolophus / Orobanche caryophyllacea / Orobanche minor / Paulownia tomentosa / Utricularia vulgaris / **Campanula rapunculcus** / Campanula patula / Campanula rotundifolia / Campanula trachelium / Sherardia arvensis / Crucjata Laevipes / Galium verum s.str. / Galium palustre / **Galium aparine** / **Galium album** / Lonicera xylosteum / Lonicera nitida / Symphoricarpos albus / Symphoricarpos x chenaultii / Viburnum lantana / Viburnum opulus / **Sambucus nigra** / **Adoxa moschatellina** / Valerianella locusta / Valerianella carinata / Valeriana officinalis / Valeriana officinalis ssp. excelsa / Centranthus ruber / Dipsacus fullonum / Dipsacus laciniatus / Dipsacus pilosus / **Knautia arvensis** / Knautia dipsacifolia / Eupatorium cannabinum / **Solidago canadensis** / **Solidago gigantea** / **Bellis perennis** / Aster novi-belgii / Aster salignus / Erigeron acer / **Erigeron annuus s.l.** / **Erigeron annuus ssp. septentrionalis** / **Conyza canadensis** / Inula conyza / Inula graveolens / Inula salicina / Pulicaria dysenterica / Guizotia abyssinica / Bidens tripartita / Helianthus annuus / Helianthus tuberosus / **Galinsoga ciliata** / Anthemis arvensis / Anthemis tinctoria / **Achillea ptarmica** / **Achillea millefolium** / **Matricaria recutita** / **Matricaria discoidea** / Tripleurospermum perforatum / **Leucanthemum irtucianum** / **Tanacetum vulgare** / Tanacetum parthenium / Artemisia vulgaris / Artemisia verlotiorum / Tussilago farfara / **Petasites hybridus** / Senecio ovatus / **Senecio erucifolius** / **Senecio jacobaea** / Senecio aquaticus / **Senecio vulgaris** / Senecio viscosus / Calendula officinalis / Arctium tomentosum / Arctium lappa / Arctium crispus / **Cirsium vulgare** / **Cirsium arvense** / Cirsium palustre / **Cirsium oleraceum** / Onopordum acanthium / Silybum marianum / Centaurea cyanus / Centaurea montana / Centaurea scabiosa / **Centaurea jacea s.l.** / **Centaurea jacea s.str.** / Centaurea jacea ssp. angustifolia / Cichorium intybus / Cichorium endivia / Tragopogon dubius / Tragopogon pratensis ssp. orientalis / Tragopogon pratensis ssp. minor / **Hypochaeris radicata** / **Leontodon autumnalis** / **Leontodon hispidus s.l.** / **Picris hieracioides** / Picris echioides / **Sonchus oleraceus** / **Sonchus asper** / Sonchus arvensis / **Lactuca serriola** / **Lapsana communis** / **Taraxacum officinale** / Crepis biennis / **Crepis capillaris** / Crepis pulchra / Crepis foetida / **Crepis setosa** / **Hieracium pilosella** / Hieracium lactucella / Hieracium aurantiacum / Hieracium caespitosum / Hieracium piloselloides / Hieracium maculatum / Hieracium lachenalii / Hieracium laevigatum / Hieracium sabaudum / Butomus umbellatus / Alisma plantago-aquatica / Sagittaria sagittifolia / Stratiotes aloides / Elodea canadensis / Potamogeton crispus / Potamogeton natans / Potamogeton gramineus / Potamogeton bertholdii / Zannichellia palustris / Acorus calamus / **Arum maculatum** / Spirodela polyrhiza / Lemna trisulca / Lemna minor / **Juncus effusus** / **Juncus tenuis** / **Juncus compressus** / Juncus bufonius / Juncus subnodulosus / Juncus articulatus / **Luzula campestris** / Scirpus sylvaticus / Schoenoplectus lacustris / Eleocharis palustris / Eriophorum angustifolium / Cladium mariscus / **Carex brizoides** / **Carex muricata agr.** / Carex spicata / Carex polyphylla / Carex paniculata / Carex remota / Carex acuta / Carex caryophyllaea / **Carex pendula** / Carex sylvatica / Carex distans / Carex pseudocyperus / **Carex hirta** / Carex rostrata / **Carex acutiformis** / **Festuca gigantea** / **Festuca pratensis** / **Festuca arundinacea** / **Festuca rubra s. str.** / Festuca brevipila / **Festuca ovina agr.** / Lolium multiflorum / **Lolium perenne** / Vulpia myuros / Poa bulbosa / **Poa annua** / **Poa compressa** / **Poa trivialis** / **Poa pratensis** / Poa angustifolia / **Poa nemoralis** / Poa palustris / **Dactylis glomerata** / Dactylis polygama / Cynosurus cristatus / Briza media / Glyceria maxima / Glyceria fluitans / Glyceria notata / Glyceria x pedicellata / **Bromus sterilis** / Bromus tectorum / **Bromus erectus** / Bromus inermis / **Bromus hordeaceus** / **Brachypodium pinnatum** / Brachypodium sylvaticum / Elymus caninus / **Elymus repens** / Elymus repens glaucus / Triticum aestivum / Secale cereale / **Hordeum murinum** / Avena sativa / **Helictotrichon pubescens** / Arrhenatherum elatius / Trisetum flavescens / Anthoxantum odoratum / Holcus lanatus / Holcus mollis / Agrostis capillaris / Agrostis gigantea / **Agrostis stolonifera s.l.** / Agrostis stolonifera ssp. prorepens / **Apera spica-venti** / Phleum pratense / Alopecurus myosuroides / **Alopecurus pratensis** / Phalaris arundinacea / Phalaris canariensis / Milium effusum / **Phragmites australis** / Eragrostis minor / Leersia oryzoides / Panicum miliaceum / **Panicum capillare** / **Echinochloa crus-galli** / Digitaria sanguinalis / Setaria verticillata / Setaria verticilliformis / Setaria pumilla / **Setaria viridis s.l.** / Sorghum halepense / Sparganium erectum / Typha angustifolia / Typha latifolia / Pontederia cordata / Gagea lutea / **Tulipa sylvestris** / **Ornithogalum umbellatum** / Scilla bifolia / Scilla siberica / Hyacinthoides sp. / Muscari racemosum / Muscari armeniacum / Allium vineale / **Allium scorodoprasum** / Allium schoenoprasum / Allium ursinum / Allium oleraceum / Polygonatum multiflorum / Asparagus officinalis / **Galanthus nivalis** / **Narcissus pseudonarcissus** / **Iris pseudacorus** / Crocus sp. / Listera ovata / Dactylorhiza fuchsii / Anacamptis pyramidalis

## LANGE ERL. SPECIFICITY

*Equisetum arvense* / Equisetum telmateia / Gymnocarpium robertianum / Dryopteris filix-mas / Athyrium filix-femina / Asplenium trichomanes / Asplenium ruta-muraria / Pseudotsuga menziesii / Pinus sylvestris / Thuja occidentalis / Taxus baccata / Aristolochia clematidis / Nymphaea alba / Nuphar lutea / Ceratophyllum demersum / Eranthis hyemalis / Aquilegia vulgaris / Caltha palustris / Consolida regalis / Consolida ajacis / **Anemone ranunculoides** / **Anemone nemorosa** / Anemone blanda / Clematis vitalba / **Ranunculus ficaria** / Ranunculus aquatilis / Ranunculus penicillatus / Ranunculus aconitifolius / Ranunculus lingua / **Ranunculus biformis** / Ranunculus alnetorum / Ranunculus kuznii / Ranunculus macrotis / **Ranunculus acer** / Ranunculus bulbosus / **Ranunculus repens** / Berberis vulgaris / Berberis thunbergii / Mahonia aquifolium / Chelidonium majus / Papaver somniferum / **Papaver rhoeas** / Papaver argemone / Corydalis cava / **Corydalis solida** / Fumaria officinalis / Fumaria officinalis wirtgenii / Ulmus laevis / **Ulmus minor** / **Ulmus glabra** / **Humulus lupulus** / Cannabis sativa / Urtica urens / **Urtica dioica** / Parietaria officinalis / Juglans regia / Juglans nigra / Fagus sylvatica / **Quercus robur** / Quercus petraea / Quercus rubra / **Alnus glutinosa** / **Alnus incana** / Betula pendula / **Carpinus betulus** / **Corylus avellana** / Phytolacca esculenta / Chenopodium hybridum / **Chenopodium polyspermum** / Chenopodium opulifolium / **Chenopodium album** / Atriplex patula / Atriplex prostrata / Beta vulgaris / **Amaranthus powellii** / **Amaranthus retroflexus** / Amaranthus spinosus / Amaranthus albus / Amaranthus blitum / Portulaca oleracea / Sagina procumbens / Sagina apetala erecta / **Arenaria serpyllifolia** / Arenaria leptoclados / **Stellaria media** / Stellaria nemorum / Stellaria holostea / Stellaria graminea / Myosoton aquaticum / Cerastium arvense / **Cerastium glomeratum** / Cerastium brachypetalum / **Cerastium fontanum** / Cerastium semidecandrum / Cerastium pumilum / **Saponaria officinalis** / **Petrohragia prolifera** / Dianthus superbus sylvestris / Dianthus armeria / Dianthus carthusianorum / Dianthus deltoides / Silene noctiflora / **Silene dioica** / **Silene pratensis** / **Silene vulgaris** / Lychnis coronaria / Lychnis flos-cuculi / Agrostemma githago / **Rumex acetosella** / **Rumex acetosa** / **Rumex thyrsoiflorus** / **Rumex obtusifolius** / Rumex conglomeratus / Rumex sanguineus / Rumex hydrolapathum / **Rumex crispus** / **Fallopia convolvulus** / Fallopia dumetorum / **Reynoutria japonica** / **Polygonum aviculare** / Polygonum aequale / **Polygonum heterophyllum** / Polygonum bistorta / Polygonum amphibium / Polygonum amphibium aquaticum / **Polygonum persicaria** / Polygonum lapathifolium / Polygonum lapathifolium ssp. / Polygonum hydropiper / **Polygonum mite** / Fagopyrum esculentum / Hypericum calycinum / **Hypericum perforatum** / Hypericum maculatum s.l. / Hypericum maculatum ssp. Obtusiusculum / Hypericum tetrapterum / Tilia cordata / Althaea hirsuta / Alcea rosea / Malva alcea / **Malva moschata** / Malva sylvestris / Malva neglecta / **Viola arvensis** / Viola alba / **Viola odorata** / Viola hirta / **Viola reichenbachiana** / Viola x dubia / Bryonia dioica / Cucumis sativus / Populus tremula / Populus alba / Populus nigra / Populus canadensis / **Salix alba s.str.** / Salix alba vitellina / Salix fragilis / Salix x rubens / Salix purpurea / Salix viminalis / **Salix caprea** / Salix aurita / Salix cinerea / **Sisymbrium officinale** / Descurainia sophia / **Alliaria petiolata** / **Arabidopsis thaliana** / Isatis tinctoria / Bunias orientalis / Erysimum cheiranthoides / Hesperis matronalis / Barbarea vulgaris / Armoracia rusticana / **Rorippa palustris** / Rorippa x anceps / Rorippa austriaca / **Rorippa sylvestris** / Nasturtium officinale / Cardamine amara / **Cardamine pratensis** / Cardamine impatiens / Cardamine flexuosa / **Cardamine hirsuta** / Aubrieta deltoidea / Lunaria annua / Berteroa incana / Draba muralis / Erophila verna / Erophila praecox / **Capsella bursa-pastoris** / Capsella rubella / **Thlaspi arvense** / Thlaspi perfoliatum / beris umbellata / Lepidium campestre / **Lepidium virginicum** / Cardaria draba / Coronopus didymus / Diplotaxis tenuifolia / Brassica rapa / Brassica napus / **Sinapis arvensis** / Sinapis alba / Raphanus raphanistrum Reseda luteola / Reseda lutea / Lysimachia nummularia / Lysimachia nemorum / **Lysimachia vulgaris** / Lysimachia thyrsoiflora / **Anagallis arvensis** / Anagallis foemina / Primula elatior / Hottonia palustris / Ribes uva-crispa / **Ribes rubrum** / Sedum telephium / Sedum spurium / **Sedum rupestre** / Sedum acre / **Sedum sexangulare** / Sedum hispanicum / Sedum album / Saxifraga tridactylites / Chrysosplenium oppositifolium / **Filipendula ulmaria** / Filipendula vulgaris / Rubus idaeus / **Rubus caesius** / **Rubus fruticosus** / Rubus laciniatus / Rosa rubiginosa / Rosa agrestis / Rosa tomentosa / Rosa canina / **Agrimonia eupatoria** / Sanguisorba officinalis / **Sanguisorba minor s.str.** / Sanguisorba minor polygama / **Geum urbanum** / Geum rivale / Potentilla sterilis / **Potentilla anserina** / Potentilla norvegica / **Potentilla reptans** / Potentilla recta / **Potentilla argentea** / **Potentilla neumanniana** / Fragaria vesca / **Duchesnea indica** / Aphanes arvensis / **Alchemilla xanthochlora** / Alchemilla monticola / Alchemilla glabra / Malus domestica / Sorbus intermedia / Cotoneaster divaricatus / Crataegus laevigata / Crataegus monogyna / Prunus spinosa s.str. / Prunus avium / Prunus mahaleb / **Prunus padus** / Prunus laurocerasus / Gleditsia triacanthos / Lupinus polyphyllus / **Robinia pseudoacacia** / Astragalus glycyphyllos / Anthyllis vulneraria s.l. / Anthyllis vulneraria s.str. / Anthyllis vulneraria carpatica / **Lotus corniculatus** / Lotus uliginosus / Coronilla varia / **Onobrychis vicifolia** / **Medicago sativa** / Medicago x varia / **Medicago lupulina** / Medicago minima / **Melilotus albus** / Melilotus officinalis / Trifolium resupinatum Trifolium arvense / Trifolium incarnatum / **Trifolium pratense** / **Trifolium repens** / Trifolium hybridum / **Trifolium campestre** / **Trifolium dubium** / **Vicia hirsuta** / Vicia Tetrasperma / Vicia cracca / Vicia villosa varia / **Vicia sepium** / Vicia angustifolia s.str. / **Vicia angustifolia s.l.** / Lathyrus pratensis / **Lathyrus sylvestris** / Lathyrus latifolius / Hippophae rhamnoides / Myriophyllum verticillatum / Myriophyllum spicatum / **Lythrum salicaria** / Epilobium angustifolium / **Epilobium hirsutum** / **Epilobium parviflorum** / Epilobium montanum / Epilobium roseum / Epilobium obscurum / Epilobium tetragonum / Oenothera erythrosepala / Oenothera parviflora / Circaea lutetiana / **Cornus sanguinea** / Cornus mas / Viscum album / **Euonymus europaeus** / Buxus sempervirens / **Mercurialis annua** / Euphorbia maculata / Euphorbia lathyris / **Euphorbia helioscopia** / **Euphorbia platyphyllos** / **Euphorbia cyparissias** / **Euphorbia peplus** / **Euphorbia exigua** / Parthenocissus inserta / Linum catharticum / Linum usitatissimum / Aesculus hippocastanum / **Acer pseudoplatanus** / **Acer platanoides** / **Acer campestre** / Rhus typhina / Ailanthus altissima / **Oxalis fontana** / Oxalis corniculata / Oxalis dillenii / Geranium robertianum / **Geranium rotundifolium** / Geranium pratense / Geranium sanguineum / Geranium columbinum / Geranium dissectum / Geranium molle / **Geranium pusillum** / **Geranium pyrenaicum** / Erodium cicutarium / **Impatiens glandulifera** / Impatiens noli-tangere / **Impatiens parviflora** / **Hedera helix** / Chaerophyllum hirsutum / Chaerophyllum temulum / **Chaerophyllum aureum** / Anthriscus sylvestris / Torilis japonica / Cicuta virosa / Pimpinella major / Pimpinella saxifraga / **Aegopodium podagraria** / **Aethusa cynapium** / **Angelica sylvestris** / Pastinaca sativa / Heracleum mantegazzianum / **Heracleum sphondylium** / **Daucus carota** / Vinca minor / Vinca major / Physalis franchetti / Solanum dulcamara / **Solanum nigrum** / Lycopersicon esculentum / Datura stramonium / Datura stramonium tatula / **Convolvulus arvensis** / **Calystegia sepium** / Menyanthes trifoliata / Nymphoides peltata / Phacelia tanacetifolia / **Echium vulgare** / Pulmonaria obscura / **Symphytum officinale** / Anchusa arvensis / Borago officinalis / Myosotis scorpioides / Myosotis ramosissima / **Myosotis arvensis** / **Verbena officinalis** / Caryopteris x clandonensis / Teucrium scorodonia / **Ajuga reptans** / Lavandula angustifolia / **Mentha arvensis** / **Mentha aquatica** / **Mentha longifolia** / Mentha x dumetorum / Mentha x piperita / Lycopus europaeus / **Origanum vulgare** / **Thymus pulegiodes** / Melissa officinalis / Satureja hortensis / Acinos arvensis / **Glechoma hederacea** / Ballota nigra / Stachys recta / **Stachys sylvatica** / Stachys palustris / **Lamium maculatum** / Lamium amplexicaule / **Lamium purpureum** / Lamium hybridum / **Lamium galeobdolon montanum** / Lamium galeobdolon argentatum / Galeopsis tetrahit / **Prunella vulgaris** / Salvia glutinosa / **Salvia pratensis** / Scutellaria galericulata / Hippuris vulgaris / **Plantago media** / **Plantago major** / Plantago intermedia / **Plantago lanceolata** / Buddleja davidii / Forsythia sp. / **Fraxinus excelsior** / Syringa vulgaris / **Ligustrum vulgare** / Ligustrum sinense / Verbascum blattaria / **Verbascum nigrum** / Verbascum lychnitis / Verbascum lychnitis album / Verbascum thapsus / **Verbascum densiflorum** / Verbascum phlomoides / **Scrophularia nodosa** / **Chaenorhinum minus** / Cymbalaria muralis / Kickxia spuria / Kickxia elatine / **Linaria vulgaris** / Antirrhinum majus / Misopates orontium / Digitalis purpurea / Veronica serpyllifolia / Veronica montana / **Veronica Chamaedrys** / **Veronica beccabunga** / Veronica anagalis-aquatica / **Veronica arvensis** / **Veronica peregrina** / **Veronica hederifolia** / Veronica hederifolia lucorum / **Veronica persica** / **Veronica filiformis** / Veronica polita / Rinanthes alectorolophus / Orobanche caryophyllacea / Orobanche minor / Paulownia tomentosa / Utricularia vulgaris / **Campanula rapunculcus** / Campanula patula / Campanula rotundifolia / Campanula trachelium / Sherardia arvensis / Crucjata Laevipes / Galium verum s.str. / Galium palustre / **Galium aparine** / **Galium album** / Lonicera xylosteum / Lonicera nitida / Symphoricarpos albus / Symphoricarpos x chenaultii / Viburnum lantana / Viburnum opulus / **Sambucus nigra** / **Adoxa moschatellina** / Valerianella locusta / Valerianella carinata / Valeriana officinalis / Valeriana officinalis ssp. excelsa / Centranthus ruber / Dipsacus fullonum / Dipsacus laciniatus / Dipsacus pilosus / **Knautia arvensis** / Knautia dipsacifolia / Eupatorium cannabinum / **Solidago canadensis** / **Solidago gigantea** / **Bellis perennis** / Aster novi-belgii / Aster salignus / Erigeron acer / **Erigeron annuus s.l.** / **Erigeron annuus ssp. septentrionalis** / **Conyza canadensis** / Inula conyza / Inula graveolens / Inula salicina / Pulicaria dysenterica / Guizotia abyssinica / Bidens tripartita / Helianthus annuus / Helianthus tuberosus / **Galinsoga ciliata** / Anthemis arvensis / Anthemis tinctoria / **Achillea ptarmica** / **Achillea millefolium** / **Matricaria recutita** / **Matricaria discoidea** / Tripleurospermum perforatum / **Leucanthemum ircutianum** / **Tanacetum vulgare** / Tanacetum parthenium / Artemisia vulgaris / Artemisia verlotiorum / Tussilago farfara / **Petasites hybridus** / Senecio ovatus / **Senecio erucifolius** / **Senecio jacobaea** / Senecio aquaticus / **Senecio vulgaris** / Senecio viscosus / Calendula officinalis / Arctium tomentosum / Arctium lappa / **Arctium minus** / Carduus crispus / **Cirsium vulgare** / **Cirsium arvense** / Cirsium palustre / **Cirsium oleraceum** / Onopordum acanthium / Silybum marianum / Centaurea cyanus / Centaurea montana / Centaurea scabiosa / **Centaurea jacea s.l.** / **Centaurea jacea s.str.** / Centaurea jacea ssp. angustifolia / Cichorium intybus / Cichorium endivia / Tragopogon dubius / Tragopogon pratensis ssp. orientalis / Tragopogon pratensis ssp. minor / **Hypochaeris radicata** / **Leontodon autumnalis** / **Leontodon hispidus s.l.** / **Picris hieracioides** / Picris echioides / **Sonchus oleraceus** / **Sonchus asper** / Sonchus arvensis / **Lactuca serriola** / **Lapsana communis** / **Taraxacum officinale** / Crepis biennis / **Crepis capillaris** / Crepis pulchra / Crepis foetida / **Crepis setosa** / **Hieracium pilosella** / Hieracium lactucella / Hieracium aurantiacum / Hieracium caespitosum / Hieracium piloselloides / Hieracium maculatum / Hieracium lachenalii / Hieracium laevigatum / Hieracium sabaudum / Butomus umbellatus / Alisma plantago-aquatica / Sagittaria sagittifolia / Stratiotes aloides / Elodea canadensis / Potamogeton crispus / Potamogeton natans / Potamogeton gramineus / Potamogeton bertholdii / Zannichellia palustris / Acorus calamus / **Arum maculatum** / Spirodela polyrhiza / Lemna trisulca / Lemna minor / **Juncus effusus** / **Juncus tenuis** / **Juncus compressus** / Juncus bufonius / Juncus subnodulosus / Juncus articulatus / **Luzula campestris** / Scirpus sylvaticus / Schoenoplectus lacustris / Eleocharis palustris / Eriophorum angustifolium / Cladium mariscus / **Carex brizoides** / **Carex muricata aggr.** / Carex spicata / Carex polyphylla / Carex paniculata / Carex remota / Carex acuta / Carex caryophyllaea / **Carex pendula** / Carex sylvatica / Carex distans / Carex pseudocyperus / **Carex hirta** / Carex rostrata / **Carex acutiformis** / **Festuca gigantea** / **Festuca pratensis** / **Festuca arundinacea** / **Festuca rubra s. str.** / Festuca brevipila / **Festuca ovina aggr.** / Lolium multiflorum / **Lolium perenne** / Vulpia myuros / Poa bulbosa / **Poa annua** / **Poa compressa** / **Poa trivialis** / **Poa pratensis** / Poa angustifolia / **Poa nemoralis** / Poa palustris / **Dactylis glomerata** / Dactylis polygama / Cynosurus cristatus / Briza media / Glyceria maxima / Glyceria fluitans / Glyceria notata / Glyceria x pedicellata / **Bromus sterilis** / Bromus tectorum / **Bromus erectus** / Bromus inermis / **Bromus hordeaceus** / **Brachypodium pinnatum** / Brachypodium sylvaticum / Elymus caninus / **Elymus repens** / Elymus repens glaucus / Triticum aestivum / Secale cereale / **Hordeum murinum** / Avena sativa / **Helictotrichon pubescens** / Arrhenatherum elatius / **Trisetum flavescens** / **Anthoxanthum odoratum** / **Holcus lanatus** / **Holcus mollis** / Agrostis capillaris / Agrostis gigantea / **Agrostis stolonifera s.l.** / Agrostis stolonifera ssp. prorepens / **Apera spica-venti** / Phleum pratense / Alopecurus myosuroides / **Alopecurus pratensis** / **Phalaris arundinacea** / Phalaris canariensis / Milium effusum / **Phragmites australis** / Eragrostis minor / Leersia oryzoides / Panicum miliaceum / **Panicum capillare** / **Echinochloa crus-galli** / **Digitaria sanguinalis** / Setaria verticillata / Setaria verticilliformis / Setaria pumilla / **Setaria viridis s.l.** / Sorghum halepense / Sparganium erectum / Typha angustifolia / Typha latifolia / Pontederia cordata / Gagea lutea / Tulipa sylvestris / **Ornithogalum umbellatum** / Scilla bifolia / Scilla siberica / Hyacinthoides sp. / Muscari racemosum / Muscari armeniacum / Allium vineale / **Allium scorodoprasum** / Allium schoenoprasum / Allium ursinum / Allium oleraceum / Polygonatum multiflorum / Asparagus officinalis / Galanthus nivalis / Narcissus pseudonarcissus / **Iris pseudacorus** / Crocus sp. / Listera ovata / Dactylorhiza fuchsii / Anacamptis pyramidalis

## DOMINANT PHENOMENA IN THE REGION

They are the calendars of the tree species in the region as dominant existing phenomena's background.



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### CONCEPT: "LANGE ERLEN"

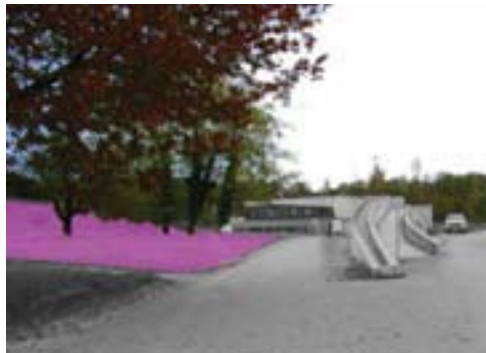
The perception of Lange Erlen is not only one. Lange Erlen accommodates different environments, from Forest to Agriculture fields, and each of them has an extension enough to work independently.

There are also big spatial divisions within the area because of the Wiese river and the Swiss-German political border. It could be said that there are several parks inside the park.

There is an existing proposal Landschaftspark Wiese for this area, that is a great opportunity to improve the quality of the places as a metropolitan natural area. It is focused more on the improvement of each of the places, than to increase the perceptive connectivity between the different areas.

I think this is the way to follow, to increase the connectivity between the different areas. Though Lange Erlen holds a single name for the whole area, it doesn't hold a common perception, or a unique remembering. A unique remembering shared by whole areas would enhance the identity of the park.

The conceptual idea for the proposal is a natural phenomena that could be perceived in different conditions of Lange Erlen, a natural phenomena that jumps over the borders and edges to colonize the whole Park, at the same time that it fits to the spatial conditions and other parameters of the future Landschaftspark Wiese.



# FUMEWORT | GEFINGERTER LERCHENSPOHN | *Corydalis solida* |

## Scientific Information

*Wikipedia*

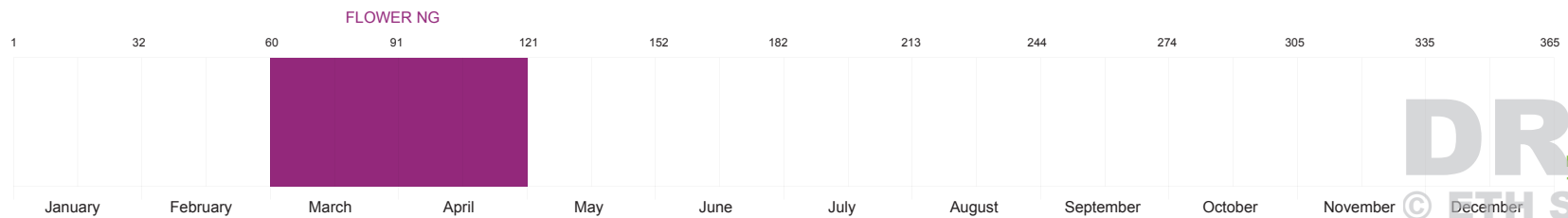
Early Spring flowering, tuberous perennial 10-30 cm in high. Each erect stem has 2 or 3 dissected leaves, one at the base, and terminates in a dense spike of pink to purplish red flowers in spring. It dies back in summer.



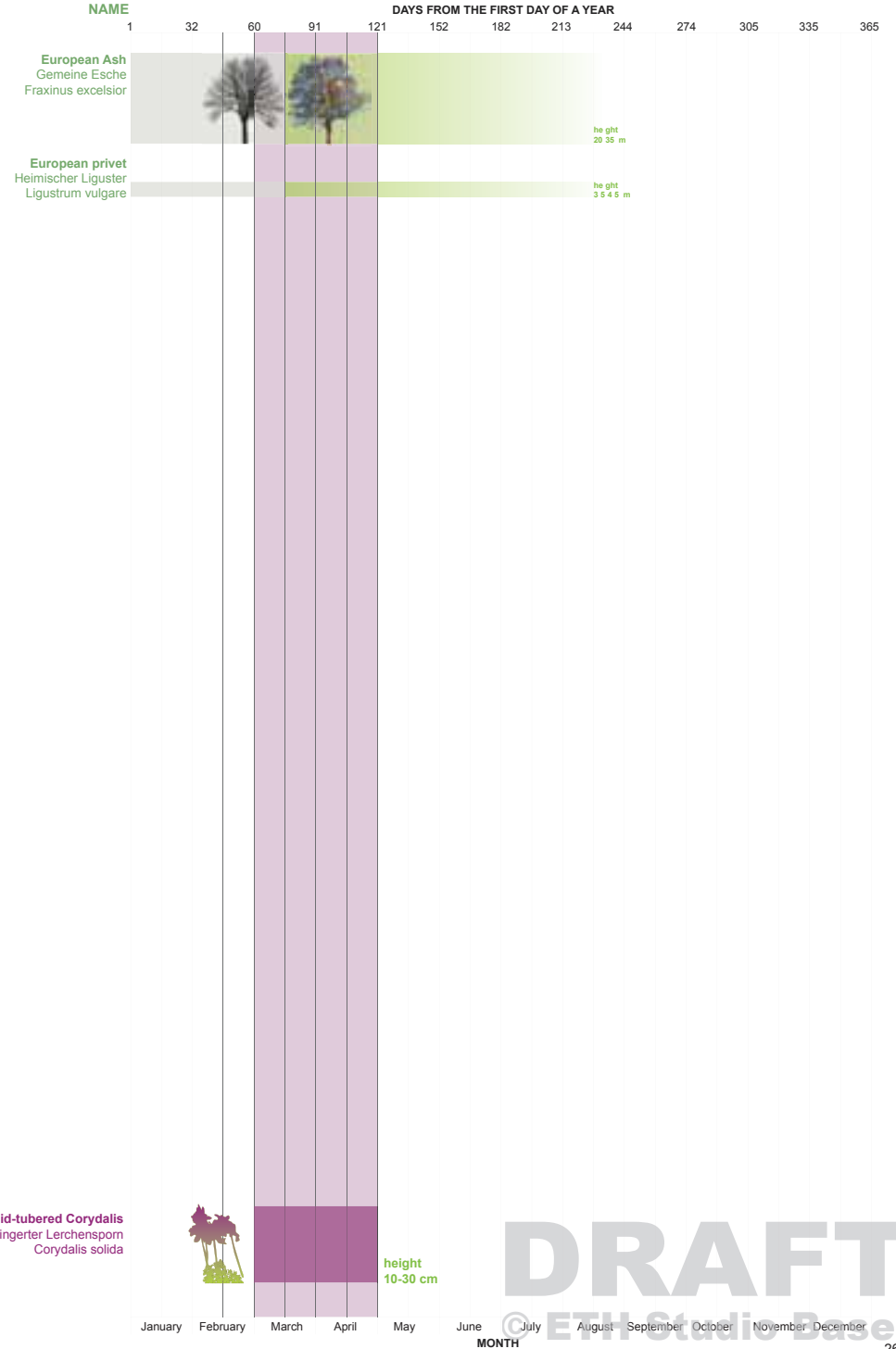
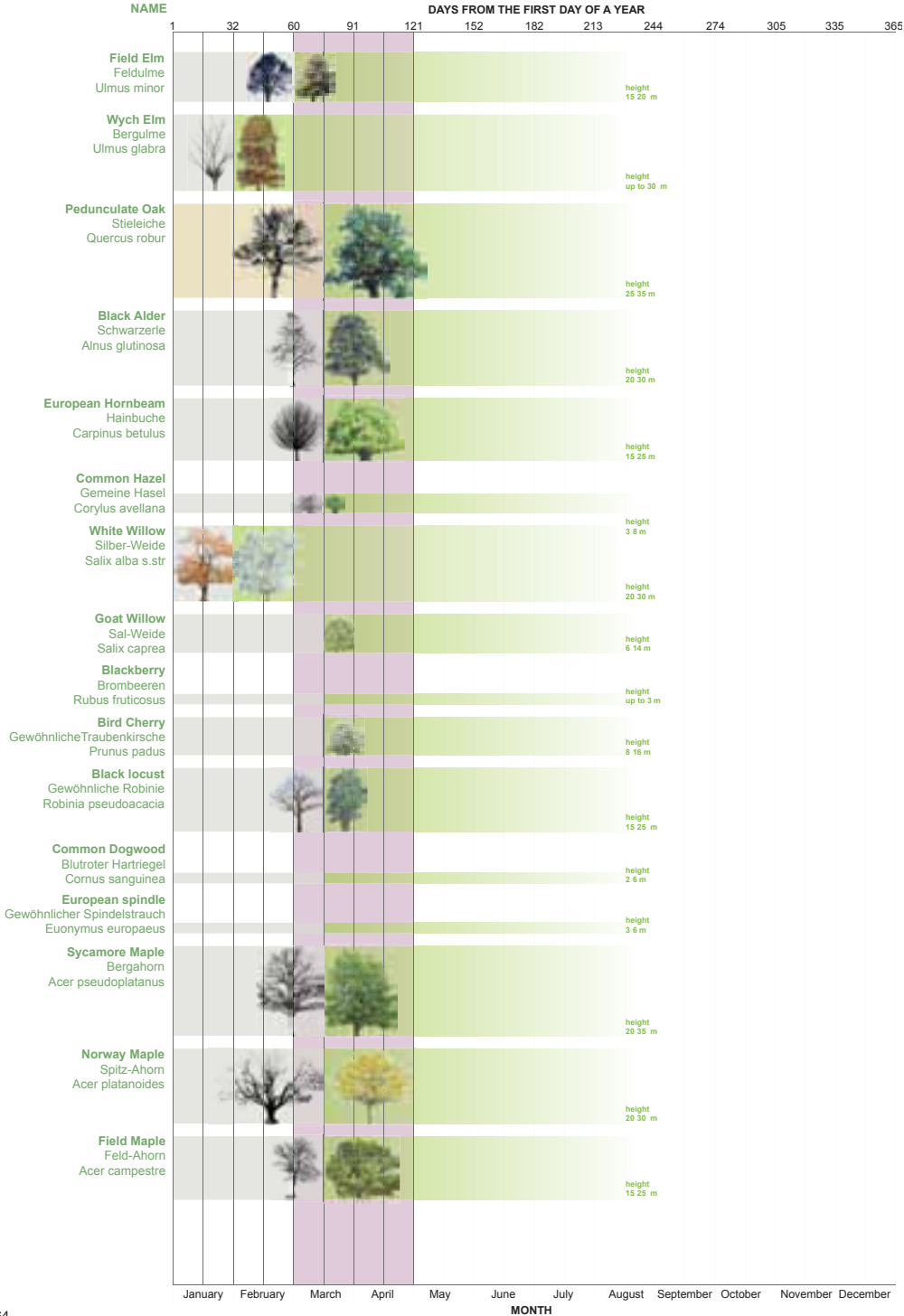
Selected points:

1. The species fits to the specific list of species of Lange Erlen.
2. It happens in early Spring as its arrival, and it would be the symbol of Spring because they cannot live without enough light, so as soon as trees get new leaves they disappear.
3. Recommended by a biologist as „representative “ in Lange Erlen.
4. This species are common to grow in the forest, even producing a flowering carpet.
5. It has three different colors and a fragrant smell .

Fumewort  
Gefingertes  
Lerchensporn  
*Corydalis solida*



**CALENDAR OF TREES WITH THE PHENOMENA OF FUMEWORT**



**DRAFT**  
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**4.6**  
**SUMMER**  
**METROPARK**

**“HARDWALD”**  
**X**  
**“RED POPPY”**

**VIGNETTE. MOST COMMON + REPORTED**

Huperzia selago / Lycopodium clavatum / Lycopodium annotinum / **Equisetum arvense** / Equisetum telmateia / Equisetum palustre / Equisetum sylvaticum / Equisetum fluviatile / Equisetum hyemale / Equisetum variegatum / Equisetum ramosissimum / Equisetum x moorei / Pteridium aquilinum / Phegopteris connectilis / Oreopteris limbosperma / Gymnocarpium dryopteris / Gymnocarpium robertianum / Dryopteris affinis / Dryopteris filix-mas / Dryopteris dilatata / Dryopteris carthusiana / Polystichum setiferum / Polystichum aculeatum / Athyrium filix-femina / Cystopteris fragilis / Asplenium viride / Asplenium trichomanes / Asplenium fontanum / **Asplenium ruta-muraria** / Ceterach officinarum / Phyllitis scolopendrium / Blechnum spicatum / Polypodium vulgare / Polypodium interjectum / Abies alba / Pseudotsuga menziesii / Picea abies / Larix decidua / Pinus strobus / Pinus nigra / Pinus sylvestris / Juniperus communis / Thuja occidentalis / Thuja orientalis / Taxus baccata / Asarum europaeum / Aristolochia clematitis / Nymphaea alba / Nuphar lutea / Actaea spicata / Ceratophyllum demersum / Helleborus foetidus / Helleborus orientalis / Eranthis hyemalis / **Aquilegia vulgaris** / **Caltha palustris** / Trollius europaeus / Nigella damascena / Aconitum altissimum / Consolida regalis / **Consolida ajacis** / Thalictrum aquilegifolium / Thalictrum minus / Thalictrum flavum / Anemone ranuncoloides / **Anemone nemorosa** / Anemone blanda / Pulsatilla vulgaris / Hepatica nobilis / **Clematis vitalba** / **Ranunculus ficaria** / Ranunculus aquatilis / Ranunculus penicillatus / Ranunculus fluitans / Ranunculus trichophyllus / Ranunculus aconitifolius / Ranunculus lingua / Ranunculus flammula / Ranunculus arvensis / **Ranunculus sceleratus** / Ranunculus pseudocassubicus / Ranunculus biformis / Ranunculus alsaticus / Ranunculus lyratus / Ranunculus alinetorum / Ranunculus kuznizi / Ranunculus argoviensis / Ranunculus sphinx / Ranunculus stellaris / Ranunculus lunaris / Ranunculus gratiolus / Ranunculus macrotis / Ranunculus quinatus / **Ranunculus acer** / **Ranunculus bulbosus** / **Ranunculus repens** / Ranunculus tuberosus / Berberis julianae / Berberis vulgaris / Berberis thunbergii / Mahonia aquifolium / **Cheilonium majus** / **Papaver somniferum** / **Papaver rhoeas** / **Papaver dubium** / **Papaver dubium lecoquii** / Papaver argemone / Corydalis lutea / **Corydalis cava** / Corydalis solida / **Fumaria officinalis** / Fumaria officinalis wirtgenii / Fumaria vaillantii / Platanus hispanica / Ulmus laevis / **Ulmus minor** / Ulmus minor suberosa / **Ulmus glabra** / Celtis occidentalis / **Humulus lupulus** / **Cannabis sativa** / Ficus carica / Urtica urens / **Urtica dioica** / Parietaria officinalis / **Juglans regia** / Juglans nigra / Fagus sylvatica / Castanea sativa / Quercus pubescens / **Quercus robur** / **Quercus petraea** / **Quercus rubra** / **Alnus glutinosa** / Alnus incana / Betula pendula / Betula pubescens / **Carpinus betulus** / **Corylus avellana** / Phytolacca esculenta / Chenopodium botrys / Chenopodium pumilio / **Chenopodium bonus-henricus** / Chenopodium hybridum / **Chenopodium polyspermum** / Chenopodium murale / Chenopodium opulifolium / Chenopodium ficifolium / **Chenopodium strictum** / **Chenopodium album** / Chenopodium album borbasii / Chenopodium pratense / Chenopodium glaucum / Chenopodium rubrum / **Atriplex patula** / Atriplex prostrata / **Beta vulgaris** / Bassia scoparia / Salsola ruthenica / Polycnemum majus / Amaranthus cruentus / Amaranthus quinzensis / **Amaranthus powellii** / Amaranthus bouchonii / **Amaranthus retroflexus** / Amaranthus spinosus / Amaranthus albus / Amaranthus blitoides / Amaranthus graecians / **Amaranthus blitum** / Amaranthus emarginatus / Amaranthus deflexus / Amaranthus palmeri / **Portulaca oleracea** / Herniaria glabra / Herniaria hirsuta / Corrigiola litoralis / Spergula arvensis / Spergularia rubra / Polycarpon tetraphyllum / Scleranthus perennis / **Scleranthus annuus** / Minuartia fastigiata / Minuartia hybrida / Sagina procumbens / Sagina apetala erecta / Sagina apetala / **Arenaria serpyllifolia** / **Arenaria leptocladus** / Moehringia muscosa / Moehringia trinervia / Holosteum umbellatum / **Stellaria media** / Stellaria neglecta / Stellaria pallida / Stellaria nemorum / **Stellaria holostea** / Stellaria alsine / **Stellaria graminea** / **Myosoton aquaticum** / **Cerastium arvense** / Cerastium tomentosum / **Cerastium glomeratum** / **Cerastium brachypetalum** / **Cerastium fontanum** / **Cerastium semidecandrum** / Cerastium pumilum / **Cerastium pumilum pallens** / Gypsophila muralis / Gypsophila elegans / **Saponaria officinalis** / **Petrorhagia prolifera** / Petrorhagia saxifraga / Dianthus superbus / Dianthus superbus sylvestris / Dianthus armeria / Dianthus barbatus / **Dianthus carthusianorum** / Dianthus deltoides / Dianthus gratiopolitanus / Silene noctiflora / Silene dioica / **Silene pratensis** / **Silene vulgaris** / Silene gallica / **Silene nutans** / Silene armeria / **Lychnis coronaria** / **Lychnis flos-cuculi** / Agrostemma githago / **Rumex acetosella** / Rumex scutatus / **Rumex acetosa** / **Rumex thyriflorus** / **Rumex obtusifolius** / **Rumex conglomeratus** / Rumex sanguineus / Rumex hydroalpathum / **Rumex crispus** / Rumex patientia / Rheum rhubarbarum / **Fallopia convolvulus** / Fallopia dumetorum / Fallopia aubertii / **Reynoutria japonica** / **Polygonum aviculare** / **Polygonum aequale** / Polygonum calcatum / Polygonum heterophyllum / Polygonum monspeliense / Polygonum polystachyum / Polygonum bistorta / **Polygonum amphibium** / Polygonum amphibium aquaticum / **Polygonum persicaria** / Polygonum pensylvanicum / **Polygonum lapathifolium** / Polygonum lapathifolium ssp. / **Polygonum hydropiper** / **Polygonum mite** / Polygonum minus / Fagopyrum esculentum / Paonia officinalis / Hypericum androsaemum / Hypericum calycinum / Hypericum humifusum / Hypericum hirsutum / Hypericum pulchrum / Hypericum montanum / **Hypericum perforatum** / Hypericum perforatum veronense / **Hypericum perforatum angustifolium** / Hypericum perforatum latifolium / Hypericum maculatum s.l. / Hypericum maculatum s.str. / Hypericum maculatum ssp. Obtusiusculum / Hypericum desetangii / Hypericum tetrapterum / **Tilia cordata** / **Tilia platyphyllos** / Tilia vulgaris / Abutilon theophrasti / Althaea hirsuta / Alcea rosea / **Malva alcea** / **Malva moschata** / **Malva sylvestris** / Malva sylvestris mauritiana / **Malva neglecta** / Malva pusilla / Silva spinosa / Anoda cristata / Helianthemum nummularium / Helianthemum nummularium obscurum / **Viola tricolor** / **Viola arvensis** / Viola wittrockiana / Viola alba / Viola alba scotophylla / Viola odorata / Viola hirta / Viola mirabilis / Viola reichenbachiana / **Viola riviniana** / Viola canina / Viola scabra / Viola x dubia / **Bryonia dioica** / Cucumis sativus / Cucurbita pepo / **Populus tremula** / Populus canescens / **Populus alba** / **Populus nigra** / Populus nigra italica / Populus canadensis / Salix x sepulcralis / **Salix alba** s.str. / **Salix alba vitellina** / **Salix fragilis** / **Salix x rubens** / Salix triandra / **Salix elaeagnos** / Salix daphnoides / **Salix purpurea** / Salix viminalis / Salix nigricans / **Salix caprea** / Salix aurita / **Salix cinerea** / Sisymbrium altissimum / **Sisymbrium officinale** / Sisymbrium orientale / Sisymbrium irio / Descurainia sophia / Alliaria petiolata / **Arabis thaliana** / Isatis tinctoria / Bunias orientalis / Erysimum cheiranthoides / Cheiranthus cheiri / **Hesperis matronalis** / **Barbarea vulgaris** / Barbarea intermedia / **Armoracia rusticana** / **Rorippa palustris** / Rorippa x anceps / Rorippa austriaca / Rorippa amphibia / Rorippa sylvestris / Nasturtium officinale / Nasturtium microphyllum / Cardamine amara / **Cardamine pratensis** / **Cardamine impatiens** / **Cardamine flexuosa** / Cardamine hirsuta / Dentaria bulbifera / Dentaria heptaphylla / Cardaminopsis arenosa / Cardaminopsis arenosa borbasii / Turritis glabra / Arabis turrita / Arabis alpina s. str. / Arabis alpina caucasica / Arabis hirsuta / Aubrieta deltoidea / Lunaria rediviva / Lunaria annua / **Alyssum alyssoides** / Alyssum montanum / Alyssum saxatile / **Lobularia maritima** / **Berteroa incana** / Draba aizoides / Draba muralis / **Erophila verna** / **Erophila praecox** / Kerneria saxatilis / Camelina microcarpa / Neslia paniculata / **Capsella bursa-pastoris** / Capsella rubella / **Thlaspi arvense** / Thlaspi perfoliatum / Thlaspi montanum / Iberis umbellata / **Lepidium campestre** / Lepidium latifolium / Lepidium graminifolium / Lepidium ruderales / **Lepidium virginicum** / Lepidium neglectum / **Cardaria draba** / Coronopus squamatus / Coronopus didymus / **Diplotaxis tenuifolia** / Diplotaxis muralis / Brassica nigra / **Brassica rapa** / **Brassica napus** / **Brassica oleracea** / Brassica juncea / **Sinapis arvensis** / Sinapis alba / Eruca sativa / Erucastrum nasturtiifolium / Erucastrum gallicum / Coincya cheiranthos / Hirschfeldia incana / Rapistrum rugosum / Rapsitrum rugosum orientale / **Raphanus raphanistrum** / Raphanus raphanistrum (gelblb. Formen) / **Reseda luteola** / **Reseda lutea** / Vaccinium myrtillus / **Calluna vulgaris** / Orthilia secunda / Pyrola rotundifolia / Pyrola minor / Monotropa hypopitys / Monotropa hypophaea / Lysimachia nummularia / Lysimachia nemorum / Lysimachia vulgaris / Lysimachia punctata / Lysimachia thyriflora / **Anagallis arvensis** / **Anagallis foemina** / Centunculus minimus / Primula acaulis / Primula auricula / Primula elatior / Primula veris / Primula veris columnae / Hottonia palustris / Philadelphus coronarius / **Ribes uva-crispa** / Ribes alpinum / Ribes rubrum / Sedum telephium / Sedum spurium / Sedum rupestre / Sedum acre / Sedum sexangulare / Sedum hispanicum / Sedum album / Sempervivum tectorum / Saxifraga paniculata / Saxifraga granulata / Saxifraga tridactylites / Chrysosplenium alternifolium / Chrysosplenium oppositifolium / Parnassia palustris / Rubus dioicus / **Filipendula ulmaria** / Filipendula vulgaris / Rubus saxatilis / **Rubus idaeus** / **Rubus caesius** / **Rubus fruticosus** / **Rubus laciniatus** / Rubus canescens / Rosa pendulina / Rosa pimpinellifolia / **Rosa rugosa** / Rosa multiflora / Rosa arvensis / Rosa rubiginosa / Rosa micrantha / Rosa agrestis / Rosa glauca / Rosa jundzillii / **Rosa tomentosa** / **Rosa corymbifera** / Rosa corymbifera platyphylla / Rosa corymbifera thuillieri / Rosa corymbifera hemitricha / Rosa stylosa / **Rosa canina** / Rosa canina lutetiana / Rosa canina transitoria / Rosa canina hispidula / Rosa canina diversiglandulosa / Rosa canina dumalis / Rosa vosiagiaca / Rosa vosiagiaca subcanina / **Agrimonia eupatoria** / Sanguisorba officinalis / **Sanguisorba minor s.str.** / Sanguisorba minor polygama / Geum urbanum / Geum rivale / Potentilla fruticosa / **Potentilla sterilis** / **Potentilla supina** / Potentilla anserina / Potentilla erecta / **Potentilla norvegica** / **Potentilla reptans** / Potentilla recta / **Potentilla argentea** / **Potentilla inclinata** / Potentilla intermedia / Potentilla heptaphylla / Potentilla neumanniana / Potentilla arenaria / Fragaria moschata / Fragaria viridis / **Fragaria vesca** / Duchesnea indica / **Aphanes arvensis** / Alchemilla glaucescens / Alchemilla filicaulis / Alchemilla xanthochlora / Alchemilla monticola / Alchemilla micans / Alchemilla subcrenata / Alchemilla glabra / Chaenomeles japonica / Pyrus pyraeaster / Malus sylvestris / **Malus domestica** / Sorbus aucuparia / Sorbus domestica / Sorbus terminalis / Sorbus x latifolia / Sorbus aria / Sorbus mougeotii / Sorbus intermedia / Amelanchier ovalis / Coteaster horizontalis / Coteaster divaricatus / Coteaster tomentosus / Coteaster salicifolius / Coteaster dammeri / **Pyraecantha coccinea** / Mespilus germanica / Crataegus laevigata / Crataegus lindmanii / **Crataegus monogyna** / Crataegus x macrocarpa / Prunus persica / **Prunus spinosa** / Prunus spinosa fruticans / Prunus domestica / **Prunus avium** / Prunus cerasus / Prunus mahaleb / Prunus padus / Prunus serotina / Prunus laurocerasus / Gleditsia triacanthos / Cercis siliquastrum / Cassia obtusifolia / Lupinus polyphyllus / Genista germanica / Genista tinctoria / Genista pilosa / Genista sagittalis / Cytisus scoparius / **Robinia pseudoacacia** / Colutea arborescens / Astragalus glycyphyllos / **Anthyllis vulneraria s.l.** / Anthyllis vulneraria s.str. / **Anthyllis vulneraria carpatica** / Lotus tenuis / **Lotus corniculatus** / Lotus corniculatus hirsutus / Lotus uliginosus / Tetragonolobus maritimus / Ornithopus perpusillus / **Coronilla varia** / Coronilla emerus / Coronilla coronata / Coronilla vaginalis / Hippocrepis comosa / **Onobrychis vicifolia** / Ononis spinosa / Ononis spinosa austriaca / **Ononis repens** / **Medicago falcata** / **Medicago sativa** / **Medicago x varia** / **Medicago lupulina** / Medicago minima / **Melilotus albus** / **Melilotus altissimus** / **Melilotus officinalis** / Trifolium fragiferum / Trifolium resupinatum / Trifolium rubens / Trifolium medium / Trifolium arvense / Trifolium incarnatum / Trifolium alpestre / **Trifolium pratense** / Trifolium ochroleucon / Trifolium scabrum / **Trifolium repens** / Trifolium montanum / Trifolium hybridum / Trifolium aureum / **Trifolium campestre** / **Trifolium dubium** / **Vicia hirsuta** / **Vicia Tetrasperma** / Vicia dumetorum / Vicia cracca / Vicia villosa / Vicia villosa varia / Vicia narbonensis / Vicia pannonica / **Vicia sepium** / Vicia lutea / Vicia angustifolia s.str. / **Vicia angustifolia s.l.** / Lathyrus aphaca / Lathyrus hirsutus / **Lathyrus pratensis** / Lathyrus tuberosus / Lathyrus sylvestris / Lathyrus latifolius / Lathyrus linifolius / Lathyrus niger / Lathyrus vernus / Glycine max / Hippophae rhamnoides / Myriophyllum verticillatum / Myriophyllum spicatum / **Lythrum salicaria** / Lythrum hyssopifolia / Peplis portula / Thymelaea passerina / Daphne mezereum / Daphne laureola / **Epilobium angustifolium** / **Epilobium dodonaei** / **Epilobium hirsutum** / **Epilobium parviflorum** / **Epilobium montanum** / **Epilobium roseum** / **Epilobium palustre** / **Epilobium obscurum** / **Epilobium ciliatum** / **Epilobium tetragonum** / **Epilobium tetragonum lamyi** / Oenothera biennis / Oenothera suaveolens / Oenothera oehlkersii / Oenothera pycnocarpa / Oenothera erythrosepala / Oenothera x fallax / Oenothera issleri / Oenothera parviflora / **Circaea lutetiana** / **Cornus sanguinea** / Cornus alba / Cornus mas / Thesium pyrenaicum / Thesium alpinum / Viscum album / Viscum album abietis / Viscum album austriacum / Euonymus europaeus / Ilex aquifolium / Buxus sempervirens / **Mercurialis annua** / Mercurialis perennis / Euphorbia nutans / Euphorbia maculata / Euphorbia humifusa / **Euphorbia lathyris** / **Euphorbia helioscopia** / Euphorbia seguieriana / Euphorbia palustris / **Euphorbia platyphyllos** / **Euphorbia stricta** / Euphorbia dulcis / Euphorbia verrucosa / Euphorbia amygdaloides / **Euphorbia cyparissias** / Euphorbia virgata / Euphorbia peplus / Euphorbia exigua / Rhamnus cathartica / Rhamnus alpina / Frangula alnus / Vitis silvestris / Vitis vinifera / **Parthenocissus inserta** / Linum catharticum / Linum Tenuifolium / Linum usitatissimum / Polygala amarella / Polygala vulgaris / Polygala comosa / Staphylea pinnata / Koeleruteria paniculata / Aesculus hippocastanum / **Acer negundo** / Acer pseudoplatanus / Acer platanoides / **Acer campestre** / Acer opalus / Cotinus coggygia / **Rhus typhina** / **Ailanthus altissima** / Ruta graveolens / Dictamnus albus / Oxalis acetosella / Oxalis fontana / Oxalis corniculata / Oxalis dillenii / Geranium robertianum / Geranium purpureum / Geranium rotundifolium / Geranium plaustrum / Geranium sylvaticum / Geranium pratense / Geranium sanguineum / **Geranium columbinum** / **Geranium dissectum** / Geranium molle / Geranium pusillum / Geranium pyrenaicum / **Erodium cicutarium** / Tropaeolum majus / **Impatiens glandulifera** / Impatiens balfourii / Impatiens noli-tangere / Impatiens parviflora / **Hedera helix** / Hydrocotyle vulgaris / Sanicula europea / Eryngium campestre / Chaerophyllum hirsutum / Chaerophyllum temulum / Chaerophyllum aureum / **Anthriscus sylvestris** / Anthriscus nitida / Anthriscus caucalis / **Torilis japonica** / Torilis arvensis / Caucalis platycarpus / Orlaya grandiflora / Bifora radians / Conium maculatum / Bluepuruon rotundifolium / Bluepuruon falcatum / Trinia glauca / Petroselinum crispum / Cicuta virosa / Ammi majus / Falcaria vulgaris / Carum carvi / Pimpinella major / **Pimpinella saxifraga** / Pimpinella peregrina / Aegopodium podagraria / Berula erecta / Seseli libanotis / Seseli annuum / Oenanthe lachenali / **Aethusa cynapium** / **Aethusa cynapium cynapioides** / Athamanta cretensis / Foeniculum vulgare / Silaum silaus / Angelica sylvestris / Peucedanum carvifolia / Peucedanum oreoselinum / Peucedanum cervaria / **Pastinaca sativa** / Heracleum mantegazzianum / **Heracleum sphondylium** / Laserpitium latifolium / Laserpitium siler / **Daucus carota** / Centaurium erythraea / Centaurium pulchellum / Blackstonia perfoliata / Gentiana lutea / Gentiana cruciata / Gentiana pneumonanthe / Gentiana verna / Gentianella ciliata / Gentianella germanica / Vinca minor / Vinca major / Asclepias syriaca / Vincetoxicum hirundinaria / Nicandra physalodes / Lycium barbarum / Atropa bella-donna / Physalis alkekengi / Physalis franchetti / **Solanum dulcamara** / **Solanum nigrum** / Solanum nigrum ssp. Schultesii / Solanum carolinense / **Lycopersicon esculentum** / Datura stramonium / Datura stramonium tatula / **Petunia x Atkinsiana** / **Convolvulus arvensis** / **Calystegia sepium** / Ipomoea hederacea / Ipomoea lacunosa / Cuscuta europaea / Cuscuta epithimum / Menyanthes trifoliata / Nymphoides peltata / **Phacelia tanacetifolia** / Heliotropium europaeum / Lithospermum officinale / Buglossoides purpureo-caerulea / **Buglossoides arvensis** / **Echium vulgare** / Echium plantagineum / Pulmonaria obscura / **Symphytum officinale** / **Anchusa arvensis** / **Brunnera macrophylla** / Borago officinalis / Myosotis nemorosa / Myosotis scorpioides / Myosotis alpestris / Myosotis sylvatica / **Myosotis ramosissima** / **Myosotis arvensis** / Myosotis discolor / **Cynoglossum officinale** / **Verbena officinalis** / Verbena bonariensis / Caryopteris x claudensis / Teucrium scorodonia / Teucrium montanum / Teucrium botrys / Teucrium chamaedrys / Ajuga reptans / **Ajuga reptans** / Ajuga genevensis / **Lavandula angustifolia** / Mentha pulegium / **Mentha arvensis** / Mentha aquatica / Mentha suaveolens / **Mentha longifolia** / **Mentha spicata glabrata** / Mentha x verticillata / Mentha x dumetorum / Mentha x piperita / Mentha x villosa / Mentha x

