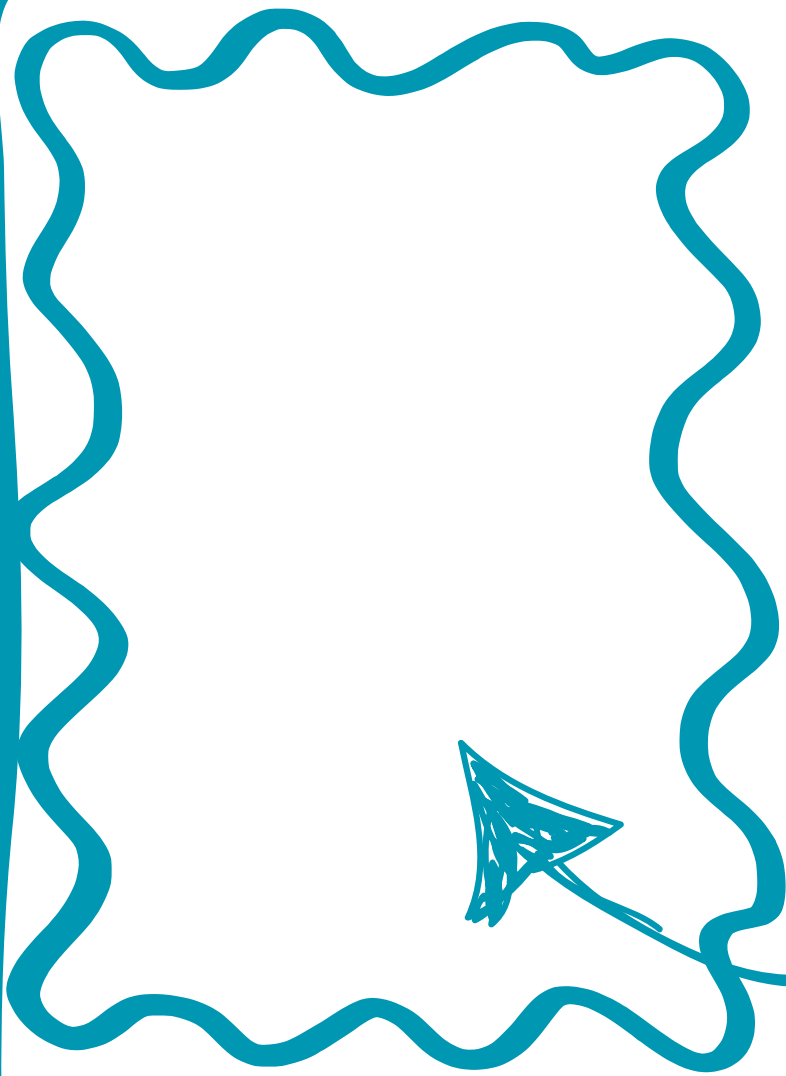
e-book
quizzes, games, fun

Leave a trace of nature in your life.
Polish-Greek inspirational guide to plants.

Dofinansowane przez
Unię Europejską



Part I
The art of ornament begins with observation...

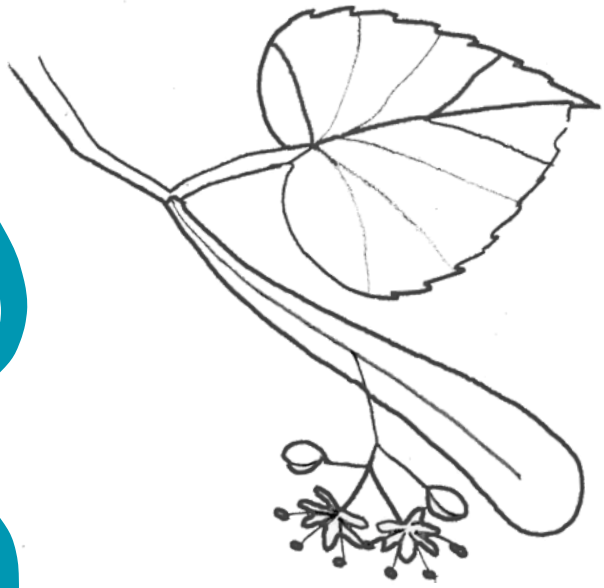
The first task is to carefully observe natural forms: leaves, flowers, fruits from our pattern book. Can you reproduce them? We have left space for your drawings.