rotundifolia / Lycopos europaeus / **Origanum vulgare** / **Thymus pulegiodes** / Thymus froelichianus / Thymus praecox / **Melissa officinalis** / Satureja hortensis / Clinopodium vulgare / Calamintha methifolia / Acinos arvensis / Nepeta cataria / Glechoma hederacea / Melittis melissophyllum / **Ballota nigra** / Stachys alpina / Stachys germanica / **Stachys annua** / **Stachys recta** / Stachys arvensis / Stachys sylvatica / Stachys palustris / Stachys officinalis / Lamium maculatum / Lamium album / Lamium amplexicaule / Lamium **purpureum** / Lamium hybridum / **Lamium galeobdolon montanum** / Lamium galeobdolon argentatum / Galeopsis segetum / Galeopsis angustifolia / Galeopsis tetrahit / Prunella grandiflora / Prunella vulgaris / Prunella lacinata / Salvia glutinosa / **Salvia pratensis** / Salvia verticillata / Scutellaria galericulata / Hippuris vulgaris / Callitriche palustris / Plantago arenaria / **Plantago media** / **Plantago major** / **Plantago intermedia** / **Plantago lanceolata** / **Plantago lanceolata sphaerostachya** / **Buddleja davidii** / Forsythia sp. / Fraxinus excelsior / Fraxinus ornus / Syringa vulgaris / Ligustrum vulgare / Ligustrum sinense / Ligustrum ovalifolium / Verbasum blattaria / Verbasum nigrum / Verbasum lychniitis / Verbasum lychnitis album / Verbasum pulverulentum / Verbasum thapsus / **Verbasum densiflorum** / **Verbasum phlomoides** / **Scrophularia canina** / **Scrophularia umbrosa** / **Scrophularia nodosa** / **Chaenorhynchus minus** / Cymbalaria muralis / Kickxia spuria / Kickxia elatine / **Linaria vulgaris** / Linaria repens / Linaria purpurea / **Antirrhinum majus** / Misopates orontium / Digitalis purpurea / Digitalis grandiflora / Digitalis erinus / **Veronica serpyllifolia** / **Veronica officinalis** / **Veronica montana** / **Veronica Chamaedrys** / Veronica urticifolia / Veronica prostrata / Veronica teucrium / **Veronica Beccabunga** / Veronica anagalid-aquatica / Veronica catenata / Veronica spicata / **Veronica arvensis** / **Veronica peregrina** / Veronica acinifolia / Veronica triphyllus / Veronica praecox / **Veronica hederifolia** / Veronica hederifolia lucorum / **Veronica persica** / **Veronica filiformis** / Veronica agrestis / **Veronica polita** / Euphrasia rostkoviana / Euphrasia salisburgensis / **Euphrasia stricta** / Odontites vernus / **Odontites vulgaris** / Odontites luteus / **Rhinanthus minor** / **Rhinanthus alectorolophus** / Melampyrum cristatum / Melampyrum arvense / Melampyrum sylvaticum / Melampyrum pratense / Lathraea squamaria / Globularia punctata / Globularia cordifolia / Orobanche lutea / Orobanche hederae / Orobanche caryophyllacea / Orobanche teucrii / Orobanche alba / **Orobanche minor** / Paulownia tomentosa / Catalpa bignonioides / Piniguiolica vulgaris / Utricularia vulgaris / Utricularia intermedia / Campanula glomerata / **Campanula rapunculosa** / Campanula patula / Campanula cochlearifolia / Campanula rotundifolia / Campanula persicifolia / Campanula rapunculoides / Campanula trachelium / Campanula poscharskyana / Legousia speculum-veneris / Phyteuma orbiculare / Phyteuma nigrum / Phyteula spicatum / Jasione laevis / Lobelia erinus / **Sherardia arvensis** / **Asperula cynanchica** / Crucjata Laevipes / **Galium verum s.str.** / Galium verum ssp. wirtgenii / Galium odoratum / Galium glaucum / Galium palustre / Galium uliginosum / **Galium aparine** / Galium spurium / Galium parisiense / **Galium sylvaticum** / **Galium album** / Galium pumilum / Loniceria periclymenum / Loniceria caprifolium / Loniceria alpigena / Loniceria xylostem / Loniceria nitida / **Symphoricarpos albus** / **Symphoricarpos x chenaultii** / Viburnum lantana / Viburnum rhytidophyllum / Viburnum opulus / **Sambucus ebulus** / **Sambucus nigra** / Sambucus racemosa / Adoxa moschatellina / **Valerianaella locusta** / **Valerianaella carinata** / **Valerianaella dentata** / Valerianaella dentata var. erioperma / **Valerianaella rimosa** / **Valeriana officinalis** / Valeriana officinalis ssp. excelsa / **Valeriana officinalis ssp. tenuifolia** / Valeriana dioica / Valeriana tripteris / Valeriana montana / **Centranthus ruber** / **Dipsacus fullonum** / **Dipsacus laciniatus** / **Dipsacus pilosus** / Succisa pratensis / **Knautia arvensis** / Knautia dipsacifolia / Scabiosa canescens / Scabiosa columbaria / **Ageratum houstonianum** / **Eupatorium cannabinum** / **Solidago virgaurea** / Solidago canadensis / Solidago gigantea / **Bellis perennis** / **Callistephus chinensis** / Aster bellidiastrum / Aster linoisyris / Aster amellus / Aster novae-angliae / Aster novi-belgii / Aster x versicolor / **Aster lanceolatus** / Aster salignus / **Erigeron acer** / **Erigeron annuus s.l.** / **Erigeron annuus s.str.** / Erigeron annuus ssp. septentrionalis / **Erigeron annuus ssp. strigosus** / Erigeron karvinskianus / **Conyza canadensis** / Conyza bonariensis / Filago vulgaris / Antennaria dioica / Gnaphalium uliginosum / Gnaphalium luteoalbum / Gnaphalium sylvaticum / Inula conyza / Inula graveolens / Inula salicina / **Pulicaria dysenterica** / Bupththalmum salicifolium / Guizotia abyssinica / Bidens cernua / Bidens connata / Bidens tripartita / Bidens frondosa / **Cosmos bipinnatus** / Rudbeckia hirta / **Helianthus annuus** / **Helianthus tuberosus** / **Helianthus laetiflorus** / Iva xanthifolia / Ambrosia artemisiifolia / Ambrosia trifida / Xanthium strumarium / Galinsoga parviflora / Galinsoga ciliata / **Tagetes patula** / Anthemis cotula / Anthemis arvensis / Anthemis tinctoria / Achillea ptarmica / **Achillea millefolium** / Achillea nobilis / Achillea filipendulina / **Matricaria recutita** / **Matricaria discoidea** / **Tripleurospermum perforatum** / Chrysanthemum segetum / **Leucanthemum ictuianum** / Leucanthemum adustum / Leucanthemum vulgare / Leucanthemum maximum / **Tanacetum vulgare** / Tanacetum corymbosum / **Tanacetum parthenium** / **Artemisia vulgaris** / Artemisia verlotiorum / Artemisia absinthium / Artemisia campestris / **Tussilago farfara** / Petasites hybridus / Petasites albus / Adenostyles alliariae / Adenostyles glabra / Senecio inaequidens / Senecio paludosus / Senecio hercynicus / Senecio ovatus / Senecio cineraria / **Senecio erucifolius** / **Senecio jacobaea** / Senecio aquaticus / Senecio squalidus / **Senecio vulgaris** / **Senecio viscosus** / Senecio vernalis / **Calendula officinalis** / Calendula arvensis / **Arcium tomentosum** / **Arctium lappa** / Arctium nemorosum / Arctium minus / **Carduus nutans** / Carduus defloratus / **Carduus crispus** / **Cirsium vulgare** / **Cirsium arvense** / Cirsium palustre / Cirsium acule / Cirsium tuberosum / Cirsium oleraceum / Cirsium x rigens / Onopordum acanthium / Silybum marianum / Serratula tinctoria / Centaurea solstitialis / **Centaurea cyanus** / Centaurea montana / Centaurea scabiosa / **Centaurea stoebe** / **Centaurea jacea s.l.** / **Centaurea jacea s.str.** / **Centaurea jacea ssp. angustifolia** / Centaurea nemoralis / **Carlina vulgaris** / Carlina aucalis ssp. caulescens / **Echinops sphaerocephalus** / **Cichorium intybus** / **Cichorium endivia** / **Tragopogon dubius** / Tragopogon pratensis ssp. orientalis / Tragopogon pratensis ssp. minor / **Hypochoeris radicata** / Leontodon saxatilis / Leontodon autumnalis / Leontodon hispidus s.l. / Leontodon hispidus ssp. hastilis / **Picris hieracioides** / Picris echioides / **Sonchus oleraceus** / **Sonchus asper** / **Sonchus arvensis** / Prenanthes purpurea / Mycelis muralis / Lactuca virosa / **Lactuca serriola** / Lactuca sativa / **Lapsana communis** / **Taraxacum officinale** / Taraxacum laevigatum / **Chondrilla juncea** / Crepis paludosa / Crepis praemorsosa / Crepis biennis / Crepis tectorum / Crepis capillaris / Crepis pulchra / **Crepis foetida** / Crepis taraxacifolia / Crepis setosa / Hieracium pilosella / Hieracium lactucella / Hieracium aurantiacum / Hieracium caespitosum / **Hieracium piloselloides** / Hieracium visianii / Hieracium zizianum / Hieracium calodon / Hieracium auriculoides / Hieracium scorzonerifolium / Hieracium glaucinum / Hieracium murorum / Hieracium maculatum / Hieracium lachenalii / Hieracium humile / Hieraciumamplexicaule / Hieracium laevigatum / Hieracium umbellatum / **Hieracium sabaudum** / Hieracium lycopifolium / Butomus umbellatus / Alisma plantago-aquatica / Alisma lanceolatum / Sagittaria sagittifolia / Stratiotes aloides / Elodea densa / Elodea canadensis / Elodea nuttallii / Triglochin palustre / Potamogeton crispus / Potamogeton nodosus / Potamogeton natans / Potamogeton lucens / Potamogeton gramineus / Potamogeton pectinatus / Potamogeton berchtoldii / Groenlandia densa / Najas marina / Zannichellia palustris / Acorus calamus / **Arum maculatum** / Spirodela polyrhiza / Lemna trisulca / Lemna minor / Lemna minuta / Tradescantia virginiana / Commelina communis / **Juncus inflexus** / **Juncus conglomeratus** / **Juncus effusus** / **Juncus tenuis** / **Juncus compressus** / **Juncus bufonius** / Juncus bulbosus / **Juncus subnodulosus** / Juncus alpinoarticulatus / **Juncus articulatus** / Juncus acutiflorus / **Luzulla pilosa** / Luzula forsteri / **Luzula luzuloides** / Luzula sylvatica / Luzula campestris / **Luzula multiflora** / Scirpus sylvaticus / Bolboschoenus maritimus / Isolepis setacea / Schoenoplectus lacustris / Schoenoplectus tabernaemontani / Schoenoplectus mucronatus / Eleocharis uniglumis / **Eleocharis palustris** / Eleocharis mamillata / Eriophorum angustifolium / Eriophorum latifolium / Cladium mariscus / Schoenus nigricans / Cyperus fuscus / Carex davalliana / Carex disticha / Carex brizoides / Carex praecox / Carex otrubae / **Carex muricata** / **Carex spicata** / **Carex muricata ssp. lamprocarpa** / **Carex polyphylla** / Carex paniculata / Carex remota / Carex leporina / Carex elongata / Carex echinata / Carex acuta / Carex nigra / Carex elata / **Carex umbrosa** / Carex montana / Carex fritschii / Carex pilulifera / Carex tomentosa / Carex caryophyllea / Carex pilosa / **Carex pallescens** / Carex pendula / Carex hallerana / **Carex flacca** / Carex panicea / Carex alba / Carex humilis / Carex digitata / Carex ornithopoda / Carex sylvatica / Carex strigosa / Carex flava / Carex lepidocarpa / Carex demissa / Carex viridula / **Carex distans** / Carex hostiana / Carex pseudocyperus / **Carex hirta** / Carex rostrata / Carex vesicaria / **Carex acutiformis** / Carex riparia / **Festuca gigantea** / **Festuca pratensis** / **Festuca arundinacea** / **Festuca rubra** / Festuca heterophylla / **Festuca brevipila** / **Festuca ovina** / Festuca guestfalica / Festuca pallens / Festuca tenuifolia / Lolium multiflorum / Lolium perenne / Lolium rigidum / Vulpia ciliata / **Vulpia myuros** / Catapodium rigidum / Poa bulbosa / **Poa annua** / **Poa compressa** / Poa chaixii / **Poa trivialis** / **Poa pratensis** / **Poa angustifolia** / Poa humilis / **Poa nemoralis** / Poa palustris / Puccinellia distans / **Dactylis glomerata** / **Dactylis polygama** / Cynosurus cristatus / **Briza media** / Sesleria albicans / Melica ciliata / **Melica nutans** / Melica uniflora / Glyceria maxima / Glyceria striata / Glyceria declinata / Glyceria fluitans / **Glyceria notata** / Glyceria x pedicellata / **Bromus sterilis** / **Bromus tectorum** / Bromus ramosus / Bromus benekenii / **Bromus erectus** / Bromus inermis / Bromus secalinus / **Bromus hordeaceus** / Bromus arvensis / Bromus racemosus / Bromus racemosus commutatus / Bromus japonicus / Bromus catharticus / **Brachypodium pinnatum** / Brachypodium sylvaticum / Elymus caninus / **Elymus elongatus** / **Elymus repens** / **Elymus repens aristatus** / Elymus repens glaucus / Elymus campestris / Aegilops cylindrica / Triticum durum / **Triticum aestivum** / **Secale cereale** / **Hordeum murinum** / Hordeum distichon / Hordeum vulgare / Hordelymus europaeus / **Avena fatua** / Avena sativa / **Helictotrichon pubescens** / Helictotrichon pratense / **Arrhenatherum elatius** / **Koeleria macrantha** / Koeleria pyramidata / **Trisetum flavescens** / Deschampsia caespitosa / Avenella flexuosa / Aira caryophyllea / **Anthoxanthum odoratum** / **Holcus lanatus** / **Holcus mollis** / **Agrostis capillaris** / Agrostis gigantea / **Agrostis stolonifera** / Agrostis stolonifera prorepens / Agrostis canina / **Apera spica-venti** / Calamagrostis varia / Calamagrostis epigejos / Calamagrostis canescens / **Pheum phleoides** / Pheum paniculatum / **Pheum pratense** / Pheum bertolonii / **Alopecurus myosuroides** / **Alopecurus pratensis** / Alopecurus aequalis / **Phalaris arundinacea** / **Phalaris canariensis** / Milium effusum / Stipa eriocalis ssp. lutetiana / Achnatherum calamagrostis / **Phragmites australis** / Danthonia decumbens / Molinia arundinacea / Eragrostis pilosa / Eragrostis multicaulis / **Eragrostis minor** / Eragrostis cilianensis / Eleusine indica / Cynodon dactylon / Leersia oryzoides / **Panicum miliaceum** / **Panicum capillare** / Panicum dichotomiflorum / **Echinochloa crus-galli** / Echinochloa colona / **Digitaria sanguinalis** / Digitaria ischaemum / **Setaria verticillata** / **Setaria verticilliformis** / Setaria geniculata / **Setaria pumilla** / **Setaria viridis** / Setaria italica / Setaria italica moharia / Setaria faberi / Sorghum halepense / Sorghum bicolor / Bothriochloa / ischaemum / Sparganium erectum / Sparganium erectum neglectum / Sparganium emersum / Sparganium minimum / **Typha angustifolia** / **Typha latifolia** / Pontederia cordata / Anthericum ramosum / Anthericum liliago / Hemerocallis fulva / **Colchicum autumnale** / Gagea villosa / Gagea lutea / Tulipa sylvestris / Tulipa gesneriana / Lilium martagon / Ornithogalum umbellatum / Ornithogalum nutans / Ornithogalum pyrenaicum / Scilla bifolia / Scilla siberica / Chionodoxa sp. / Hyacinthoides sp. / Mucari comosum / Muscari racemosum / **Muscari armeniacum** / **Allium vineale** / Allium sphaerocephalon / Allium scorodoprasum / **Allium schoenoprasum** / allium ursinum / Allium paradoxum / **Allium oleraceum** / Allium carinatum / Allium senescens montanum / Convallaria majalis / Maianthemum bifolium / Polygonatum verticillatum / Polygonatum multiflorum / Polygonatum odoratum / Paris quadrifolia / **Asparagus officinalis** / Leucojum vernum / Galanthus nivalis / Narcissus pseudonarcissus / Iris germanica / Iris pseudacorus / Iris sibirica / Crocus sp. / Tamus communis / Cephalanthera rubra / Cephalanthera damasonium / Cephalanthera longifolia / Epipactis palustris / Epipactis microphylla / Epipactis atrorubens / Epipactis helleborine / Epipactis muelleri / Epipactis leptochila / Epipactis purpurata / Limodorum abortivum / Listera ovata / Neottia nidus-avis / Goodyera repens / Spiranthes spiralis / Gymnadenia conopsea / Gymnadenia odoratissima / Coeloglossum viride / Platanthera bifolia / Platanthera chlorantha / Ophrys insectifera / Ophrys apifera / Ophrys sphegodes / Ophrys sphegodes litigiosa / Ophrys holoserica / Ophrys holoserica elatior / Orchis morio / Orchis ustulata / Orchis purpurea / Orchis militaris / Orchis simia / Orchis pallens / Orchis mascula / Dactylorhiza fuchsii / Dactylorhiza incarnata / Dactylorhiza majalis / Aceras anthropophorum / Himantoglossum hircinum / Anacamptis pyramidalis

## VIGNETTE. PHENOLOGY

**Equisetum** / Asplenium ruta-muraria / Aquilegia vulgaris / Caltha palustris / Consolida ajacis / Clematis vitalba / Ranunculus ficaria / Ranunculus sceleratus / Ranunculus acer / Ranunculus bulbosus / **Ranunculus repens** / Chelidonium majus / Papaver somniferum / **Papaver rhoeas** / Papaver dubium / Papaver dubium lecoquii / Corydalis cava / Fumaria officinalis / Ulmus minor / Ulmus glabra / Humulus lupulus / Cannabis sativa / **Urtica dioica** / Juglans regia / Quercus robur / Quercus petraea / Quercus rubra / Alnus glutinosa / Carpinus betulus / **Corylus avellana** / Chenopodium bonus-henricus / Chenopodium polysperum / Chenopodium strictum / **Chenopodium album** / Atriplex patula / Beta vulgaris / **Amaranthus powellii** / **Amaranthus retroflexus** / Amaranthus blitum / Portulaca oleracea / Scleranthus annuus / **Arenaria serpyllifolia** / Arenaria leptoclados / Stellaria media / Stellaria holostea / Stellaria graminea / Myosoton aquaticum / Cerastium arvense / **Cerastium glomeratum** / Cerastium brachypetalum / **Cerastium fontanum** / Cerastium semidecandrum / Cerastium pumilum pallens / **Saponaria officinalis** / **Petrorhagia prolifera** / Dianthus armeria / Dianthus carthusianorum / **Silene pratensis** / **Silene vulgaris** / Silene nutans / Lychnis coronaria / Lychnis flos-cuculi / **Rumex acetosella** / Rumex acetosa / Rumex thyrsiflorus / **Rumex obtusifolius** / Rumex conglomeratus / Rumex crispus / **Fallopia convolvulus** / Reynoutria japonica / **Polygonum aviculare** / Polygonum aequale / **Polygonum amphibium** / Polygonum persicaria / Polygonum lapathifolium / Polygonum hydropiper / Polygonum mite / **Hypericum perforatum** / Hypericum perforatum angustifolium / **Tilia cordata** / **Tilia platyphyllos** / **Malva alcea** / Malva moschata / Malva sylvestris / Malva neglecta / Viola tricolor / **Viola arvensis** / Viola riviniana / Bryonia dioica / **Populus tremula** / Populus alba / **Populus nigra** / **Salix alba** s.str. / Salix alba vitellina / Salix fragilis / Salix rubens / **Salix elaeagnos** / **Salix purpurea** / Salix caprea / Salix cinerea / Sisymbrium officinale / Arabidopsis thaliana / Hesperis matronalis / **Barbarea vulgaris** / **Armoracia rusticana** / Rorippa palustris / **Cardamine pratensis** / Cardamine impatiens / Cardamine flexuosa / Cardamine hirsuta / Alyssum alyssoides / Lobularia maritima / Berteroa incana / Erophila verna / Erophila praecox / **Capsella bursa-pastoris** / Thlaspi arvense / Lepidium campestre / Lepidium virginicum / Cardaria draba / **Diplotaxis tenuifolia** / Brassica rapa / Brassica napus / Brassica oleracea / **Sinapis arvensis** / **Raphanus raphanistrum** / **Reseda luteola** / **Reseda lutea** / Calluna vulgaris / **Anagallis arvensis** / Anagallis foemina / Ribes uva-crispa / Sedum telephium / Sedum spurium / Sedum rupestre / Sedum acre / Sedum sexangulare / Sedum album / Sempervivum tectorum / Saxifraga tridactylites / **Filipendula ulmaria** / Rubus idaeus / **Rubus caesius** / Rubus fruticosus / Rubus laciniatus / Rosa rugosa / Rosa tomentosa / Rosa corymbifera / Rosa canina / **Agrimonia eupatoria** / **Sanguisorba minor** / Geum urbanum / Potentilla sterilis / Potentilla supina / Potentilla anserina / Potentilla norvegica / **Potentilla reptans** / Potentilla recta / **Potentilla argentea** / Potentilla inclinata / Potentilla neumanniana / Fragaria vesca / Aphanes arvensis / **Malus domestica** / Sorbus torminalis / Pyracantha coccinea / Crataegus monogyna / Prunus spinosa / Prunus avium / Genista germanica / Genista tinctoria / **Robinia pseudoacacia** / Astragalus glycyphyllos / Anthyllis vulneraria s.l. / Anthyllis vulneraria carpatica / **Lotus corniculatus** / Lotus corniculatus hirsutus / **Coronilla varia** / Onobrychis vicifolia / Ononis repens / Medicago falcata / **Medicago sativa** / Medicago x varia / **Medicago lupulina** / Medicago minima / **Melilotus albus** / Melilotus altissimus / **Melilotus officinalis** / Trifolium medium / Trifolium arvense / **Trifolium pratense** / **Trifolium repens** / **Trifolium campestre** / **Trifolium dubium** / **Vicia hirsuta** / Vicia Tetrasperma / Vicia cracca / Vicia villosa / Vicia sepium / **Vicia angustifolia s.l.** / Lathyrus aphaca / **Lathyrus pratensis** / Lathyrus tuberosus / Lathyrus sylvestris / Lathyrus latifolius / Lathyrus linifolius / Hippophae rhamnoides / Myriophyllum spicatum / **Lythrum salicaria** / Epilobium angustifolium / **Epilobium dodonaei** / **Epilobium hirsutum** / Epilobium parviflorum / Epilobium montanum / Epilobium roseum / Epilobium obscurum / **Epilobium tetragonum** / Oenothera pycnocarpa / Oenothera erythrosepala / Oenothera issleri / Oenothera parviflora / Circaea lutetiana / Cornus sanguinea / **Mercurialis annua** / Euphorbia lathyris / **Euphorbia helioscopia** / Euphorbia platyphyllos / Euphorbia stricta / Euphorbia verrucosa / **Euphorbia cyparissias** / Euphorbia exigua / Parthenocissus inserta / Linum catharticum / Koeleria paniculata / Acer negundo / Acer campestre / Rhus typhina / Ailanthus altissima / Oxalis fontana / Oxalis corniculata / Geranium robertianum / **Geranium columbinum** / **Geranium dissectum** / Geranium molle / Geranium pusillum / **Geranium pyrenaicum** / Erodium cicutarium / Impatiens glandulifera / Hedera helix / Anthriscus sylvestris / Torilis japonica / Pimpinella saxifraga / **Aethusa cynapium** / Aethusa cynapium cynapioides / Pastinaca sativa / Heracleum sphondylium / **Daucus carota** / Solanum dulcamara / Solanum nigrum / Lycopersicon esculentum / Petunia x Atkinsiana / **Convolvulus arvensis** / Calystegia sepium / Phacelia tanacetifolia / Buglossoides arvensis / **Echium vulgare** / Symphytum officinale / Anchusa arvensis / Brunnera macrophylla / Myosotis ramosissima / **Myosotis arvensis** / Cynoglossum officinale / **Verbena officinalis** / Verbena bonariensis / Teucrium scorodonia / Ajuga reptans / Lavandula angustifolia / Mentha arvensis / Mentha longifolia / Mentha spicata glabrata / **Origanum vulgare** / **Thymus pulegiodes** / Melissa officinalis / Clinopodium vulgare / Calamintha methifolia / Acinos arvensis / Glechoma hederacea / Ballota nigra / Stachys annua / Stachys recta / Stachys sylvatica / Stachys palustris / Stachys officinalis / Lamium maculatum / Lamium amplexicaule / Lamium purpureum / Lamium galeobdolon montanum / Galeopsis angustifolia / Galeopsis tetrahit / Prunella vulgaris / **Salvia pratensis** / Plantago media / **Plantago major** / Plantago intermedia / **Plantago lanceolata** / Plantago lanceolata sphaerostachya / **Buddleja davidii** / Verbascum nigrum / **Verbascum lychnitis** / Verbascum lychnitis album / Verbascum thapsus / Verbascum densiflorum / Verbascum phlomoideis / **Scrophularia canina** / Scrophularia umbrosa / **Scrophularia nodosa** / **Chaenorhinum minus** / **Kickxia spuria** / Kickxia elatine / **Linaria vulgaris** / Antirrhinum majus / Veronica serpyllifolia / Veronica officinalis / **Veronica Chamaedrys** / Veronica Beccabunga / **Veronica arvensis** / Veronica peregrina / Veronica hederifolia / **Veronica persica** / Veronica filiformis / Veronica polita / Euphrasia stricta / Odontites vulgaris / Rhinanthus minor / **Rhinanthus alectorolophus** / Orobanche minor / **Campanula rapunculus** / Sherardia arvensis / Asperula cynanchica / Galium verum s.str. / Galium aparine / Galium sylvaticum / **Galium album** / Galium pumilum / Symphoricarpos albus / Symphoricarpos x chenaultii / Sambucus ebulus / **Sambucus nigra** / Valerianella locusta / Valerianella carinata / Valerianella dentata / Valerianella ramosa / Valeriana officinalis / Valeriana officinalis ssp. tenuifolia / Centranthus ruber / **Dipsacus fullonum** / Dipsacus laciniatus / **Knautia arvensis** / Ageratum houstonianum / Eupatorium cannabinum / Solidago virgaurea / Solidago gigantea / **Bellis perennis** / Callistephus chinensis / Aster lanceolatus / Erigeron acer / **Erigeron annuus s.l.** / Erigeron annuus s.str. / Erigeron annuus ssp. septentrionalis / Erigeron annuus ssp. strigosus / **Conyza canadensis** / Inula conyza / Pulicaria dysenterica / Cosmos bipinnatus / Helianthus annuus / Helianthus tuberosus / Helianthus laetiflorus / Tagetes patula / **Achillea millefolium** / Matricaria recutita / Matricaria discoidea / **Tripleurospermum perforatum** / **Leucanthemum irtucianum** / **Tanacetum vulgare** / Tanacetum parthenium / **Artemisia vulgaris** / **Tussilago farfara** / **Senecio erucifolius** / **Senecio jacobaea** / Senecio vulgaris / Senecio viscosus / Calendula officinalis / Arctium tomentosum / Arctium lappa / Arctium minus / Carduus nutans / **Carduus crispus** / **Cirsium vulgare** / **Cirsium arvense** / Centaurea cyanus / **Centaurea stoebe** / **Centaurea jacea s.l.** / **Centaurea jacea s.str.** / **Centaurea jacea ssp. angustifolia** / Centaurea nemoralis / **Carlina vulgaris** / Echinops sphaerocephalus / **Cichorium intybus** / Cichorium endivia / Tragopogon dubius / **Hypochaeris radicata** / Leontodon autumnalis / Leontodon hispidus s.l. / **Picris hieracioides** / **Sonchus oleraceus** / Sonchus asper / Sonchus arvensis / **Lactuca serriola** / **Lapsana communis** / **Taraxacum officinale** / Chondrilla juncea / Crepis biennis / Crepis capillaris / **Crepis foetida** / Crepis taraxacifolia / Crepis setosa / Hieracium pilosella / **Hieracium piloselloides** / Hieracium visianii / Hieracium glaucinum / Hieracium murorum / Hieracium sabaudum / Arum maculatum / Juncus inflexus / Juncus conglomeratus / Juncus effusus / Juncus tenuis / Juncus compressus / Juncus bufonius / Juncus subnodulosus / Juncus articulatus / Luzulla pilosa / Luzula multiflora / Eleocharis palustris / **Carex muricata** / Carex spicata / Carex muricata ssp. lamprocarpa / Carex polyphylla / Carex umbrosa / Carex pallescens / Carex flacca / Carex distans / **Carex hirta** / Carex acutiformis / Festuca gigantea / Festuca pratensis / Festuca arundinacea / Festuca rubra / Festuca brevipila / **Festuca ovina** / Lolium perenne / Vulpia myuros / Poa bulbosa / **Poa annua** / Poa compressa / **Poa trivialis** / Poa pratensis / Poa angustifolia / Poa nemoralis / **Dactylis glomerata** / Dactylis polygama / Cynosurus cristatus / Briza media / Melica nutans / Glyceria notata / **Bromus sterilis** / Bromus tectorum / **Bromus erectus** / **Bromus hordeaceus** / Brachypodium pinnatum / Elymus elongatus / **Elymus repens** / Elymus repens aristatus / **Triticum aestivum** / **Secale cereale** / Hordeum murinum / Avena fatua / Helictotrichon pubescens / **Arrhenatherum elatius** / Koeleria macrantha / **Trisetum flavescens** / **Anthoxanthum odoratum** / **Holcus lanatus** / Holcus mollis / Agrostis capillaris / **Agrostis stolonifera** / Apera spica-venti / Phleum phleoides / Phleum pratense / **Alopecurus myosuroides** / Phalaris arundinacea / Phalaris canariensis / Phragmites australis / **Eragrostis minor** / Panicum miliaceum / Panicum capillare / **Echinochloa crus-galli** / **Digitaria sanguinalis** / Setaria verticillata / Setaria verticilliformis / Setaria pumilla / Setaria viridis / Typha angustifolia / Typha latifolia / **Colchicum autumnale** / Muscari armeniacum / Allium vineale / Allium schoenoprasum / **Asparagus officinalis** /

## VIGNETTE. PERCEIVERS

**Equisetum** / Asplenium ruta-muraria / Aquilegia vulgaris / Caltha palustris / Consolida ajacis / Clematis vitalba / **Ranunculus ficaria** / Ranunculus sceleratus / Ranunculus acer / Ranunculus bulbosus / **Ranunculus repens** / Chelidonium majus / Papaver somniferum / **Papaver rhoeas** / Papaver dubium / Papaver dubium lecoquii / **Corydalis cava** / Fumaria officinalis / Ulmus minor / Ulmus glabra / Humulus lupulus / Cannabis sativa / **Urtica dioica** / **Juglans regia** / Quercus robur / Quercus petraea / Quercus rubra / Alnus glutinosa / Carpinus betulus / Corylus avellana / Chenopodium bonus-henricus / Chenopodium polysperum / Chenopodium strictum / **Chenopodium album** / Atriplex patula / Beta vulgaris / **Amaranthus powellii** / **Amaranthus retroflexus** / Amaranthus blitum / Portulaca oleracea / Scleranthus annuus / **Arenaria serpyllifolia** / Arenaria leptoclados / Stellaria media / Stellaria holostea / Stellaria graminea / Myosoton aquaticum / Cerastium arvense / **Cerastium glomeratum** / Cerastium brachypetalum / **Cerastium fontanum** / Cerastium semidecandrum / Cerastium pumilum pallens / **Saponaria officinalis** / **Petrorhagia prolifera** / Dianthus armeria / Dianthus carthusianorum / **Silene pratensis** / **Silene vulgaris** / Silene nutans / Lychnis coronaria / Lychnis flos-cuculi / **Rumex acetosella** / Rumex acetosa / Rumex thyrsiflorus / **Rumex obtusifolius** / Rumex conglomeratus / Rumex crispus / **Fallopia convolvulus** / Reynoutria japonica / **Polygonum aviculare** / Polygonum aequale / **Polygonum amphibium** / Polygonum persicaria / Polygonum lapathifolium / Polygonum hydropiper / Polygonum mite / **Hypericum perforatum** / Hypericum perforatum angustifolium / Tilia cordata / Tilia platyphyllos / **Malva alcea** / Malva moschata / Malva sylvestris / Malva neglecta / Viola tricolor / **Viola arvensis** / Viola riviniana / Bryonia dioica / Populus tremula / Populus alba / **Populus nigra** / **Salix alba** s.str. / Salix alba vitellina / Salix fragilis / Salix rubens / **Salix elaeagnos** / **Salix purpurea** / **Salix caprea** / Salix cinerea / Sisymbrium officinale / Arabidopsis thaliana / Hesperis matronalis / **Barbarea vulgaris** / **Armoracia rusticana** / Rorippa palustris / Cardamine pratensis / Cardamine impatiens / Cardamine flexuosa / Cardamine hirsuta / Alyssum alyssoides / Lobularia maritima / Berteroa incana / Erophila verna / Erophila praecox / **Capsella bursa-pastoris** / Thlaspi arvense / Lepidium campestre / Lepidium virginicum / Cardaria draba / **Diplotaxis tenuifolia** / Brassica rapa / Brassica napus / Brassica oleracea / **Sinapis arvensis** / **Raphanus raphanistrum** / **Reseda luteola** / **Reseda lutea** / Calluna vulgaris / **Anagallis arvensis** / Anagallis foemina / Ribes uva-crispa / Sedum telephium / Sedum spurium / Sedum rupestre / Sedum acre / Sedum sexangulare / Sedum album / Sempervivum tectorum / Saxifraga tridactylites / **Filipendula ulmaria** / Rubus idaeus / **Rubus caesius** / Rubus fruticosus / Rubus laciniatus / Rosa rugosa / Rosa tomentosa / Rosa corymbifera / Rosa canina / **Agrimonia eupatoria** / **Sanguisorba minor** / Geum urbanum / Potentilla sterilis / Potentilla supina / Potentilla anserina / Potentilla norvegica / **Potentilla reptans** / Potentilla recta / **Potentilla argentea** / **Potentilla** inclinata / Potentilla neumanniana / Fragaria vesca / Aphanes arvensis / **Malus domestica** / Sorbus torminalis / Pyracantha coccinea / Crataegus monogyna / Prunus spinosa / **Prunus avium** / Genista germanica / Genista tinctoria / **Robinia pseudoacacia** / Astragalus glycyphyllos / Anthyllis vulneraria s.l. / Anthyllis vulneraria carpatica / **Lotus corniculatus** / Lotus corniculatus hirsutus / **Coronilla varia** / Onobrychis vicifolia / Ononis repens / Medicago falcata / **Medicago sativa** / Medicago x varia / **Medicago lupulina** / Medicago minima / **Melilotus albus** / Melilotus altissimus / **Melilotus officinalis** / Trifolium medium / Trifolium arvense / **Trifolium pratense** / **Trifolium repens** / **Trifolium campestre** / **Trifolium dubium** / **Vicia hirsuta** / Vicia Tetrasperma / Vicia cracca / Vicia villosa / Vicia sepium / **Vicia angustifolia s.l.** / Lathyrus aphaca / **Lathyrus pratensis** / Lathyrus tuberosus / Lathyrus sylvestris / Lathyrus latifolius / Lathyrus linifolius / Hippophae rhamnoides / Myriophyllum spicatum / **Lythrum salicaria** / Epilobium angustifolium / **Epilobium dodonaei** / **Epilobium hirsutum** / Epilobium parviflorum / Epilobium montanum / Epilobium roseum / Epilobium obscurum / **Epilobium tetragonum** / Oenothera pycnocarpa / Oenothera erythrosepala / Oenothera issleri / Oenothera parviflora / Circaea lutetiana / Cornus sanguinea / **Mercurialis annua** / Euphorbia lathyris / **Euphorbia helioscopia** / Euphorbia platyphyllos / Euphorbia stricta / Euphorbia verrucosa / **Euphorbia cyparissias** / Euphorbia exigua / Parthenocissus inserta / Linum 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longifolia / Mentha spicata / **Origanum vulgare** / **Thymus pulegiodes** / Melissa officinalis / Clinopodium vulgare / Calamintha methifolia / Acinos arvensis / Glechoma hederacea / Ballota nigra / Stachys annua / Stachys recta / Stachys sylvatica / Stachys palustris / Stachys officinalis / Lamium maculatum / Lamium amplexicaule / Lamium purpureum / Lamium galeobdolon montanum / Galeopsis angustifolia / Galeopsis tetrahit / Prunella vulgaris / **Salvia pratensis** / Plantago media / **Plantago major** / Plantago intermedia / **Plantago lanceolata** / Plantago lanceolata sphaerostachya / **Buddleja davidii** / Verbascum nigrum / **Verbascum lychnitis** / Verbascum thapsus / Verbascum densiflorum / Verbascum phlomoides / **Scrophularia canina** / Scrophularia umbrosa / **Scrophularia nodosa** / **Chaenorhinum minus** / **Kickxia spuria** / Kickxia elatine / **Linaria vulgaris** / Antirrhinum majus / Veronica serpyllifolia / Veronica officinalis / **Veronica Chamaedryx** / Veronica 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septentrionalis / Erigeron annuus ssp. strigosus / **Conyza canadensis** / Inula conyza / Pulicaria dysenterica / Cosmos bipinnatus / Helianthus annuus / Helianthus tuberosus / Helianthus laetiflorus / Tagetes patula / **Achillea millefolium** / Matricaria recutita / Matricaria discoidea / **Tripleurospermum perforatum** / **Leucanthemum irtucianum** / Tanacetum vulgare / Tanacetum parthenium / **Artemisia vulgaris** / Tussilago farfara / **Senecio erucifolius** / **Senecio jacobaea** / Senecio vulgaris / Senecio viscosus / Calendula officinalis / Arctium tomentosum / Arctium lappa / Arctium minus / Carduus nutans / **Carduus crispus** / **Cirsium vulgare** / **Cirsium arvense** / Centaurea cyanus / **Centaurea stoebe** / **Centaurea jacea s.l.** / **Centaurea jacea s.str.** / **Centaurea jacea ssp. angustifolia** / Centaurea nemoralis / **Carlina vulgaris** / Echinops sphaerocephalus / **Cichorium intybus** / Cichorium endivia / Tragopogon dubius / **Hypochaeris radicata** / Leontodon autumnalis / Leontodon hispidus s.l. / **Picris hieracioides** / **Sonchus oleraceus** / Sonchus asper / Sonchus arvensis / **Lactuca serriola** / **Lapsana communis** / **Taraxacum officinale** / Chondrilla juncea / Crepis biennis / Crepis capillaris / **Crepis foetida** / Crepis taraxacifolia / Crepis setosa / Hieracium pilosella / **Hieracium piloselloides** / Hieracium visianii / Hieracium zizianum / Hieracium glaucinum / Hieracium murorum / Hieracium sabaudum / Arum maculatum / Juncus inflexus / Juncus conglomeratus / Juncus effusus / Juncus tenuis / Juncus compressus / Juncus bufonius / Juncus subnodulosus / Juncus articulatus / Luzulla pilosa / Luzula multiflora / Eleocharis palustris / **Carex muricata** / Carex spicata / Carex muricata ssp. lamprocarpa / Carex polyphylla / Carex umbrosa / Carex pallescens / Carex flacca / Carex distans / **Carex hirta** / Carex acutiformis / Festuca gigantea / Festuca pratensis / Festuca arundinacea / Festuca rubra / Festuca brevipila / **Festuca ovina** / Lolium perenne / Vulpia myuros / Poa bulbosa / **Poa annua** / Poa compressa / **Poa trivialis** / Poa pratensis / Poa angustifolia / Poa nemoralis / **Dactylis glomerata** / Dactylis polygama / Cynosurus cristatus / Briza media / Melica nutans / Glyceria notata / **Bromus sterilis** / Bromus tectorum / **Bromus erectus** / **Bromus hordeaceus** / Brachypodium pinnatum / Elymus elongatus / **Elymus repens** / Elymus repens aristatus / Triticum aestivum / Secale cereale / Hordeum murinum / Avena fatua / Helictotrichon pubescens / **Arrhenatherum elatius** / Koeleria macrantha / **Trisetum flavescens** / **Anthoxanthum odoratum** / **Holcus lanatus** / Holcus mollis / Agrostis capillaris / **Agrostis stolonifera** / Apera spica-venti / Phleum phleoides / Phleum pratense / **Alopecurus myosuroides** / Phalaris arundinacea / Phalaris canariensis / Phragmites australis / **Eragrostis minor** / Panicum miliaceum / Panicum capillare / **Echinochloa crus-galli** / **Digitaria sanguinalis** / Setaria verticillata / Setaria verticilliformis / Setaria pumilla / Setaria viridis / Typha angustifolia / Typha latifolia / Colchicum autumnale / Muscari armeniacum / Allium vineale / Allium schoenoprasum / **Asparagus officinalis** /

**DRAFT**  
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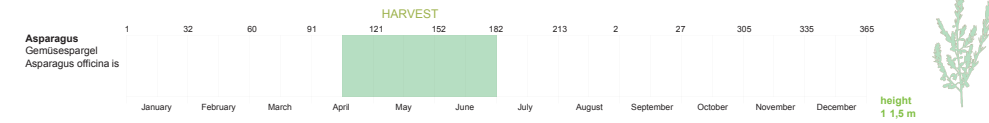
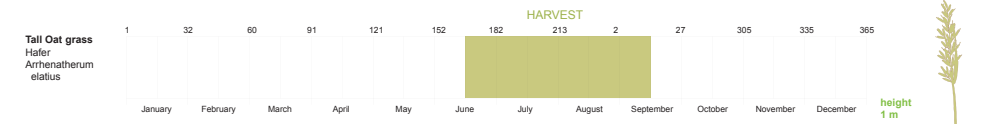
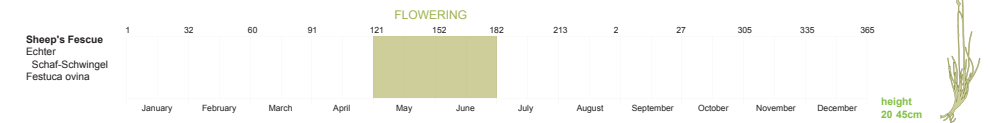
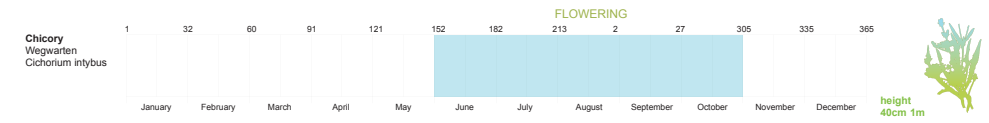
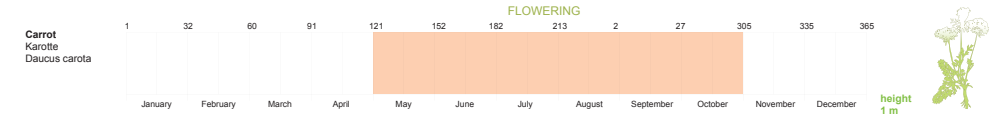
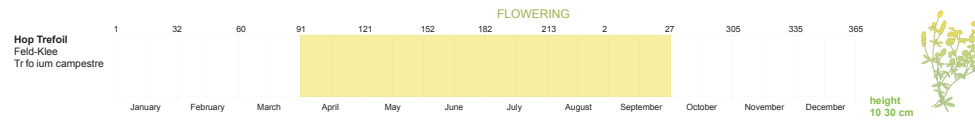
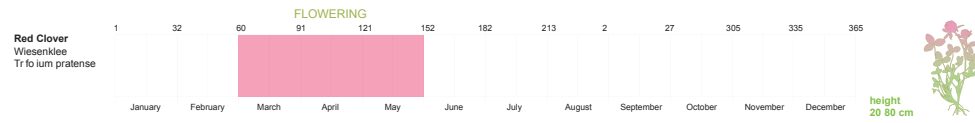
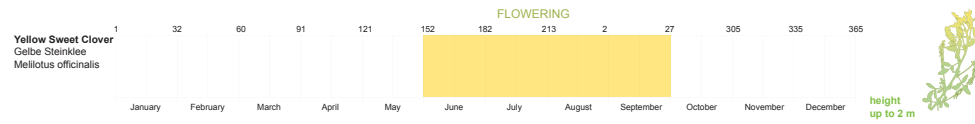
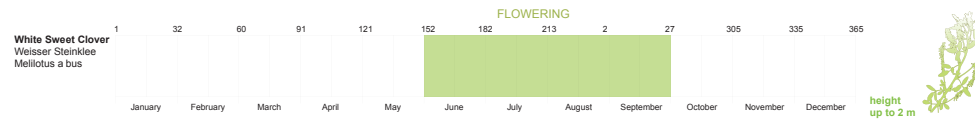
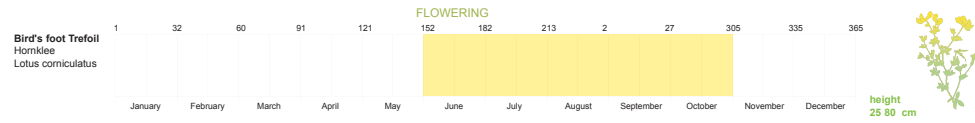
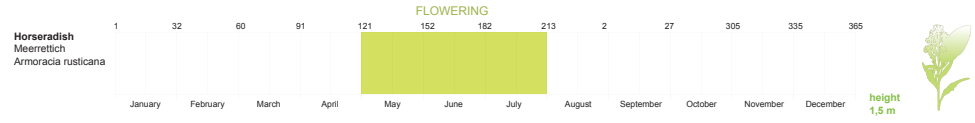
## VIGNETTE. SPECIFICITY

**Equisetum** / Asplenium ruta-muraria / Aquilegia vulgaris / Caltha palustris / Consolida ajacis / Clematis vitalba / Ranunculus ficaria / Ranunculus sceleratus / Ranunculus acer / Ranunculus bulbosus / **Ranunculus repens** / Chelidonium majus / Papaver somniferum / **Papaver rhoeas** / Papaver dubium / Papaver dubium lecoquii / Corydalis cava / Fumaria officinalis / Ulmus minor / Ulmus glabra / Humulus lupulus / Cannabis sativa / **Urtica dioica** / Juglans regia / Quercus robur / Quercus petraea / Quercus rubra / **Alnus glutinosa** / Carpinus betulus / Corylus avellana / Chenopodium bonus-henricus / Chenopodium polysperum / Chenopodium strictum / **Chenopodium album** / Atriplex patula / Beta vulgaris / **Amaranthus powellii** / **Amaranthus retroflexus** / Amaranthus blitum / Portulaca oleracea / Scleranthus annuus / **Arenaria serpyllifolia** / Arenaria leptoclados / Stellaria media / Stellaria holostea / Stellaria graminea / Myosoton aquaticum / Cerastium arvense / **Cerastium glomeratum** / Cerastium brachypetalum / **Cerastium fontanum** / Cerastium semidecandrum / Cerastium pumilum pallens / **Saponaria officinalis** / **Petrorhagia prolifera** / Dianthus armeria / Dianthus carthusianorum / **Silene pratensis** / **Silene vulgaris** / Silene nutans / Lychnis coronaria / Lychnis flos-cuculi / **Rumex acetosella** / Rumex acetosa / Rumex thyrsiflorus / **Rumex obtusifolius** / Rumex conglomeratus / Rumex crispus / **Fallopia convolvulus** / Reynoutria japonica / **Polygonum aviculare** / Polygonum aequale / **Polygonum amphibium** / Polygonum persicaria / Polygonum lapathifolium / Polygonum hydropiper / Polygonum mite / **Hypericum perforatum** / Hypericum perforatum angustifolium / Tilia cordata / Tilia platyphyllos / **Malva alcea** / Malva moschata / Malva sylvestris / Malva neglecta / Viola tricolor / **Viola arvensis** / Viola riviniana / Bryonia dioica / Populus tremula / Populus alba / **Populus nigra** / **Salix alba** s.str. / Salix alba vitellina / Salix fragilis / Salix rubens / **Salix elaeagnos** / **Salix purpurea** / Salix caprea / Salix cinerea / Sisymbrium officinale / Arabidopsis thaliana / Hesperis matronalis / **Barbarea vulgaris** / **Armoracia rusticana** / Rorippa palustris / Cardamine pratensis / Cardamine impatiens / Cardamine flexuosa / Cardamine hirsuta / Alyssum alyssoides / Lobularia maritima / Berberoa incana / Erophila verna / Erophila praecox / **Capsella bursa-pastoris** / Thlaspi arvense / Lepidium campestre / Lepidium virginicum / Cardaria draba / **Diplotaxis tenuifolia** / Brassica rapa / Brassica napus / Brassica oleracea / **Sinapis arvensis** / **Raphanus raphanistrum** / **Reseda luteola** / **Reseda lutea** / Calluna vulgaris / **Anagallis arvensis** / Anagallis foemina / Ribes uva-crispa / Sedum telephium / Sedum spurium / Sedum rupestre / Sedum acre / Sedum sexangulare / Sedum album / Sempervivum tectorum / Saxifraga tridactylites / **Filipendula ulmaria** / Rubus idaeus / **Rubus caesius** / Rubus fruticosus / Rubus laciniatus / Rosa rugosa / Rosa tomentosa / Rosa corymbifera / Rosa canina / **Agrimonia eupatoria** / **Sanguisorba minor** / Geum urbanum / Potentilla sterilis / Potentilla supina / Potentilla anserina / Potentilla norvegica / **Potentilla reptans** / Potentilla recta / **Potentilla argentea** / Potentilla inclinata / Potentilla neumanniana / Fragaria vesca / Aphanes arvensis / Malus domestica / Sorbus torminalis / Pyracantha coccinea / Crataegus monogyna / Prunus spinosa / Prunus avium / Genista germanica / Genista tinctoria / **Robinia pseudoacacia** / Astragalus glycyphyllos / Anthyllis vulneraria s.l. / Anthyllis vulneraria carpatica / **Lotus corniculatus** / Lotus corniculatus hirsutus / **Coronilla varia** / Onobrychis vicifolia / Ononis repens / Medicago falcata / **Medicago sativa** / Medicago x varia / **Medicago lupulina** / Medicago minima / **Melilotus albus** / Melilotus altissimus / **Melilotus officinalis** / Trifolium medium / Trifolium arvense / **Trifolium pratense** / **Trifolium repens** / **Trifolium campestre** / **Trifolium dubium** / **Vicia hirsuta** / Vicia Tetrasperma / Vicia cracca / Vicia villosa / Vicia sepium / **Vicia angustifolia s.l.** / Lathyrus aphaca / **Lathyrus pratensis** / Lathyrus tuberosus / Lathyrus sylvestris / Lathyrus latifolius / Lathyrus linifolius / Hippophae rhamnoides / Myriophyllum spicatum / **Lythrum salicaria** / Epilobium angustifolium / **Epilobium dodonaei** / **Epilobium hirsutum** / Epilobium parviflorum / Epilobium montanum / Epilobium roseum / Epilobium obscurum / **Epilobium tetragonum** / **Oenothera pycnocarpa** / **Oenothera erythrosepala** / **Oenothera issleri** / **Oenothera parviflora** / Circaea lutetiana / Cornus sanguinea / **Mercurialis annua** / Euphorbia lathyris / **Euphorbia helioscopia** / Euphorbia platyphyllos / Euphorbia stricta / Euphorbia verrucosa / **Euphorbia cyparissias** / Euphorbia exigua / Parthenocissus inserta / Linum catharticum / Koeleria 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Chamaedryis** / Veronica Beccabunga / **Veronica arvensis** / Veronica peregrina / Veronica hederifolia / **Veronica persica** / Veronica filiformis / Veronica polita / Euphrasia stricta / Odontites vulgaris / Rhinanthus minor / **Rhinanthus alectorolophus** / Orobanche minor / **Campanula rapunculus** / Sherardia arvensis / Asperula cynanchica / Galium verum s.str. / Galium aparine / Galium sylvaticum / **Galium album** / Galium pumilum / Symphoricarpos albus / Symphoricarpos x chenaultii / Sambucus ebulus / Sambucus nigra / Valerianella locusta / Valerianella carinata / Valerianella dentata / Valerianella rimosa / Valeriana officinalis / Valeriana officinalis ssp. tenuifolia / Centranthus ruber / **Dipsacus fullonum** / Dipsacus laciniatus / **Knautia arvensis** / Ageratum houstonianum / Eupatorium cannabinum / Solidago virgaurea / Solidago gigantea / **Bellis perennis** / Callistephus chinensis / Aster lanceolatus / Erigeron acer / **Erigeron annuus s.l.** / Erigeron annuus s.str. / Erigeron annuus ssp. septentrionalis / Erigeron annuus ssp. strigosus / **Conyza canadensis** / Inula conyza / Pulicaria dysenterica / Cosmos bipinnatus / Helianthus annuus / Helianthus tuberosus / Helianthus laetiflorus / Tagetes patula / **Achillea millefolium** / Matricaria recutita / Matricaria discoidea / **Tripleurospermum perforatum** / **Leucanthemum irtucianum** / **Tanacetum vulgare** / Tanacetum parthenium / **Artemisia vulgaris** / Tussilago farfara / **Senecio erucifolius** / **Senecio jacobaea** / Senecio vulgaris / Senecio viscosus / Calendula officinalis / Arctium tomentosum / Arctium lappa / Arctium minus / Carduus nutans / **Carduus crispus** / **Cirsium vulgare** / **Cirsium arvense** / Centaurea cyanus / **Centaurea stoebe** / **Centaurea jacea s.l.** / **Centaurea jacea s.str.** / **Centaurea jacea ssp. angustifolia** / Centaurea nemoralis / **Carlina vulgaris** / Echinops sphaerocephalus / **Cichorium intybus** / Cichorium endivia / Tragopogon dubius / **Hypochaeris radicata** / Leontodon autumnalis / Leontodon hispidus s.l. / **Picris hieracioides** / **Sonchus oleraceus** / Sonchus asper / Sonchus arvensis / **Lactuca serriola** / **Lapsana communis** / **Taraxacum officinale** / Chondrilla juncea / Crepis biennis / Crepis capillaris / **Crepis foetida** / Crepis taraxacifolia / Crepis setosa / Hieracium pilosella / **Hieracium piloselloides** / Hieracium visianii / Hieracium zizianum / Hieracium glaucinum / Hieracium murorum / Hieracium sabaudum / Arum maculatum / Juncus inflexus / Juncus conglomeratus / Juncus effusus / Juncus tenuis / Juncus compressus / Juncus bufonius / Juncus subnodulosus / Juncus articulatus / Luzulla pilosa / Luzula multiflora / Eleocharis palustris / **Carex muricata** / Carex spicata / Carex muricata ssp. lamprocarpa / Carex polyphylla / Carex umbrosa / Carex pallescens / Carex flacca / Carex distans / **Carex hirta** / Carex acutiformis / Festuca gigantea / Festuca pratensis / Festuca arundinacea / Festuca rubra / Festuca brevipila / **Festuca ovina** / Lolium perenne / Vulpia myuros / Poa bulbosa / **Poa annua** / Poa compressa / **Poa trivialis** / Poa pratensis / Poa angustifolia / Poa nemoralis / **Dactylis glomerata** / Dactylis polygama / Cynosurus cristatus / Briza media / Melica nutans / Glyceria notata / **Bromus sterilis** / Bromus tectorum / **Bromus erectus** / **Bromus hordeaceus** / Brachypodium pinnatum / Elymus elongatus / **Elymus repens** / Elymus repens aristatus / Triticum aestivum / Secale cereale / **Hordeum murinum** / Avena fatua / Helictotrichon pubescens / **Arrhenatherum elatius** / Koeleria macrantha / **Trisetum flavescens** / **Anthoxanthum odoratum** / **Holcus lanatus** / Holcus mollis / Agrostis capillaris / **Agrostis stolonifera** / Apera spica-venti / Phleum phleoides / Phleum pratense / **Alopecurus myosuroides** / Phalaris arundinacea / Phalaris canariensis / Phragmites australis / **Eragrostis minor** / Panicum miliaceum / Panicum capillare / **Echinochloa crus-galli** / **Digitaria sanguinalis** / Setaria verticillata / Setaria verticilliformis / Setaria pumilla / Setaria viridis / Typha angustifolia / Typha latifolia / Colchicum autumnale / Muscari armeniacum / Allium vineale / Allium schoenoprasum / **Asparagus officinalis** /



## DOMINANT PHENOMENA IN THE REGION

They are the calendars of the agricultural species in the region as dominant existing phenomena's background.



## CONCEPT: "VIGNETTE"

As a spatial multiplication concept, the meaning of "Vignette", the name of the site, works very good with the fact that agriculture is the dominant land use of the area and its parcels show clearly their frames (perimeter).

### Definition from the dictionary

**vignette:** /veenyet/

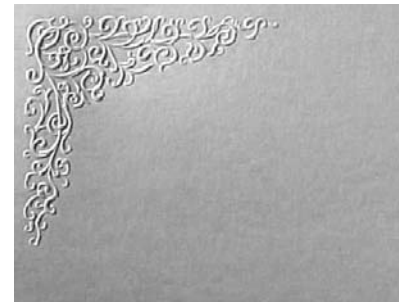
1°Ornament that one puts at the top of the first page of a book or a chapter; they were formerly branches of vine; but various kind of drawings are made today. By extension, all small prints of a book, either that they are with the top of the pages, or which they decorate the frontispiece and the bottom of page at the end of the chapters. Finally one gives this name today to the same prints which occupy a whole page, when they are surrounded by a cartouche.

2°Designs, ornaments which are used as framing for the tables, covers of books, etc

3°Ornement same kind put around a handkerchief. A handkerchief with label.

4°Papier with labels, writing paper whose edges are decorated small colored garlands.

<http://francois.gannaz.free.fr/Littre/xmlittre.php?requete=vignette>



**DRAFT**  
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**RED POPPY |  
MOHNBLUME |  
*Papaver rhoeas* |**



**Scientific Information**

*Wikipedia*

The four petals are vivid red, most commonly with a black spot at their base. In the northern hemisphere it generally flowers in late spring, but if the weather is warm enough other flowers frequently appear at the beginning of autumn.

It is known to have been associated with agriculture in the Old World since early times. It has most of the characteristics of a successful weed of agriculture. These include an annual life cycle that fits into that of most cereals, a tolerance of simple weed control methods, the ability to flower and seed itself before the crop is harvested. Like many such weeds, it also shows the tendency to become a crop in its own right; its seed is a moderately useful commodity, and its flower is edible.

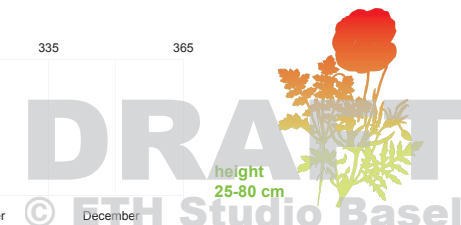
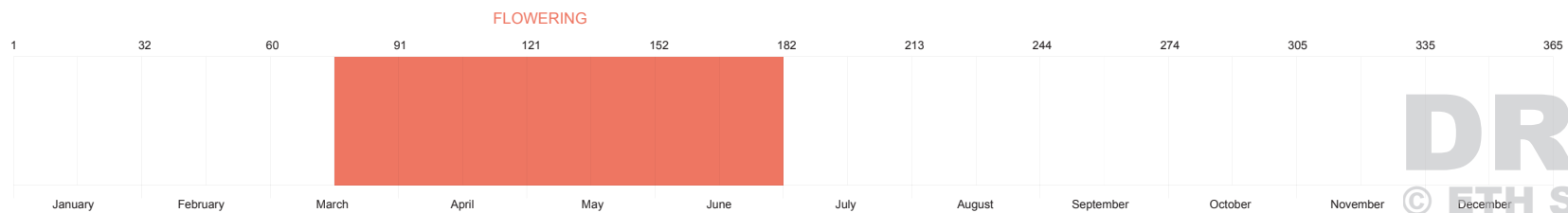
The commonly used parts of the corn poppy are the seeds (in baking), the fresh green parts as vegetable, and the red petals by making syrups and alcoholic/non-alcoholic drinks.

It has had an old symbolism and association with agricultural fertility.

**Selected points**

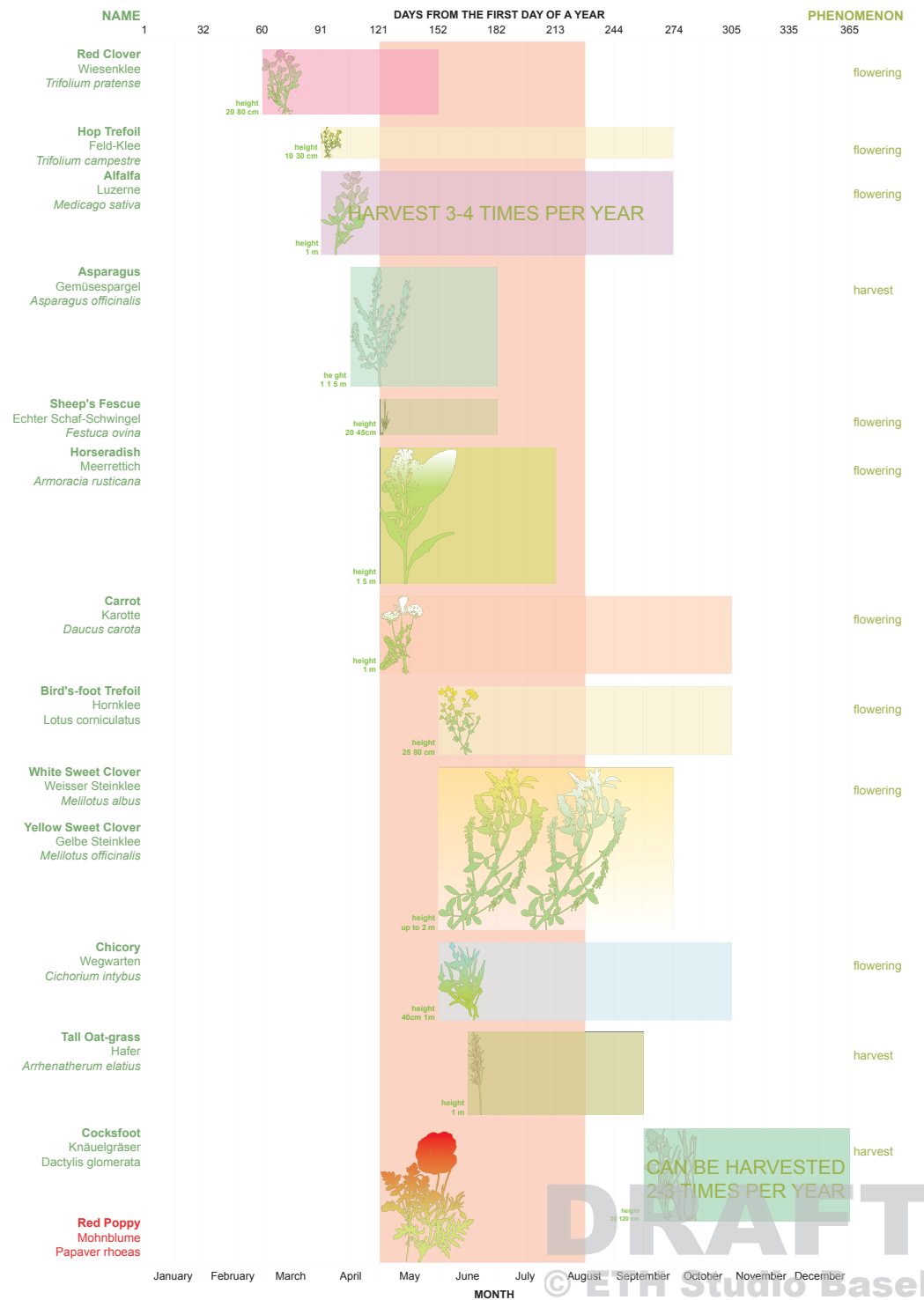
1. Already existing species as "common" in Vignette
2. Recommended by a biologist as "typical" in Agricultural fields and quarries >> fit to the specificity of Alsace plain
3. Common in the side of the roads >> fit to concept Vignette (ornamental frame)
4. Edible >> potential to have special program with the phenomenon
5. Prominent and at the same time fragile appearance

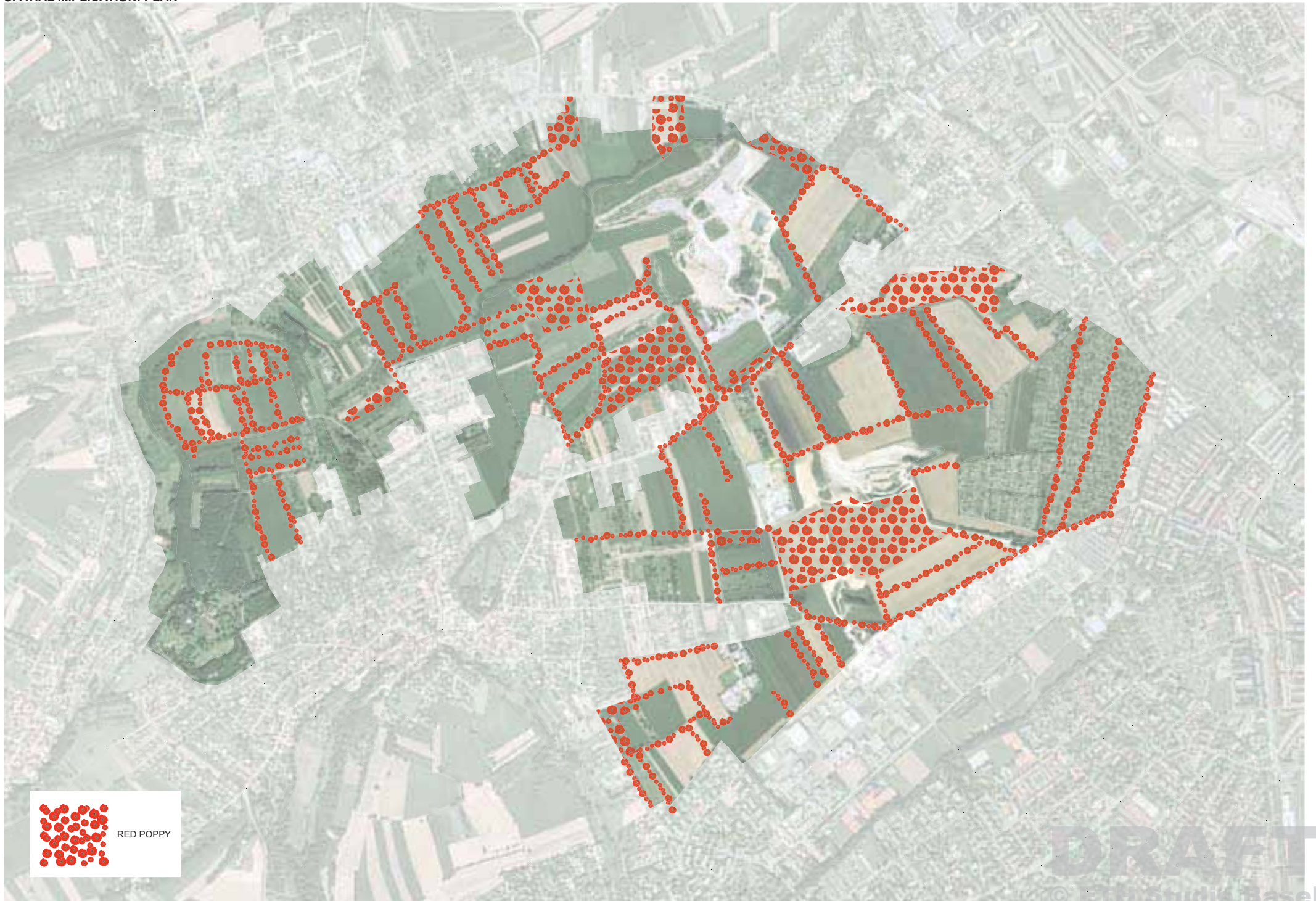
**RED POPPY**  
Mohnbrume  
*Papaver rhoeas*



**CALENDAR OF AGRICULTURAL SPECIES WITH THE PHENOMENA OF RED POPPY**

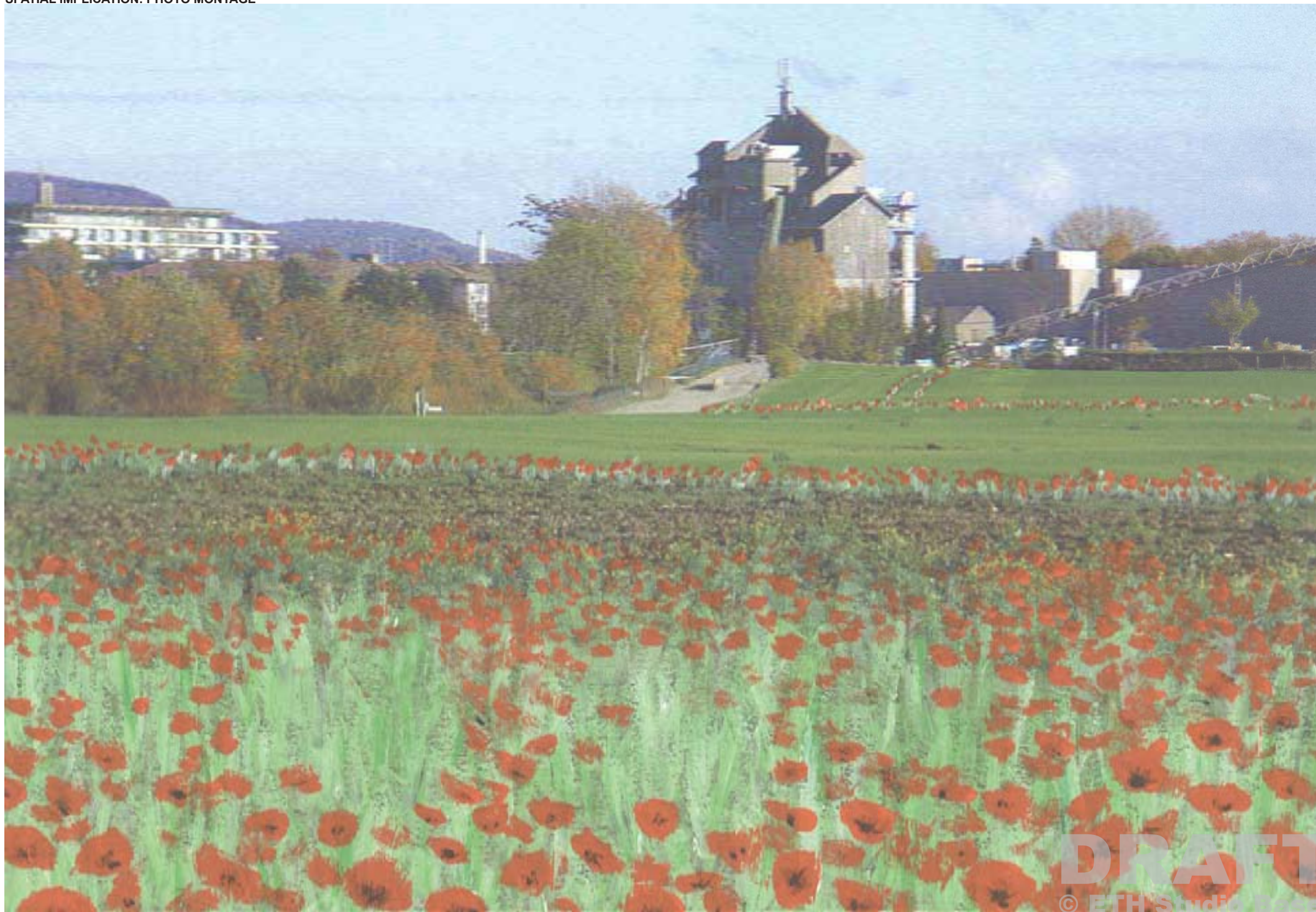
They are the calendars of the agricultural species in the region as dominant existing phenomena.





RED POPPY

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# AUTUMN METROPARK

“BRUDERHOLZ”

X

“APPLE TREE”

## BRUDERSELG. MOST COMMON + REPORTED

Huperzia selago / Lycopodium clavatum / Lycopodium annotinum / **Equisetum arvense** / **Equisetum telmateia** / Equisetum palustre / Equisetum sylvaticum / Equisetum fluviatile / Equisetum hyemale / Equisetum variegatum / Equisetum ramosissimum / Equisetum x moorei / **Pteridium aquilinum** / Phegopteris connectilis / Oreopteris limbosperma / Gymnocarpium dryopteris / Gymnocarpium robertianum / Dryopteris affinis / **Dryopteris filix-mas** / **Dryopteris dilatata** / **Dryopteris carthusiana** / Polystichum setiferum / **Polystichum aculeatum** / **Athyrium filix-femina** / Cystopteris fragilis / Asplenium viride / **Asplenium trichomanes** / Asplenium fontanum / **Asplenium ruta-muraria** / Ceterach officinarum / Phyllitis scolopendrium / Blechnum spicant / Polypodium vulgare / **Polypodium interjectum** / **Abies alba** / **Pseudotsuga menziesii** / **Picea abies** / **Larix decidua** / Pinus strobus / Pinus nigra / **Pinus sylvestris** / Juniperus communis / Thuja occidentalis / Thuja orientalis / **Taxus baccata** / Asarum europaeum / Aristolochia clematitis / **Nymphaea alba** / Nuphar lutea / Actaea spicata / **Ceratophyllum demersum** / **Helleborus foetidus** / Helleborus orientalis / **Eranthis hyemalis** / **Aquilegia vulgaris** / **Caltha palustris** / Trollius europaeus / **Nigella damascena** / Aconitum altissimum / Consolida regalis / Consolida ajacis / Thalictrum aquilegifolium / Thalictrum minus / Thalictrum flavum / Anemone ranunculoides / **Anemone nemorosa** / Anemone blanda / Pulsatilla vulgaris / Hepatica nobilis / **Clematis vitalba** / **Ranunculus ficaria** / Ranunculus aquatilis / Ranunculus penicillatus / Ranunculus fluitans / **Ranunculus trichophyllus** / Ranunculus aconitifolius / **Ranunculus lingua** / Ranunculus flammula / **Ranunculus arvensis** / Ranunculus scleratus / Ranunculus pseudocassubicus / **Ranunculus biflorus** / **Ranunculus alsaticus** / **Ranunculus lyratus** / Ranunculus alinetorum / Ranunculus kuznizi / **Ranunculus argoviensis** / Ranunculus sphinx / Ranunculus stellaris / Ranunculus lunaris / Ranunculus gratiosus / **Ranunculus macrotis** / **Ranunculus quinatus** / **Ranunculus acer** / Ranunculus bulbosus / **Ranunculus repens** / Ranunculus tuberosus / Berberis julianae / Berberis vulgaris / **Berberis thunbergii** / Mahonia aquifolium / Chelidonium majus / Papaver somniferum / **Papaver rhoeas** / Papaver dubium / Papaver dubium lecoquii / Papaver argemone / **Corydalis lutea** / Corydalis cava / **Corydalis solida** / Fumaria officinalis / Fumaria officinalis wirtgenii / Fumaria vaillantii / Platanus hispanica / Ulmus laevis / **Ulmus minor** / **Ulmus minor ruberosa** / **Ulmus glabra** / Celtis occidentalis / **Humulus lupulus** / **Cannabis sativa** / Ficus carica / Urtica urens / **Urtica dioica** / Parietaria officinalis / **Juglans regia** / Juglans nigra / **Fagus sylvatica** / **Castanea sativa** / Quercus pubescens / **Quercus robur** / **Quercus petraea** / Quercus rubra / **Alnus glutinosa** / Alnus incana / **Betula pendula** / Betula pubescens / **Carpinus betulus** / **Corylus avellana** / Phytolacca esculenta / Chenopodium botrys / Chenopodium pumilio / Chenopodium bonus-henricus / Chenopodium hybridum / **Chenopodium polyspermum** / Chenopodium murale / Chenopodium opulifolium / Chenopodium ficifolium / Chenopodium strictum / **Chenopodium album** / Chenopodium album borbasii / Chenopodium pratense / Chenopodium glaucum / Chenopodium rubrum / **Atriplex patula** / Atriplex prostrata / Beta vulgaris / Bassia scoparia / Salsola ruthenica / Polycnemum majus / Amaranthus creuentus / Amaranthus quitensis / **Amaranthus powellii** / Amaranthus bouchonii / **Amaranthus retroflexus** / Amaranthus spinosus / Amaranthus albus / Amaranthus biitoides / Amaranthus graecizans / **Amaranthus blitum** / Amaranthus emarginatus / Amaranthus deflexus / Amaranthus palmeri / **Portulaca oleracea** / Herniaria glabra / Herniaria hirsuta / Corrigiola litoralis / **Spergula arvensis** / **Spergularia rubra** / Polycarpon tetraphyllum / Scleranthus perennis / Scleranthus annuus / Minuartia fastigiata / Minuartia hybrida / **Sagina procumbens** / **Sagina apetala erecta** / Sagina apetala / **Arenaria serpyllifolia** / Arenaria leptocladus / Moehringia muscosa / **Moehringia trinervia** / Holosteum umbellatum / **Stellaria media** / Stellaria neglecta / **Stellaria pallida** / Stellaria nemorum / Stellaria holostea / **Stellaria alsina** / **Stellaria graminea** / Myosoton aquaticum / **Cerastium arvense** / Cerastium tomentosum / **Cerastium glomeratum** / Cerastium brachypetalum / **Cerastium fontanum** / **Cerastium semidecandrum** / Cerastium pumilum / Cerastium pumilum pallens / Gypsophila muralis / Gypsophila elegans / **Saponaria officinalis** / Petrorhagia prolifera / Petrorhagia saxifraga / Dianthus superbus / Dianthus superbus sylvestris / Dianthus armeria / Dianthus barbatus / **Dianthus carthusianorum** / Dianthus deltoideus / Dianthus gratianopolitanus / **Silene noctiflora** / **Silene dioica** / Silene pratensis / **Silene vulgaris** / Silene gallica / Silene nutans / Silene armeria / Lychnis coronaria / **Lychnis flos-cuculi** / Agrostemma githago / **Rumex acetosella** / **Rumex scutatus** / **Rumex acetosa** / **Rumex thysiflorus** / **Rumex obtusifolius** / **Rumex conglomeratus** / **Rumex sanguineus** / **Rumex hydrolapathum** / **Rumex crispus** / **Rumex patientia** / Rheim rhabarbarum / **Fallopia convolvulus** / Fallopia dumetorum / Fallopia aubertii / **Reynoutria japonica** / **Polygonum aviculare** / Polygonum aequale / Polygonum calcatum / **Polygonum heterophyllum** / Polygonum monspeliense / Polygonum polystachyum / Polygonum bistorta / Polygonum amphibium / Polygonum amphibium aquaticum / **Polygonum persicaria** / Polygonum pensylvanicum / Polygonum lapathifolium / Polygonum lapathifolium ssp. / **Polygonum hydropiper** / **Polygonum mite** / Polygonum minus / Fagopyrum esculentum / Paeonia officinalis / **Hypericum androsaemum** / Hypericum calycinum / **Hypericum humifusum** / **Hypericum hirsutum** / Hypericum pulchrum / **Hypericum montanum** / **Hypericum perforatum** / Hypericum perforatum veronense / Hypericum perforatum angustifolium / Hypericum perforatum latifolium / Hypericum maculatum s.l. / Hypericum maculatum s.str. / Hypericum maculatum ssp. Obtusiusculum / Hypericum desetangii / **Hypericum tetrapterum** / **Tilia cordata** / **Tilia platyphyllos** / Tilia vulgaris / Abutilon theophrasti / Althaea hirsuta / Alcea rosea / Malva alcea / Malva moschata / **Malva sylvestris** / Malva sylvestris mauritiana / **Malva neglecta** / Malva pusilla / Sida spinosa / Anoda cristata / Helianthemum nummularium / Helianthemum nummularium obscurum / Viola tricolor / **Viola arvensis** / Viola wittrockiana / Viola alba / Viola alba scotophylla / **Viola odorata** / **Viola hirta** / Viola mirabilis / **Viola reichenbachiana** / **Viola riviniana** / Viola canina / Viola scabra / **Viola x dubia** / Bryonia dioica / Cucumis sativus / Cucurbita pepo / Populus tremula / Populus canescens / Populus alba / **Populus nigra** / Populus nigra italica / Populus canadensis / Salix x sepulcralis / **Salix alba s.str.** / Salix alba vitellina / **Salix fragilis** / **Salix x rubens** / Salix triandra / Salix elaeagnos / Salix daphnoides / **Salix purpurea** / Salix viminalis / Salix nigricans / **Salix caprea** / Salix aurita / **Salix cinerea** / Sisymbrium altissimum / Sisymbrium officinale / Sisymbrium orientale / Sisymbrium irio / Descurainia sophia / **Alliaria petiolata** / **Arabioides thaliana** / Isatis tinctoria / Bunias orientalis / Erysimum cheiranthoides / Cheiranthus cheiri / **Hesperis matronalis** / Barbarea vulgaris / Barbarea intermedia / Armoracia rusticana / **Rorippa palustris** / **Rorippa x anceps** / Rorippa austriaca / Rorippa amphibia / **Rorippa sylvestris** / Nasturtium officinale / Nasturtium microphyllum / Cardamine amara / **Cardamine pratensis** / Cardamine impatiens / **Cardamine flexuosa** / **Cardamine hirsuta** / Dentaria bulbifera / Dentaria heptaphylla / Cardaminopsis arenosa / Cardaminopsis arenosa borbasii / Turrilis glabra / Arabis turrita / Arabis alpina s. str. / Arabis alpina caucasica / Arabis hirsuta / Aubrieta deltoidea / Lunaria rediviva / Lunaria annua / Alyssum alyssoides / Alyssum montanum / **Alyssum saxatile** / Lobularia maritima / Berteroa incana / Draba aizoides / Draba muralis / **Erophila verna** / **Erophila praecox** / Kerera saxatilis / Camelina microcarpa / Neslia paniculata / **Capsella bursa-pastoris** / Capsella rubella / **Thlaspi arvense** / Thlaspi perfoliatum / Thlaspi montanum / Iberis umbellata / Lepidium latifolium / Lepidium graminifolium / Lepidium ruderalis / **Lepidium virginicum** / Lepidium neglectum / **Cardaria draba** / Coronopus squamatus / Coronopus didymus / Diplotaxis tenuifolia / Diplotaxis muralis / Brassica nigra / Brassica rapa / Brassica napus / Brassica oleracea / Brassica juncea / **Sinapis arvensis** / Sinapis alba / Eruca sativa / Erucastrum nasturtiifolium / Erucastrum gallicum / Coicyca cheiranthos / Hirschfeldia incana / Rapistrum rugosum / Rapistrum rugosum orientale / **Raphanus raphanistrum** / Raphanus raphanistrum (geblb. Formen) / **Reseda luteola** / **Reseda lutea** / Vaccinium myrtillus / Calluna vulgaris / Orthilia secunda / Pyrola rotundifolia / Pyrola minor / Monotropa hypopitys / Monotropa hypophega / **Lysimachia nummularia** / **Lysimachia nemorum** / **Lysimachia vulgaris** / Lysimachia punctata / **Lysimachia thysiflora** / **Anagallis arvensis** / **Anagallis foemina** / Centunculus minimus / Primula acaulis / Primula auricula / **Primula elatior** / **Primula veris** / Primula veris columnae / **Hottonia palustris** / Philadelphus coronarius / **Ribes uva-crispa** / Ribes alpinum / **Ribes rubrum** / Sedum telephium / Sedum spurium / Sedum rupestre / Sedum acre / Sedum sexangulare / Sedum hispanicum / Sedum album / Sempervivum tectorum / Saxifraga paniculata / Saxifraga granulata / Saxifraga tridactylites / Chrysosplenium alternifolium / Chrysosplenium oppositifolium / Parnassia palustris / Aruncus dioicus / **Filipendula ulmaria** / Filipendula vulgaris / Rubus saxatilis / **Rubus idaeus** / **Rubus caesius** / **Rubus fruticosus** / Rubus laciniatus / Rubus canescens / Rosa pendulina / **Rosa pimpinellifolia** / Rosa rugosa / Rosa multiflora / **Rosa arvensis** / **Rosa rubiginosa** / Rosa micrantha / Rosa agrestis / **Rosa glauca** / Rosa jundzillii / Rosa tomentosa / **Rosa corymbifera** / **Rosa corymbifera platyphylla** / Rosa corymbifera thuileri / Rosa corymbifera hemitricha / Rosa stylosa / **Rosa canina** / Rosa canina luteiana / Rosa canina transitoria / Rosa canina hispidula / Rosa canina diversiglandulosa / Rosa canina dumalis / Rosa vosagiaca / Rosa vosagiaca subcanina / Agrimonia eupatoria / Sanguisorba officinalis / **Sanguisorba minor s.str.** / Sanguisorba minor polygama / **Geum urbanum** / **Geum rivale** / **Potentilla fruticosa** / **Potentilla sterilis** / Potentilla supina / **Potentilla anserina** / Potentilla erecta / Potentilla norvegica / **Potentilla reptans** / Potentilla recta / Potentilla argentea / Potentilla inclinata / Potentilla intermedia / Potentilla heptaphylla / Potentilla neumanniana / Potentilla arenaria / Fragaria moschata / Fragaria viridis / **Fragaria vesca** / **Duchesnea indica** / **Aphanes arvensis** / Alchemilla glaucescens / Alchemilla filicaulis / **Alchemilla xanthochlora** / Alchemilla monticola / Alchemilla micans / Alchemilla subcrenata / Alchemilla glabra / Chaenomeles japonica / Pyrus pyraeaster / Malus sylvestris / Malus domestica / **Sorbus aucuparia** / Sorbus domestica / Sorbus terminalis / Sorbus x latifolia / Sorbus aria / Sorbus mougeotii / Sorbus intermedia / Amelanchier ovalis / **Cotoneaster divaricatus** / Cotoneaster integerrimus / Cotoneaster tomentosus / Cotoneaster salicifolius / **Cotoneaster dammeri** / Pyracantha coccinea / Mespilus germanica / **Crataegus laevigata** / Crataegus lindmannii / **Crataegus monogyna** / Crataegus x macrocarpa / Prunus persica / **Prunus spinosa s.str.** / Prunus spinosa fruticans / **Prunus domestica** / **Prunus avium** / Prunus cerasus / Prunus mahaleb / **Prunus padus** / Prunus serotina / **Prunus laurocerasus** / Gleditsia triacanthos / Cercis siliquastrum / Cassia obtusifolia / Lupinus polyphyllus / Genista germanica / Genista tinctoria / Genista pilosa / Genista sagittalis / Cytisus scoparius / **Robinia pseudoacacia** / Colutea arborecens / Astragalus glycyphyllos / Anthyllis vulneraria s.l. / Anthyllis vulneraria s.str. / Anthyllis vulneraria carpatica / Lotus tenuis / **Lotus corniculatus** / Lotus corniculatus hirsutus / **Lotus uliginosus** / Tetragonolobus maritimus / Ornithopus perpusillus / **Coronilla varia** / Coronilla emerus / Coronilla coronata / Coronilla vaginalis / Hippocrepis comosa / **Onobrychis vicifolia** / Ononis spinosa / Ononis spinosa austriaca / **Ononis repens** / Medicago falcata / **Medicago sativa** / Medicago x varia / **Medicago lupulina** / Medicago minima / Melilotus albus / Melilotus altissimus / Melilotus officinalis / Trifolium fragiferum / Trifolium resupinatum / Trifolium rubens / Trifolium medium / Trifolium arvense / Trifolium incarnatum / Trifolium alpestre / **Trifolium pratense** / Trifolium ochroleucon / Trifolium scabrum / Trifolium repens / Trifolium montanum / Trifolium hybridum / Trifolium aureum / Trifolium campestre / **Trifolium dubium** / **Vicia hirsuta** / **Vicia Tetrasperma** / Vicia dumetorum / **Vicia cracca** / **Vicia villosa** / **Vicia villosa varia** / Vicia narbonensis / **Vicia pannonica** / **Vicia sepium** / Vicia lutea / Vicia angustifolia s.str. / Vicia angustifolia s.l. / Lathyrus aphaca / Lathyrus hirsutus / **Lathyrus pratensis** / Lathyrus tuberosus / Lathyrus sylvestris / Lathyrus latifolius / Lathyrus linifolius / Lathyrus niger / Lathyrus vernus / Glycine max / Hippophae rhamnoides / Myriophyllum verticillatum / Myriophyllum spicatum / Lythrum salicaria / Lythrum hyssopifolia / Peplis portula / Thymelaea passerina / Daphne mezereum / Daphne laureola / Epilobium angustifolium / Epilobium dodonaei / **Epilobium hirsutum** / **Epilobium parviflorum** / **Epilobium montanum** / Epilobium roseum / Epilobium palustre / Epilobium obscurum / Epilobium ciliatum / **Epilobium tetragonum** / Epilobium tetragonum lamyi / Oenothera biennis / Oenothera suaveolens / Oenothera oehlkersii / Oenothera pycnocarpa / Oenothera erythrosepala / Oenothera x fallax / Oenothera issleri / Oenothera parviflora / **Circaea luteiana** / **Cornus sanguinea** / **Cornus alba** / Cornus mas / Thesium pyrenaicum / Thesium alpinum / **Viscum album** / **Viscum album abietis** / **Viscum album austriacum** / **Euonymus europaeus** / Ilex aquifolium / Buxus sempervirens / Mercurialis annua / Mercurialis perennis / Euphorbia nutans / Euphorbia maculata / Euphorbia humifusa / Euphorbia lathyris / Euphorbia helioscopia / Euphorbia seguieriana / Euphorbia palustris / Euphorbia platyphylla / Euphorbia stricta / Euphorbia dulcis / Euphorbia verrucosa / Euphorbia amygdaloides / Euphorbia cyparissias / Euphorbia virgata / Euphorbia peplus / Euphorbia exigua / Rhamnus cathartica / Rhamnus alpina / **Frangula alnus** / Vitis silvestris / Vitis vinifera / Parthenocissus inserta / Linum catharticum / Linum usitatissimum / Polygala amarella / Polygala vulgaris / Polygala comosa / Staphylea pinnata / Koeleruteria paniculata / Aesculus hippocastanum / Acer negundo / **Acer pseudoplatanus** / **Acer platanoides** / **Acer campestre** / Acer opalus / Cotinus coggygria / Rhus typhina / Ailanthus altissima / Ruta graveolens / Dictamnus albus / **Oxalis acetosella** / **Oxalis fontana** / Oxalis corniculata / Oxalis dillenii / **Geranium robertianum** / Geranium purpureum / Geranium rotundifolium / Geranium plaustris / Geranium sylvaticum / Geranium pratense / Geranium sanguineum / Geranium columbinum / Geranium dissectum / Geranium molle / Geranium pusillum / Geranium pyrenaicum / Erodium cicutarium / Tropaeolum majus / Impatiens glandulifera / Impatiens balfourii / Impatiens noli-tangere / Impatiens parviflora / **Hedera helix** / Hydrocotyle vulgaris / Sanicula europaea / Eryngium campestre / Chaerophyllum hirsutum / Chaerophyllum temulum / Chaerophyllum aureum / Anthriscus sylvestris / Anthriscus nitida / Anthriscus caucalis / Torilis japonica / Torilis arvensis / Caucalis platycarpos / Orlaya grandiflora / Bifora radians / Conium maculatum / Blueperum rotundifolium / Blueperum falcatum / Trinia glauca / Petroselinum crispum / Cicuta virosa / Ammi majus / Falcaria vulgaris / Carum carvi / **Pimpinella major** / **Pimpinella saxifraga** / **Pimpinella peregriana** / **Aegopodium podagraria** / Berula erecta / Seseli libanotis / Seseli annuum / Oenanthe lachenali / **Aethusa cynapium** / Aethusa cynapium cynapioides / Athamanta cretensis / Foeniculum vulgare / Silium silaus / **Angelica sylvestris** / Peucedanum cavifolia / Peucedanum oreoselinum / Peucedanum cervaria / Pastinaca sativa / **Heracleum mantegazzianum** / **Heracleum sphondylium** / Laserpitium latifolium / Laserpitium siler / **Daucus carota** / Centaurium erythraea / **Centaurium pulchellum** / Blackstonia perfoliata / Gentiana lutea / Gentiana cruciata / Gentiana pneumonanthe / Gentiana verna / Gentianella ciliata / Gentianella germanica / **Vinca minor** / Vinca major / Asclepias syriaca / Vincetoxicum hirundinaria / Nicandra physalodes / Lycium barbarum / Atropa bella-donna / Physalis alkekengi / Physalis franchetti / **Solanum dulcamara** / **Solanum nigrum** / Solanum nigrum ssp. Schultesii / Solanum carolinense / Lycopersicon esculentum / **Datura stramonium** / Datura stramonium tatula / Petunia x Atkinsiana / **Convolvulus arvensis** / **Calystegia sepium** / Ipomoea hederacea / Ipomoea lacunosa / Cuscuta europaea / **Cuscuta epithymum** / **Menyanthes trifoliata** / **Nymphoides peltata** / Phacelia tanacetifolia / Heliotropium europaeum / Lithospermum officinale / Buglossoides purpureo-caerulea / **Buglossoides arvensis** / Echium vulgare / Echium plantagineum / **Pulmonaria obscura** / Symphytum officinale / Anchusa arvensis / Brunnera macrophylla / Borago officinalis / **Myosotis nemorosa** / **Myosotis scorpioides** / Myosotis alpestris / **Myosotis sylvatica** / **Myosotis ramosissima** / **Myosotis arvensis** / Myosotis discolor / Cynoglossum officinale / Verbena officinalis / Verbena bonariensis / Caryopteris x clandonensis / **Teucrium scorodonia** / Teucrium montanum / Teucrium botrys / Teucrium chamaedrys / **Ajuga reptans** / **Ajuga reptans** / Ajuga genevensis / **Lavandula angustifolia** / Mentha pulegium / Mentha arvensis / **Mentha aquatica** / Mentha suaveolens / **Mentha longifolia** / Mentha spicata glabrata / Mentha x verticillata / Mentha x dumetorum / Mentha x piperita / Mentha x villosa / Mentha x