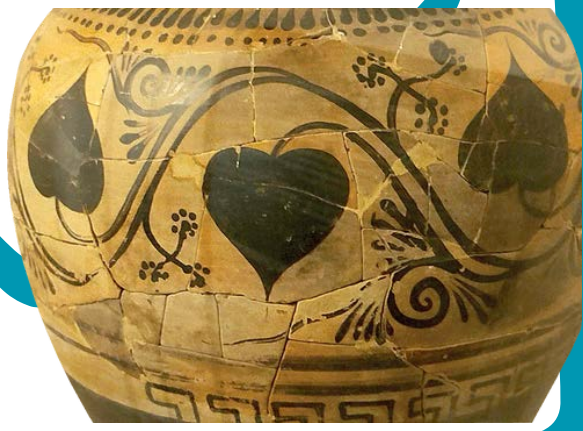
1. Where did natural forms come from in art come from?

Europe is a mosaic of different cultures drawing inspiration from many sources. However, there is one thing in common, which is at the root of the very different cultural traditions we know from the contemporary map of Europe. This common source of inspiration is our nature.
It was an inspiration in the creation of the first artifacts, that is everyday objects, based on natural motifs: forms traced from the shapes of plants or animals as well as signs of forces such as wind, water or fire were used to decorate dishes, clothing and jewellery. In ancient times nature was a common source of inspiration everywhere, even in the farthest corners of our Europe. Since the dawn of time, it has fascinated man... and the first observations of forms and phenomena were recorded with simple signs on everyday objects.

Linden and ivy

1





There are two examples of plants very important for our cultures. Here is a linden leaf and flower as a decorative motif of an ancient Greek vase from the Archaeological Museum of Athens.
In the art of ancient Greece, an ivy stem with leaves of a distinctive shape was a common decorative motif

2

Thistles

Thistles are generally considered weeds. These thorny plants come in many varieties, and the flowers of some, for example of Carlina acaulis, are edible just like artichokes

The flowers of thistles are a very valuable source of nectar for insects, while the seeds are eaten by many birds. The properties of these plants have been valued in medicine for centuries. They were so important that they found their place in culture, folk customs and art.

Royal oak

The oak – long-lived oaks have always been seen as majestic and powerful trees, so the motif of oak leaves was readily used in decorations and rituals, as oak leaves were supposed to emphasize the importance of the participants. Objects inspired by the shape of oak leaves can also be found in folk art. Some paper cutouts refer to the form of the so-called “tree of life” often associated with oak.

Sun – rosette

The shape of the rosette as a symbol of the sun, appears very early in our cultures – it is a protective sign that brings good luck. We can find it on furniture, dishes, clothes, jewellery, wooden beams of houses, and even on Polish Easter eggs. Many decorative floral elements, whether cut or embroidered, are created by concentric division of a circle into smaller parts.

Ceremonial wreaths

In ancient Greece, wreaths made of gold emphasized the uniqueness of a person or ritual, while participants in ancient rites, depending on the occasion, decorated their heads with wreaths made of hawthorn branches, violets or aromatic herbs, vines or ivy.
In Slavic culture, wreaths had a very extensive and diverse use and rich symbolism. The most famous is the bride's wreath. There were also wreaths woven and given to the rivers during Kupala Night (Midsummer Night).
In August we celebrate the day of Our Lady of the Herbs (Assumption of Mary), when we bless flowers in churches. In the past, blessed wreaths protected people, animals and farms. To this day, the rafter framing of a newly built house is decorated with a wreath made from twigs, flowers and ribbons to bring good luck.