rotundifolia / **Lycopus europaeus** / **Origanum vulgare** / **Thymus pulegiodes** / Thymus froelichianus / Thymus praecox / **Melissa officinalis** / Satureja hortensis / Clinopodium vulgare / Calamintha methifolia / Acinos arvensis / Nepeta cataria / **Glechoma hederacea** / Melittis melissophyllum / **Ballota nigra** / Stachys alpina / Stachys germanica / Stachys annua / Stachys recta / Stachys arvensis / **Stachys sylvatica** / Stachys palustris / Stachys officinalis / **Lamium maculatum** / Lamium album / Lamium amplexicaule / **Lamium purpureum** / Lamium hybridum / **Lamium galeobdolon montanum** / Lamium galeobdolon argentatum / Galeopsis segetum / Galeopsis angustifolia / **Galeopsis tetrahit** / Prunella grandiflora / **Prunella vulgaris** / Prunella lacinata / Salvia glutinosa / **Salvia pratensis** / Salvia verticillata / **Scutellaria galericulata** / **Hippuris vulgaris** / **Callitriche palustris** / Plantago arenaria / **Plantago media** / **Plantago major** / **Plantago intermedia** / **Plantago lanceolata** / Plantago lanceolata sphaerostachya / **Buddleja davidii** / **Forsythia sp.** / **Fraxinus excelsior** / Fraxinus ornus / **Syringa vulgaris** / **Ligustrum vulgare** / Ligustrum sinense / Ligustrum ovalifolium / Verbascum blattaria / Verbascum nigrum / Verbascum lychnitis / Verbascum lychnitis album / Verbascum pulverulentum / Verbascum thapsus / Verbascum densiflorum / Verbascum phlomoides / Scrophularia canina / **Scrophularia umbrosa** / **Scrophularia nodosa** / Chaenorhynchus minus / **Cymbalaria muralis** / **Kickxia spuria** / **Kickxia elatine** / **Linaria vulgaris** / Linaria repens / Linaria purpurea / **Antirrhinum majus** / **Misopates orontium** / **Digitalis purpurea** / Digitalis grandiflora / Digitalis lutea / Erinus alpinus / **Veronica serpyllifolia** / **Veronica officinalis** / **Veronica montana** / **Veronica Chamaedrys** / Veronica urticifolia / Veronica prostrata / Veronica teucrium / **Veronica beccabunga** / Veronica anagalıs-aquatica / Veronica catenata / Veronica spicata / **Veronica arvensis** / **Veronica peregrina** / **Veronica acinifolia** / Veronica triphyllus / Veronica praecox / **Veronica hederifolia** / **Veronica hederifolia lucorum** / **Veronica persica** / **Veronica filiformis** / Veronica agrestis / Veronica polita / Euphrasia rostkoviana / Euphrasia salisburgensis / Euphrasia stricta / Odontites vernus / Odontites vulgaris / Odontites luteus / Rhinanthus minor / **Rhinanthus alectorolophus** / Melampyrum cristatum / Melampyrum arvense / Melampyrum sylvaticum / **Melampyrum pratense** / Lathraea squamaria / Globularia punctata / Globularia cordifolia / Orobanche lutea / Orobanche hederae / **Orobanche caryophyllacea** / Orobanche teucrii / Orobanche alba / Orobanche minor / Paulownia tomentosa / Catalpa bignonioides / Pinigularia vulgaris / **Utricularia australis** / Utricularia intermedia / Campanula glomerata / Campanula rapunculosa / Campanula patula / Campanula cochlearifolia / **Campanula rotundifolia** / Campanula persicifolia / **Campanula rapunculoides** / **Campanula trachelium** / **Campanula poscharskyana** / Legousia speculum-veneris / Phyteuma orbiculare / Phyteuma nigrum / **Phyteuma spicatum** / Jasione laevis / Lobelia erinus / **Sherardia arvensis** / Asperula cynanchica / Crucjata Laevipes / Galium verum s.str. / Galium verum ssp. wirtgenii / Galium odoratum / Galium glaucum / Galium palustre / Galium uliginosum / Galium aparine / Galium spurium / Galium parisiense / Galium sylvaticum / Galium album / Galium pumilum / **Lonicera periclymenum** / Loniceria caprifolium / Loniceria alpigena / **Lonicera xylosteum** / **Lonicera nitida** / Symphoricarpos albus / Symphoricarpos x chenaultii / **Viburnum lantana** / **Viburnum rhytidophyllum** / **Viburnum opulus** / **Sambucus ebulus** / **Sambucus nigra** / **Sambucus racemosa** / **Adoxa moschatellina** / **Valerianaella locusta** / **Valerianaella carinata** / Valerianaella dentata / Valerianaella dentata var. eriosperma / Valerianaella rimosa / **Valeriana officinalis** / Valeriana officinalis ssp. excelsa / **Valeriana officinalis ssp. tenuifolia** / **Valeriana dioica** / Valeriana tripteris / Valeriana montana / Centranthus ruber / **Dipsacus fullonum** / Dipsacus laciniatus / Dipsacus pilosus / Succisa pratensis / **Knautia arvensis** / Knautia dipacifolia / Scabiosa canescens / Scabiosa columbaria / **Ageratum houstonianum** / **Eupatorium cannabinum** / **Solidago virgaurea** / **Solidago canadensis** / **Solidago gigantea** / **Bellis perennis** / Callistephus chinensis / Aster bellidiflorus / Aster linoisyris / Aster amellus / Aster novae-angliae / Aster novi-belgii / Aster x versicolor / Aster lanceolatus / Aster salignus / Erigeron acer / **Erigeron annuus s.l.** / Erigeron annuus s.str. / Erigeron annuus ssp. septentrionalis / Erigeron annuus ssp. strigosus / Erigeron karvinskianus / **Conyza canadensis** / Conyza bonariensis / Filago vulgaris / Antennaria dioica / **Gnaphalium uliginosum** / Gnaphalium luteoalbum / Gnaphalium sylvaticum / **Inula conyza** / Inula graveolens / **Inula salicina** / Pulicaria dysenterica / Bupththalmum salicifolium / Guizotia abyssinica / Bidens cernua / Bidens connata / Bidens tripartita / Bidens frondosa / Cosmos bipinnatus / Rudbeckia hirta / **Helianthus annuus** / Helianthus tuberosus / **Helianthus laetiflorus** / Iva xanthifolia / Ambrosia artemisiifolia / Ambrosia trifida / Xanthium strumarium / Galinsoga parviflora / **Galinsoga ciliata** / Tagetes patula / Anthemis cotula / Anthemis arvensis / Anthemis tinctoria / Achillea ptarmica / **Achillea millefolium** / Achillea nobilis / Achillea filipendulina / **Matricaria recutita** / **Matricaria discoidea** / **Tripleurospermum perforatum** / Chrysanthemum segetum / **Leucanthemum ictuatum** / Leucanthemum adustum / Leucanthemum vulgare / Leucanthemum maximum / **Tanacetum vulgare** / Tanacetum corymbosum / **Tanacetum parthenium** / Artemisia vulgaris / Artemisia verlotiorum / Artemisia absinthium / Artemisia campestris / **Tussilago farfara** / Petasites hybridus / Petasites albus / Adenostyles alliariae / Adenostyles glabra / Senecio inaequidens / Senecio paludosus / Senecio hercynicus / Senecio ovatus / Senecio cineraria / **Senecio erucifolius** / **Senecio jacobaea** / **Senecio aquaticus** / Senecio squalidus / **Senecio vulgaris** / **Senecio viscosus** / Senecio vernalis / **Calendula officinalis** / Calendula arvensis / Arcium tomentosum / Arcium lappa / Arctium nemorosum / Arctium minus / Carduus nutans / Carduus defloratus / Carduus crispus / **Cirsium vulgare** / **Cirsium arvense** / **Cirsium palustre** / Cirsium acule / Cirsium tuberosum / **Cirsium oleraceum** / Cirsium x rigens / Onopordum acanthium / Silybum marianum / Serratula tinctoria / Centaurea solstitialis / Centaurea cyanus / Centaurea montana / **Centaurea scabiosa** / Centaurea stoebe / **Centaurea jacea s.l.** / **Centaurea jacea s.str.** / Centaurea jacea ssp. angustifolia / Centaurea nemoralis / Carlina vulgaris / Carlina acaulis ssp. caulescens / Echinops sphaerocephalus / Cichorium intybus / Cichorium endivia / Tragopogon dubius / **Tragopogon pratensis ssp. orientalis** / Tragopogon pratensis ssp. minor / **Hypochoeris radicata** / Leontodon saxatilis / **Leontodon autumnalis** / **Leontodon hispidus s.l.** / Leontodon hispidus ssp. hastilis / Picris hieracioides / Picris echioides / **Sonchus oleraceus** / **Sonchus asper** / **Sonchus arvensis** / Prenanthes purpurea / Mycelis muralis / Lactuca virosa / Lactuca serriola / Lactuca sativa / **Lapsana communis** / **Taraxacum officinale** / Taraxacum laevigatum / Chondrilla juncea / Crepis paludosa / Crepis praemorsa / **Crepis biennis** / Crepis tectorum / **Crepis capillaris** / Crepis pulchra / Crepis foetida / **Crepis taraxacifolia** / **Crepis setosa** / Hieracium pilosella / Hieracium lactucella / Hieracium aurantiacum / **Hieracium caespitosum** / Hieracium piloselloides / Hieracium visianii / Hieracium zizianum / Hieracium calodum / Hieracium auriculoides / Hieracium scorzoniferolium / Hieracium glaucinum / **Hieracium murorum** / Hieracium maculatum / Hieracium lachenalii / Hieracium humile / Hieracium amplexicaule / Hieracium laevigatum / Hieracium umbellatum / Hieracium sabaudum / Hieracium lycopifolium / **Butomus umbellatus** / **Alisma plantago-aquatica** / Alisma lanceolatum / Sagittaria sagittifolia / Stratiotes aloides / Elodea densa / **Elodea canadensis** / Elodea nuttallii / Triglochin palustre / **Potamogeton crispus** / Potamogeton nodosus / **Potamogeton natans** / **Potamogeton lucens** / Potamogeton gramineus / Potamogeton pectinatus / **Potamogeton bercholdii** / Groenlandia densa / Najas marina / Zannichellia palustris / **Acorus calamus** / **Arum maculatum** / Spirodela polyrhiza / Lemna trisulca / Lemna minor / Lemna minuta / Tradescantia virginiana / Commelina communis / **Juncus inflexus** / **Juncus conglomeratus** / **Juncus effusus** / **Juncus tenuis** / Juncus compressus / **Juncus bufonius** / Juncus bulbosus / Juncus subnodulosus / Juncus alpinoarticulatus / Juncus articulatus / Juncus acutiflorus / **Luzula pilosa** / Luzula forsteri / Luzula luzuloides / Luzula sylvatica / Luzula campestris / **Luzula multiflora** / **Scirpus sylvaticus** / Bolboschoenus maritimus / Issolepis setacea / Schoenoplectus lacustris / Schoenoplectus tabernaemontani / Schoenoplectus mucronatus / Eleocharis unguiculata / **Eleocharis palustris** / Eleocharis mamillata / Eriophorum angustifolium / Eriophorum latifolium / Cladium mariscus / Schoenus nigricans / Cyperus fuscus / Carex davalliana / Carex disticha / **Carex brizoides** / Carex praecox / Carex otrubae / **Carex muricata aggr.** / **Carex spicata** / **Carex muricata ssp. lamprocarpa** / **Carex polyphylla** / **Carex paniculata** / **Carex remota** / **Carex leporina** / Carex elongata / Carex echinata / Carex acuta / Carex nigra / Carex elata / **Carex umbrosa** / **Carex montana** / Carex fritschii / Carex pilulifera / Carex tomentosa / **Carex caryophyllea** / Carex pilosa / **Carex pallescens** / **Carex pendula** / Carex hallerana / Carex flacca / **Carex panicea** / Carex alba / Carex humilis / **Carex digitata** / **Carex ornithopoda** / **Carex sylvatica** / **Carex strigosa** / Carex flava / Carex lepidocarpa / Carex demissa / Carex viridula / Carex distans / Carex hostiana / Carex pseudocyperus / **Carex hirta** / Carex rostrata / Carex vesicaria / **Carex acutiformis** / Carex riparia / **Festuca gigantea** / **Festuca altissima** / **Festuca pratensis** / **Festuca arundinacea** / **Festuca rubra s. str.** / **Festuca heterophylla** / **Festuca brevipila** / **Festuca ovina aggr.** / Festuca guestfalica / Festuca pallens / Festuca tenuifolia / **Lolium multiflorum** / Lolium perenne / Lolium rigidum / Vulpia ciliata / Vulpia myuros / Catapodium rigidum / Poa bulbosa / **Poa annua** / Poa compressa / Poa chaixii / **Poa trivialis** / Poa pratensis / Poa angustifolia / Poa humilis / **Poa nemoralis** / Poa palustris / Puccinella distans / **Dactylis glomerata** / **Dactylis polygama** / Cynosurus cristatus / **Briza media** / Sesleria albicans / Melica ciliata / **Melica nutans** / Melica uniflora / Glyceria maxima / Glyceria striata / Glyceria declinata / Glyceria fluitans / Glyceria notata / Glyceria x pedicellata / Bromus sterilis / Bromus tectorum / Bromus ramosus / Bromus benekenii / Bromus erectus / Bromus inermis / Bromus secalinus / **Bromus hordeaceus** / Bromus arvensis / Bromus racemosus / Bromus racemosus commutatus / Bromus japonicus / Bromus catharticus / **Brachypodium pinnatum** / **Brachypodium sylvaticum** / Elymus caninus / Elymus elongatus / Elymus repens / Elymus repens aristatus / Elymus repens glaucus / Elymus campestris / Aegilops cylindrica / Triticum durum / Triticum aestivum / Secale cereale / Hordeum murinum / Hordeum distichon / Hordeum vulgare / Hordelymus europaeus / Avena fatua / Avena sativa / Helictotrichon pubescens / Helictotrichon pratense / Arrhenatherum elatius / Koeleria macrantha / Koeleria pyramidata / Trisetum flavescens / **Deschampsia caespitosa** / Avenella flexuosa / Aira caryophyllea / **Anthoxanthum odoratum** / **Holcus lanatus** / **Holcus mollis** / **Agrostis capillaris** / Agrostis gigantea / **Agrostis stolonifera s.l.** / Agrostis stolonifera ssp. prorepens / Agrostis canina / **Apera spica-venti** / Calamagrostis varia / Calamagrostis epigejos / Calamagrostis canescens / Phleum phleoides / Phleum paniculatum / Phleum pratense / Phleum bertolonii / **Alopecurus myosuroides** / **Alopecurus pratensis** / **Alopecurus aequalis** / Phalaris arundinacea / Phalaris canariensis / **Milium effusum** / Stipa eriocalis ssp. lutetiana / Achnatherum calamagrostis / Phragmites australis / Danthonia decumbens / Molinia arundinacea / Eragrostis pilosa / Eragrostis multicaulis / Eragrostis minor / Eragrostis cilianensis / Eleusine indica / Cynodon dactylon / Leersia oryzoides / Panicum miliaceum / Panicum capillare / Panicum dichotomiflorum / **Echinochloa crus-galli** / Echinochloa colona / Digitaria sanguinalis / Digitaria ischaemum / **Setaria verticilliformis** / Setaria geniculata / **Setaria pumila** / **Setaria viridis s.l.** / Setaria italica / Setaria italica moharia / Setaria faberi / Sorghum halepense / **Sorghum bicolor s.l.** / Bothriochloa / ischaemum / Sparganium erectum / Sparganium erectum neglectum / Sparganium emersum / Sparganium minimum / **Typha angustifolia** / **Typha latifolia** / Pontederia cordata / Anthericum ramosum / Anthericum liliago / Hemerocallis fulva / Colchicum autumnale / Gagea villosa / Gagea lutea / Tulipa sylvestris / Tulipa gesneriana / Liliium martagon / **Ornithogalum umbellatum** / **Ornithogalum nutans** / Ornithogalum pyrenaicum / Scilla bifolia / **Scilla siberica** / Chionodoxa sp. / **Hyacinthoides sp.** / Muscari comosum / Muscari racemosum / Muscari armeniacum / **Allium vineale** / Allium sphaerocephalon / Allium scorodoprasum / Allium schoenoprasum / **Allium ursinum** / **Allium paradoxum** / **Allium oleraceum** / Allium carinatum / Allium senescens montanum / Convallaria majalis / Maianthemum bifolium / Polygonatum verticillatum / **Polygonatum multiflorum** / Polygonatum odoratum / **Paris quadrifolia** / Asparagus officinalis / Leucojum vernum / Galanthus nivalis / Narcissus pseudonarcissus / Iris germanica / **Iris pseudacorus** / Iris sibirica / Crocus sp. / Tamus communis / Cephalanthera rubra / **Cephalanthera damasonium** / Cephalanthera longifolia / Epipactis palustris / Epipactis atrorubens / Epipactis helleborine / Epipactis muelleri / Epipactis leptochila / Epipactis purpurata / Limodorum abortivum / Listeria ovata / **Neottia nidus-avis** / Goodyera repens / Spiranthes spiralis / Gymnadenia conopsea / Gymnadenia odoratissima / Coeloglossum viride / Platanthera bifolia / Platanthera chlorantha / Ophrys insectifera / Ophrys apifera / Ophrys sphegodes / Ophrys sphegodes litigiosa / Ophrys holoserica / Ophrys holoserica elatior / Orchis morio / Orchis ustulata / Orchis purpurea / Orchis militaris / Orchis simia / Orchis pallens / Orchis mascula / **Dactylorhiza fuchsii** / Dactylorhiza incarnata / **Dactylorhiza majalis** / Aceras anthropophorum / Himantoglossum hircinum / Anacamptis pyramidalis

## BRUDERHOLZ. PHENOLOGY

*Equisetum arvense* / *Equisetum telmateia* / Pteridium aquilinum / **Dryopteris filix-mas** / *Dryopteris dilatata* / *Dryopteris carthusiana* / Polystichum aculeatum / *Athyrium filix-femina* / Asplenium trichomanes / Asplenium ruta-muraria / Phyllitis scolopendrium / Polypodium interjectum / **Abies alba** / Pseudotsuga menziesii / **Picea abies** / **Larix decidua** / *Pinus sylvestris* / Taxus baccata / Nymphaea alba / Ceratophyllum demersum / Helleborus foetidus / Eranthis hyemalis / Aquilegia vulgaris / **Caltha palustris** / Nigella damascena / **Anemone nemorosa** / Clematis vitalba / **Ranunculus ficaria** / Ranunculus trichophyllus / Ranunculus lingua / Ranunculus arvensis / **Ranunculus biformis** / **Ranunculus alsaticus** / Ranunculus lyratus / Ranunculus argoviensis / Ranunculus macrotis / Ranunculus quinatus / **Ranunculus acer** / Ranunculus bulbosus / **Ranunculus repens** / Ranunculus tuberosus / Berberis thunbergii / Mahonia aquifolium / Chelidonium majus / **Papaver rhoeas** / Corydalis lutea / Corydalis solida / Ulmus minor / Ulmus minor suberosa / Ulmus glabra / Humulus lupulus / Cannabis sativa / **Urtica dioica** / Juglans regia / **Fagus sylvatica** / Castanea sativa / **Quercus robur** / **Quercus petraea** / **Alnus glutinosa** / **Betula pendula** / **Carpinus betulus** / **Corylus avellana** / **Chenopodium polyspermum** / **Chenopodium album** / **Atriplex patula** / Amaranthus powellii / Amaranthus retroflexus / **Amaranthus blitum** / Portulaca oleracea / Spargula arvensis / Spargularia rubra / **Sagina procumbens** / Sagina apetala erecta / Arenaria serpyllifolia / Moehringia trinervia / **Stellaria media** / Stellaria pallida / Stellaria alsine / Stellaria graminea / Cerastium arvense / **Cerastium glomeratum** / **Cerastium fontanum** / Cerastium semidecandrum / Gypsophila muralis / Saponaria officinalis / Dianthus carthusianorum / Silene noctiflora / Silene dioica / Silene vulgaris / **Lychnis flos-cuculi** / Rumex acetosella / **Rumex acetosa** / Rumex thyrsiflorus / **Rumex obtusifolius** / **Rumex sanguineus** / **Rumex crispus** / Fallopia convolvulus / Reynoutria japonica / **Polygonum aviculare** / Polygonum aequale / Polygonum calcatum / **Polygonum heterophyllum** / Polygonum monspeliense / Polygonum amphibium / **Polygonum persicaria** / Polygonum lapathifolium / **Polygo-Picea abies num hydro Piper** / Polygonum mite / Hypericum androsaemum / **Hypericum humifusum** / **Hypericum hirsutum** / Hypericum montanum / **Hypericum perforatum** / **Hypericum tetrapterum** / **Tilia cordata** / **Tilia platyphyllos** / Malva sylvestris / Malva neglecta / **Viola arvensis** / Viola odorata / Viola hirta / **Viola reichenbachiana** / **Viola riviniana** / **Viola x dubia** / Bryonia dioica / **Populus tremula** / Populus nigra / Salix x sepulcralis / Salix alba s.str. / Salix fragilis / Salix x rubens / Salix purpurea / **Salix caprea** / Salix cinerea / Sisymbrium officinale / **Alliaria petiolata** / **Arabidopsis thaliana** / Erysimum cheiranthoides / Hesperis matronalis / Rorippa palustris / Rorippa x anceps / Rorippa sylvestris / **Cardamine pratensis** / Cardamine flexuosa / **Cardamine hirsuta** / Dentaria bulbifera / Arabis alpina caucasica / Aubrieta deltoidea / Alyssum saxatilis / Erophila verna / Erophila praecox / **Capsella bursa-pastoris** / Thlaspi arvense / Lepidium campestre / Lepidium virginicum / Cardaria draba / Brassica napus / Brassica oleracea / **Sinapis arvensis** / **Raphanus raphanistrum** / Reseda luteola / Reseda lutea / Lysimachia nummularia / Lysimachia nemorum / Lysimachia vulgaris / Lysimachia thyriflora / **Anagallis arvensis** / Anagallis foemina / Centunculus minimus / Primula acaulis / **Primula elatior** / Primula veris / Hotttonia palustris / Philadelphus coronarius / **Ribes uva-crispa** / **Ribes rubrum** / Sedum spurium / Sempervivum tectorum / Saxifraga granulata / Saxifraga tridactylites / Chrysosplenium alternifolium / **Filipendula ulmaria** / Rubus idaeus / **Rubus caesius** / **Rubus fruticosus** / Rubus laciniatus / Rosa pimpinellifolia / **Rosa arvensis** / Rosa rubiginosa / Rosa glauca / Rosa corymbifera / Rosa corymbifera platyphylla / Rosa canina / Agrimonia eupatoria / **Sanguisorba minor s.str.** / **Geum urbanum** / **Geum rivale** / Potentilla fruticosa / **Potentilla sterilis** / **Potentilla anserina** / **Potentilla reptans** / **Fragaria vesca** / Duchesnea indica / **Aphanes arvensis** / Alchemilla xanthochlora / Alchemilla subcrenata / Chaenomeles japonica / **Malus domestica** / **Sorbus aucuparia** / Sorbus terminalis / Cotoneaster divaricatus / Cotoneaster dammeri / **Crataegus laevigata** / **Crataegus monogyna** / **Prunus spinosa s.str.** / Prunus domestica / **Prunus avium** / **Prunus padus** / **Prunus laurocerasus** / Lupinus polyphyllus / Genista germanica / **Robinia pseudoacacia** / **Lotus corniculatus** / Lotus uliginosus / Coronilla varia / Onobrychis vicifolia / Ononis repens / Medicago sativa / **Medicago lupulina** / Trifolium medium / Trifolium arvense / **Trifolium pratense** / **Trifolium repens** / Trifolium hybridum / Trifolium campestre / **Trifolium dubium** / Vicia hirsuta / **Vicia Tetrasperma** / Vicia cracca / Vicia villosa / Vicia villosa varia / Vicia pannonica / **Vicia sepium** / Vicia angustifolia s.l. / **Lathyrus pratensis** / Lathyrus latifolius / Lathyrus linifolius / Hippophae rhamnoides / Myriophyllum verticillatum / Myriophyllum spicatum / Lythrum salicaria / Lythrum hyssopifolia / Epilobium angustifolium / **Epilobium hirsutum** / **Epilobium parviflorum** / **Epilobium montanum** / Epilobium roseum / Epilobium obscurum / Epilobium ciliatum / **Epilobium tetragonum** / Oenothera erythrosepala / **Circaea lutetiana** / **Cornus sanguinea** / Cornus alba / Viscum album / Viscum abietis / **Euonymus europaeus** / Ilex aquifolium / Buxus sempervirens / Mercurialis annua / Mercurialis perennis / Euphorbia lathyris / Euphorbia helioscopia / Euphorbia dulcis / Euphorbia amygdaloides / Euphorbia cyparissias / Euphorbia peplus / Euphorbia exigua / Frangula alnus / Vitis vinifera / Linum catharticum / **Aesculus hippocastanum** / Acer negundo / **Acer pseudoplatanus** / **Acer platanoides** / **Acer campestre** / Rhus typhina / **Oxalis acetosella** / **Oxalis fontana** / Oxalis corniculata / **Geranium robertianum** / Geranium plaustrum / Geranium pratense / Geranium columbinum / Geranium dissectum / Geranium molle / Geranium pusillum / Geranium pyrenaicum / Impatiens glandulifera / Impatiens parviflora / **Hedera helix** / Sanicula europaea / Chaerophyllum temulum / Anthriscus sylvestris / Torilis japonica / Pimpinella major / Pimpinella saxifraga / Pimpinella peregrina / **Aegopodium podagraria** / Aethusa cynapium / **Angelica sylvestris** / Heracleum mantegazzianum / **Heracleum sphondylium** / Daucus carota / Centaurium pulchellum / Vinca minor / Solanum dulcamara / **Solanum nigrum** / Lycopersicon esculentum / Datura stramonium / **Convolvulus arvensis** / **Calystegia sepium** / Cuscuta epithymum / Menyanthes trifoliata / Nymphoides peltata / Buglossoides arvensis / **Pulmonaria obscura** / Symphytum officinale / Myosotis nemorosa / Myosotis scorpioides / Myosotis sylvatica / **Myosotis arvensis** / Verbena officinalis / Teucrium scorodonia / **Ajuga reptans** / Lavandula angustifolia / Mentha aquatica / Origanum longifolia / Lycopodium europaeus / Origanum vulgare / Thymus pulegioides / Melissa officinalis / **Glechoma hederacea** / Ballota nigra / **Stachys sylvatica** / Lamium maculatum / **Lamium purpureum** / **Lamium galeobdolon montanum** / **Galeopsis tetrahit** / **Prunella vulgaris** / Salvia pratensis / Scutellaria galericulata / Hippuris vulgaris / Callitriche palustris / **Plantago media** / **Plantago major** / Plantago intermedia / **Plantago lanceolata** / **Buddleja davidii** / Forsythia sp. / **Fraxinus excelsior** / Syringa vulgaris / **Ligustrum vulgare** / Verbascum nigrum / Verbascum densiflorum / Scrophularia umbrosa / **Scrophularia nodosa** / Chaenorhynchus minus / Cymbalaria muralis / **Kickxia spuria** / **Kickxia elatine** / Linaria vulgaris / Antirrhinum majus / Misopates orontium / Digitalis purpurea / **Veronica serpyllifolia** / **Veronica officinalis** / **Veronica montana** / **Veronica chamaedrys** / **Veronica beccabunga** / **Veronica arvensis** / Veronica peregrina / Veronica acinifolia / **Veronica hederifolia** / Veronica hederifolia lucorum / **Veronica persica** / **Veronica filiformis** / Rhinanthus alectorolophus / Melampyrum pratense / Orobanche caryophyllacea / Utricularia vulgaris / Campanula rotundifolia / Campanula rapunculoides / Campanula trachelium / Campanula poscharskyana / **Phyteula spicatum** / Sherardia arvensis / Galium odoratum / Galium palustre / Galium aparine / Galium sylvaticum / **Galium album** / **Lonicera periclymenum** / **Lonicera xylosteum** / Lonicera nitida / **Viburnum lantana** / Viburnum rhytidophyllum / **Viburnum opulus** / Sambucus ebulus / **Sambucus nigra** / **Sambucus racemosa** / Adoxa moschatellina / Valerianaella locusta / Valerianaella carinata / **Valeriana officinalis** / Valeriana officinalis ssp. tenuifolia / Valeriana dioica / Dipsacus fullonum / **Knautia arvensis** / Ageratum houstonianum / Eupatorium cannabinum / Solidago virgaurea / Solidago canadensis / Solidago gigantea / **Bellis perennis** / Erigeron annuus s.l. / Conyza canadensis / **Gnaphalium uliginosum** / Inula conyza / Inula salicina / Helianthus annuus / Helianthus laetiflorus / Galinsoga ciliata / **Achillea millefolium** / **Matricaria recutita** / Matricaria discoidea / Tripleurospermum perforatum / **Leucanthemum ircutianum** / Tanacetum vulgare / Tanacetum parthenium / Artemisia vulgaris / Artemisia verlotiorum / **Tussilago farfara** / Senecio ovatus / Senecio cineraria / **Senecio erucifolius** / Senecio jacobaea / Senecio aquaticus / **Senecio vulgaris** / Senecio viscosus / Calendula officinalis / Arctium lappa / Arctium minus / Carduus crispus / Cirsium vulgare / **Cirsium arvense** / Cirsium palustre / Cirsium oleraceum / Centaurea scabiosa / Centaurea jacea s.l. / Centaurea jacea s.str. / Tragopogon pratensis ssp. orientalis / Hypochaeris radicata / Leontodon autumnalis / Leontodon hispidus s.l. / Picris hieracioides / **Sonchus oleraceus** / **Sonchus asper** / Sonchus arvensis / Prenanthes purpurea / Mycelis muralis / Lactuca serriola / **Lapsana communis** / **Taraxacum officinale** / Crepis paludosa / **Crepis biennis** / Crepis capillaris / Crepis taraxacifolia / Crepis setosa / Hieracium pilosella / Hieracium caespitosum / **Hieracium murorum** / Hieracium lachenalii / Butomus umbellatus / Alisma plantago-aquatica / Elodea canadensis / Potamogeton crispus / Potamogeton natans / Potamogeton lucens / Potamogeton berchtoldii / Acorus calamus / **Arum maculatum** / Lemna minor / **Juncus inflexus** / Juncus conglomeratus / **Juncus effusus** / Juncus tenuis / **Juncus bufonius** / Juncus subnodulosus / Juncus articulatus / **Luzula pilosa** / Luzula luzuloides / Luzula sylvatica / Luzula campestris / **Luzula multiflora** / Scirpus sylvaticus / Schoenoplectus lacustris / Eleocharis palustris / **Carex brizoides** / **Carex muricata** aggr. / **Carex spicata** / **Carex muricata** ssp. lamprocarpa / **Carex polyphylla** / **Carex paniculata** / **Carex remota** / **Carex leporina** / **Carex umbrosa** / **Carex montana** / **Carex caryophyllea** / **Carex pallescens** / **Carex pendula** / **Carex flacca** / **Carex panicea** / **Carex digitata** / **Carex ornithopoda** / **Carex sylvatica** / **Carex strigosa** / **Carex hirta** / **Carex acutiformis** / **Festuca gigantea** / Festuca altissima / Festuca pratensis / **Festuca arundinacea** / **Festuca rubra s. str.** / Festuca heterophylla / Festuca brevipila / Festuca ovina aggr. / **Lolium multiflorum** / **Poa annua** / **Poa trivialis** / Poa pratensis / Poa angustifolia / **Poa nemoralis** / **Dactylis glomerata** / Dactylis polygama / Cynosurus cristatus / Briza media / Melica nutans / Glyceria fluitans / Glyceria notata / Glyceria x pedicellata / Bromus sterilis / Bromus benekenii / Bromus erectus / Bromus inermis / **Bromus hordeaceus** / Brachypodium pinnatum / **Brachypodium sylvaticum** / Elymus repens / Triticum durum / **Triticum aestivum** / **Secale cereale** / Hordeum murinum / Avena sativa / Helictotrichon pubescens / **Arrhenatherum elatius** / Trisetum flavescens / **Deschampsia caespitosa** / **Anthoxantum odoratum** / **Holcus lanatus** / Holcus mollis / Agrostis capillaris / **Agrostis stolonifera s.l.** / Agrostis stolonifera ssp. prorepens / **Apera spica-venti** / Calamagrostis epigejos / Phleum pratense / **Alopecurus myosuroides** / Alopecurus pratensis / Phalaris arundinacea / Phalaris canariensis / **Milium effusum** / Phragmites australis / Molinia arundinacea / Eragrostis pilosa / Eragrostis minor / Panicum capillare / Panicum dichotomiflorum / **Echinochloa crus-galli** / Digitaria sanguinalis / Digitaria ischaemum / Setaria verticillata / **Setaria pumilla** / Setaria viridis s.l. / Sorghum bicolor s.l. / Typha angustifolia / **Typha latifolia** / **Colchicum autumnale** / Ornithogalum umbellatum / Ornithogalum nutans / Scilla siberica / Hyacinthoides sp. / Muscari racemosum / Muscari armeniacum / **Allium vineale** / **Allium ursinum** / Allium paradoxum / Allium oleraceum / Convallaria majalis / Maianthemum bifolium / **Polygonatum multiflorum** / **Paris quadrifolia** / Leucojum vernum / Galanthus nivalis / Narcissus pseudonarcissus / **Iris pseudacorus** / Iris sibirica / Crocus sp. / Cephalanthera damasonium / Neottia nidus-avis / Dactylorhiza fuchsii / Dactylorhiza majalis /

## BRUDERHOLZ. PERCEIVERS

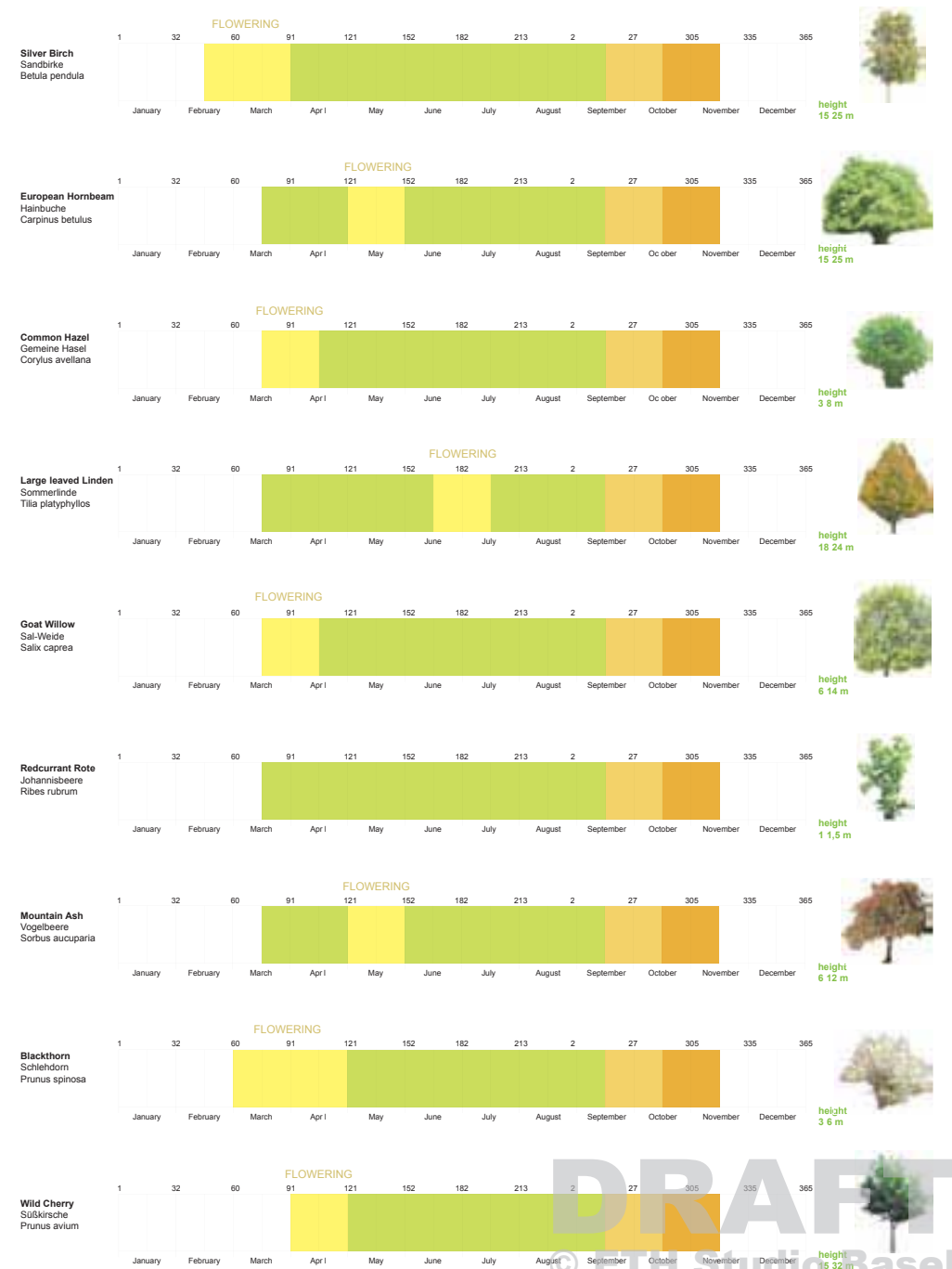
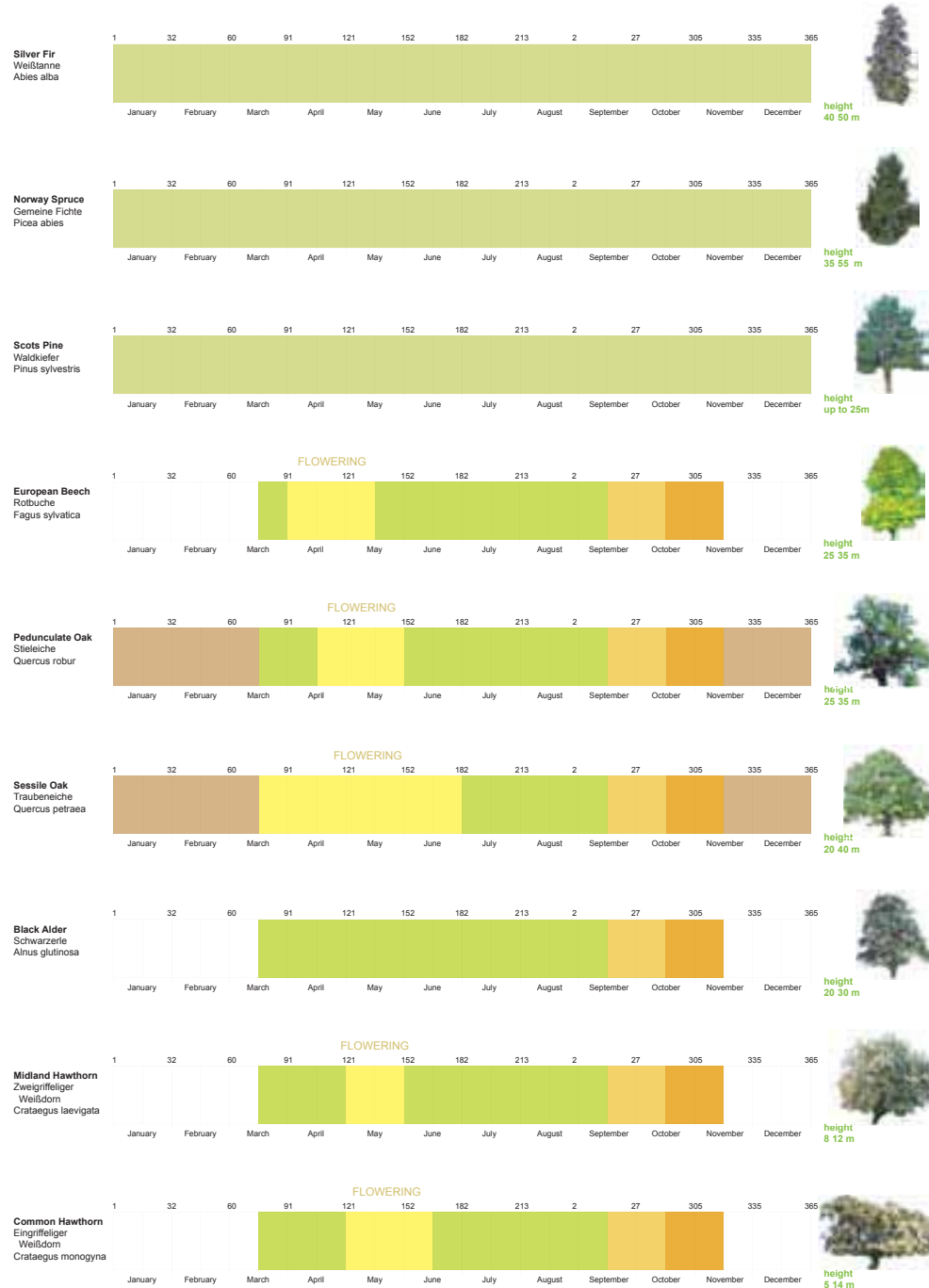
*Equisetum arvense* / *Equisetum telmateia* / *Pteridium aquilinum* / **Dryopteris filix-mas** / *Dryopteris dilatata* / *Dryopteris carthusiana* / *Polystichum aculeatum* / *Athyrium filix-femina* / *Asplenium trichomanes* / *Asplenium ruta-muraria* / *Phyllitis scolopendrium* / *Polypodium interjectum* / **Abies alba** / *Pseudotsuga menziesii* / **Picea abies** / *Larix decidua* / **Pinus sylvestris** / *Taxus baccata* / *Nymphaea alba* / *Ceratophyllum demersum* / *Helleborus foetidus* / *Eranthis hyemalis* / *Aquilegia vulgaris* / **Caltha palustris** / *Nigella damascena* / **Anemone nemorosa** / *Clematis vitalba* / **Ranunculus ficaria** / *Ranunculus trichophyllus* / *Ranunculus lingua* / *Ranunculus arvensis* / **Ranunculus biformis** / **Ranunculus alsaticus** / *Ranunculus lyratus* / *Ranunculus argoviensis* / *Ranunculus macrotis* / *Ranunculus quinatus* / **Ranunculus acer** / *Ranunculus bulbosus* / **Ranunculus repens** / *Ranunculus tuberosus* / *Berberis thunbergii* / *Mahonia aquifolium* / *Chelidonium majus* / **Papaver rhoeas** / *Corydalis lutea* / *Corydalis solida* / *Ulmus minor* / *Ulmus minor suberosa* / *Ulmus glabra* / *Humulus lupulus* / *Cannabis sativa* / **Urtica dioica** / **Juglans regia** / **Fagus sylvatica** / *Castanea sativa* / **Quercus robur** / **Quercus petraea** / **Alnus glutinosa** / **Betula pendula** / **Carpinus betulus** / **Corylus avellana** / **Chenopodium polysperum** / **Chenopodium album** / **Atriplex patula** / *Amaranthus powellii* / *Amaranthus retroflexus* / **Amaranthus blitum** / *Portulaca oleracea* / *Spergularia arvensis* / *Spergularia rubra* / **Sagina procumbens** / *Sagina apetala erecta* / *Arenaria serpyllifolia* / *Moehringia trinervia* / **Stellaria media** / *Stellaria pallida* / *Stellaria alsine* / *Stellaria graminea* / *Cerastium arvense* / **Cerastium glomeratum** / **Cerastium fontanum** / *Cerastium semidecandrum* / *Gypsophila muralis* / *Saponaria officinalis* / *Dianthus carthusianorum* / *Silene noctiflora* / *Silene dioica* / *Silene vulgaris* / **Lychnis flos-cuculi** / *Rumex acetosella* / **Rumex acetosa** / *Rumex thyrsoiflorus* / **Rumex obtusifolius** / **Rumex sanguineus** / **Rumex crispus** / *Fallopia convolvulus* / *Reynoutria japonica* / **Polygonum aviculare** / *Polygonum aequale* / *Polygonum calcatum* / **Polygonum heterophyllum** / *Polygonum monspeliense* / *Polygonum amphibium* / **Polygonum persicaria** / *Polygonum lapathifolium* / **Polygonum hydropiper** / *Polygonum mite* / *Hypericum androsaemum* / **Hypericum humifusum** / **Hypericum hirsutum** / *Hypericum montanum* / **Hypericum perforatum** / **Hypericum tetrapterum** / *Tilia cordata* / *Tilia platyphyllos* / *Malva sylvestris* / *Malva neglecta* / **Viola arvensis** / *Viola odorata* / *Viola hirta* / **Viola reichenbachiana** / **Viola riviniana** / **Viola x dubia** / *Bryonia dioica* / *Populus tremula* / *Populus nigra* / *Salix x sepulcralis* / *Salix alba s.str.* / *Salix fragilis* / *Salix x rubens* / *Salix purpurea* / **Salix caprea** / *Salix cinerea* / *Sisymbrium officinale* / **Alliaria petiolata** / **Arabidopsis thaliana** / *Erysimum cheiranthoides* / *Hesperis matronalis* / *Rorippa palustris* / *Rorippa x anceps* / *Rorippa sylvestris* / **Cardamine pratensis** / *Cardamine flexuosa* / **Cardamine hirsuta** / *Dentaria bulbifera* / *Arabis alpina caucasica* / *Aubrieta deltoidea* / *Alyssum saxatilis* / *Erophila verna* / *Erophila praecox* / **Capsella bursa-pastoris** / *Thlaspi arvense* / *Lepidium campestre* / *Lepidium virginicum* / *Cardaria draba* / *Brassica napus* / *Brassica oleracea* / **Sinapis arvensis** / **Raphanus raphanistrum** / *Reseda luteola* / *Reseda lutea* / *Lysimachia nummularia* / *Lysimachia nemorum* / *Lysimachia vulgaris* / *Lysimachia thyrsoiflora* / **Anagallis arvensis** / *Anagallis foemina* / *Centunculus minimus* / *Primula acaulis* / **Primula elatior** / *Primula veris* / *Hottonia palustris* / *Philadelphus coronarius* / **Ribes uva-crispa** / **Ribes rubrum** / *Sedum spurium* / *Sempervivum tectorum* / *Saxifraga granulata* / *Saxifraga tridactylites* / *Chrysosplenium alternifolium* / **Filipendula ulmaria** / *Rubus idaeus* / **Rubus caesius** / **Rubus fruticosus** / *Rubus laciniatus* / *Rosa pimpinellifolia* / **Rosa arvensis** / *Rosa rubiginosa* / *Rosa glauca* / *Rosa corymbifera* / *Rosa corymbifera platyphylla* / *Rosa canina* / *Agrimonia eupatoria* / **Sanguisorba minor s.str.** / **Geum urbanum** / **Geum rivale** / *Potentilla fruticosa* / **Potentilla sterilis** / **Potentilla anserina** / **Potentilla reptans** / **Fragaria vesca** / *Duchesnea indica* / **Aphanes arvensis** / *Alchemilla xanthochlora* / *Alchemilla subcrenata* / *Chaenomeles japonica* / **Malus domestica** / **Sorbus aucuparia** / *Sorbus torminalis* / *Cotoneaster divaricatus* / *Cotoneaster dammeri* / **Crataegus laevigata** / **Crataegus monogyna s.str.** / **Prunus spinosa s.str.** / **Prunus domestica** / **Prunus avium** / **Prunus padus** / **Prunus laurocerasus** / *Lupinus polyphyllus* / *Genista germanica* / **Robinia pseudoacacia** / **Lotus corniculatus** / *Lotus uliginosus* / *Coronilla varia* / *Onobrychis vicifolia* / *Ononis repens* / *Medicago sativa* / **Medicago lupulina** / *Trifolium medium* / *Trifolium arvense* / **Trifolium pratense** / **Trifolium repens** / *Trifolium hybridum* / *Trifolium campestre* / **Trifolium dubium** / *Vicia hirsuta* / **Vicia Tetrasperma** / *Vicia cracca* / *Vicia villosa* / *Vicia villosa varia* / *Vicia pannonica* / **Vicia sepium** / *Vicia angustifolia s.l.* / **Lathyrus pratensis** / *Lathyrus latifolius* / *Lathyrus linifolius* / *Hippophae rhamnoides* / *Myriophyllum verticillatum* / *Myriophyllum spicatum* / *Lythrum salicaria* / *Lythrum hyssopifolia* / *Epilobium angustifolium* / **Epilobium hirsutum** / **Epilobium parviflorum** / **Epilobium montanum** / *Epilobium roseum* / *Epilobium obscurum* / *Epilobium ciliatum* / **Epilobium tetragonum** / *Oenothera erythrosepala* / **Circaea lutetiana** / **Cornus sanguinea** / *Cornus alba* / *Viscum album* / *Viscum album abietis* / **Euonymus europaeus** / **Ilex aquifolium** / *Buxus sempervirens* / *Mercurialis annua* / *Mercurialis perennis* / *Euphorbia lathyris* / *Euphorbia helioscopia* / *Euphorbia dulcis* / *Euphorbia amygdaloides* / *Euphorbia cyparissias* / *Euphorbia peplus* / *Euphorbia exigua* / *Frangula alnus* / **Vitis vinifera** / *Linum catharticum* / *Aesculus hippocastanum* / *Acer negundo* / **Acer pseudoplatanus** / **Acer platanoides** / **Acer campestre** / *Rhus typhina* / **Oxalis acetosella** / **Oxalis fontana** / *Oxalis corniculata* / **Geranium robertianum** / *Geranium plaustrum* / *Geranium pratense* / *Geranium columbinum* / *Geranium dissectum* / *Geranium molle* / *Geranium pusillum* / *Geranium pyrenaicum* / *Impatiens glandulifera* / *Impatiens parviflora* / **Hedera helix** / *Sanicula europaea* / *Chaerophyllum temulum* / *Anthriscus sylvestris* / *Torilis japonica* / *Pimpinella major* / *Pimpinella saxifraga* / *Pimpinella peregrina* / **Aegopodium podagraria** / *Aethusa cynapium* / **Angelica sylvestris** / *Heracleum mantegazzianum* / **Heracleum sphondylium** / *Daucus carota* / *Centaurium pulchellum* / *Vinca minor* / *Solanum dulcamara* / **Solanum nigrum** / *Lycopersicon esculentum* / *Datura stramonium* / **Convolvulus arvensis** / **Calystegia sepium** / *Cuscuta epithymum* / *Menyanthes trifoliata* / *Nymphaeodes peltata* / *Buglossoides arvensis* / **Pulmonaria obscura** / *Symphytum officinale* / *Myosotis nemorosa* / *Myosotis scorpioides* / *Myosotis sylvatica* / **Myosotis arvensis** / *Verbena officinalis* / *Teucrium scorodonia* / **Ajuga reptans** / *Lavandula angustifolia* / *Mentha aquatica* / *Mentha longifolia* / *Lycopus europaeus* / *Origanum vulgare* / *Origanum vulgare* / *Thymus pulegioides* / *Melissa officinalis* / **Glechoma hederacea** / *Ballota nigra* / **Stachys sylvatica** / *Lamium maculatum* / **Lamium purpureum** / **Lamium galeobdolon montanum** / **Galeopsis tetrahit** / **Prunella vulgaris** / *Salvia pratensis* / *Scutellaria galericulata* / *Hippuris vulgaris* / *Callitriche palustris* / **Plantago media** / **Plantago major** / *Plantago intermedia* / **Plantago lanceolata** / **Buddleja davidii** / *Forsythia sp.* / **Fraxinus excelsior** / *Syringa vulgaris / **Ligustrum vulgare** / *Verbascum nigrum* / *Verbascum densiflorum* / *Scrophularia umbrosa* / **Scrophularia nodosa** / *Chaenorhynchus minus* / *Cymbalaria muralis* / **Kickxia spuria** / **Kickxia elatine** / *Linaria vulgaris* / *Antirrhinum majus* / *Misopates orontium* / *Digitalis purpurea* / **Veronica serpyllifolia** / **Veronica officinalis** / **Veronica montana** / **Veronica Chamaedrys** / **Veronica beccabunga** / **Veronica arvensis** / *Veronica peregrina* / *Veronica acinifolia* / **Veronica hederifolia** / *Veronica hederifolia lucorum* / **Veronica persica** / **Veronica filiformis** / *Rhinanthus alectorolophus* / *Melampyrum pratense* / *Orobanche caryophyllacea* / *Utricularia vulgaris* / *Campanula rotundifolia* / *Campanula rapunculoides* / *Campanula trachelium* / *Campanula poscharskyana* / **Phyteula spicatum** / *Sherardia arvensis* / *Galium odoratum* / *Galium palustre* / *Galium aparine* / *Galium sylvaticum* / **Galium album** / **Lonicera periclymenum** / **Lonicera xylosteum** / *Lonicera nitida* / **Viburnum lantana** / *Viburnum rhytidophyllum* / **Viburnum opulus** / *Sambucus ebulus* / **Sambucus nigra** / *Sambucus racemosa* / *Adoxa moschatellina* / *Valerianaella locusta* / *Valerianaella carinata* / **Valeriana officinalis** / *Valeriana officinalis ssp. tenuifolia* / *Valeriana dioica* / *Dipsacus fullonum* / **Knautia arvensis** / *Ageratum houstonianum* / *Eupatorium cannabinum* / *Solidago virgaurea* / *Solidago canadensis* / *Solidago gigantea* / **Bellis perennis** / *Erigeron annuus s.l.* / *Conyza canadensis* / **Gnaphalium uliginosum** / *Inula conyza* / *Inula salicina* / *Helianthus annuus* / *Helianthus laetiflorus* / *Galinsoga ciliata* / **Achillea millefolium** / **Matricaria recutita** / *Matricaria discoidea* / *Tripleurospermum perforatum* / **Leucanthemum ircutianum** / *Tanacetum vulgare* / *Tanacetum parthenium* / *Artemisia vulgaris* / *Artemisia verlotiorum* / **Tussilago farfara** / *Senecio ovatus* / *Senecio cineraria* / **Senecio erucifolius** / *Senecio jacobaea* / *Senecio aquaticus* / **Senecio vulgaris** / *Senecio viscosus* / *Calendula officinalis* / *Arctium lappa* / *Arctium minus* / *Carduus crispus* / *Cirsium vulgare* / **Cirsium arvense** / *Cirsium palustre* / *Cirsium oleraceum* / *Centaurea scabiosa* / *Centaurea jacea s.l.* / *Centaurea jacea s.str.* / *Tragopogon pratensis ssp. orientalis* / *Hypochaeris radicata* / *Leontodon autumnalis* / *Leontodon hispidus s.l.* / *Picris hieracioides* / **Sonchus oleraceus** / **Sonchus asper** / *Sonchus arvensis* / *Prenanthes purpurea* / *Mycelis muralis* / *Lactuca serriola* / **Lapsana communis** / **Taraxacum officinale** / *Crepis paludosa* / **Crepis biennis** / *Crepis capillaris* / *Crepis taraxacifolia* / *Crepis setosa* / *Hieracium pilosella* / *Hieracium caespitosum* / **Hieracium murorum** / *Hieracium lachenalii* / *Butomus umbellatus* / *Alisma plantago-aquatica* / *Elodea canadensis* / *Potamogeton crispus* / *Potamogeton natans* / *Potamogeton lucens* / *Potamogeton bertholdii* / *Acorus calamus* / **Arum maculatum** / *Lemna minor* / **Juncus inflexus** / *Juncus conglomeratus* / *Juncus tenuis* / **Juncus bufonius** / *Juncus subnodulosus* / *Juncus articulatus* / **Luzula pilosa** / *Luzula luzuloides* / *Luzula sylvatica* / *Luzula campestris* / **Luzula multiflora** / *Scirpus sylvaticus* / *Schoenoplectus lacustris* / *Eleocharis palustris* / **Carex brizoides** / *Carex muricata aggr.* / *Carex spicata* / *Carex muricata ssp. lamprocarpa* / *Carex polyphylla* / *Carex paniculata* / **Carex remota** / *Carex leporina* / **Carex umbrosa** / *Carex montana* / *Carex caryophylla* / *Carex pallescens* / **Carex pendula** / *Carex flacca* / *Carex panicea* / *Carex digitata* / *Carex ornithopoda* / **Carex sylvatica** / **Carex strigosa** / **Carex hirta** / *Carex acutiformis* / **Festuca gigantea** / *Festuca altissima* / *Festuca pratensis* / **Festuca arundinacea** / **Festuca rubra s. str.** / *Festuca heterophylla* / *Festuca brevipila* / *Festuca ovina aggr.* / **Lolium multiflorum** / **Poa annua** / **Poa trivialis** / *Poa pratensis* / *Poa angustifolia* / **Poa nemoralis** / **Dactylis glomerata** / *Dactylis polygama* / *Cynosurus cristatus* / *Briza media* / *Melica nutans* / *Glyceria fluitans* / *Glyceria notata* / *Glyceria x pedicellata* / *Bromus sterilis* / *Bromus benekenii* / *Bromus erectus* / *Bromus inermis* / **Bromus hordeaceus** / *Brachypodium pinnatum* / **Brachypodium sylvaticum** / *Elymus repens* / *Triticum durum* / *Triticum aestivum* / *Secale cereale* / *Hordeum murinum* / *Avena sativa* / *Helictotrichon pubescens* / **Arrhenatherum elatius** / *Trisetum flavescens* / **Deschampsia caespitosa** / **Anthoxanthum odoratum** / **Holcus lanatus** / *Holcus mollis* / *Agrostis capillaris* / **Agrostis stolonifera s.l.** / *Agrostis stolonifera ssp. prorepens* / **Apera spica-venti** / *Calamagrostis epigejos* / *Phleum pratense* / **Alopecurus myosuroides** / *Alopecurus pratensis* / *Phalaris arundinacea* / *Phalaris canariensis* / **Milium effusum** / *Phragmites australis* / *Molinia arundinacea* / *Eragrostis pilosa* / *Eragrostis minor* / *Panicum capillare* / *Panicum dichotomiflorum* / **Echinochloa crus-galli** / *Digitaria sanguinalis* / *Digitaria ischaemum* / *Setaria verticillata* / **Setaria pumilla** / *Setaria viridis s.l.* / *Sorghum bicolor s.l.* / *Typha angustifolia* / **Typha latifolia** / *Colchicum autumnale* / *Ornithogalum umbellatum* / *Ornithogalum nutans* / *Scilla siberica* / *Hyacinthoides sp.* / *Muscari racemosum* / *Muscari armeniacum* / **Allium vineale** / **Allium ursinum** / *Allium paradoxum* / *Allium oleraceum* / *Convallaria majalis* / *Maianthemum bifolium* / **Polygonatum multiflorum** / **Paris quadrifolia** / *Leucojum vernum* / **Galanthus nivalis** / **Narcissus pseudonarcissus** / **Iris pseudacorus** / *Iris sibirica* / *Crocus sp.* / *Cephalanthera damasonium* / *Neottia nidus-avis* / *Dactylorhiza fuchsii* / *Dactylorhiza majalis* /*

**BRUDERHOLZ. SPECIFICITY**

*Equisetum arvense* / *Equisetum telmateia* / Pteridium aquilinum / **Dryopteris filix-mas** / **Dryopteris dilatata** / **Dryopteris carthusiana** / Polystichum aculeatum / **Athyrium filix-femina** / Asplenium trichomanes / Asplenium ruta-muraria / Phyllitis scolopendrium / Polypodium interjectum / **Abies alba** / Pseudotsuga menziesii / **Picea abies** / Larix decidua / **Pinus sylvestris** / Taxus baccata / Nymphaea alba / Ceratophyllum demersum / Helleborus foetidus / Eranthis hyemalis / Aquilegia vulgaris / **Caltha palustris** / Nigella damascena / **Anemone nemorosa** / Clematis vitalba / **Ranunculus ficaria** / Ranunculus trichophyllus / Ranunculus lingua / Ranunculus arvensis / **Ranunculus biflorus** / **Ranunculus alsaticus** / Ranunculus lyratus / Ranunculus argoviensis / Ranunculus macrotis / Ranunculus quinatus / **Ranunculus acer** / Ranunculus bulbosus / **Ranunculus repens** / Ranunculus tuberosus / Berberis thunbergii / Mahonia aquifolium / Chelidonium majus / **Papaver rhoeas** / Corydalis lutea / Corydalis solida / Ulmus minor / Ulmus minor suberosa / Ulmus glabra / Humulus lupulus / Cannabissativa / **Urtica dioica** / **Juglans regia** / **Fagus sylvatica** / Castanea sativa / **Quercus robur** / **Quercus petraea** / **Alnus glutinosa** / **Betula pendula** / **Carpinus betulus** / **Corylus avellana** / **Chenopodium polysperum** / **Chenopodium album** / **Atriplex patula** / Amaranthus powellii / Amaranthus retroflexus / **Amaranthus blitum** / Portulaca oleracea / Sparganium arvense / Spargularia rubra / **Sagina procumbens** / Sagina apetala erecta / Arenaria serpyllifolia / Moehringia trinervia / **Stellaria media** / Stellaria pallida / Stellaria alsine / Stellaria graminea / Cerastium arvense / **Cerastium glomeratum** / **Cerastium fontanum** / Cerastium semidecandrum / Gypsophila muralis / Saponaria officinalis / Dianthus carthusianorum / Silene noctiflora / Silene dioica / Silene vulgaris / **Lychnis flos-cuculi** / Rumex acetosella / **Rumex acetosa** / Rumex thyrsoiflorus / **Rumex obtusifolius** / **Rumex sanguineus** / **Rumex crispus** / Fallopia convolvulus / Reynoutria japonica / **Polygonum aviculare** / Polygonum aequale / Polygonum calcatum / **Polygonum heterophyllum** / Polygonum monspeliense / Polygonum amphibium / **Polygonum persicaria** / Polygonum lapathifolium / **Polygonum hydropiper** / Polygonum mite / Hypericum androsaemum / **Hypericum humifusum** / **Hypericum hirsutum** / Hypericum montanum / **Hypericum perforatum** / **Hypericum tetrapterum** / Tilia cordata / **Tilia platyphyllos** / Malva sylvestris / Malva neglecta / **Viola arvensis** / Viola odorata / Viola hirta / **Viola reichenbachiana** / **Viola riviniana** / **Viola x dubia** / Bryonia dioica / Populus tremula / Populus nigra / Salix x sepulcralis / Salix alba s.str. / Salix fragilis / Salix x rubens / Salix purpurea / **Salix caprea** / Salix cinerea / Sisymbrium officinale / **Alliaria petiolata** / **Arabidopsis thaliana** / Erysimum cheiranthoides / Hesperis matronalis / Rorippa palustris / Rorippa x anceps / Rorippa sylvestris / **Cardamine pratensis** / Cardamine flexuosa / **Cardamine hirsuta** / Dentaria bulbifera / Arabis alpina caucasica / Aubrieta deltoidea / Alyssum saxatile / Erophila verna / Erophila praecox / **Capsella bursa-pastoris** / Thlaspi arvense / Lepidium campestre / Lepidium virginicum / Cardaria draba / Brassica napus / Brassica oleracea / **Sinapis arvensis** / **Raphanus raphanistrum** / Reseda luteola / Reseda lutea / Lysimachia nummularia / Lysimachia nemorum / Lysimachia vulgaris / Lysimachia thyrsoiflora / **Anagallis arvensis** / Anagallis foemina / Centunculus minimus / Primula acaulis / **Primula elatior** / Primula veris / Hottonia palustris / Philadelphus coronarius / **Ribes uva-crispa** / **Ribes rubrum** / Sedum spurium / Sempervivum tectorum / Saxifraga granulata / Saxifraga tridactylites / Chrysosplenium alternifolium / **Filipendula ulmaria** / Rubus idaeus / **Rubus caesius** / **Rubus fruticosus** / Rubus laciniatus / Rosa pimpinellifolia / **Rosa arvensis** / Rosa rubiginosa / Rosa glauca / Rosa corymbifera / Rosa corymbifera platyphylla / Rosa canina / Agrimonia eupatoria / **Sanguisorba minor s.str.** / **Geum urbanum** / **Geum rivale** / Potentilla fruticosa / **Potentilla sterilis** / **Potentilla anserina** / **Potentilla reptans** / **Fragaria vesca** / Duchesnea indica / **Aphanes arvensis** / Alchemilla xanthochlora / Alchemilla subcrenata / Chaenomeles japonica / **Malus domestica** / **Sorbus aucuparia** / Sorbus torminalis / **Cotoneaster divaricatus** / **Cotoneaster dammeri** / **Crataegus laevigata** / **Crataegus monogyna** / **Prunus spinosa s.str.** / Prunus domestica / **Prunus avium** / **Prunus padus** / **Prunus laurocerasus** / Lupinus polyphyllus / Genista germanica / **Robinia pseudoacacia** / **Lotus corniculatus** / Lotus uliginosus / Coronilla varia / Onobrychis vicifolia / Ononis repens / Medicago sativa / **Medicago lupulina** / Trifolium medium / Trifolium arvense / **Trifolium pratense** / **Trifolium repens** / Trifolium hybridum / Trifolium campestre / **Trifolium dubium** / Vicia hirsuta / **Vicia Tetrasperma** / Vicia cracca / Vicia villosa / Vicia villosa varia / Vicia pannonica / **Vicia sepium** / Vicia angustifolia s.l. / **Lathyrus pratensis** / Lathyrus latifolius / Lathyrus linifolius / Hippophae rhamnoides / Myriophyllum verticillatum / Myriophyllum spicatum / Lythrum salicaria / Lythrum hyssopifolia / Epilobium angustifolium / **Epilobium hirsutum** / **Epilobium parviflorum** / **Epilobium montanum** / Epilobium roseum / Epilobium obscurum / Epilobium ciliatum / **Epilobium tetragonum** / Oenothera erythrosepala / **Circaea lutetiana** / **Cornus sanguinea** / Cornus alba / Viscum album / Viscum album abietis / **Euonymus europaeus** / Ilex aquifolium / Buxus sempervirens / Mercurialis annua / Mercurialis perennis / Euphorbia lathyris / Euphorbia helioscopia / Euphorbia dulcis / Euphorbia amygdaloides / Euphorbia cyparissias / Euphorbia peplus / Euphorbia exigua / Frangula alnus / Vitis vinifera / Linum catharticum / Aesculus hippocastanum / Acer negundo / **Acer pseudoplatanus** / **Acer platanoides** / **Acer campestre** / Rhus typhina / **Oxalis acetosella** / **Oxalis fontana** / Oxalis corniculata / **Geranium robertianum** / Geranium plaustrum / Geranium pratense / Geranium columbinum / Geranium dissectum / Geranium molle / Geranium pusillum / Geranium pyrenaicum / Impatiens glandulifera / Impatiens parviflora / **Hedera helix** / Sanicula europaea / Chaerophyllum temulum / Anthriscus sylvestris / Torilis japonica / Pimpinella major / Pimpinella saxifraga / Pimpinella peregrina / **Aegopodium podagraria** / Aethusa cynapium / **Angelica sylvestris** / Heracleum mantegazzianum / **Heracleum sphondylium** / Daucus carota / Centaurium pulchellum / Vinca minor / Solanum dulcamara / **Solanum nigrum** / Lycopersicon esculentum / Datura stramonium / **Convolvulus arvensis** / **Calystegia sepium** / Cuscuta epithymum / Menyanthes trifoliata / Nymphaeoides peltata / Buglossoides arvensis / **Pulmonaria obscura** / Symphytum officinale / Myosotis nemorosa / Myosotis scorpioides / Myosotis sylvatica / **Myosotis arvensis** / Verbena officinalis / Teucrium scorodonia / **Ajuga reptans** / Lavandula angustifolia / Mentha aquatica / Mentha longifolia / Lycopodium europaeus / Origanum vulgare / Origanum vulgare / Thymus pulegioides / Melissa officinalis / **Glechoma hederacea** / Ballota nigra / **Stachys sylvatica** / Lamium maculatum / **Lamium purpureum** / **Lamium galeobdolon montanum** / **Galeopsis tetrahit** / **Prunella vulgaris** / Salvia pratensis / Scutellaria gericulata / Hippuris vulgaris / Callitriche palustris / **Plantago media** / **Plantago major** / Plantago intermedia / **Plantago lanceolata** / **Buddleja davidii** / Forsythia sp. / **Fraxinus excelsior** / Syringa vulgaris / **Ligustrum vulgare** / Verbascum nigrum / Verbascum densiflorum / Scrophularia umbrosa / **Scrophularia nodosa** / Chaenorhynchus minus / Cymbalaria muralis / **Kickxia spuria** / **Kickxia elatine** / Linaria vulgaris / Antirrhinum majus / Misopates orontium / Digitalis purpurea / **Veronica serpyllifolia** / **Veronica officinalis** / **Veronica montana** / **Veronica Chamaedrys** / **Veronica beccabunga** / **Veronica arvensis** / Veronica peregrina / Veronica acinifolia / **Veronica hederifolia** / Veronica hederifolia lucorum / **Veronica persica** / **Veronica filiformis** / Rhinanthus alectorolophus / Melampyrum pratense / Orobanche caryophyllacea / Utricularia vulgaris / Campanula rotundifolia / Campanula rapunculoides / Campanula trachelium / Campanula poscharskyana / **Phyteula spicatum** / Sherardia arvensis / Galium odoratum / Galium palustre / Galium aparine / Galium sylvaticum / **Galium album** / **Lonicera periclymenum** / **Lonicera xylosteum** / Lonicera nitida / **Viburnum lantana** / Viburnum rhytidophyllum / **Viburnum opulus** / Sambucus ebulus / **Sambucus nigra** / Sambucus racemosa / Adoxa moschatellina / Valerianaella locusta / Valerianaella carinata / **Valeriana officinalis** / Valeriana officinalis ssp. tenuifolia / Valeriana dioica / Dipsacus fullonum / **Knautia arvensis** / Ageratum houstonianum / Eupatorium cannabinum / Solidago virgaurea / Solidago canadensis / Solidago gigantea / **Bellis perennis** / Erigeron annuus s.l. / Conyza canadensis / **Gnaphalium uliginosum** / Inula conyza / Inula salicina / Helianthus annuus / Helianthus laetiflorus / Galinsoga ciliata / **Achillea millefolium** / **Matricaria recutita** / Matricaria discoidea / Tripleurospermum perforatum / **Leucanthemum ircutianum** / Tanacetum vulgare / Tanacetum parthenium / Artemisia vulgaris / Artemisia verlotiorum / **Tussilago farfara** / Senecio ovatus / Senecio cineraria / **Senecio erucifolius** / Senecio jacobaea / Senecio aquaticus / **Senecio vulgaris** / Senecio viscosus / Calendula officinalis / Arctium lappa / Arctium minus / Carduus crispus / Cirsium vulgare / **Cirsium arvense** / Cirsium palustre / Cirsium oleraceum / Centaurea scabiosa / Centaurea jacea s.l. / Centaurea jacea s.str. / Tragopogon pratensis ssp. orientalis / Hypochaeris radicata / Leontodon autumnalis / Leontodon hispidus s.l. / Picris hieracioides / **Sonchus oleraceus** / **Sonchus asper** / Sonchus arvensis / Prenanthes purpurea / Mycelis muralis / Lactuca serriola / **Lapsana communis** / **Taraxacum officinale** / Crepis paludosa / **Crepis biennis** / Crepis capillaris / Crepis taraxacifolia / Crepis setosa / Hieracium pilosella / Hieracium caespitosum / **Hieracium murorum** / Hieracium lachenalii / Butomus umbellatus / Alisma plantago-aquatica / Elodea canadensis / Potamogeton crispus / Potamogeton natans / Potamogeton lucens / Potamogeton berchtoldii / Acorus calamus / **Arum maculatum** / Lemna minor / **Juncus inflexus** / Juncus conglomeratus / **Juncus effusus** / Juncus tenuis / **Juncus bufonius** / Juncus subnodulosus / Juncus articulatus / **Luzula pilosa** / Luzula luzuloides / Luzula sylvatica / Luzula campestris / **Luzula multiflora** / Scirpus sylvaticus / Schoenoplectus lacustris / Eleocharis palustris / **Carex brizoides** / Carex muricata aggr. / Carex spicata / Carex muricata ssp. lamprocarpa / Carex polyphylla / Carex paniculata / **Carex remota** / Carex leporina / **Carex umbrosa** / Carex montana / Carex caryophylla / Carex pallescens / **Carex pendula** / Carex flacca / Carex panicea / Carex digitata / Carex ornithopoda / **Carex sylvatica** / **Carex strigosa** / **Carex hirta** / Carex acutiformis / **Festuca gigantea** / Festuca altissima / Festuca pratensis / **Festuca arundinacea** / **Festuca rubra s. str.** / Festuca heterophylla / Festuca brevipila / Festuca ovina aggr. / **Lolium multiflorum** / **Poa annua** / **Poa trivialis** / Poa pratensis / Poa angustifolia / **Poa nemoralis** / **Dactylis glomerata** / Dactylis polygama / Cynosurus cristatus / Briza media / Melica nutans / Glyceria fluitans / Glyceria notata / Glyceria x pedicellata / Bromus sterilis / Bromus benekenii / Bromus erectus / Bromus inermis / **Bromus hordeaceus** / Brachypodium pinnatum / **Brachypodium sylvaticum** / Elymus repens / Triticum durum / **Triticum aestivum** / **Secale cereale** / Hordeum murinum / Avena sativa / Helictotrichon pubescens / **Arrhenatherum elatius** / Trisetum flavescens / **Deschampsia caespitosa** / **Anthoxanthum odoratum** / **Holcus lanatus** / Holcus mollis / Agrostis capillaris / **Agrostis stolonifera s.l.** / Agrostis stolonifera ssp. prorepens / **Apera spica-venti** / Calamagrostis epigejos / Phleum pratense / **Alopecurus myosuroides** / Alopecurus pratensis / Phalaris arundinacea / Phalaris canariensis / **Milium effusum** / Phragmites australis / Molinia arundinacea / Eragrostis pilosa / Eragrostis minor / Panicum capillare / Panicum dichotomiflorum / **Echinochloa crus-galli** / 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## DOMINANT PHENOMENA IN THE REGION

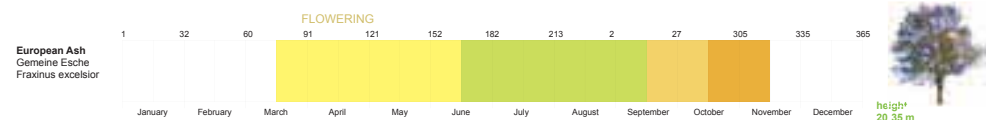
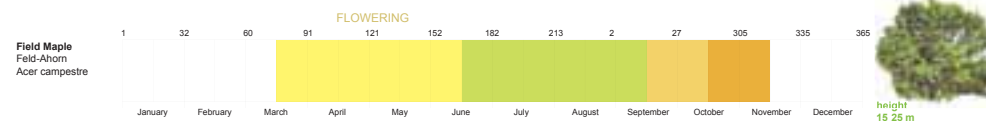
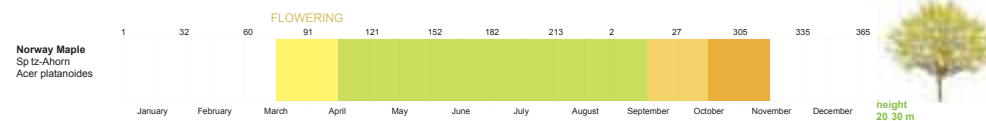
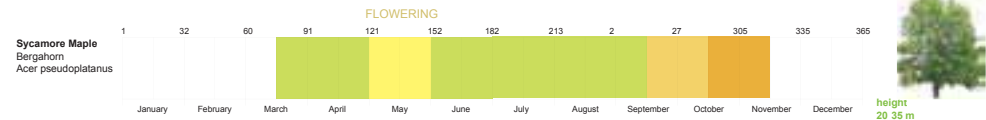
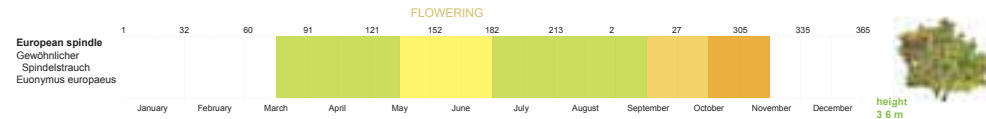
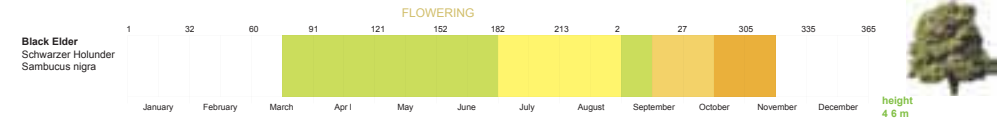
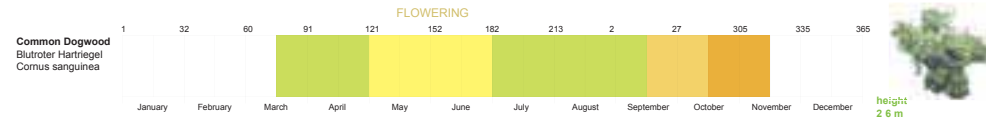
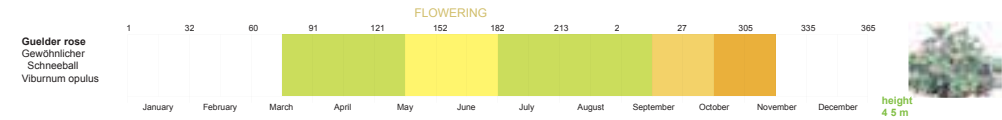
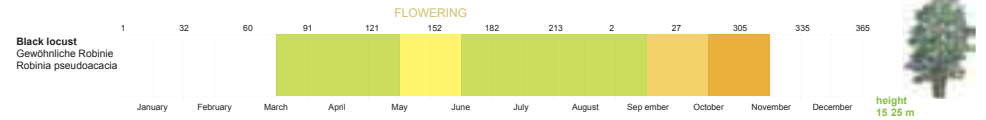
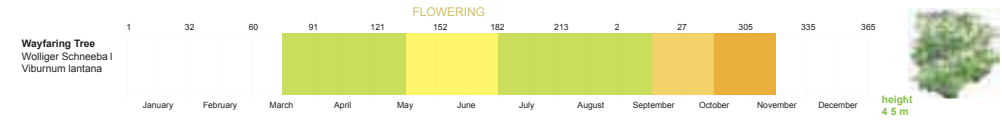
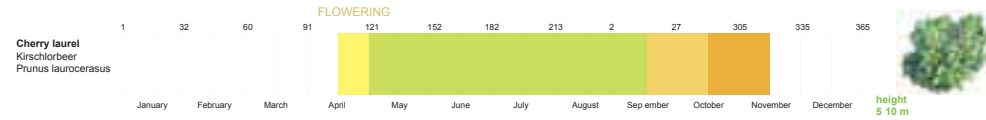
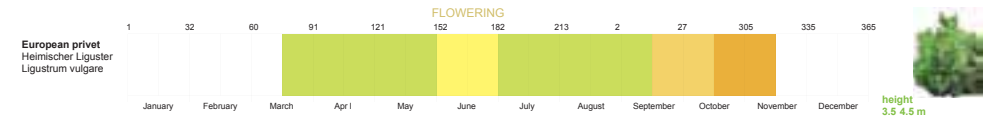
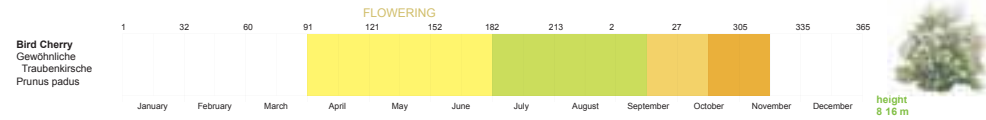
They are the calendars of the tree species in the region as dominant existing phenomena's background.



DRAFT  
© EIT Studio Basel

## DOMINANT PHENOMENA IN THE REGION

They are the calendars of the tree species in the region as dominant existing phenomena's background.



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## CONCEPT: "PARADISE/FORBIDDEN FRUIT"

Towards a spatial concept for the planting design of the adequate species, the unique topographical situation amongst four Metroparks gives some tips. As is described in MAP ANALYSIS/PHOTO DESCRIPTION, Bruderholz is itself the shape of hilly island in the valley of the Rhine river. And the slope periphery from the perimeter till the plain on top with agricultural fields is the layer of forest which gives the impression of "hidden" or "secret" space because of the disconnection from urbanized area outside. This situation could be interpreted as potential "the Paradise" in Metrobasel.

Apples appear in many religious traditions, often as a mystical and forbidden fruit. Though the forbidden fruit in the book of Genesis is not identified, popular European Christian tradition has held that it was an apple that Eve coaxed Adam to share with her. As a result, in the story of Adam and Eve the apple became a symbol for temptation, the fall of man into sin, and sin itself.

William Tell from Bürglen was known as an expert marksman with the crossbow. At the time, the Habsburg emperors were seeking to dominate Uri. Hermann Gessler, the newly appointed Austrian Vogt of Altdorf raised a pole in the village's central square with his hat on top and demanded that all the local townsfolk bow before it. As Tell passed by without bowing, he was arrested. He received the punishment of being forced to shoot an apple off the head of his son, Walter, or else both would be executed.

Apple picking is a recreational activity which is participated in during harvest time in areas with apple trees. Farms with apple orchards may open them to the public, where consumers may themselves pick the apples they will buy. Although this is ultimately a method of purchasing apples, it is often a social activity as well.



# APPLE TREE | ÄPFELBAUM | *Malus domestica* |



## Scientific Information

*Wikipedia*

The apple is a tree and its pomaceous fruit, of the species *Malus domestica* in the rose family Rosaceae. It is one of the most widely cultivated tree fruits. It is a small deciduous tree reaching 5-12 m tall, with a broad, often densely twiggy crown. The leaves are alternately arranged, simple oval with an acute tip and serrated margin, slightly downy below, 5-12 cm long and 3-6 cm broad on a 2-5 cm petiole. The flowers are produced in spring with the leaves, white, usually tinged pink at first, 2.5-3.5 cm diameter, with five petals. The fruit matures in autumn, and is typically 5-9 cm diameter (rarely up to 15 cm).

Apples are relatively indifferent to soil conditions and will grow in a wide range of pH values and fertility levels.

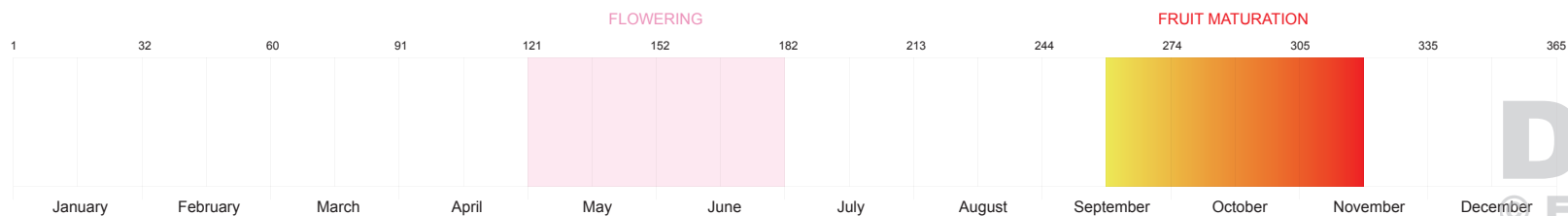
Apples bear in groups of five (or more rarely six) blossoms. The first blossom to open is called the king bloom. It will produce the best possible apple of the five. If it sets, it tends to suppress setting of the other blossoms, which, if they set anyway, should be removed. The next three blossoms tend to bloom and set simultaneously, therefore there is no dominance. All but one of these should be thinned for best quality. If the final blossom is the only one that sets, the crop will not be as good, but it will help reduce excessive woody growth (suckering) that usually happens when there is no crop.

**Maturation and harvest** Mature trees typically bear 40-200 kg of apples each year, though productivity can be close to zero in poor years. Apples are harvested using three-point ladders that are designed to fit amongst the branches. Dwarf trees will bear about 10-80 kg of fruit per year.

### Selected points

1. Already existing species in Bruderholz.
2. Recommended by a biologist as „typical“ for the area.
3. It has a big symbolic potential.
4. Edible, and introduce the possibility of picking apples as an alternative program.
5. It can also hold a secondary phenomena in spring, due to its impressive flowering and smell.
6. As a possible plan design, it introduces the grid of the orchards.

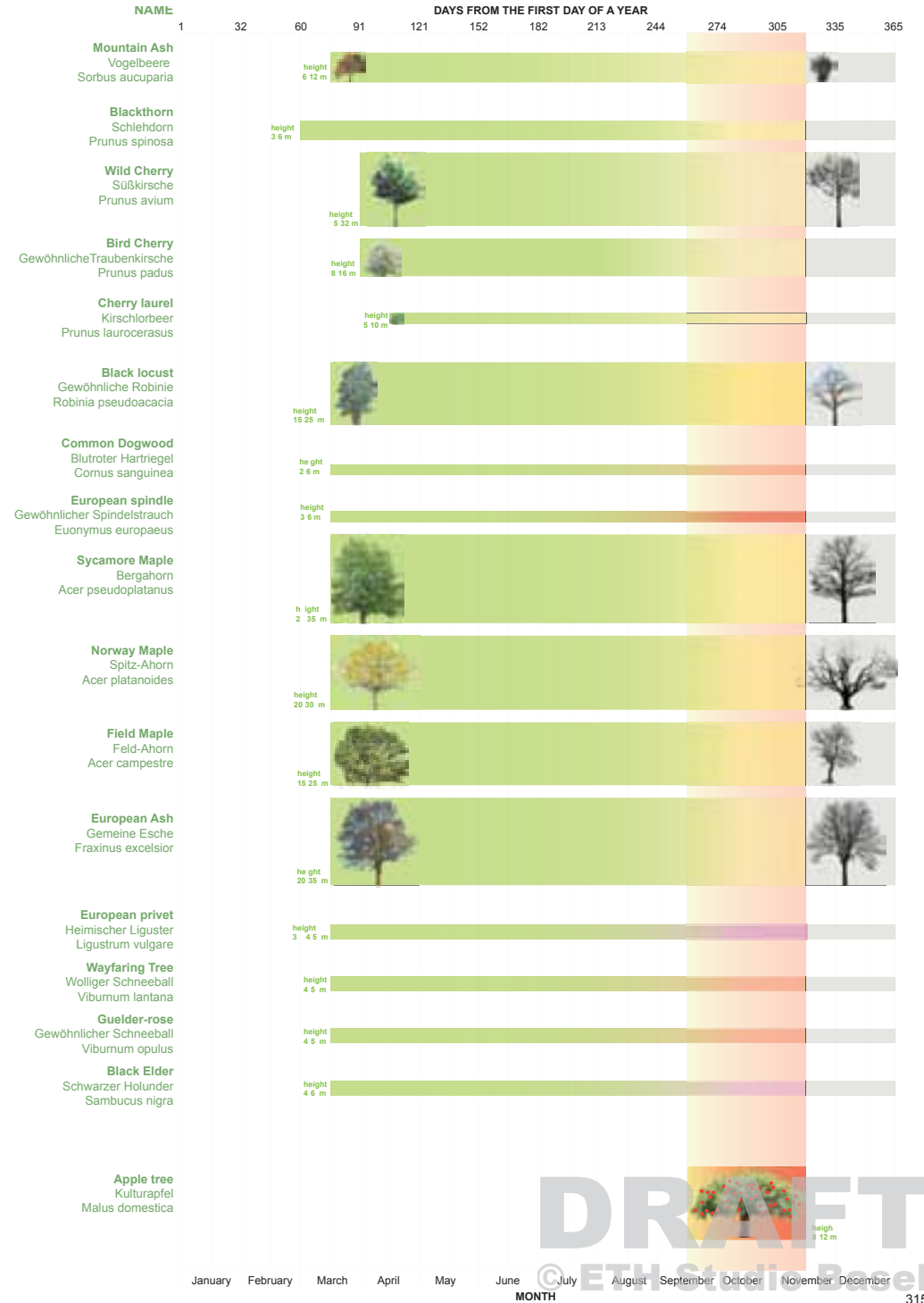
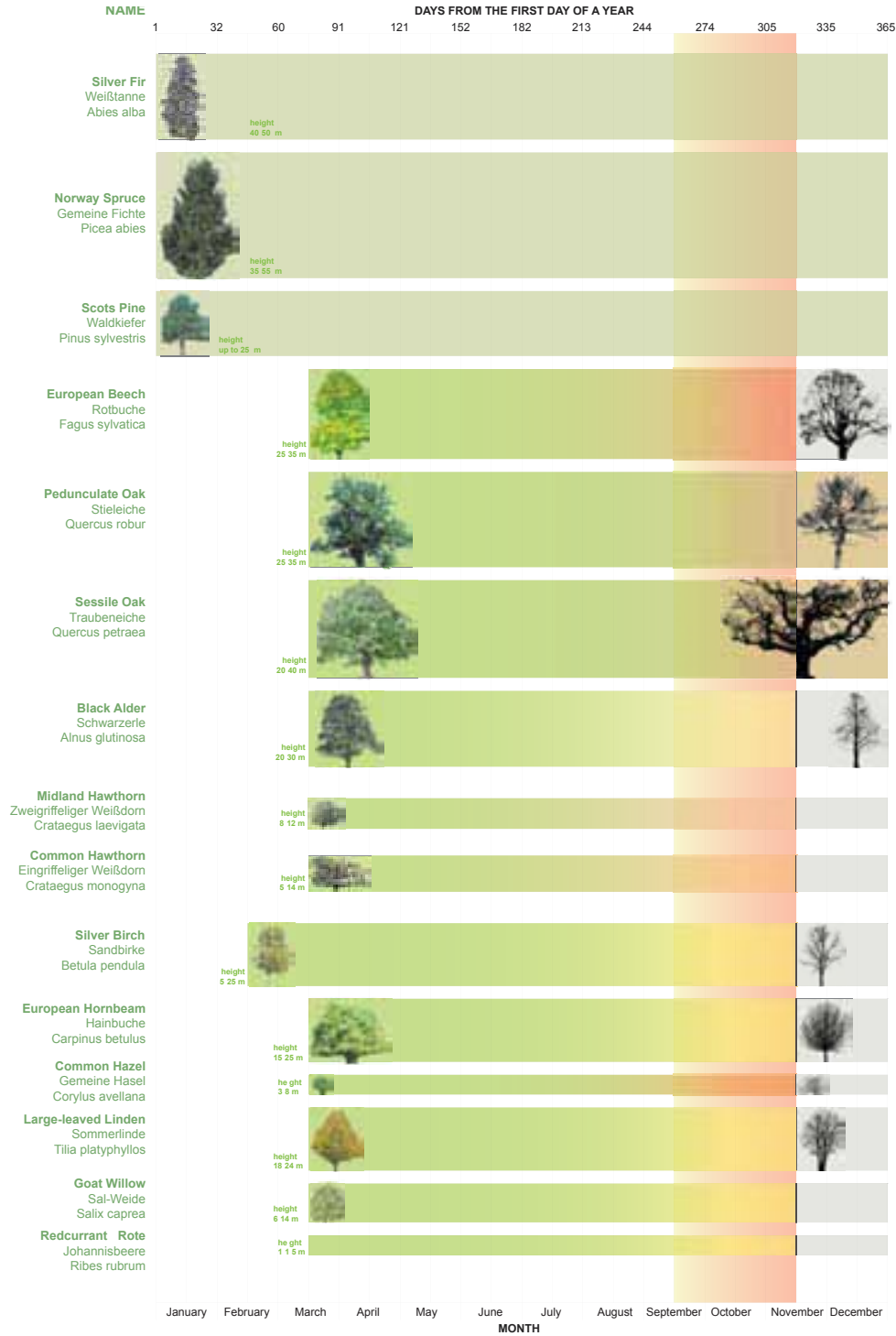
APPLE TREE  
Äpfelbaum  
*Malus domestica*



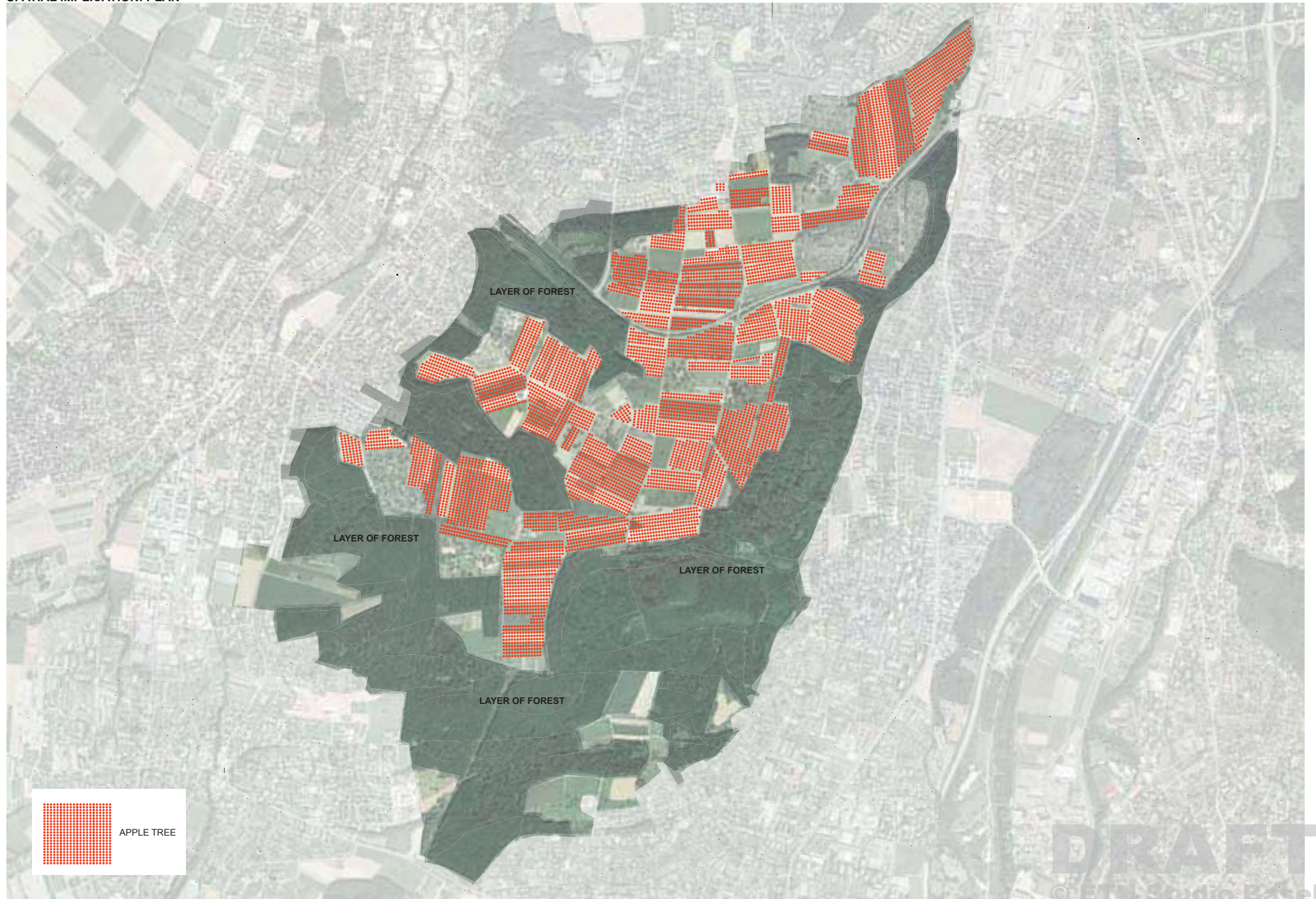
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# CALENDAR OF TREES WITH THE PHENOMENA OF APPLE MATURATION



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# WINTER METROPARK

“HALDWALD”

X

“EUROPEAN SPINDLE”

**HARDWALD. MOST COMMON + REPORTED**

Huperzia selago / Lycopodium clavatum / Lycopodium annotinum / **Equisetum arvense** / Equisetum telmateia / Equisetum palustre / Equisetum sylvaticum / Equisetum fluviatile / Equisetum hyemale / Equisetum variegatum / Equisetum ramosissimum / Equisetum x moorei / Pteridium aquilinum / Phegopteris connectilis / Oreopteris limbosperma / Gymnocarpium dryopteris / Gymnocarpium robertianum / Dryopteris affinis / **Dryopteris filix-mas** / **Dryopteris dilatata** / **Dryopteris carthusiana** / Polystichum setiferum / Polystichum aculeatum / **Athyrium filix-femina** / Cystopteris fragilis / Asplenium viride / Asplenium trichomanes / Asplenium fontanum / Asplenium ruta-muraria / Ceterach officinarum / Phyllitis scolopendrium / Blechnum spicatum / Polypodium vulgare / Polypodium interjectum / **Abies alba** / Pseudotsuga menziesii / **Picea abies** / **Larix decidua** / **Pinus strobus** / **Pinus nigra** / **Pinus sylvestris** / Juniperus communis / Thuja occidentalis / Thuja orientalis / Taxus baccata / **Asarum europaeum** / Aristolochia clematidis / Nymphaea alba / Nuphar lutea / Actaea spicata / Ceratophyllum demersum / Helleborus foetidus / Helleborus orientalis / Eranthis hyemalis / **Aquilegia vulgaris** / **Caltha palustris** / Trollius europaeus / **Nigella damascena** / Aconitum altissimum / Consolida regalis / **Consolida ajacis** / Thalictrum aquilegifolium / Thalictrum minus / Thalictrum flavum / Anemone ranuncoloides / **Anemone nemorosa** / **Anemone blanda** / Pulsatilla vulgaris / Hepatica nobilis / **Clematis vitalba** / **Ranunculus ficaria** / Ranunculus aquatilis / Ranunculus penicillatus / Ranunculus fluitans / Ranunculus trichophyllus / Ranunculus acrifolius / Ranunculus lingua / Ranunculus flammula / Ranunculus arvensis / Ranunculus scleratus / Ranunculus pseudocassubicus / **Ranunculus biflorus** / Ranunculus alsaticus / Ranunculus lyratus / Ranunculus alnetorum / Ranunculus kuznii / Ranunculus argoviensis / Ranunculus sphinx / Ranunculus stellaris / Ranunculus lunaris / Ranunculus gratiolosus / **Ranunculus macrotis** / Ranunculus quinatus / **Ranunculus acer** / **Ranunculus bulbosus** / **Ranunculus repens** / Ranunculus tuberosus / Berberis julianae / Berberis vulgaris / Berberis thunbergii / Mahonia aquifolium / Chelidonium majus / Papaver somniferum / **Papaver rhoeas** / Papaver dubium / Papaver dubium lecoquii / Papaver argemone / Corydalis lutea / **Corydalis cava** / **Corydalis solida** / **Fumaria officinalis** / Fumaria officinalis wirtgenii / Fumaria vaillantii / Platanus hispanica / Ulmus laevis / **Ulmus minor** / **Ulmus minor suberosus** / **Ulmus glabra** / Celtis occidentalis / Humulus lupulus / **Cannabis sativa** / **Ficus carica** / **Urtica urens** / **Urtica dioica** / Parietaria officinalis / Juglans regia / Juglans nigra / **Fagus sylvatica** / Castanea sativa / Quercus pubescens / **Quercus robur** / **Quercus petraea** / **Quercus rubra** / Alnus glutinosa / Alnus incana / **Betula pendula** 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**Rubus fruticosus** / **Rubus laciniatus** / Rubus canescens / Rosa pendulina / **Rosa pimpinellifolia** / Rosa rugosa / Rosa multiflora / **Rosa arvensis** / **Rosa rubiginosa** / Rosa micrantha / Rosa agrestis / Rosa glauca / Rosa jundzilli / Rosa tomentosa / **Rosa corymbifera** / Rosa corymbifera platyphylla / Rosa corymbifera thuillieri / Rosa corymbifera hemitricha / Rosa stylosa / Rosa canina / Rosa canina lutetiana / Rosa canina transitoria / Rosa canina hispida / Rosa canina diversiglandulosa / Rosa canina dumalis / Rosa vosiagiaca / Rosa vosiagiaca subcanina / Agrimonia eupatoria / Sangisorba officinalis / **Sangisorba minor s.str.** / Sangisorba minor polygama / Geum urbanum / Geum rivale / Potentilla fruticosa / **Potentilla sterilis** / Potentilla supina / Potentilla anserina / Potentilla erecta / Potentilla norvegica / **Potentilla reptans** / Potentilla recta / Potentilla argentea / Potentilla inclinata / Potentilla intermedia / Potentilla heptaphylla / Potentilla neumanniana / Potentilla arenaria / Fragaria moschata / Fragaria viridis / **Fragaria vesca** / Duchesnea indica / **Aphanes arvensis** / Alchemilla glaucescens / Alchemilla filicaulis / Alchemilla xanthochlora / Alchemilla monticola / Alchemilla micans / Alchemilla subcrenata / Alchemilla glabra / Chaenomeles japonica / Pyrus pyraeaster / Malus sylvestris / Malus domestica / Sorbus aucuparia / Sorbus domestica / Sorbus torminalis / Sorbus x latifolia / Sorbus aria / Sorbus mougeotii / Sorbus intermedia / Amelanchier ovalis / **Cotoneaster horizontalis** / **Cotoneaster divaricatus** / Cotoneaster integerrimus / Cotoneaster tomentosus / Cotoneaster salicifolius / **Cotoneaster dammeri** / **Pyraecantha coccinea** / Mespilus germanica / **Crataegus laevigata** / Crataegus lindmannii / **Crataegus monogyna** / Crataegus x macrocarpa / Prunus persica / Prunus spinosa s.str. / Prunus spinosa fruticans / Prunus domestica / **Prunus avium** / Prunus cerasus / Prunus mahaleb / Prunus padus / Prunus serotina / Prunus laurocerasus / Gleditsia triacanthos / Cercis siliquastrum / Cassia obtusifolia / Lupinus polyphyllus / Genista germanica / Genista tinctoria / Genista pilosa / Genista sagittalis / Cytisus scoparius / **Robinia pseudoacacia** / Colutea arborescens / Astragalus glycyphyllos / Anthyllis vulneraria s.l. / Anthyllis vulneraria s.str. / Anthyllis vulneraria carpatica / **Lotus tenuis** / **Lotus corniculatus** / Lotus corniculatus hirsutus / Lotus uliginosus / Tetragonolobus maritimus / Ornithopus perpusillus / Coronilla varia / Coronilla emerus / Coronilla coronata / Coronilla vaginalis / Hippocrepis comosa / **Onobrychis vicifolia** / Ononis spinosa / Ononis spinosa austriaca / Ononis repens / **Medicago falcata** / **Medicago sativa** / **Medicago x varia** / **Medicago lupulina** / Medicago minima / Melilotus albus / Melilotus altissimus / **Melilotus officinalis** / Trifolium fragiferum / Trifolium resupinatum / Trifolium rubens / Trifolium medium / Trifolium arvense / Trifolium incarnatum / Trifolium alpestre / **Trifolium pratense** / Trifolium ochroleucon / Trifolium scabrum / **Trifolium repens** / Trifolium montanum / Trifolium hybridum / Trifolium aureum / **Trifolium campestre** / Trifolium dubium / Vicia hirsuta / Vicia Tetrasperma / Vicia dumetorum / Vicia cracca / Vicia villosa / Vicia villosa varia / Vicia narbonensis / Vicia pannonica / Vicia sepium / Vicia lutea / Vicia angustifolia s.str. / Vicia angustifolia s.l. / Lathyrus aphaca / Lathyrus hirsutus / Lathyrus pratensis / Lathyrus tuberosus / Lathyrus sylvestris / Lathyrus latifolius / Lathyrus linifolius / Lathyrus niger / Lathyrus vernus / Glycine max / Hippophae rhamnoides / Myriophyllum verticillatum / Myriophyllum spicatum / Lythrum salicaria / Lythrum hyssopifolia / Peplis portula / Thymelaea passerina / Daphne mezereum / Daphne laureola / **Epilobium angustifolium** / **Epilobium dodonaei** / **Epilobium hirsutum** / **Epilobium parviflorum** / Epilobium montanum / Epilobium roseum / Epilobium palustre / Epilobium obscurum / Epilobium ciliatum / **Epilobium tetragonum** / Epilobium tetragonum lamyi / Oenothera biennis / Oenothera suaveolens / Oenothera oehlkersii / Oenothera pycnocarpa / Oenothera erythrosepala / Oenothera x fallax / Oenothera issleri / **Oenothera parviflora** / Circaea lutetiana / **Cornus sanguinea** / **Cornus alba** / **Cornus mas** / Thesium pyrenaicum / Thesium alpinum / Viscum album / Viscum album abietis / Viscum album austriacum / **Euonymus europaeus** / Ilex aquifolium / Buxus sempervirens / Mercurialis annua / Mercurialis perennis / Euphorbia nutans / Euphorbia maculata / Euphorbia humifusa / Euphorbia lathyris / Euphorbia helioscopia / Euphorbia seguieriana / Euphorbia palustris / Euphorbia platyphyllos / Euphorbia stricta / **Euphorbia dulcis** / Euphorbia verrucosa / **Euphorbia amygdaloides** / **Euphorbia cyparissias** / Euphorbia virgata / Euphorbia peplus / Euphorbia exigua / Rhamnus cathartica / Rhamnus alpina / Frangula alnus / Vitis silvestris / Vitis vinifera / Parthenocissus inserta / Linum catharticum / Linum Tenuifolium / Linum usitatissimum / Polygala amarella / Polygala vulgaris / Polygala comosa / Staphylea pinnata / Koeleruteria paniculata / Aesculus hippocastanum / Acer negundo / Acer pseudoplatanus / Acer platanoides / **Acer campestre** / Acer opalus / Cotinus coggygria / Rhus typhina / Ailanthus altissima / Ruta graveolens / Dictamnus albus / **Oxalis acetosella** / Oxalis fontana / Oxalis corniculata / Oxalis dillenii / **Geranium robertianum** / Geranium purpureum / **Geranium rotundifolium** / Geranium plaustrum / Geranium sylvaticum / Geranium pratense / Geranium sanguineum / Geranium columbinum / Geranium dissectum / Geranium molle / Geranium pusillum / Geranium pyrenaicum / **Erodium cicutarium** / Tropaeolum majus / Impatiens glandulifera / Impatiens balfourii / Impatiens noli-tangere / **Impatiens parviflora** / Hedera helix / Hydrocotyle vulgaris / Sanicula europea / Eryngium campestre / Chaerophyllum hirsutum / Chaerophyllum temulum / Chaerophyllum aureum / Anthriscus sylvestris / Anthriscus nitida / Anthriscus caucalis / Torilis japonica / Torilis arvensis / Caucalis platycarpos / Orlaya grandiflora / Bifora radians / Conium maculatum / Blueprium rotundifolium / Blueprium falcatum / Trinia glauca / Petroselinum crispum / Cicuta virosa / Ammi majus / Falcaria vulgaris / Carum carvi / Pimpinella major / Pimpinella saxifraga / Pimpinella peregrina / **Aegopodium podagraria** / Berula erecta / Seseli libanotis / Seseli annuum / Oenanthe lachenali / **Aethusa cynapium** / Aethusa cynapium cynapioides / Athamanta cretensis / Foeniculum vulgare / Silaum silaus / Angelica sylvestris / Peucedanum carvifolia / Peucedanum oreoselinum / Peucedanum cervaria / **Pastinaca sativa** / Heracleum mantegazzianum / Heracleum sphondylium / Laserpitium latifolium / Laserpitium siler / **Daucus carota** / **Centaureum erythraea** / Centaureum pulchellum / Blackstonia perfoliata / Gentiana lutea / Gentiana cruciata / Gentiana pneumonanthe / Gentiana verna / Gentianella ciliata / Gentianella germanica / **Vinca minor** / Vinca major / Asclepias syriaca / Vincetoxicum hirundinaria / Nicandra physalodes / **Lycium barbarum** / Atropa bella-donna / Physalis alkekengi / Physalis franchetti / Solanum dulcamara / **Solanum nigrum** / Solanum nigrum ssp. Schultesii / Solanum carolinense / Lycopersicon esculentum / **Datura stramonium** / Datura stramonium tatula / Petunia x Atkinsiana / **Convolvulus arvensis** / **Calystegia sepium** / **Ipomoea hederacea** / **Ipomoea lacunosa** / Cuscuta europaea / Cuscuta epithymum / Menyanthes trifoliata / **Nymphoides peltata** / Phacelia tanacetifolia / Heliotropium europaeum / Lithospermum officinale / Buglossoides purpureo-caerulea / Buglossoides arvensis / **Echium vulgare** / Echium plantagineum / Pulmonaria obscura / Symphytum officinale / Anchusa arvensis / Brunnera macrophylla / Borago officinalis / Myosotis nemorosa / Myosotis scorpioides / Myosotis alpestris / Myosotis sylvatica / **Myosotis ramosissima** / Myosotis arvensis / Myosotis discolor / Cynoglossum officinale / **Verbena officinalis** / Verbena bonariensis / Caryopteris x clandonensis / Teucrium scorodonia / Teucrium montanum / Teucrium botrys / **Teucrium chamaedrys** / **Ajuga reptans** / **Ajuga reptans** / **Ajuga reptans** / **Ajuga reptans** / Lavandula angustifolia / Mentha pulegium / Mentha arvensis / **Mentha aquatica** / Mentha suaveolens / Mentha longifolia / Mentha spicata glabrata / Mentha x verticillata / Mentha x dumetorum / Mentha x piperita / Mentha x villosa / Mentha x

rotundifolia / **Lycopus europaeus** / **Origanum vulgare** / **Thymus pulegioides** / Thymus froelichianus / Thymus praecox / **Melissa officinalis** / Satureja hortensis / **Clinopodium vulgare** / **Calamintha menthifolia** / **Acinos arvensis** / Nepeta cataria / **Glechoma hederacea** / Melittis melissophyllum / **Ballota nigra** / Stachys alpina / Stachys germanica / Stachys arvensis / Stachys annua / **Stachys recta** / Stachys arvensis / **Stachys sylvatica** / Stachys palustris / Stachys officinalis / **Lamium maculatum** / **Lamium album** / **Lamium amplexicaule** / **Lamium purpureum** / **Lamium hybridum** / **Lamium galeobdolon montanum** / **Lamium galeobdolon argentatum** / Galeopsis segetum / Galeopsis angustifolia / Galeopsis tetrahit / **Prunella grandiflora** / **Prunella vulgaris** / **Prunella lacinata** / **Salvia glutinosa** / **Salvia pratensis** / **Salvia verticillata** / Scutellaria galericulata / **Hippuris vulgaris** / **Callitriche palustris** / **Plantago arenaria** / **Plantago media** / **Plantago major** / **Plantago intermedia** / **Plantago lanceolata** / **Plantago lanceolata sphaerostachya** / **Buddleja davidii** / Forsythia sp. / **Fraxinus excelsior** / Fraxinus ornus / **Syringa vulgaris** / **Ligustrum vulgare** / **Ligustrum sinense** / **Ligustrum ovalifolium** / **Verbascum blattaria** / **Verbascum nigrum** / **Verbascum lychnitis** / **Verbascum lychnitis album** / **Verbascum pulverulentum** / **Verbascum thapsus** / **Verbascum densiflorum** / **Verbascum phlomoides** / **Scrophularia canina** / Scrophularia umbrosa / **Scrophularia nodosa** / **Chaenorhynchus minus** / **Cymbalaria muralis** / **Kickxia spuria** / **Kickxia elatine** / **Linaria vulgaris** / **Linaria repens** / **Linaria purpurea** / **Antirrhinum majus** / Misopates orontium / Digitalis purpurea / Digitalis grandiflora / Digitalis lutea / **Erinus alpinus** / **Veronica serpyllifolia** / **Veronica officinalis** / **Veronica montana** / **Veronica chamaedrys** / **Veronica urticifolia** / **Veronica prostrata** / **Veronica teucrium** / **Veronica beccabunga** / **Veronica anagalis-aquatica** / **Veronica catenata** / **Veronica spicata** / **Veronica arvensis** / **Veronica peregrina** / **Veronica acinifolia** / **Veronica triphyllus** / **Veronica praecox** / **Veronica hederifolia** / **Veronica hederifolia lucorum** / **Veronica persica** / **Veronica filiformis** / **Veronica agrestis** / **Veronica polita** / Euphrasia rostkoviana / Euphrasia salisburgensis / Euphrasia stricta / Odontites vernus / Odontites vulgaris / Odontites luteus / Rhinanthus minor / Rhinanthus alectorolophus / Melampyrum cristatum / Melampyrum arvense / Melampyrum sylvaticum / Melampyrum pratense / Lathraea squamaria / Globularia punctata / Globularia cordifolia / **Orobancha lutea** / **Orobancha hederae** / **Orobancha caryophyllacea** / **Orobancha teucrii** / **Orobancha alba** / **Orobancha minor** / **Paulownia tomentosa** / **Catalpa bignonioides** / Pinigaulia vulgaris / Utricularia australis / Utricularia intermedia / **Campanula glomerata** / **Campanula rapunculosa** / **Campanula patula** / **Campanula cochlearifolia** / **Campanula rotundifolia** / **Campanula persicifolia** / **Campanula rapunculoides** / **Campanula trachelium** / **Campanula poscharskyana** / **Legousia speculum-venenis** / Phyteuma orbiculare / Phyteuma nigrum / **Phyteula spicatum** / Jasionae laevis / Lobelia erinus / **Sherardia arvensis** / **Asperula cynanchica** / **Cruciata Laevipes** / Galium verum s.str. / Galium verum ssp. wirtgenii / Galium odoratum / Galium glaucum / Galium palustre / Galium uliginosum / **Galium aparine** / Galium spurium / Galium parisiense / Galium sylvaticum / **Galium album** / Galium pumilum / **Lonicera periclymenum** / **Lonicera caprifolium** / **Lonicera alpicana** / **Lonicera xylosteum** / **Lonicera nitida** / **Symphoricarpos albus** / **Symphoricarpos x chenaultii** / **Viburnum lantana** / **Viburnum rhytidophyllum** / **Viburnum opulus** / **Sambucus ebulus** / **Sambucus nigra** / **Sambucus racemosa** / **Adoxa moschatellina** / **Valerianaella locusta** / **Valerianaella carinata** / **Valerianaella dentata** / **Valerianaella dentata** var. erioperma / **Valerianaella rimosa** / **Valeriana officinalis** / **Valeriana officinalis ssp. excelsa** / **Valeriana officinalis ssp. tenuifolia** / o **Valeriana dioica** / **Valeriana tripteris** / **Valeriana montana** / **Centranthus ruber** / **Dipsacus fullonum** / **Dipsacus laciniatus** / **Dipsacus pilosus** / **Succisa pratensis** / **Knautia arvensis** / **Knautia dipsacifolia** / **Scabiosa canescens** / **Scabiosa columbaria** / **Ageratum hostonianum** / **Eupatorium cannabinum** / **Solidago virgaurea** / **Solidago canadensis** / **Solidago gigantea** / **Bellis perennis** / **Callistephus chinensis** / **Aster bellidiastrum** / **Aster linosyris** / **Aster amellus** / **Aster novae-angliae** / **Aster novi-belgii** / **Aster x versicolor** / **Aster lanceolatus** / **Aster salignus** / **Erigeron acer** / **Erigeron annuus s.l.** / **Erigeron annuus s.str.** / **Erigeron annuus ssp. septentrionalis** / **Erigeron annuus ssp. strigosus** / **Erigeron karvinskianus** / **Conyza canadensis** / **Conyza bonariensis** / **Filago vulgaris** / **Antennaria dioica** / **Gnaphalium uliginosum** / **Gnaphalium luteoalbum** / **Gnaphalium sylvaticum** / **Inula conyza** / **Inula graveolens** / **Inula salicina** / **Pulicaria dysenterica** / **Bupththalmum salicifolium** / **Guizotia abyssinica** / **Bidens cernua** / **Bidens connata** / **Bidens tripartita** / **Bidens frondosa** / **Cosmos bipinnatus** / **Rudbeckia hirta** / **Helianthus annuus** / **Helianthus tuberosus** / **Helianthus laetiflorus** / **Iva xanthifolia** / **Ambrosia artemisiifolia** / **Ambrosia trifida** / **Xanthium strumarium** / **Galinsoga parviflora** / **Galinsoga ciliata** / **Tagetes patula** / **Anthemis cotula** / **Anthemis arvensis** / **Anthemis tinctoria** / **Achillea ptarmica** / **Achillea millefolium** / **Achillea nobilis** / **Achillea filipendulina** / **Matricaria recutita** / **Matricaria discoidea** / **Tripleurospermum perforatum** / **Chrysanthemum segetum** / **Leucanthemum icutianum** / **Leucanthemum adustum** / **Leucanthemum vulgare** / **Leucanthemum maximum** / **Tanacetum vulgare** / **Tanacetum corymbosum** / **Tanacetum parthenium** / **Artemisia vulgaris** / **Artemisia verlotiorum** / **Artemisia absinthium** / **Artemisia campestris** / **Tussilago farfara** / **Petasites hybridus** / **Petasites albus** / **Adenostyles alliariae** / **Adenostyles glabra** / **Senecio inaequidens** / **Senecio paludosus** / **Senecio hercynicus** / **Senecio ovatus** / **Senecio cineraria** / **Senecio erucifolius** / **Senecio jacobaea** / **Senecio aquaticus** / **Senecio squalius** / **Senecio vulgaris** / **Senecio viscosus** / **Senecio vernalis** / **Calendula officinalis** / **Calendula arvensis** / **Arctium tomentosum** / **Arctium lappa** / **Arctium nemorosum** / **Arctium minus** / **Carduus nutans** / **Carduus defloratus** / **Carduus crispus** / **Cirsium vulgare** / **Cirsium arvense** / **Cirsium palustre** / **Cirsium acaule** / **Cirsium tuberosum** / **Cirsium oleraceum** / **Cirsium x rigens** / **Onopordum acanthium** / **Silybum marianum** / **Serratula tinctoria** / **Centaurea solstitialis** / **Centaurea cyanus** / **Centaurea montana** / **Centaurea scabiosa** / **Centaurea stoebe** / **Centaurea jacea s.l.** / **Centaurea jacea s.str.** / **Centaurea jacea ssp. angustifolia** / **Centaurea nemoralis** / **Carlina vulgaris** / **Carlina acaulis ssp. caulescens** / **Echinops sphaerocephalus** / **Cichorium intybus** / **Cichorium endivia** / **Tragopogon dubius** / **Tragopogon pratensis ssp. orientalis** / **Tragopogon pratensis ssp. minor** / **Hypochoeris radicata** / **Leontodon saxatilis** / **Leontodon autumnalis** / **Leontodon hispidus s.l.** / **Leontodon hispidus ssp. hastilis** / **Picris hieracioides** / **Picris echioides** / **Sonchus oleraceus** / **Sonchus asper** / **Sonchus arvensis** / **Prenanthes purpurea** / **Mycelis muralis** / **Lactuca virosa** / **Lactuca serriola** / **Lactuca sativa** / **Lapsana communis** / **Taraxacum officinale** / **Taraxacum laevigatum** / **Chondrilla juncea** / **Crepis paludosa** / **Crepis praemorsa** / **Crepis biennis** / **Crepis tectorum** / **Crepis capillaris** / **Crepis pulchra** / **Crepis foetida** / **Crepis taraxacifolia** / **Crepis setosa** / **Hieracium pilosella** / **Hieracium lactucella** / **Hieracium aurantiacum** / **Hieracium caespitosum** / **Hieracium piloselloides** / **Hieracium visianii** / **Hieracium zizianum** / **Hieracium calodan** / **Hieracium auriculoides** / **Hieracium scorzoniferifolium** / **Hieracium glaucinum** / **Hieracium murorum** / **Hieracium maculatum** / **Hieracium lachenalii** / **Hieracium humile** / **Hieracium amplexicaule** / **Hieracium laevigatum** / **Hieracium umbellatum** / **Hieracium sabaudum** / **Hieracium lycopifolium** / **Butomus umbellatus** / **Alisma plantago-aquatica** / **Alisma lanceolatum** / **Sagittaria sagittifolia** / **Stratiotes aloides** / **Elodea densa** / **Elodea canadensis** / **Elodea nuttallii** / **Triglochin palustre** / **Potamogeton crispus** / **Potamogeton nodosus** / **Potamogeton natans** / **Potamogeton lucens** / **Potamogeton gramineus** / **Potamogeton pectinatus** / **Potamogeton berchtoldii** / **Greenlandia densa** / **Najas marina** / **Zannichellia palustris** / **Acorus calamus** / **Arum maculatum** / **Spirodela polyrhiza** / **Lemna trisulca** / **Lemna minor** / **Lemna minuta** / **Tradescantia virginiana** / **Commelina communis** / **Juncus inflexus** / **Juncus conglomeratus** / **Juncus effusus** / **Juncus tenuis** / **Juncus compressus** / **Juncus bufonius** / **Juncus bulbosus** / **Juncus subnodulosus** / **Juncus alpinoarticulatus** / **Juncus articulatus** / **Juncus acutiflorus** / **Luzulla pilosa** / **Luzula forsteri** / **Luzula luzuloides** / **Luzula sylvatica** / **Luzula campestris** / **Luzula multiflora** / **Scirpus sylvaticus** / **Bolboschoenus maritimus** / **Isolepis setacea** / **Schoenoplectus lacustris** / **Schoenoplectus tabernaemontani** / **Schoenoplectus mucronatus** / **Eleocharis uniglumis** / **Eleocharis palustris** / **Eleocharis mamillata** / **Eriophorum angustifolium** / **Eriophorum latifolium** / **Cladium mariscus** / **Schoenus nigricans** / **Cyperus fuscus** / **Carex davalliana** / **Carex disticha** / **Carex brizoides** / **Carex praecox** / **Carex otrubae** / **Carex muricata** **aggr.** / **Carex spicata** / **Carex muricata ssp. lamprocarpa** / **Carex polyphylla** / **Carex paniculata** / **Carex remota** / **Carex leporina** / **Carex elongata** / **Carex echinata** / **Carex acuta** / **Carex nigra** / **Carex elata** / **Carex umbrosa** / **Carex montana** / **Carex fritschii** / **Carex pilulifera** / **Carex tomentosa** / **Carex caryophyllea** / **Carex pilosa** / **Carex pallescens** / **Carex pendula** / **Carex hallerana** / **Carex flacca** / **Carex panicea** / **Carex alba** / **Carex humilis** / **Carex digitata** / **Carex omithopoda** / **Carex sylvatica** / **Carex strigosa** / **Carex flava** / **Carex lepidocarpa** / **Carex demissa** / **Carex viridula** / **Carex distans** / **Carex hostiana** / **Carex pseudocyperus** / **Carex hirta** / **Carex rostrata** / **Carex vesicaria** / **Carex acutiformis** / **Carex riparia** / **Festuca gigantea** / **Festuca altissima** / **Festuca pratensis** / **Festuca arundinacea** / **Festuca rubra s. str.** / **Festuca heterophylla** / **Festuca brevipila** / **Festuca ovina** **aggr.** / **Festuca guestfalica** / **Festuca pallens** / **Festuca tenuifolia** / **Lolium multiflorum** / **Lolium perenne** / **Lolium rigidum** / **Vulpia ciliata** / **Vulpia myuros** / **Catapodium rigidum** / **Poa bulbosa** / **Poa annua** / **Poa compressa** / **Poa chaixii** / **Poa trivialis** / **Poa pratensis** / **Poa angustifolia** / **Poa humilis** / **Poa nemoralis** / **Poa palustris** / **Puccinellia distans** / **Dactylis glomerata** / **Dactylis polygama** / **Cynosurus cristatus** / **Briza media** / **Sesleria albicans** / **Melica ciliata** / **Melica nutans** / **Melica uniflora** / **Glyceria maxima** / **Glyceria striata** / **Glyceria declinata** / **Glyceria fluitans** / **Glyceria notata** / **Glyceria x pedicellata** / **Bromus sterilis** / **Bromus tectorum** / **Bromus madritensis** / **Bromus ramosus** / **Bromus benekenii** / **Bromus erectus** / **Bromus inermis** / **Bromus secalinus** / **Bromus hordeaceus** / **Bromus arvensis** / **Bromus racemosus** / **Bromus racemosus commutatus** / **Bromus japonicus** / **Bromus catharticus** / **Brachypodium pinnatum** / **Brachypodium sylvaticum** / **Elymus caninus** / **Elymus elongatus** / **Elymus repens** / **Elymus repens aristatus** / **Elymus repens glaucus** / **Elymus campestris** / **Aegilops cylindrica** / **Triticum durum** / **Triticum aestivum** / **Secale cereale** / **Hordeum murinum** / **Hordeum distichon** / **Hordeum vulgare** / **Hordelymus europaeus** / **Avena fatua** / **Avena sativa** / **Helictotrichon pubescens** / **Helictotrichon pratense** / **Arrhenatherum elatius** / **Koeleria macrantha** / **Koeleria pyramidata** / **Trisetum flavescens** / **Deschampsia caespitosa** / **Avenella flexuosa** / **Aira caryophyllea** / **Anthoxanthum odoratum** / **Holcus lanatus** / **Holcus mollis** / **Agrostis capillaris** / **Agrostis gigantea** / **Agrostis stolonifera s.l.** / **Agrostis stolonifera ssp. prorepens** / **Agrostis canina** / **Apera spica-venti** / **Calamagrostis varia** / **Calamagrostis epigejos** / **Calamagrostis canescens** / **Phleum phleoides** / **Phleum paniculatum** / **Phleum pratense** / **Phleum bertolonii** / **Alopecurus myosuroides** / **Alopecurus pratensis** / **Alopecurus aequalis** / **Phalaris arundinacea** / **Phalaris canariensis** / **Milium effusum** / **Stipa eriocalis ssp. lutetiana** / **Achnatherum calamagrostis** / **Phragmites australis** / **Danthonia decumbens** / **Molinia arundinacea** / **Eragrostis pilosa** / **Eragrostis multicaulis** / **Eragrostis cilianensis** / **Eleusine indica** / **Cynodon dactylon** / **Leersia oryzoides** / **Panicum miliaceum** / **Panicum capillare** / **Panicum dichotomiflorum** / **Echinochloa crum-galli** / **Echinochloa colona** / **Digitaria sanguinalis** / **Digitaria ischaemum** / **Setaria verticillata** / **Setaria verticilliformis** / **Setaria geniculata** / **Setaria pumilla** / **Setaria viridis s.l.** / **Setaria italica** / **Setaria italica moharia** / **Setaria faberi** / **Sorghum halepense** / **Sorghum bicolor s.l.** / **Bothriochloa ischaemum** / **Sparganium erectum** / **Sparganium erectum neglectum** / **Sparganium emersum** / **Sparganium minimum** / **Typha angustifolia** / **Typha latifolia** / **Pontederia cordata** / **Anthericum ramosum** / **Anthericum liliago** / **Hemerocallis fulva** / **Colchicum autumnale** / **Gagea villosa** / **Gagea lutea** / **Tulipa sylvestris** / **Tulipa gesneriana** / **Lilium martagon** / **Ornithogalum umbellatum** / **Ornithogalum nutans** / **Ornithogalum pyrenaicum** / **Scilla bifolia** / **Scilla siberica** / **Chionodoxa sp.** / **Hyacinthoides sp.** / **Muscari comosum** / **Muscari racemosum** / **Muscari armeniacum** / **Allium vineale** / **Allium sphaerocephalon** / **Allium scorodoprasum** / **Allium schoenoprasum** / **Allium ursinum** / **Allium paradoxum** / **Allium oleraceum** / **Allium carinatum** / **Allium senescens montanum** / **Convallaria majalis** / **Maianthemum bifolium** / **Polygonatum verticillatum** / **Polygonatum multiflorum** / **Polygonatum odoratum** / **Paris quadrifolia** / **Asparagus officinalis** / **Leucojum vernum** / **Galanthus nivalis** / **Narcissus pseudonarcissus** / **Iris germanica** / **Iris pseudacorus** / **Iris sibirica** / **Crocus sp.** / **Tamus communis** / **Cephalanthera rubra** / **Cephalanthera damasonium** / **Cephalanthera longifolia** / **Epipactis palustris** / **Epipactis atrorubens** / **Epipactis helleborine** / **Epipactis muelleri** / **Epipactis leptochila** / **Epipactis purpurata** / **Limodorum abortivum** / **Listera ovata** / **Neottia nidus-avis** / **Goodyera repens** / **Spiranthes spiralis** / **Gymnadenia conopsea** / **Gymnadenia odoratissima** / **Coeloglossum viride** / **Platanthera bifolia** / **Platanthera chlorantha** / **Ophrys insectifera** / **Ophrys apifera** / **Ophrys sphegodes** / **Ophrys sphegodes litigiosa** / **Ophrys holoserica** / **Ophrys holoserica elatior** / **Orchis morio** / **Orchis ustulata** / **Orchis purpurea** / **Orchis militaris** / **Orchis simia** / **Orchis pallens** / **Orchis mascula** / **Dactylorhiza fuchsii** / **Dactylorhiza incarnata** / **Dactylorhiza majalis** / **Aceras anthropophorum** / **Himantoglossum hircinum** / **Anacamptis pyramidalis**

## HARDWALD. PHENOLOGY

Equisetum arvense / Dryopteris filix-mas / Dryopteris dilatata / Dryopteris carthusiana / Athyrium filix-femina / Abies alba / **Picea abies** / **Larix decidua** / **Pinus strobus** / Pinus nigra / Pinus sylvestris / Asarum europaeum / Aquilegia vulgaris / Caltha palustris / Nigella damascena / Consolida ajacis / **Anemone nemorosa** / Anemone blanda / **Clematis vitalba** / **Ranunculus ficaria** / **Ranunculus biformis** / **Ranunculus macrotis** / Ranunculus acer / Ranunculus bulbosus / **Ranunculus repens** / Berberis vulgaris / Berberis thunbergii / Mahonia aquifolium / Chelidonium majus / **Papaver rhoeas** / Corydalis cava / Corydalis solida / Fumaria officinalis / Ulmus minor / Ulmus minor suberosa / **Ulmus glabra** / Humulus lupulus / Cannabis sativa / Ficus carica / Urtica urens / **Urtica dioica** / Parietaria officinalis / Juglans regia / Juglans nigra / **Fagus sylvatica** / **Quercus robur** / Quercus petraea / Quercus rubra / Alnus glutinosa / Alnus incana / **Betula pendula** / **Carpinus betulus** / Chenopodium botrys / Chenopodium polyspermum / **Chenopodium album** / Chenopodium album borbasii / Chenopodium glaucum / Chenopodium rubrum / Atriplex patula / Atriplex prostrata / Bassia scoparia / Salsola ruthenica / Polyneum majus / Amaranthus quitensis / Amaranthus powellii / Amaranthus bouchonii / Amaranthus retroflexus / **Amaranthus albus** / Amaranthus deflexus / Portulaca oleracea / **Herniaria glabra** / Herniaria hirsuta / Corrigiola litoralis / Spargularia rubra / Minuartia hybrida / **Sagina procumbens** / **Arenaria serpyllifolia** / Arenaria leptoclados / **Moehringia trinervia** / **Stellaria media** / Stellaria pallida / **Stellaria holostea** / Stellaria graminea / Myosoton aquaticum / Cerastium arvense / Cerastium tomentosum / **Cerastium glomeratum** / Cerastium brachypetalum / **Cerastium fontanum** / Cerastium semidecandrum / Cerastium pumilum fallens / Saponaria officinalis / **Petrorhagia prolifera** / Dianthus armeria / Dianthus carthusianorum / Silene noctiflora / **Silene pratensis** / **Silene vulgaris** / Silene gallica / Lychnis coronaria / Rumex acetosella / **Rumex acetosa** / **Rumex obtusifolius** / Rumex sanguineus / **Rumex crispus** / **Fallopia convolvulus** / Reynoutria japonica / **Polygonum aviculare** / Polygonum calcatum / Polygonum amphibium / **Polygonum persicaria** / Polygonum lapathifolium / Polygonum hydropiper / **Polygonum mite** / Hypericum calycinum / Hypericum humifusum / **Hypericum hirsutum** / Hypericum montanum / **Hypericum perforatum** / Hypericum perforatum angustifolium / Hypericum tetrapterum / **Tilia cordata** / **Tilia platyphyllos** / Abutilon theophrasti / Alcea rosea / Malva alcea / Malva moschata / Malva sylvestris / Malva sylvestris mauritiana / **Malva neglecta** / Malva pusilla / Anoda cristata / Helianthemum nummularium obscurum / **Viola arvensis** / Viola alba / Viola odorata / **Viola reichenbachiana** / Viola riviniana / Viola x dubia / Bryonia dioica / Populus tremula / Populus alba / **Populus nigra** / Populus canadensis / **Salix alba s.str.** / Salix elaeagnos / **Salix purpurea** / **Salix caprea** / Salix cinerea / Sisymbrium altissimum / Sisymbrium officinale / Sisymbrium orientale / Descurainia sophia / Alliaria petiolata / **Arabis thaliana** / Isatis tinctoria / Bunias orientalis / Erysimum cheiranthoides / **Barbarea vulgaris** / Rorippa palustris / **Cardamine pratensis** / Cardamine impatiens / Cardamine flexuosa / **Cardamine hirsuta** / Turritis glabra / Arabis hirsuta / Alyssum alyssoides / Lobularia maritima / Berteroa incana / Draba muralis / **Erophila verna** / Erophila praecox / **Capsella bursa-pastoris** / Thlaspi arvense / Thlaspi perfoliatum / Iberis umbellata / Lepidium campestre / Lepidium ruderales / **Lepidium virginicum** / Cardaria draba / Coronopus didymus / Diplotaxis tenuifolia / Brassica rapa / Brassica napus / Brassica oleracea / Brassica juncea / Sinapis alba / Eruca sativa / Erucastrum nasturtium / Erucastrum gallicum / Hirschfeldia incana / Rapistrum rugosum / Rapsitrum rugosum orientale / Raphanus raphanistrum / Raphanus raphanistrum (gelbl. Formen) / Reseda luteola / **Reseda lutea** / Lysimachia nummularia / Lysimachia vulgaris / Lysimachia punctata / **Anagallis arvensis** / Anagallis foemina / Primula acaulis / Primula elatior / Philadelphus coronarius / **Ribes uva-crispa** / Sedum spurium / Sedum acre / Sedum sexangulare / **Sedum album** / **Saxifraga tridactylites** / Filipendula ulmaria / Rubus idaeus / **Rubus caesius** / **Rubus fruticosus** / Rubus laciniatus / Rosa pimpinellifolia / Rosa arvensis / Rosa rubiginosa / Rosa corymbifera / Rosa canina / Agrimonia eupatoria / **Sanguisorba minor s.str.** / Geum urbanum / **Potentilla sterilis** / Potentilla anserina / Potentilla norvegica / **Potentilla reptans** / Potentilla recta / Potentilla intermedia / **Potentilla neumanniana** / **Fragaria vesca** / Aphanes arvensis / Pyrus pyrastrer / Sorbus aucuparia / Cotoneaster horizontalis / Cotoneaster divaricatus / Cotoneaster dammeri / Pyracantha coccinea / **Crataegus laevigata** / **Crataegus monogyna** / Crataegus x macrocarpa / **Prunus spinosa s.str.** / **Prunus avium** / Prunus mahaleb / Prunus padus / Prunus laurocerasus / Cassia obtusifolia / Genista tinctoria / **Robinia pseudoacacia** / Astragalus glycyphyllos / Lotus tenuis / **Lotus corniculatus** / Coronilla varia / Hippocrepis comosa / **Onobrychis viciifolia** / Ononis repens / Medicago falcata / **Medicago sativa** / Medicago x varia / **Medicago lupulina** / Medicago minima / **Melilotus albus** / Melilotus altissimus / **Melilotus officinalis** / **Trifolium pratense** / **Trifolium repens** / Trifolium hybridum / **Trifolium campestre** / Trifolium dubium / Vicia hirsuta / Vicia Tetrasperma / Vicia cracca / Vicia villosa varia / Vicia sepium / Vicia angustifolia s.l. / Lathyrus pratensis / Lathyrus sylvestris / Lathyrus vernus / Glycine max / Hippophae rhamnoides / Myriophyllum spicatum / Lythrum salicaria / Epilobium angustifolium / **Epilobium dodonaei** / **Epilobium hirsutum** / **Epilobium parviflorum** / Epilobium montanum / Epilobium roseum / **Epilobium tetragonum** / Oenothera erythrosepala / Oenothera issleri / **Oenothera parviflora** / Circaea lutetiana / **Cornus sanguinea** / Cornus alba / Cornus mas / **Euonymus europaeus** / Ilex aquifolium / Mercurialis annua / Mercurialis perennis / Euphorbia humifusa / Euphorbia helioscopia / Euphorbia platyphyllos / **Euphorbia dulcis** / Euphorbia verrucosa / **Euphorbia amygdaloides** / **Euphorbia cyparissias** / Euphorbia peplus / Euphorbia exigua / Vitis vinifera / Parthenocissus inserta / Linum catharticum / Linum usitatissimum / Aesculus hippocastanum / Acer negundo / Acer pseudoplatanus / Acer platanoides / **Acer campestre** / Rhus typhina / Ailanthus altissima / **Oxalis acetosella** / Oxalis fontana / **Geranium robertianum** / Geranium purpureum / **Geranium rotundifolium** / Geranium sanguineum / Geranium columbinum / Geranium dissectum / Geranium molle / Geranium pusillum / **Geranium pyrenaicum** / **Erodium cicutarium** / Impatiens glandulifera / **Impatiens parviflora** / Hedera helix / Chaerophyllum temulum / Torilis japonica / Blupeurum falcatum / Carum carvi / Aegopodium podagraria / **Aethusa cynapium** / Foeniculum vulgare / **Pastinaca sativa** / Heracleum sphondylium / **Daucus carota** / Centaurea erythraea / Vinca minor / Lycium barbarum / Solanum dulcamara / **Solanum nigrum** / Solanum nigrum ssp. Schultesii / Solanum carolinense / Lycopersicon esculentum / Datura stramonium / **Convolvulus arvensis** / Calystegia sepium / Ipomoea hederacea / Ipomoea lacunosa / Nymphaeoides peltata / **Echium vulgare** / Pulmonaria obscura / Symphytum officinale / Anchusa arvensis / Myosotis ramosissima / Myosotis arvensis / **Verbena officinalis** / Teucrium scorodonia / Teucrium chamaedrys / Ajuga chamaepitys / Ajuga reptans / Lavandula angustifolia / Mentha aquatica / Mentha longifolia / Lycopodium europaeus / **Origanum vulgare** / Thymus pulegioides / Melissa officinalis / Clinopodium vulgare / **Calamintha menthifolia** / **Acinosis arvensis** / **Glechoma hederacea** / Ballota nigra / Stachys recta / Stachys sylvatica / Lamium maculatum / Lamium amplexicaule / **Lamium purpureum** / Lamium galeobdolon montanum / Lamium galeobdolon argentatum / Galeopsis angustifolia / Galeopsis tetrahit / **Prunella vulgaris** / **Salvia pratensis** / Salvia verticillata / Hippuris vulgaris / Callitriche palustris / Plantago arenaria / **Plantago media** / **Plantago major** / Plantago intermedia / **Plantago lanceolata** / Plantago lanceolata sphaerostachya / **Buddleja davidii** / **Fraxinus excelsior** / Ligustrum vulgare / Verbascum blattaria / **Verbascum nigrum** / **Verbascum lychnitis** / Verbascum thapsus / Verbascum densiflorum / **Verbascum phlomoides** / Scrophularia canina / **Scrophularia nodosa** / **Chaenorhium minus** / Kickxia spuria / Kickxia elatine / **Linaria vulgaris** / Linaria repens / Antirrhinum majus / Veronica serpyllifolia / **Veronica officinalis** / Veronica chamaedrys / Veronica teucrum / Veronica anagallis-aquatica / **Veronica arvensis** / **Veronica hederifolia** / Veronica hederifolia lucorum / **Veronica persica** / Veronica filiformis / **Veronica polita** / Paulownia tomentosa / Catalpa bignonioides / Campanula glomerata / Campanula rotundifolia / Campanula poscharskyana / Legousia speculum-veneris / **Phyteula spicatum** / Sherardia arvensis / Asperula cynanchica / Galium odoratum / **Galium aparine** / **Galium album** / Lonicera periclymenum / Lonicera xylosteum / Lonicera nitida / Symphoricarpos albus / Symphoricarpos x chenaultii / Viburnum lantana / Viburnum opulus / **Sambucus nigra** / **Sambucus racemosa** / Adoxa moschatellina / Valerianella locusta / Valerianella carinata / Valeriana officinalis / Valerianaffinialis ssp. tenuifolia / Centranthus ruber / Dipsacus fullonum / Knautia arvensis / Scabiosa columbaria / Eupatorium cannabinum / Solidago virgaurea / **Solidago canadensis** / Solidago gigantea / Bellis perennis / Aster amellus / Aster nobelii / **Erigeron acer** / **Erigeron annuus s.l.** / Erigeron annuus ssp. septentrionalis / Erigeron annuus ssp. strigosus / Erigeron karvinskianus / **Conyza canadensis** / **Inula conyza** / Bidens cernua / Bidens tripartita / Bidens frondosa / Helianthus annuus / Helianthus tuberosus / Iva xanthifolia / Ambrosia artemisiifolia / Xanthium strumarium / Galinsoga parviflora / Galinsoga ciliata / Anthemis tinctoria / **Achillea millefolium** / Matricaria recutita / Matricaria discoidea / **Tripleurospermum perforatum** / **Leucanthemum ircutianum** / Tanacetum vulgare / **Artemisia vulgaris** / Artemisia verlotiorum / **Tussilago farfara** / Petasites hybridus / Senecio inaequidens / **Senecio erucifolius** / Senecio jacobaea / **Senecio vulgaris** / **Senecio viscosus** / Calendula officinalis / Arctium lappa / Arctium minus / Carduus nutans / **Carduus crispus** / **Cirsium vulgare** / **Cirsium arvense** / Cirsium palustre / Centaurea scabiosa / Centaurea stoebe / Centaurea jacea s.l. / Centaurea jacea s.str. / Centaurea jacea ssp. angustifolia / Carlina vulgaris / Echinops sphaerocephalus / **Cichorium intybus** / **Tragopogon dubius** / **Hypochaeris radicata** / Leontodon autumnalis / Leontodon hispidus s.l. / **Picris hieracioides** / **Sonchus oleraceus** / Sonchus asper / Mycelis muralis / **Lactuca serriola** / Lapsana communis / **Taraxacum officinale** / Taraxacum laevigatum / Chondrilla juncea / Crepis biennis / Crepis capillaris / **Crepis foetida** / **Crepis taraxacifolia** / **Crepis setosa** / Hieracium pilosella / **Hieracium pilosoides** / Hieracium murorum / Hieracium maculatum / Hieracium lachenalii / Hieracium sabaudum / Butomus umbellatus / Alisma plantago-aquatica / Sagittaria sagittifolia / Stratiotes aloides / Elodea canadensis / **Arum maculatum** / Lemna minor / Juncus inflexus / **Juncus effusus** / Juncus tenuis / Juncus bufonius / Juncus articulatus / **Luzula pilosa** / Luzula luzuloides / Luzula sylvatica / Luzula campestris / Luzula multiflora / Scirpus sylvaticus / Schoenoplectus lacustris / Carex muricata aggr. / Carex spicata / Carex muricata ssp. lamprocarpa / Carex polyphylla / Carex paniculata / Carex remota / Carex umbrosa / Carex caryophyllea / Carex pendula / Carex flacca / Carex sylvatica / Carex pseudocyperus / Carex hirta / Carex vesicaria / Carex acutiformis / Festuca gigantea / Festuca pratensis / Festuca arundinacea / **Festuca rubra s. str.** / **Festuca brevipila** / **Festuca ovina aggr.** / Festuca tenuifolia / Lolium multiflorum / **Lolium perenne** / Vulpia myuros / **Poa annua** / **Poa compressa** / **Poa trivialis** / **Poa pratensis** / Poa angustifolia / Poa nemoralis / **Dactylis glomerata** / Dactylis polygama / Cynosurus cristatus / Glyceria notata / **Bromus sterilis** / **Bromus tectorum** / Bromus erectus / Bromus inermis / Bromus hordeaceus / Bromus catharticus / Brachypodium pinnatum / **Brachypodium sylvaticum** / Elymus repens / **Triticum aestivum** / **Secale cereale** / Hordeum murinum / Avena fatua / Avena sativa / **Arrhenatherum elatius** / Trisetum flavescens / Deschampsia caespitosa / Anthoxanthum odoratum / **Holcus lanatus** / Agrostis capillaris / Agrostis stolonifera s.l. / Apera spica-venti / Calamagrostis epigejos / Phleum pratense / Alopecurus myosuroides / Alopecurus pratensis / Alopecurus aequalis / Phalaris arundinacea / Milium effusum / Phragmites australis / Eragrostis pilosa / **Eragrostis minor** / Eragrostis ciliaris / Eleusine indica / Cynodon dactylon / Panicum miliaceum / Panicum capillare / Panicum dichotomiflorum / Echinochloa crus-galli / Echinochloa colona / Digitaria sanguinalis / Setaria verticillata / Setaria verticilliformis / **Setaria pumila** / **Setaria viridis s.l.** / Setaria italica / Setaria faberi / Sorghum halepense / Sorghum bicolor s.l. / Bothriochloa ischaemum / Sparganium erectum / Typha angustifolia / Typha latifolia / Pontederia cordata / Gagea lutea / Tulipa gesneriana / Ornithogalum umbellatum / Scilla bifolia / Scilla siberica / Chionodoxa sp. / Muscari racemosum / Muscari armeniacum / Allium vineale / Allium schoenoprasum / **Allium ursinum** / **Polygonatum multiflorum** / Paris quadrifolia / Asparagus officinalis / Galanthus nivalis / Narcissus pseudonarcissus / Iris pseudacorus / Iris sibirica / Crocus sp. / Listera ovata / Platanthera chlorantha / Ophrys apifera / Orchis militaris / Himantoglossum hircinum / Anacamptis pyramidalis

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## HARDWALD. PERCEIVERS

Equisetum arvense / Dryopteris filix-mas / Dryopteris dilatata / Dryopteris carthusiana / Athyrium filix-femina / **Abies alba** / Picea abies / Larix decidua / **Pinus strobus** / Pinus nigra / Pinus sylvestris / Asarum europaeum / Aquilegia vulgaris / Caltha palustris / Nigella damascena / Consolida ajacis / **Anemone nemorosa** / Anemone blanda / **Clematis vitalba** / **Ranunculus ficaria** / **Ranunculus bifloris** / **Ranunculus macrotis** / Ranunculus acer / Ranunculus bulbosus / **Ranunculus repens** / Berberis vulgaris / Berberis thunbergii / Mahonia aquifolium / Chelidonium majus / **Papaver rhoeas** / Corydalis cava / Corydalis solida / Fumaria officinalis / Ulmus minor / Ulmus minor suberosa / **Ulmus glabra** / Humulus lupulus / Cannabis sativa / Ficus carica / Urtica urens / **Urtica dioica** / Parietaria officinalis / **Juglans regia** / Juglans nigra / **Fagus sylvatica** / **Quercus robur** / Quercus petraea / Quercus rubra / Alnus glutinosa / Alnus incana / **Betula pendula** / **Carpinus betulus** / Chenopodium botrys / Chenopodium polyspermum / **Chenopodium album** / Chenopodium album borbasii / Chenopodium glaucum / Chenopodium rubrum / Atriplex patula / Atriplex prostrata / Bassia scoparia / Salsola ruthenica / Polygonum majus / Amaranthus quitensis / Amaranthus powellii / Amaranthus bouchonii / Amaranthus retroflexus / **Amaranthus albus** / Amaranthus deflexus / Portulaca oleracea / **Herniaria glabra** / Herniaria hirsuta / Corrigiola litoralis / Spargularia rubra / Minuartia hybrida / **Sagina procumbens** / **Arenaria serpyllifolia** / Arenaria leptoclados / **Moehringia trinervia** / **Stellaria media** / Stellaria pallida / **Stellaria holostea** / Stellaria graminea / Myosoton aquaticum / Cerastium arvense / Cerastium tomentosum / **Cerastium glomeratum** / Cerastium brachypetalum / **Cerastium fontanum** / Cerastium semidecandrum / Cerastium pumilum pallens / Saponaria officinalis / **Petrrohagia prolifera** / Dianthus armeria / Dianthus carthusianorum / Silene noctiflora / **Silene pratensis** / **Silene vulgaris** / Silene gallica / Lychnis coronaria / Rumex acetosella / **Rumex acetosa** / **Rumex obtusifolius** / Rumex sanguineus / **Rumex crispus** / **Fallopia convolvulus** / Reynoutria japonica / **Polygonum aviculare** / Polygonum calcatum / Polygonum amphibium / **Polygonum persicaria** / Polygonum lapathifolium / Polygonum hydropiper / **Polygonum mite** / Hypericum calycinum / Hypericum humifusum / **Hypericum hirsutum** / Hypericum montanum / **Hypericum perforatum** / Hypericum perforatum angustifolium / Hypericum tetrapterum / Tilia cordata / **Tilia platyphyllos** / Abutilon theophrasti / Alcea rosea / Malva alcea / Malva moschata / Malva sylvestris / Malva sylvestris mauritiana / **Malva neglecta** / Malva pusilla / Anoda cristata / Helianthemum nummularium obscurum / **Viola arvensis** / Viola alba / Viola odorata / **Viola reichenbachiana** / Viola riviniana / Viola x dubia / Bryonia dioica / Populus tremula / Populus alba / **Populus nigra** / Populus canadensis / **Salix alba s.str.** / Salix elaeagnos / **Salix purpurea** / **Salix caprea** / Salix cinerea / Sisymbrium altissimum / Sisymbrium officinale / Sisymbrium orientale / Descurainia sophia / Alliaria petiolata / **Arabidopsis thaliana** / Isatis tinctoria / Bunias orientalis / Erysimum cheiranthoides / **Barbarea vulgaris** / Rorippa palustris / **Cardamine pratensis** / Cardamine impatiens / Cardamine flexuosa / **Cardamine hirsuta** / Turritis glabra / Arabis hirsuta / Alyssum alyssoides / Lobularia maritima / Berteroa incana / Draba muralis / **Erophila verna** / Erophila praecox / **Capsella bursa-pastoris** / Thlaspi arvense / Thlaspi perfoliatum / Iberis umbellata / Lepidium campestre / Lepidium ruderalis / **Lepidium virginicum** / Cardaria draba / Coronopus didymus / Diplotaxis tenuifolia / Brassica rapa / Brassica napus / Brassica oleracea / Brassica juncea / Sinapis arvensis / Sinapis alba / Eruca sativa / Erucastrum nasturtiifolium / Erucastrum gallicum / Hirschfeldia incana / Rapistrum rugosum / Rapsitrum rugosum orientale / Raphanus raphanistrum / Raphanus raphanistrum (gelblbl. Formen) / Reseda luteola / **Reseda lutea** / Lysimachia nummularia / Lysimachia vulgaris / Lysimachia punctata / **Anagallis arvensis** / Anagallis foemina / Primula acaulis / Primula elatior / Philadelphus coronarius / **Ribes uva-crispa** / Sedum spurium / Sedum acre / Sedum sexangulare / **Sedum album** / **Saxifraga tripartita** / Filipendula ulmaria / Rubus idaeus / **Rubus caesius** / **Rubus fruticosus** / Rubus laciniatus / Rosa pimpinellifolia / Rosa arvensis / Rosa rubiginosa / Rosa corymbifera / Rosa canina / Agrimonia eupatoria / **Sanguisorba minor s.str.** / Geum urbanum / **Potentilla sterilis** / Potentilla anserina / Potentilla norvegica / **Potentilla reptans** / Potentilla recta / Potentilla intermedia / **Potentilla neumanniana** / **Fragaria vesca** / Aphanes arvensis / Pyrus pyraster / Sorbus aucuparia / Cotoneaster horizontalis / Cotoneaster divaricatus / Cotoneaster dammeri / Pyracantha coccinea / **Crataegus laevigata** / **Crataegus monogyna** / Crataegus x macrocarpa / Prunus spinosa s.str. / **Prunus avium** / Prunus mahaleb / Prunus padus / Prunus laurocerasus / Cassia obtusifolia / Genista tinctoria / **Robinia pseudoacacia** / Astragalus glycyphyllos / Lotus tenuis / **Lotus corniculatus** / Coronilla varia / Hippocrepis comosa / **Onobrychis vicifolia** / Ononis repens / Medicago falcata / **Medicago sativa** / Medicago x varia / **Medicago lupulina** / Medicago minima / **Melilotus albus** / Melilotus altissimus / **Melilotus officinalis** / **Trifolium pratense** / **Trifolium repens** / Trifolium hybridum / **Trifolium campestre** / Trifolium dubium / Vicia hirsuta / Vicia Trasperma / Vicia cracca / Vicia villosa varia / Vicia sepium / Vicia angustifolia s.l. / Lathyrus pratensis / Lathyrus sylvestris / Lathyrus vernus / Glycine max / Hippophae rhamnoides / Myriophyllum spicatum / Lythrum salicaria / Epilobium angustifolium / **Epilobium dodonaei** / **Epilobium hirsutum** / **Epilobium parviflorum** / Epilobium montanum / Epilobium roseum / **Epilobium tetragonum** / Oenothera erythrosepala / Oenothera issleri / **Oenothera parviflora** / Circaea lutetiana / **Cornus sanguinea** / Cornus alba / Cornus mas / **Euonymus europaeus** / **Ilex aquifolium** / Mercurialis annua / Mercurialis perennis / Euphorbia humifusa / Euphorbia helioscopia / Euphorbia platyphyllos / **Euphorbia dulcis** / Euphorbia verrucosa / **Euphorbia amygdaloides** / **Euphorbia cyparissias** / Euphorbia peplus / Euphorbia exigua / **Vitis vinifera** / Parthenocissus inserta / Linum catharticum / Linum usitatissimum / Aesculus hippocastanum / Acer negundo / Acer pseudoplatanus / Acer platanoides / **Acer campestre** / Rhus typhina / Ailanthus altissima / **Oxalis acetosella** / Oxalis fontana / **Geranium robertianum** / Geranium purpureum / **Geranium rotundifolium** / Geranium sanguineum / Geranium columbinum / Geranium dissectum / Geranium molle / Geranium pusillum / **Geranium pyrenaicum** / **Erodium cicutarium** / Impatiens glandulifera / **Impatiens parviflora** / Hedera helix / Chaerophyllum temulum / Torilis japonica / Blaupeurum falcatum / Carum carvi / Aegopodium podagraria / **Aethusa cynapium** / Foeniculum vulgare / **Pastinaca sativa** / Heracleum sphondylium / **Daucus carota** / Centaurea erythraea / Vinca minor / Lycium barbarum / Solanum dulcamara / **Solanum nigrum** / Solanum nigrum ssp. Schultesii / Solanum carolinense / Lycopersicon esculentum / Datura stramonium / **Convolvulus arvensis** / Calystegia sepium / Ipomoea hederacea / Ipomoea lacunosa / Nymphaeoides peltata / **Echium vulgare** / Pulmonaria obscura / Symphytum officinale / Anchusa arvensis / Myosotis ramosissima / Myosotis arvensis / **Verbena officinalis** / Teucrium scorodonia / Teucrium chamaedrys / Ajuga chamaepitys / Ajuga reptans / Lavandula angustifolia / Mentha aquatica / Mentha longifolia / Lycopodium europaeus / **Origanum vulgare** / Thymus pulegioides / Melissa officinalis / Clinopodium vulgare / **Calamintha menthifolia** / **Acinos arvensis** / **Glechoma hederacea** / Ballota nigra / Stachys recta / Stachys sylvatica / Lamium maculatum / Lamium amplexicaule / **Lamium purpureum** / Lamium galeobdolon montanum / Lamium galeobdolon argentatum / Galeopsis angustifolia / Galeopsis tetrahit / **Prunella vulgaris** / **Salvia pratensis** / Salvia verticillata / Hippuris vulgaris / Callitriche palustris / Plantago arenaria / **Plantago media** / **Plantago major** / Plantago intermedia / **Plantago lanceolata** / Plantago lanceolata sphaerostachya / **Buddleja davidii** / **Fraxinus excelsior** / Ligustrum vulgare / Verbascum blattaria / **Verbascum nigrum** / **Verbascum lychnitis** / Verbascum thapsus / Verbascum densiflorum / **Verbascum phlomoides** / Scrophularia canina / **Scrophularia nodosa** / **Chaenorhynchus minus** / Kickxia spuria / Kickxia elatine / **Linaria vulgaris** / Linaria repens / Antirrhinum majus / Veronica serpyllifolia / **Veronica officinalis** / Veronica chamaedrys / Veronica teucrium / Veronica beccabunga / Veronica anagallis-aquatica / **Veronica arvensis** / **Veronica hederifolia** / Veronica hederifolia lucorum / **Veronica persica** / Veronica filiformis / **Veronica polita** / Paulownia tomentosa / Catalpa bignonioides / Campanula glomerata / Campanula rotundifolia / Campanula poscharskyana / Legousia speculum-veneris / **Phyteula spicatum** / Sherardia arvensis / Asperula cynanchica / Galium odoratum / **Galium aparine** / **Galium album** / Lonicera periclymenum / Lonicera xylosteum / Lonicera nitida / Symphoricarpos albus / Symphoricarpos x chenaultii / Viburnum lantana / Viburnum opulus / **Sambucus nigra** / Sambucus racemosa / Adoxa moschatellina / Valerianella locusta / Valerianella carinata / Valeriana officinalis / Valerianaaffinalis ssp. tenuifolia / Centranthus ruber / Dipsacus fullonum / Knautia arvensis / Scabiosa columbaria / Eupatorium cannabinum / Solidago virgaurea / **Solidago canadensis** / Solidago gigantea / Bellis perennis / Aster amellus / Aster novae-belgii / **Erigeron acer** / **Erigeron annuus s.l.** / Erigeron annuus ssp. septentrionalis / Erigeron annuus ssp. strigosus / Erigeron karvinskianus / **Conyza canadensis** / **Inula conyza** / Bidens cernua / Bidens tripartita / Bidens frondosa / Helianthus annuus / Helianthus tuberosus / Iva xanthifolia / Ambrosia artemisiifolia / Xanthium strumarium / Galinsoga parviflora / Galinsoga ciliata / Anthemis tinctoria / **Achillea millefolium** / Matricaria recutita / Matricaria discoidea / **Tripleurospermum perforatum** / **Leucanthemum ircutianum** / Tanacetum vulgare / **Artemisia vulgaris** / Artemisia verlotiorum / **Tussilago farfara** / Petasites hybridus / Senecio inaequidens / **Senecio erucifolius** / Senecio jacobaea / **Senecio vulgaris** / **Senecio viscosus** / Calendula officinalis / Arctium lappa / Arctium minus / Carduus nutans / **Carduus crispus** / **Cirsium vulgare** / **Cirsium arvense** / Cirsium palustre / Centaurea scabiosa / Centaurea stoebe / Centaurea jacea s.l. / Centaurea jacea s.str. / Centaurea jacea ssp. angustifolia / Carlina vulgaris / Echinops sphaerocephalus / **Cichorium intybus** / **Tragopogon dubius** / **Hypochaeris radicata** / Leontodon autumnalis / Leontodon hispidus s.l. / **Picris hieracioides** / **Sonchus oleraceus** / Sonchus asper / Mycelis muralis / **Lactuca serriola** / Lapsana communis / **Taraxacum officinale** / Taraxacum laevigatum / Chondrilla juncea / Crepis biennis / Crepis capillaris / **Crepis foetida** / **Crepis taraxacifolia** / **Crepis setosa** / Hieracium pilosella / **Hieracium pilosoides** / Hieracium murorum / Hieracium maculatum / Hieracium lachenalii / Hieracium sabaudum / Butomus umbellatus / Alisma plantago-aquatica / Sagittaria sagittifolia / Stratiotes aloides / Elodea canadensis / **Arum maculatum** / Lemna minor / Juncus inflexus / **Juncus effusus** / Juncus tenuis / Juncus bufonius / Juncus articulatus / **Luzula pilosa** / Luzula luzuloides / Luzula sylvatica / Luzula campestris / Luzula multiflora / Scirpus sylvaticus / Schoenoplectus lacustris / Carex muricata aggr. / Carex spicata / Carex muricata ssp. lamprocarpa / Carex polyphylla / Carex paniculata / Carex remota / Carex umbrosa / Carex caryophyllea / Carex pendula / Carex flacca / Carex sylvatica / Carex pseudocyperus / Carex hirta / Carex vesicaria / Carex acutiformis / Festuca gigantea / Festuca pratensis / Festuca arundinacea / **Festuca rubra s. str.** / **Festuca brevipila** / **Festuca ovina aggr.** / Festuca tenuifolia / Lolium multiflorum / **Lolium perenne** / Vulpia myuros / **Poa annua** / **Poa compressa** / **Poa trivialis** / **Poa pratensis** / Poa angustifolia / Poa nemoralis / **Dactylis glomerata** / Dactylis polygama / Cynosurus cristatus / Glyceria notata / **Bromus sterilis** / **Bromus tectorum** / Bromus erectus / Bromus inermis / Bromus hordeaceus / Bromus catharticus / Brachypodium pinnatum / **Brachypodium sylvaticum** / Elymus repens / Triticum aestivum / Secale cereale / Hordeum murinum / Avena fatua / Avena sativa / **Arrhenatherum elatius** / Trisetum flavescens / Deschampsia caespitosa / Anthoxanthum odoratum / **Holcus lanatus** / Agrostis capillaris / Agrostis stolonifera s.l. / Apera spica-venti / Calamagrostis epigejos / Phleum pratense / Alopecurus myosuroides / Alopecurus pratensis / Alopecurus aequalis / Phalaris arundinacea / Milium effusum / Phragmites australis / Eragrostis pilosa / **Eragrostis minor** / Eragrostis ciliaris / Eleusine indica / Cynodon dactylon / Panicum miliaceum / Panicum capillare / Panicum dichotomiflorum / Echinochloa crus-galli / Echinochloa colona / Digitaria sanguinalis / Setaria verticillata / Setaria verticilliformis / **Setaria pumilla** / **Setaria viridis s.l.** / Setaria italica / Setaria faberi / Sorghum halepense / Sorghum bicolor s.l. / Bothriochloa ischaemum / Sparganium erectum / Typha angustifolia / Typha latifolia / Pontederia cordata / Gagea lutea / Tulipa gesneriana / Ornithogalum umbellatum / Scilla bifolia / Scilla siberica / Chionodoxa sp. / Muscari racemosum / Muscari armeniacum / Allium vineale / Allium schoenoprasum / **Allium ursinum** / **Polygonatum multiflorum** / Paris quadrifolia / Asparagus officinalis / **Galanthus nivalis** / **Narcissus pseudonarcissus** / Iris pseudacorus / Iris sibirica / Crocus sp. / Listera ovata / Platanthera chlorantha / Ophrys apifera / Orchis militaris / Himantoglossum hircinum / Anacamptis pyramidalis

**DRAFT**  
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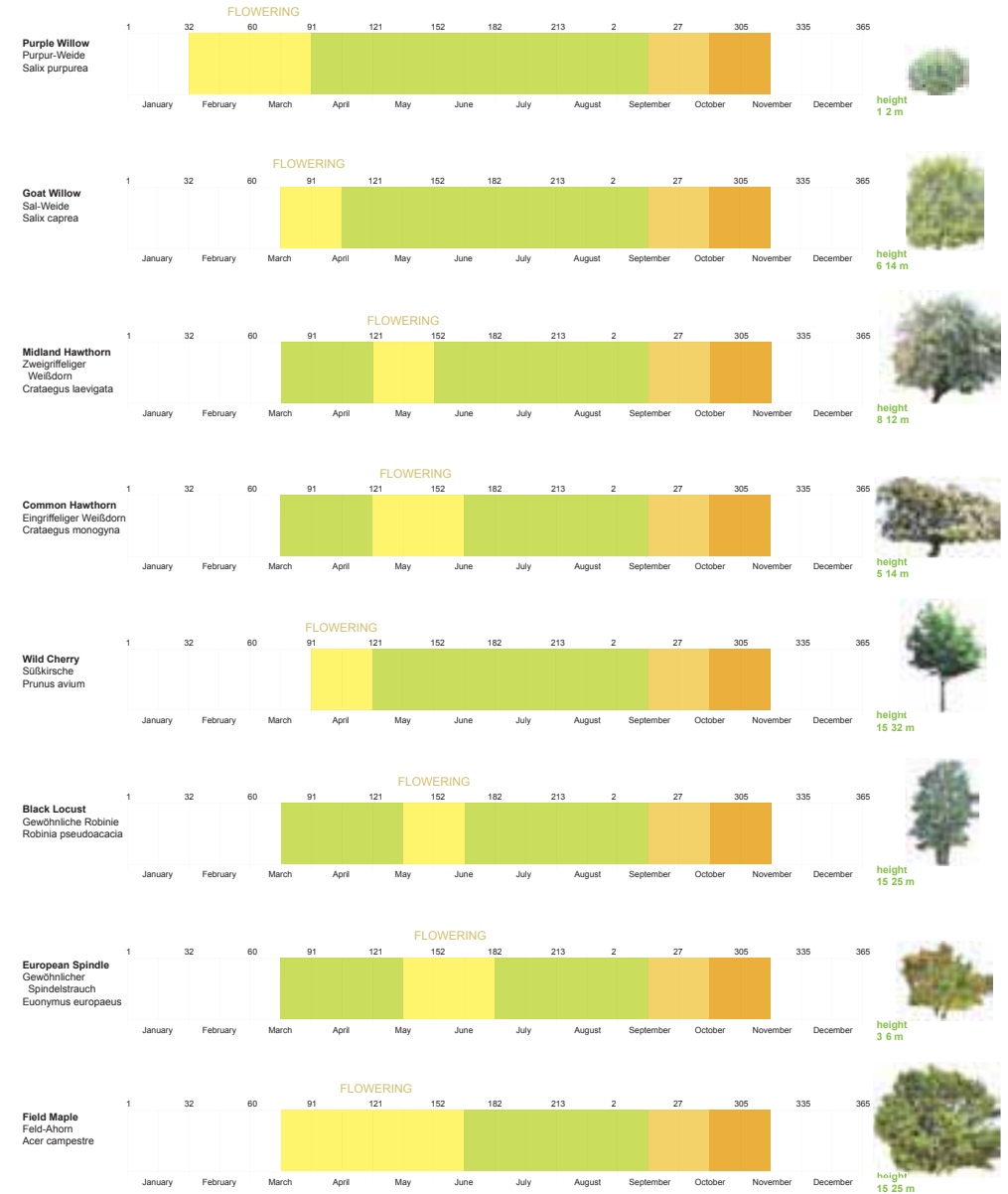
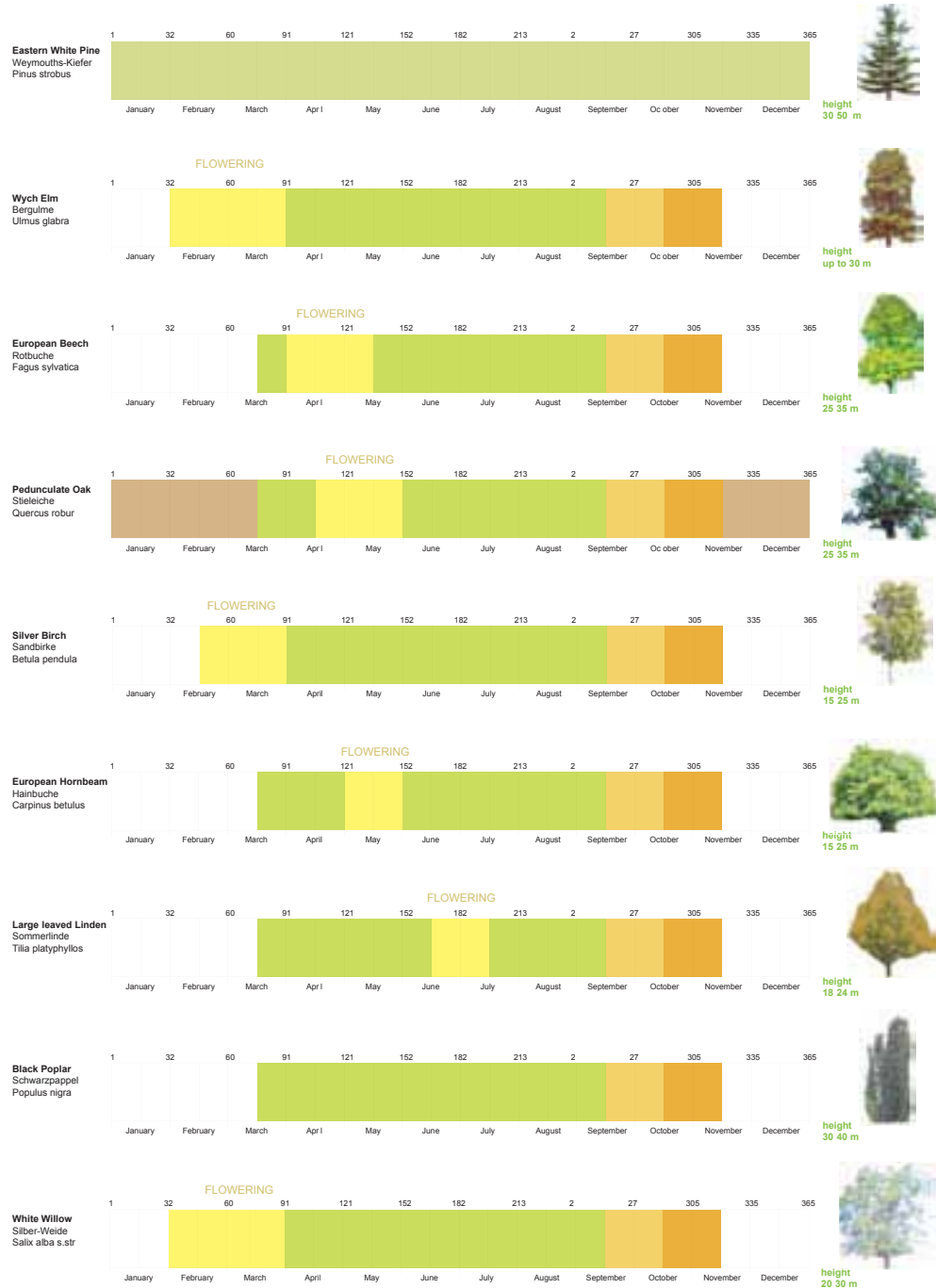
## HARDWALD. SPECIFICITY

Equisetum arvense / Dryopteris filix-mas / Dryopteris dilatata / Dryopteris carthusiana / Athyrium filix-femina / Abies alba / Picea abies / Larix decidua / **Pinus strobus** / Pinus nigra / Pinus sylvestris / Asarum europaeum / Aquilegia vulgaris / Caltha palustris / Nigella damascena / Consolida ajacis / **Anemone nemorosa** / Anemone blanda / **Clematis vitalba** / **Ranunculus ficaria** / **Ranunculus biformis** / **Ranunculus macrotis** / Ranunculus acer / Ranunculus bulbosus / **Ranunculus repens** / Berberis vulgaris / Berberis thunbergii / Mahonia aquifolium / Chelidonium majus / **Papaver rhoeas** / Corydalis cava / Corydalis solida / Fumaria officinalis / Ulmus minor / Ulmus minor suberosa / **Ulmus glabra** / Humulus lupulus / Cannabis sativa / Ficus carica / Urtica urens / **Urtica dioica** / Parietaria officinalis / Juglans regia / Juglans nigra / **Fagus sylvatica** / **Quercus robur** / Quercus petraea / Quercus rubra / Alnus glutinosa / Alnus incana / **Betula pendula** / **Carpinus betulus** / Chenopodium botrys / Chenopodium polyspermum / **Chenopodium album** / Chenopodium album borbasii / Chenopodium glaucum / Chenopodium rubrum / Atriplex patula / Atriplex prostrata / Bassia scoparia / Salsola ruthenica / Polycnemum majus / Amaranthus quitensis / Amaranthus powellii / Amaranthus bouchonii / Amaranthus retroflexus / **Amaranthus albus** / Amaranthus deflexus / Portulaca oleracea / **Herniaria glabra** / Herniaria hirsuta / Corrigoila litoralis / Spargularia rubra / Minuartia hybrida / **Sagina procumbens** / **Arenaria serpyllifolia** / Arenaria leptoclados / **Moehringia trinervia** / **Stellaria media** / Stellaria pallida / **Stellaria holostea** / Stellaria graminea / Myosoton aquaticum / Cerastium arvense / Cerastium tomentosum / **Cerastium glomeratum** / Cerastium brachypetalum / **Cerastium fontanum** / Cerastium semidecandrum / Cerastium pumilum fallens / Saponaria officinalis / **Petrorhagia prolifera** / Dianthus armeria / Dianthus carthusianorum / Silene noctiflora / **Silene pratensis** / **Silene vulgaris** / Silene gallica / Lychnis coronaria / Rumex acetosella / **Rumex acetosa** / **Rumex obtusifolius** / Rumex sanguineus / **Rumex crispus** / **Fallopia convolvulus** / Reynoutria japonica / **Polygonum aviculare** / Polygonum calcatum / Polygonum amphibium / **Polygonum persicaria** / Polygonum lapathifolium / Polygonum hydropiper / **Polygonum mite** / Hypericum calycinum / Hypericum humifusum / **Hypericum hirsutum** / Hypericum montanum / **Hypericum perforatum** / Hypericum perforatum angustifolium / Hypericum tetrapterum / Tiilia cordata / **Tiilia platyphyllos** / Abutilon theophrasti / Alcea rosea / Malva alcea / Malva moschata / Malva sylvestris / Malva sylvestris mauritiana / **Malva neglecta** / Malva pusilla / Anoda cristata / Helianthemum nummularium obscurum / **Viola arvensis** / Viola alba / Viola odorata / **Viola reichenbachiana** / Viola riviniana / Viola x dubia / Bryonia dioica / Populus tremula / Populus alba / **Populus nigra** / Populus canadensis / **Salix alba s.str.** / Salix elaeagnos / **Salix purpurea** / **Salix caprea** / Salix cinerea / Sisymbrium altissimum / Sisymbrium officinale / Sisymbrium orientale / Descurainia sophia / Alliaria petiolata / **Arabidopsis thaliana** / Isatis tinctoria / Bunias orientalis / Erysimum cheiranthoides / **Barbarea vulgaris** / Rorippa palustris / **Cardamine pratensis** / Cardamine impatiens / Cardamine flexuosa / **Cardamine hirsuta** / Turritis glabra / Arabis hirsuta / Alyssum alyssoides / Lobularia maritima / Berteroa incana / Draba muralis / **Erophila verna** / Erophila praecox / **Capsella bursa-pastoris** / Thlaspi arvense / Thlaspi perfoliatum / Iberis umbellata / Lepidium campestre / Lepidium rudemale / **Lepidium virginicum** / Cardaria draba / Coronopus didymus / Diplotaxis tenuifolia / Brassica rapa / Brassica napus / Brassica oleracea / Brassica juncea / Sinapis alba / Eruca sativa / Erucastrum nasturtiifolium / Erucastrum gallicum / Hirschfeldia incana / Rapistrum rugosum / Rapsitrum rugosum orientale / Raphanus raphanistrum / Raphanus raphanistrum (gelbl. Formen) / Reseda luteola / **Reseda lutea** / Lysimachia nummularia / Lysimachia vulgaris / Lysimachia punctata / **Anagallis arvensis** / Anagallis foemina / Primula acaulis / Primula elatior / Philadelphus coronarius / **Ribes uva-crispa** / Sedum spurium / Sedum acre / Sedum sexangulare / **Sedum album** / **Saxifraga tridactylites** / Filipendula ulmaria / Rubus idaeus / **Rubus caesius** / **Rubus fruticosus** / Rubus laciniatus / Rosa pimpinellifolia / Rosa arvensis / Rosa rubiginosa / Rosa corymbifera / Rosa canina / Agrimonia eupatoria / **Sanguisorba minor s.str.** / Geum urbanum / **Potentilla sterilis** / Potentilla anserina / Potentilla norvegica / **Potentilla reptans** / Potentilla reula / Potentilla intermedia / **Potentilla neumanniana** / **Fragaria vesca** / Aphanes arvensis / Pyrus pyraster / Sorbus aucuparia / Cotoneaster horizontalis / Cotoneaster divaricatus / Cotoneaster dammeri / Pyracantha coccinea / **Crataegus laevigata** / **Crataegus monogyna** / Crataegus x macrocarpa / Prunus spinosa s.str. / **Prunus avium** / Prunus mahaleb / Prunus padus / Prunus laurocerasus / Cassia obtusifolia / Genista tinctoria / **Robinia pseudoacacia** / Astragalus glycyphyllos / Lotus tenuis / **Lotus corniculatus** / Coronilla varia / Hippocrepis comosa / **Onobrychis viciifolia** / Ononis repens / Medicago falcata / **Medicago sativa** / Medicago x varia / **Medicago lupulina** / Medicago minima / **Melilotus albus** / Melilotus altissimus / **Melilotus officinalis** / **Trifolium pratense** / **Trifolium repens** / Trifolium hybridum / **Trifolium campestre** / Trifolium dubium / Vicia hirsuta / Vicia Tetrasperma / Vicia cracca / Vicia villosa varia / Vicia sepium / Vicia angustifolia s.l. / Lathyrus pratensis / Lathyrus sylvestris / Lathyrus vernus / Glycine max / Hippophae rhamnoides / Myriophyllum spicatum / Lythrum salicaria / Epilobium angustifolium / **Epilobium dodonaei** / **Epilobium hirsutum** / **Epilobium parviflorum** / Epilobium montanum / Epilobium roseum / **Epilobium tetragonum** / Oenothera erythrosepala / Oenothera issleri / **Oenothera parviflora** / Circaea lutetiana / **Cornus sanguinea** / Cornus alba / Cornus mas / **Euonymus europaeus** / Ilex aquifolium / Mercurialis annua / Mercurialis perennis / Euphorbia humifusa / Euphorbia hiescopia / Euphorbia platyphyllos / **Euphorbia dulcis** / Euphorbia verrucosa / **Euphorbia amygdaloides** / **Euphorbia cyparissias** / Euphorbia peplus / Euphorbia exigua / Vitis vinifera / Parthenocissus inserta / Linum catharticum / Linum usitatissimum / Aesculus hippocastanum / Acer negundo / Acer pseudoplatanus / Acer platanoides / **Acer campestre** / Rhus typhina / Ailanthus altissima / **Oxalis acetosella** / Oxalis fontana / **Geranium robertianum** / Geranium purpureum / **Geranium rotundifolium** / Geranium sanguineum / Geranium columbinum / Geranium dissectum / Geranium molle / Geranium pusillum / **Geranium pyrenaicum** / **Erodium cicutarium** / Impatiens glandulifera / **Impatiens parviflora** / Hedera helix / Chaerophyllum temulum / Torilis japonica / Blupeurum falcatum / Carum carvi / Aegopodium podagraria / **Aethusa cynapium** / Foeniculum vulgare / **Pastinaca sativa** / Heracleum sphondylium / **Daucus carota** / Centaurea erythraea / Vinca minor / Lycium barbarum / Solanum dulcamara / **Solanum nigrum** / Solanum nigrum ssp. Schultesii / Solanum carolinense / Lycopersicon esculentum / Datura stramonium / **Convolvulus arvensis** / Calystegia sepium / Ipomoea hederacea / Ipomoea lacunosa / Nymphaeoides peltata / **Echium vulgare** / Pulmonaria obscura / Symphytum officinale / Anchusa arvensis / Myosotis ramosissima / Myosotis arvensis / **Verbena officinalis** / Teucrium scorodonia / Teucrium chamaedrys / Ajuga chamaepitys / Ajuga reptans / Lavandula angustifolia / Mentha aquatica / Mentha longifolia / Lycopodium europaeus / **Origanum vulgare** / Thymus pulegiodes / Melissa officinalis / Clinopodium vulgare / **Calamintha menthifolia** / **Acinosis arvensis** / **Glechoma hederacea** / Ballota nigra / Stachys recta / Stachys sylvatica / Lamium maculatum / Lamium amplexicaule / **Lamium purpureum** / Lamium galeobdolon montanum / Lamium galeobdolon argentatum / Galeopsis angustifolia / Galeopsis tetrahit / **Prunella vulgaris** / **Salvia pratensis** / Salvia verticillata / Hippuris vulgaris / Callitriche palustris / Plantago arenaria / **Plantago media** / **Plantago major** / Plantago intermedia / **Plantago lanceolata** / Plantago lanceolata sphaerostachya / **Buddleja davidii** / **Fraxinus excelsior** / Ligustrum vulgare / Verbascum blattaria / **Verbascum nigrum** / **Verbascum lychnitis** / Verbascum thapsus / Verbascum densiflorum / **Verbascum phlomoides** / Scrophularia canina / **Scrophularia nodosa** / **Chaenorhium minus** / Kickxia spuria / Kickxia elatine / **Linaria vulgaris** / Linaria repens / Antirrhinum majus / Veronica serpyllifolia / **Veronica officinalis** / Veronica chamaedrys / Veronica teucrum / Veronica anagalidis-aquatica / **Veronica arvensis** / **Veronica hederifolia** / Veronica hederifolia lucorum / **Veronica persica** / Veronica filiformis / **Veronica polita** / Paulownia tomentosa / Catalpa bignonioides / Campanula glomerata / Campanula rotundifolia / Campanula poscharskyana / Legousia speculum-veneris / **Phyteula spicatum** / Sherardia arvensis / Asperula cynanchica / Galium odoratum / **Galium aparine** / **Galium album** / Lonicera periclymenum / Lonicera xylosteum / Lonicera nitida / Symphoricarpos albus / Symphoricarpos x chenaultii / Viburnum lantana / Viburnum opulus / **Sambucus nigra** / Sambucus racemosa / Adoxa moschatellina / Valeriana locusta / Valeriana carinata / Valeriana officinalis / Valerianaaffinialis ssp. tenuifolia / Centranthus ruber / Dipsacus fullonum / Knautia arvensis / Scabiosa columbaria / Eupatorium cannabinum / Solidago virgaurea / **Solidago canadensis** / Solidago gigantea / Bellis perennis / Aster amellus / Aster novibelgii / **Erigeron acer** / **Erigeron annuus s.l.** / Erigeron annuus ssp. septentrionalis / Erigeron annuus ssp. strigosus / Erigeron karvinskianus / **Conyza canadensis** / **Inula conyza** / Bidens cernua / Bidens tripartita / Bidens frondosa / Helianthus annuus / Helianthus tuberosus / Iva xanthifolia / Ambrosia artemisiifolia / Xanthium strumarium / Galinsoga parviflora / Galinsoga ciliata / Anthemis tinctoria / **Achillea millefolium** / Matricaria recutita / Matricaria discoidea / **Tripleurospermum perforatum** / **Leucanthemum ircutianum** / Tanacetum vulgare / **Artemisia vulgaris** / Artemisia verlotiorum / **Tussilago farfara** / Petasites hybridus / Senecio inaequidens / **Senecio erucifolius** / Senecio jacobaea / **Senecio vulgaris** / **Senecio viscosus** / Calendula officinalis / Arctium lappa / Arctium minus / Carduus nutans / **Carduus crispus** / **Cirsium vulgare** / **Cirsium arvense** / Cirsium palustre / Centaurea scabiosa / Centaurea stoebe / Centaurea jacea s.l. / Centaurea jacea s.str. / Centaurea jacea ssp. angustifolia / Carlina vulgaris / Echinops sphaerocephalus / **Cichorium intybus** / **Tragopogon dubius** / **Hypochaeris radicata** / Leontodon autumnalis / Leontodon hispidus s.l. / **Picris hieracioides** / **Sonchus oleraceus** / Sonchus asper / Mycelis muralis / **Lactuca serriola** / Lapsana communis / **Taraxacum officinale** / Taraxacum laevigatum / Chondrilla juncea / Crepis biennis / Crepis capillaris / **Crepis foetida** / **Crepis taraxacifolia** / **Crepis setosa** / Hieracium pilosella / **Hieracium pilosoides** / Hieracium murorum / Hieracium maculatum / Hieracium lachenalii / Hieracium sabaudum / Butomus umbellatus / Alisma plantago-aquatica / Sagittaria sagittifolia / Stratiotes aloides / Elodea canadensis / **Arum maculatum** / Lemna minor / Juncus inflexus / **Juncus effusus** / Juncus tenuis / Juncus bufonius / Juncus articulatus / **Luzula pilosa** / Luzula luzuloides / Luzula sylvatica / Luzula campestris / Luzula multiflora / Scirpus sylvaticus / Schoenoplectus lacustris / Carex muricata aggr. / Carex spicata / Carex muricata ssp. lamprocarpa / Carex polyphylla / Carex paniculata / Carex remota / Carex umbrosa / Carex caryophyllea / Carex pendula / Carex flacca / Carex sylvatica / Carex pseudocyperus / Carex hirta / Carex vesicaria / Carex acutiformis / Festuca gigantea / Festuca pratensis / Festuca arundinacea / **Festuca rubra s. str.** / **Festuca brevipila** / **Festuca ovina aggr.** / Festuca tenuifolia / Lolium multiflorum / **Lolium perenne** / Vulpia myuros / **Poa annua** / **Poa compressa** / **Poa trivialis** / **Poa pratensis** / Poa angustifolia / Poa nemoralis / **Dactylis glomerata** / Dactylis polygama / Cynosurus cristatus / Glyceria notata / **Bromus sterilis** / **Bromus tectorum** / Bromus erectus / Bromus inermis / Bromus hordeaceus / Bromus catharticus / Brachypodium pinnatum / **Brachypodium sylvaticum** / Elymus repens / Triticum aestivum / Secale cereale / Hordeum murinum / Avena fatua / Avena sativa / **Arrhenatherum elatius** / Trisetum flavescens / Deschampsia caespitosa / Anthoxanthum odoratum / **Holcus lanatus** / Agrostis capillaris / Agrostis stolonifera s.l. / Apera spica-venti / Calamagrostis epigejos / Phleum pratense / Alopecurus myosuroides / Alopecurus pratensis / Alopecurus aequalis / Phalaris arundinacea / Milium effusum / Phragmites australis / Eragrostis pilosa / **Eragrostis minor** / Eragrostis ciliaris / Eleusine indica / Cynodon dactylon / Panicum miliaceum / Panicum capillare / Panicum dichotomiflorum / Echinochloa crus-galli / Echinochloa colona / Digitaria sanguinalis / Setaria verticillata / Setaria verticilliformis / **Setaria pumilla** / **Setaria viridis s.l.** / Setaria italica / Setaria faberi / Sorghum halepense / Sorghum bicolor s.l. / Bothriochloa ischaemum / Sparganium erectum / Typha angustifolia / Typha latifolia / Pontederia cordata / Gagea lutea / Tulipa gesneriana / Ornithogalum umbellatum / Scilla bifolia / Scilla siberica / Chionodoxa sp. / Muscari racemosum / Muscari armeniacum / Allium vineale / Allium schoenoprasum / **Allium ursinum** / **Polygonatum multiflorum** / Paris quadrifolia / Asparagus officinalis / Galanthus nivalis / Narcissus pseudonarcissus / Iris pseudacorus / Iris sibirica / Crocus sp. / Listera ovata / Platanthera chlorantha / Ophrys apifera / Orchis militaris / Himantoglossum hircinum / Anacamptis pyramidalis

**DRAFT**  
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## DOMINANT PHENOMENA IN THE REGION

They are the calendars of the tree species in the region as dominant existing phenomena's background.



### CONCEPT: "CONFETTI from FASNACHT"

As a spatial concept for the planting design of the adequate species, the link with "Confetti" from "Baseler Fasnacht" could be interesting since Hardwald is the place in winter where people practice the march playing instruments for Fasnacht.

#### Fasnacht

The Carnival of Basel (Basler Fasnacht) is the biggest carnival in Switzerland.

#### Confetti

According to some local historians the throwing of confetti is a typical tradition from Basel and later spread to the rest of the world. There is no proof for this theory. Nevertheless, the amount of confetti used during Basler Fasnacht is huge compared with other carnivals. In the beginning confetti was used for sweets in the form of small sugar balls, that were given away (or thrown at the crowd) during the processions. This later was prohibited in the 19th century. As a replacement people started to use small snippets of paper. (Until its ban in the second half of the 20th century it was also common to use straw instead of confetti). In the Basel Swiss German dialect confetti is called R  ppli. As a spectator you have always to be alert not to be attacked from behind by a confetti throwing Waggis. However it is an unwritten law not to target any of the masked and/or costumed participants. On the other hand spectators not wearing a Blaggedde (Carnival badge) are a favoured target.

In the evening, the routes of the Cort  ge are covered with confetti ankle-deep. It is noteworthy that you can only buy single-coloured (any colour, but not mixed) confetti in Basel. This was decided by the regional confetti manufacturers to prevent the (up to this time common) reselling of "used" confetti. By now, throwing of mixed confetti is improper, as you would have picked it up from the floor, which is obviously not hygienic.



# EUROPEAN SPINDLE | GEWÖHNLICHER SPINDELSTRAUCH | *Euonymus europaeus* |



## Scientific Information

*Wikipedia*

The European Spindle (*Euonymus europaeus*), also known as the common spindle, is a deciduous shrub or small tree in the family Celastraceae, native to much of Europe, particularly in the centre, but is to be found in locations from Ireland and southern Scandinavia in the north, to northern Spain and Sicily in the south, and as far east as Lithuania. It is also to be found in Asia Minor and up to the Caucasus. It grows to 3-6 m tall, rarely up to 10 m, with a stem up to 20 cm diameter. The leaves are opposite, and are lanceolate to elliptical, 3-8 cm long and 1-3 cm broad, with a finely serrated edge. In autumn they often show a beautiful bright red colour.

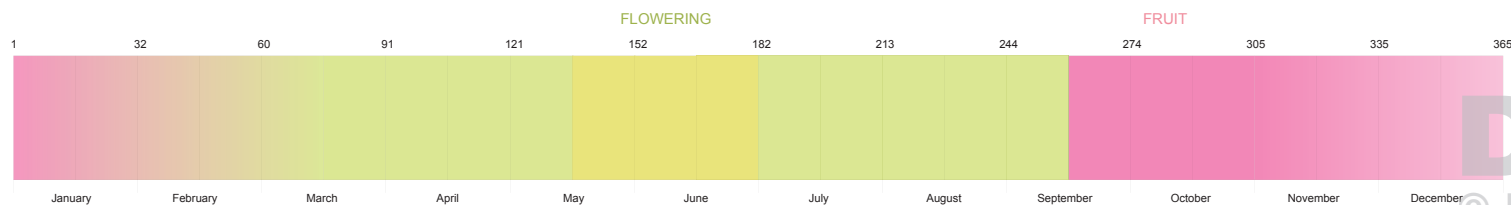
The flowers are produced in late spring; they are rather inconspicuous, small, yellowish green and grow in cymes of 3-8 together. The capsular fruit ripens in autumn, and is red to purple or pink in colour and approximately 1-1.5 cm wide. When ripe, the four lobes split open to reveal the orange seeds. European Spindle wood is very hard, and can be cut to a very sharp point; it was used in the past for making spindles for spinning wool. The European spindle prefers the edges of forest, hedges and gentle slopes, tending to thrive on nutrient-rich, chalky and salt-poor soils.

It is a popular ornamental plant in gardens and parks due to its bright pink or purple fruits and attractive autumn colouring, in addition to its resistance to frost and wind.

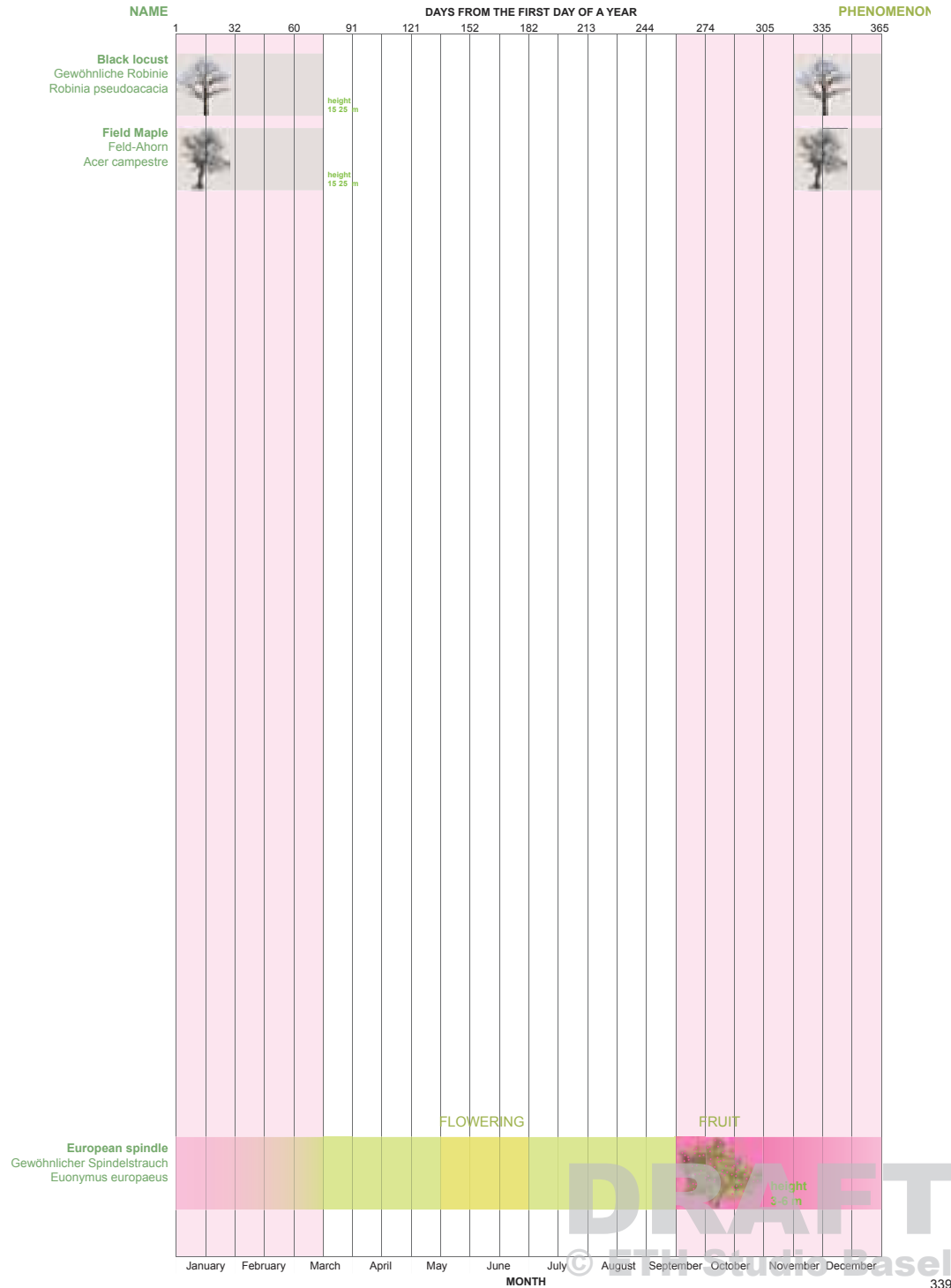
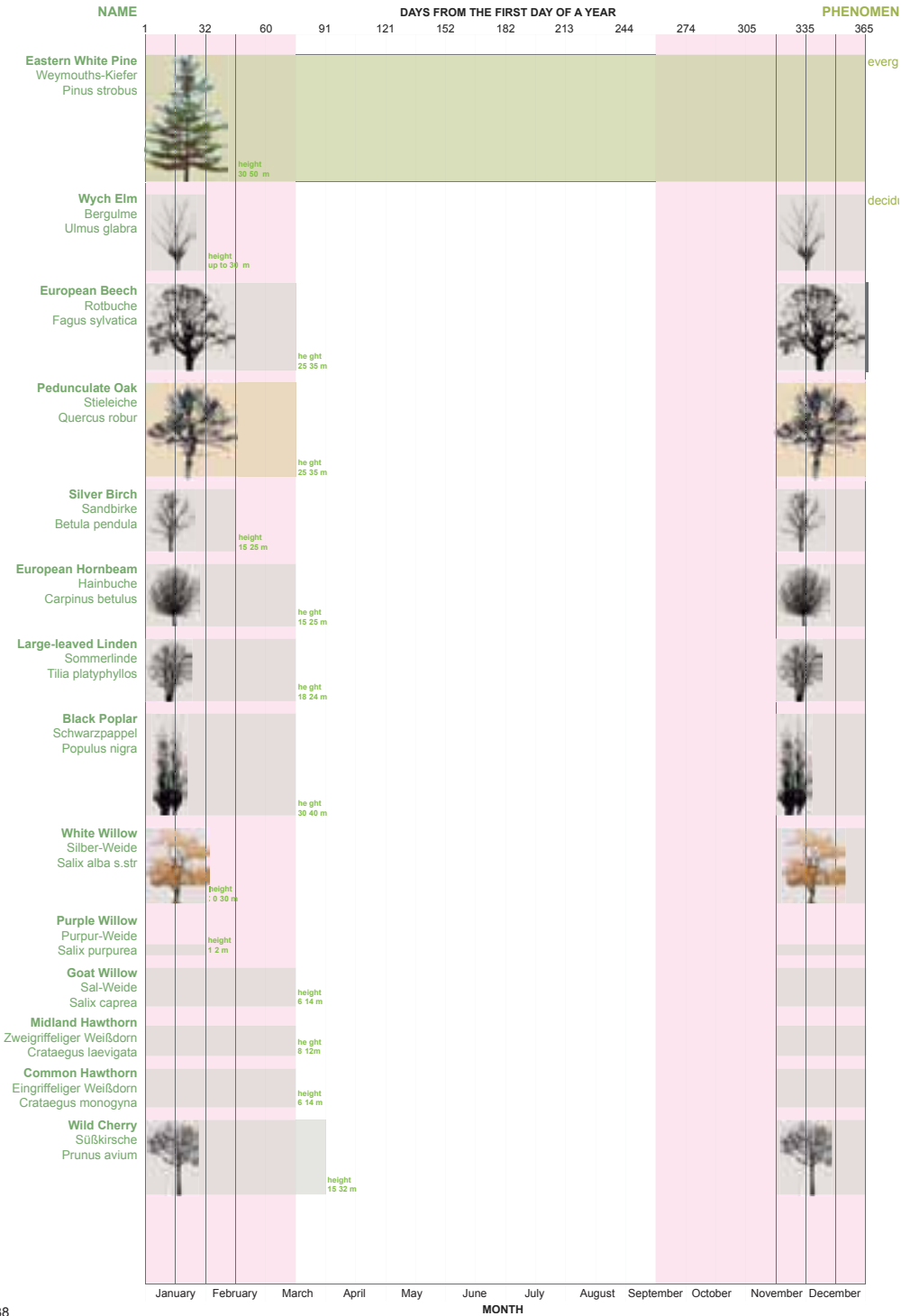
## Selected points

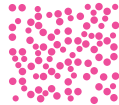
1. Already existing species in Hardwald.
2. Recommended by a biologist as „typical“ for the area.
3. The ripen of the fruit coincides with the absence of any other phenomena in the forest during the winter, and this circumstance help to stand out the phenomena of the European spindle.
5. Prominent and at the same time fragile appearance

EUROPEAN SPINDLE  
Gewöhnlicher Spindelstrauch  
*Euonymus europaeus*



# CALENDAR OF TREES WITH THE PHENOMENA OF EUROPEAN SPINDLE





EUROPEAN SP NDLE

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# 4.9

## FOUR METROPARKS

### FOUR SEASONS

As a conclusion, it is possible to analyze the connections of such proposals to Metrobasel in a territorial scale, and their relevance for the aim of enhancing the identity of the region.

3 aspects will be analyzed in this chapter:

>>>The link between the Metroparks and the city, and how the events of these parks can emerge in the city through fragmental spots.

>>>The link between the proposed seasonal parks and the cultural events that happen in Metrobasel. Every seasonal park could be connected to the events that are happening at the moment in Metrobasel.

>>>The availability of transportation to the Metroparks.



#### FOUR METROPARKS FOUR SEASONS

The proposals of the 4 Metroparks are not conventional parks but temporal parks, as each of the parks is related to one of 4 seasons. They are kinds of park that can attract people and enhance the identity of the region due to the ephemeral phenomena taking place there

for a period of time. After the event finished, the Metroparks even could fade back to their previous condition. This ephemeral condition follows the model of "Sakura" in Japan. This situation in the 4 parks is the result of efforts to connect the proposal to one of the most specific character of nature, its mutability and its constant change with time.

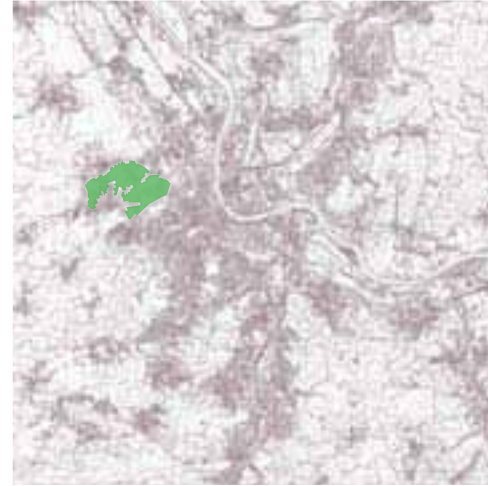
Lange Erlen in spring, Vignette in summer, Bruderholz in autumn and Hardwald in winter are the examples of understanding of the Metropolitan region of Basel as subject to changes and even to ephemeral changes.

Each of them makes the region bloom in a different moment of the year, and also each of them becomes equally important area holding very different kinds of "Urban Nature".

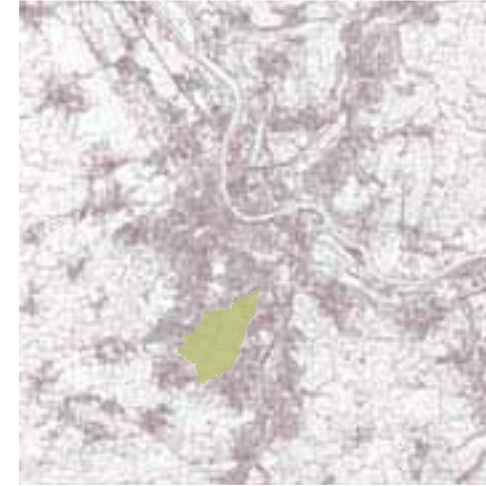
#### SPRING



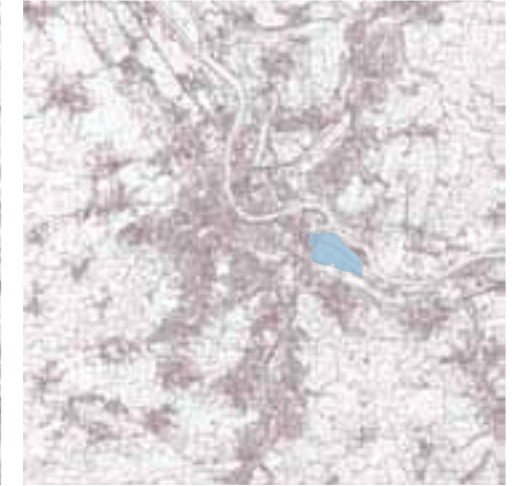
#### SUMMER



#### AUTUMN



#### WINTER



## INTERVENTIONS TO THE CITY

### FRAGMENTAL SPOTS OF NATURE IN THE CITY

The relation between the Metroparks and the city is bidirectional. It is possible that the phenomenological events taking place in the Metroparks emerge in the urban areas in a different scale. A plausible idea is that people participate in the events in which they can bring

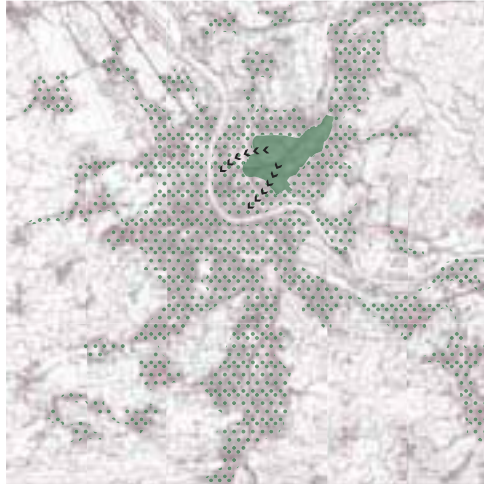
fragmental spots of the selected natures to the city. Through the cultivation of plants in the city, by individuals or by authorities, the events will take place at the same time in the city and the parks. They become themselves into an active advertisement to show what is happening in the Metroparks now.

The method is similar to what happens during every

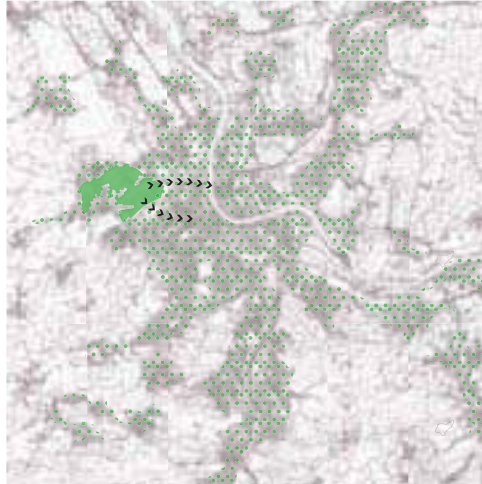
Christmas in public spaces and private houses, in which the appearance of the symbolic Tannenbaum announces the upcoming event.

Therefore, these 4 parks can be the core of this process which the events get to spread, and they also can encourage it to take place in other parts of the city.

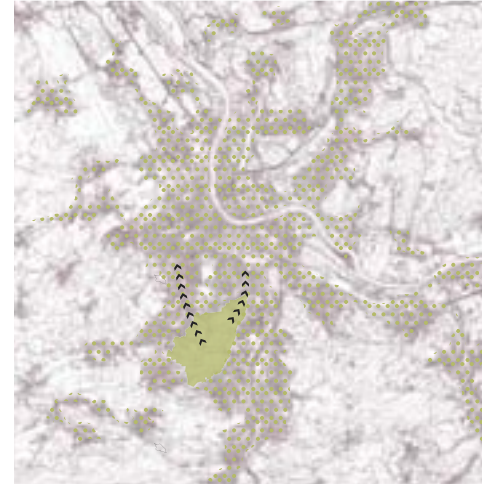
### SPRING



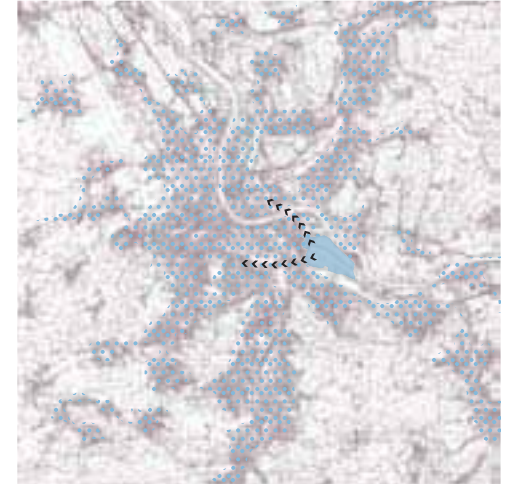
### SUMMER



### AUTUMN



### WINTER



### CORYDALIS SOLIDA

#### CULTIVATION DETAILS

Prefers a moist, well-drained rather light soil, thriving in semi-shade. Grows well in a woodland garden or peat bed. Increases well when grown in a bulb frame, but less freely when grown in the garden. A very ornamental and easily grown plant. There are some named varieties. Plants seem to be immune to the predations of rabbits.

#### PROPAGATION

Seed - best sown as soon as it is ripe, the seed rapidly loses viability if it is allowed to become dry. Surface sow and keep moist, it usually germinates in 1 - 3 months at 15°C. Germinates in spring according to another report. Two months warm, then a cold stratification improves the germination of stored seed. Sow the seed thinly so that the seedlings can be allowed to grow undisturbed in the pot for their first year. Apply liquid feed at intervals during their growing season to ensure they are well fed. The seedlings only produce one leaf in their first year of growth and are very prone to damping off. Divide the seedlings into individual pots once they have become dormant and grow them on in a partially shaded area of a greenhouse for at least another year. Plant them out into their permanent positions when they are dormant. Division after flowering.

### PAPAVER RHOEAS

#### CULTIVATION DETAILS

Prefers a well-drained sandy loam in a sunny position. Does not do well on wet clay soils but succeeds in most other soils. Plants usually self-sow freely when growing in suitable conditions so long as the soil surface is disturbed. There are several named varieties selected for their ornamental value. A polymorphic species, varying in leaf shape and flower colour. When growing in cereal fields, poppies decrease the yields of nearby cereal plants. Members of this genus are rarely if ever troubled by browsing deer or rabbits.

#### PROPAGATION

Seed - sow spring or autumn in situ.

### MALUS DOMESTICA

#### CULTIVATION DETAILS

An easily grown plant, it succeeds in most fertile soils, preferring a moisture retentive well-drained loamy soil. Grows well in heavy clay soils, though if these are poorly drained there could be problems with diseases such as canker. Prefers a sunny position but succeeds in partial shade though it fruits less well in such a situation. Tolerates a pH range from 6 to 7, preferring a range of 6.5 to 6.8. The apple is one of the most commonly cultivated fruit crops in the temperate zone. Where space is at a premium, or at the limits of their climatic range, apples can be grown against a wall. Most cultivars will grow well against a sunny south or west facing wall, an east facing wall will suit many of the tougher cultivars and even a north facing wall can be used for early culinary cultivars. There are very many named varieties and with careful choice of these varieties it is possible to provide freshly harvested fruit from July to December and stored fruit for the rest of the year.

#### PROPAGATION

It is best sown as soon as it is ripe in the autumn in a cold frame. It usually germinates in late winter. Stored seed requires stratification for 3 months at 1°C and should be sown in a cold frame as soon as it is received. It might not germinate for 12 months or more. Cuttings of mature wood, November in a frame.

### EUONYMUS EUROPAEUS

#### CULTIVATION DETAILS

An easily grown plant, it thrives in almost any soil, including chalk, and is particularly suited to dry shaded areas. Prefers a well-drained loamy soil. If cultivated for its latex it is best grown in a dry open position. A very cold-hardy plant, tolerating temperatures down to about -25°C. A very ornamental plant, there are many named varieties. This species is often damaged by caterpillars during the flowering season. It is a favoured home for blackfly, so should not be grown near broad beans.

#### PROPAGATION

Seed - best sown as soon as it is ripe in a cold frame. Stored seed requires 8 - 12 weeks warm followed by 8 - 16 weeks cold stratification and can then be sown in a cold frame. When they are large enough to handle, prick the seedlings out into individual pots and grow them on in the greenhouse for at least their first winter. Plant them out into their permanent positions in late spring or early summer, after the last expected frosts. One report says that the seed can be sown in an outdoors seedbed in early spring with good results. Grow the seedlings on for two years in the seedbed before planting them out into their permanent positions. Cuttings of half-ripe wood, 5 - 8cm long taken at a node or with a heel, July/August in a frame. Very easy. Cuttings of mature wood, November in a frame. Layering in July/August. Takes 14 months.

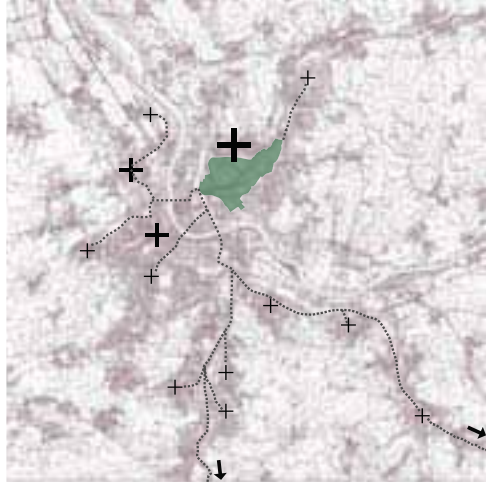
## THE METROPARKS AND THE CULTURAL EVENTS IN METROBASEL

The link between the proposed seasonal parks and the cultural events in Metrobasel can be generated. Every seasonal park can be connected to the events which happen somewhere in Metrobasel during the same season.

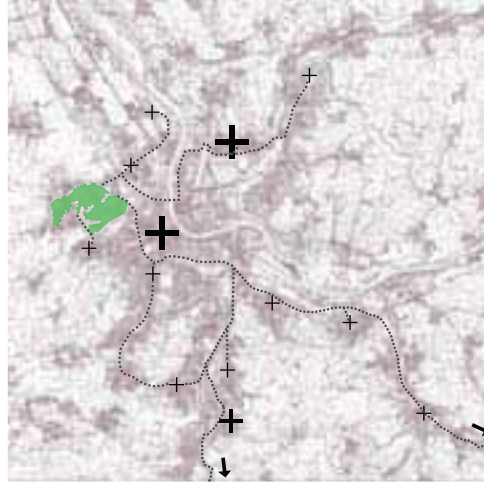
data sources on events:

BASEL TOURISMUS, GEMEINDE ARLESHEIM, ENWOHNERGEMEINDE DORNACH, STADT LAUFEN, GEMEINDE SISSACH, GEMEINDE WALDENBURG, VILLE DE DELÉMONT, STADT LÖRRACH, VILLE DE HUNINGUE.

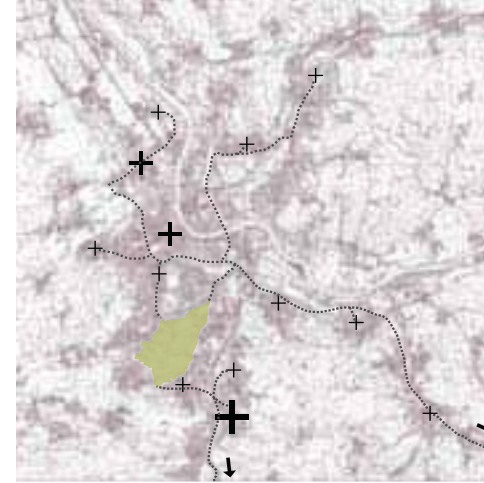
### SPRING



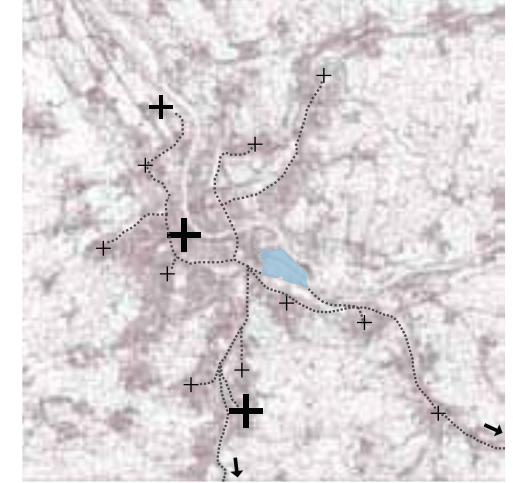
### SUMMER



### AUTUMN



### WINTER



LANGE ERLEN  
Possible link to: BUCHBASEL.Basel

VIGNETTE  
Possible link to: STIMMEN FESTIVAL. Lörrach

BRUDERHOLZ  
Possible link to: THEATRA. St. Louis

HARDWALD  
Possible link to: FASNACHT . Basel

- 16 events in Baselstadt
- 2 events in Arlesheim
- 42 events in Dorneck
- 10 events in Laufen
- 32 events in Sissach

- 9 events in Waldenburg
- 43 events in Lörrach
- 18 events in Huningue

- 22 events in Baselstadt
- 1 events in Arlesheim
- 31 events in Dorneck
- 10 events in Laufen
- 15 events in Sissach

- 44 events in Waldenburg
- 1 events in Lörrach
- 6 events in Huningue

- 9 events in Baselstadt
- 1 events in Arlesheim
- 35 events in Dorneck
- 10 events in Laufen
- 19 events in Sissach

- 53 events in Waldenburg
- 4 events in Lörrach
- 4 events in Huningue

- 19 events in Baselstadt
- 7 events in Arlesheim
- 29 events in Dorneck
- 7 events in Laufen
- 20 events in Sissach

- 20 events in Sissach
- 26 events in Waldenburg
- 80 events in Lörrach
- 11 events in Huningue

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# 5. CONCLUSIONS

## SUMMARY

In this thesis, the role of nature towards enhancement of regional identity was studied having presented a proposal in the scale of urban planning, reflecting Japanese aesthetic and perceptual point of view on nature. The chapters are structured as described in the followings.

In the preface chapter, I expressed the aim of this thesis and mentioned about the importance of identity of the city, which is one of the most essential subjects today among cities under the context of global homogenization. In addition to this, I also stressed the issue on counting nature, which usually is the proximate of cities, to bring to the same level of intention whilst dealing with urban planning. The close relationship between nature and physical appearances of cities lead me to come with an assumption that nature could be a powerful element to enhance regional identity with its specificity that is the central issue of this thesis.

In chapter 1, I introduced Metrobasel, a tri-national metropolitan region, as the objective site for my thesis.

In chapter 2, I explained the approach of research on nature. First, the term "Urban Nature" was defined mentioning that nature should be dealt equally both inside and outside of the city in terms of planning. Secondly, based on my own background, I introduced the Japanese culture "Haiku/Sajiki" and "Sakura/Hanami" and explained how to apply them as reference models to the case of Urban Nature in Metrobasel.

In chapter 3, Metrobasel Sajiki was produced as a description of the specificity of Urban Nature in Metrobasel, paying attention to the annual natural phenomena, which are prominent.

In chapter 4, four Metroparks were proposed as a possible way to enhance the identity of Metrobasel through Urban Nature. First, I chose four sites that have special conditions in Metrobasel. These sites were analyzed based on maps and fieldworks. Then, together with the adequate species selected for each park through a process, the four Metroparks were finally depicted. At the end by zooming out to a larger scale, the urban impacts were considered by perceiving the four Metroparks as a sequence of one proposal.

## CONSIDERATION

After all researches that have been done during the last few decades, mapping is one of the most efficient means of quantifying characters and aspects of cities. However, in the case of my thesis, it was part of my challenge, and at the same time a more feasible way of proving my hypothesis, to make a proposal stressing larger weight in showing an application to appropriate periodical references, which consequently allowed different type of graphical visualization besides maps. The absence of mapping is therefore deliberate, and also in that way, it was important to examine the proposals with this different approach to see whether the real potential of Urban Nature could work as a generator of the identity of the region. The way to test this potential was done by introducing timeline, seasons, and annual cycles referring to Japanese customs. That is in fact, directly linked to the principal characters of nature, which are changeability and ephemerality.

## SIGNIFICANCE

The evaluation of the proposal, in other words whether the proposal truly enhances the identity of the region or not would be an issue. However, at least it is a credit that the semi-final presentation was highly regarded by the guest critics that include representatives of the city of Basel and people in charge of the urban planning for Metrobasel. Also, I may be able to say that the proposal is successful as a trial in the sense that it took the steps not only depending on the geometrical indications based on mappings but calendars giving high priority for the timeline.

## PERSPECTIVE

It was a pity that Japanese culture was slightly arbitrarily taken as reference models to the proposal. So the less objectivity on some process of this thesis still remains to be improved. Nevertheless, one of the next challenges could be to apply this methodology on other cities, for example, a city that has more seasons, only one season and so on. Moreover, I would like to explore other ways to reflect perceptual point of view of planning in order to develop this proposal more in depth and to simulate the intervention of Basel City.


I hope this thesis opened up a discussion on different approaches towards contemporary urban planning of nature and in seeking for the role of nature in the future.

# 6.APPENDIX



061107 Questionnaire

Please describe your memory about season indicators. These indicators could be Flora (trees, flowers, plants), Fauna (animal, insects), Phenomena of landscape, Stars and atmospheric phenomena, Human activities (annual events). The more detail you could describe about these phenomena with your experience, the more it would be helpful. Since I will deal with flora, it is grateful to you if you could try to find more flora elements. In case you remember the name/type of plants, please write down them. It doesn't matter if it is in German or French.

Water flowing	Ex.) Snowdrop (Schneeglöckchen) It is the best known representative of a small genus of which bulbs bloom first in Spring. It tells people that the Spring is coming soon.	
Beginning of Winter	Kraut	
Spring	Erntedankfest / Totopfer	
Spring flowers	Stängel, Laubblätter, Äpfelblüten in Pyramiden, Stängel, Äpfelblüten, Äpfel Krautblüten - viel weiß und kleine gelbe Blüten Lilienblüten - gelbe Blüten	
In the middle of Winter	verbleibten Äpfelblüten Krautblüten (Krautblüten, Äpfelblüten)	
In the end of Winter	sehr hell, warm, Licht Kraut sind auf langes Gras - sehr grün - Blaufog - Alpen	
Autumn & Winter	Laubblätter rot, Herbstblätter	
Autumn	Apfel, Baum, Baumblätter - Herbst Hornbläser - sehr viel Licht, sehr viel das Sonnenschein und warmes Licht und Licht, Laubblätter der Äpfel	
In the end of Autumn	Kraut, Äpfel, viel felle, dunkel sehr Trübsinn - der Teil, der Äpfel sehr hell und warm	
Autumn & Winter	sehr Trübsinn - der Teil, der Äpfel sehr hell und warm	
Beginning of Winter	miter Schneefall - Temperatur im Schnee	
In the middle of Winter	Schneefall die Tage sind sehr kurz	
The end of Winter	es regnet in den Schnee, es wird wieder sehr warm die Tage werden wieder länger	

Your home town: Anja Your hometown: Lisera


This questionnaire will be only used for my master thesis in order to define natural elements (specific sorts) that could be influential to human's perception on seasonal changes. I will be in the studio today and tomorrow, so at anytime if you have a question please let me know.

Thank you very much for your cooperation!!!

Diploma student Fumiko Takahama (+41 79 577 9064)

061107 Questionnaire

Please describe your memory about season indicators. These indicators could be Flora (trees, flowers, plants), Fauna (animal, insects), Phenomena of landscape, Stars and atmospheric phenomena, Human activities (annual events). The more detail you could describe about these phenomena with your experience, the more it would be helpful. Since I will deal with flora, it is grateful to you if you could try to find more flora elements. In case you remember the name/type of plants, please write down them. It doesn't matter if it is in German or French.

Water flowing	Ex.) Snowdrop (Schneeglöckchen) It is the best known representative of a small genus of which bulbs bloom first in Spring. It tells people that the Spring is coming soon.	
Beginning of Winter	Kraut (flur)	
Spring	dew, Easter	
Spring flowers	sitting alone in short clothes	
In the middle of Winter	thunderstorms, 1. of August (national celebration day)	
In the end of Winter	lot of flies wasps, hornets	
Autumn & Winter	start of semester	
Autumn	falling leaves, maple, chestnut, fog	
In the end of Autumn	coat, gloves, scarf,	
Autumn & Winter		
Beginning of Winter	snow, clear sky in the night, bad weather, cold, wet	
In the middle of Winter	Christmas	
The end of Winter	sking holidays	

Your name: Michael Bucher Your hometown: Winterthur

This questionnaire will be only used for my master thesis in order to define natural elements (specific sorts) that could be influential to human's perception on seasonal changes. I will be in the studio today and tomorrow, so at anytime if you have a question please let me know.

Thank you very much for your cooperation!!!

Diploma student Fumiko Takahama (+41 79 577 9064)

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061107 Questionnaire

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Winter Winter	Ex.) Snowdrop (Schneeglöckchen) It is the best known representative of a small genus of which bulbs bloom first in Spring. It tells people that the Spring is coming soon.	
Beginning of Spring	KROKUSSE	
Spring	OSTERBLUMLIN / TULLEN	
Spring Winter	NIRSCHBACH / ANSELBACH / BACH	
Beginning of Summer	LOWENZAHN	
In the middle of Summer	WASSERBLUMEN / FIRSCHLANTZ	
In the end of Summer	HOHE GEGEN / UEBERHINTER LOWENZAHN / FERSCHLANTZ	
Autumn Autumn	BLÄTTER FÄHLEN SICH IM NACHBARN	
Autumn	NEBEL	
In the end of Autumn	WIND / BLÄTTER FÄHLEN VON DEN BÄUMEN	
Autumn Autumn	NEBEL TÄUSCHUNG	
Beginning of Winter	SCHNEE KINZELN SCHNEEFLOHN / FAHLE BLÄTTER	
In the middle of Winter	WALD SCENE	
The end of Winter	SCHNEEBILDE / SCHNEE BEHÄLT VIEL ZU SCHNEE / WÄRMEN	

Your name: Sally Your hometown: Basel


This questionnaire will be only used for my master thesis in order to define natural elements (specific sorts) that could be influential to human's perception on seasonal changes. I will be in the studio today and tomorrow, so at anytime if you have a question please let me know.

Thank you very much for your cooperation!!

Diploma student Fumiko Takahama (+41 79 577 9064)

061107 Questionnaire

Please describe your memory about season indicators. Those indicators could be Flora (trees, flowers, plants), Fauna (animal, insects), Phenomena of landscape, Stars and atmospheric phenomena, Human activities (annual events). The more detail you could describe about those phenomena with your experience, the more it would be helpful. Since I will deal with flora, it is grateful to you if you could try to find more flora elements. In case you remember the name/type of plants, please write down them. It doesn't matter if it is in German or French.

Winter Winter	Ex.) Snowdrop (Schneeglöckchen) It is the best known representative of a small genus of which bulbs bloom first in Spring. It tells people that the Spring is coming soon.	
Beginning of Spring	osterglocke, Kirschkorn	
Spring	Tulpe, Maikäfer, Blätter an Bäumen am späten Frühling	
Spring Winter	Grün grün	
Beginning of Summer	Lange Tage	
In the middle of Summer	Brand, Amillieren, Feien	
In the end of Summer	Wespen	
Autumn Autumn	Früchte an den Bäumen Ernte, braune Blätter	
In the end of Autumn	braune Blätter -> Laub am Boden Laub-leaves	
Autumn Autumn	Tau, Frost, Nebel am Morgen	
Beginning of Winter	Erster Schnee, Nebel, kurze Tage	
In the middle of Winter	Glatteis	
The end of Winter	Tage werden wieder länger	

Your name: Claudia Hübeler Your hometown: Basel (Sw)

This questionnaire will be only used for my master thesis in order to define natural elements (specific sorts) that could be influential to human's perception on seasonal changes. I will be in the studio today and tomorrow, so at anytime if you have a question please let me know.

Thank you very much for your cooperation!!

Diploma student Fumiko Takahama (+41 79 577 9064)

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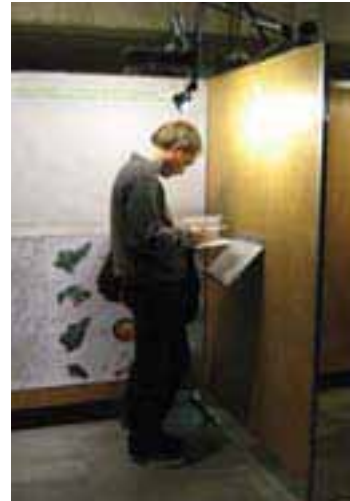
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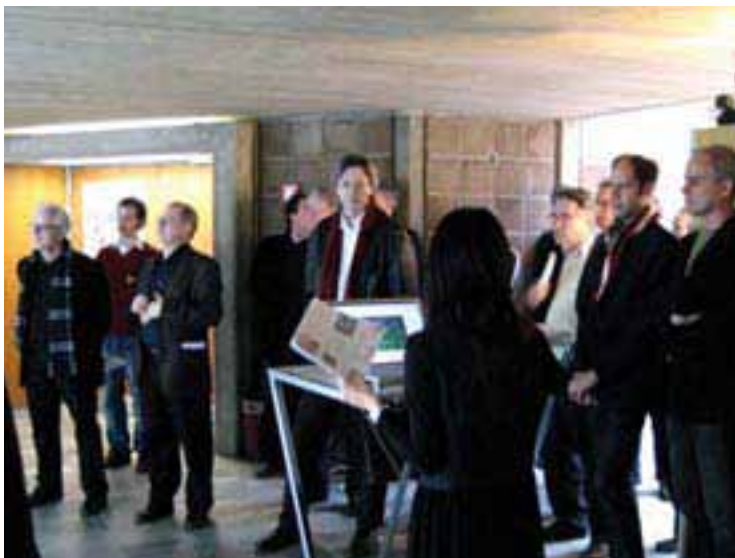


20.12.2006, 4th midterm critic

11.01.2007, Opening of diploma exhibition at ETH main building



29.01.2007, Final presentation with all the professors of architectural faculty at ETH main building



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**Evaluation**

Fumiko Takahama  
„Urban Nature“ – A study on natural phenomena towards the enhancement of the identity of Metroland

The diploma thesis of Fumiko Takahama represents a self-contained and independent part within the current research theme at ETH Studio Basel concerning the limits and methods of urban planning in the tri-national region of Basel. „Urban Nature“ aims at developing a visionary, iconographic as well as operational urban planning approach, with the means of „nature“ and landscape planning. The terms and elements of „nature“ are developed and extended through the thesis, to include a contemporary and refined notion of the concept.

Fumiko Takahama has succeeded in developing a surprising, coherent and also very in-depth and beautiful proposal of line „Metroland“, arising from a remarkable analysis of the existing natural spaces within the region. The „Metroland – Sujiki“, which was worked out in an exemplary way by the student, allows for a fascinating method of adapting an abstract design process to the specificity of a region while also taking its particular fauna and flora into consideration.

Very rarely has a student worked out a thesis in this depth and detail, as well as along such a range of fascinating issues, as Fumiko Takahama, while at the same time maintaining an exceptional level of representational quality, both in the sense of beauty and clarity, ETH Studio Basel deems itself lucky, that Fumiko Takahama has participated and extended our research into the study of metropolitan regions with this exceptional contribution. Within the grading system of the ETH Zurich, we judge the thesis with a „six“, the highest and best grade.

F. de Meuron  
ETH Studio Basel



(F.V. Manuel Studli)

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