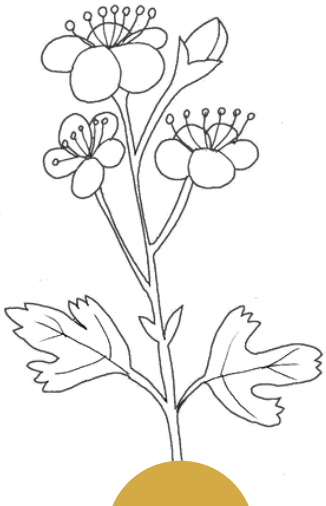
Part II

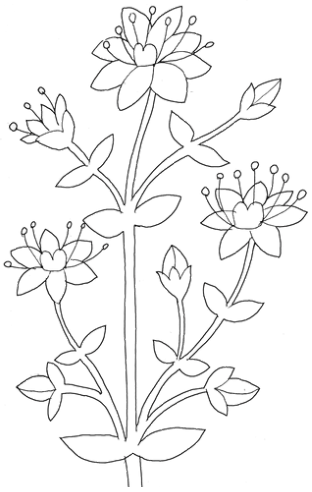
The useful plants

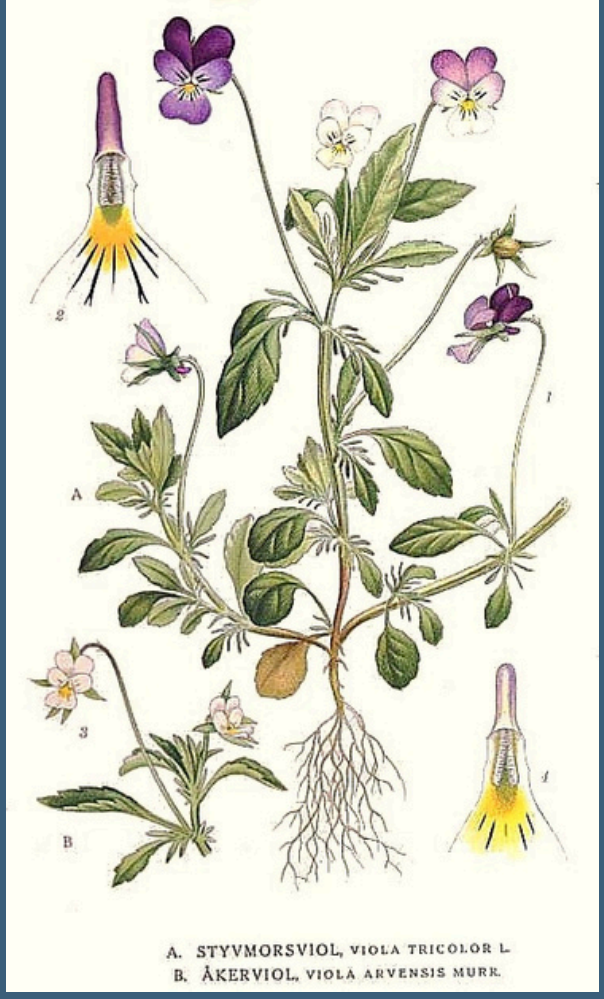
Second task: Now let's take a look at some plants which are very important in everyday life: they were a source of food, medicinal substances, dyes and fibres for weaving. Here are some of them.

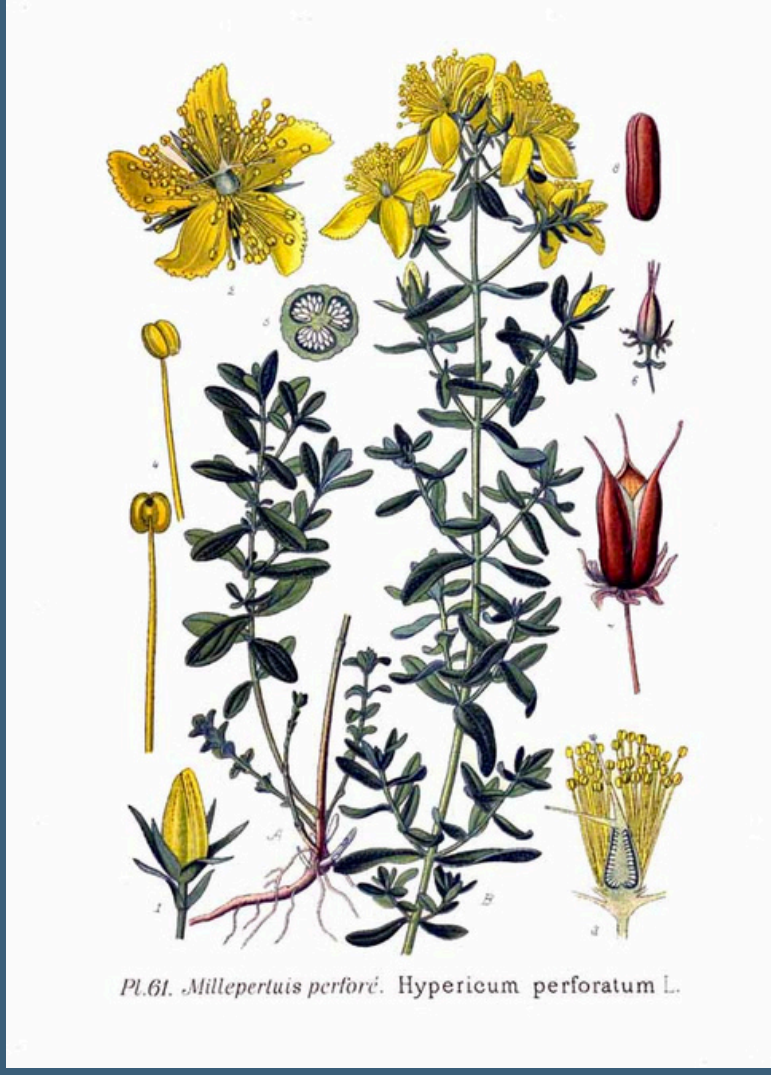
1. Observing nature

Observing nature is as old as the world. Observation of phenomena and events in nature has always helped people to live in harmony with its rhythm. Food, medicine, dyes and plant fibres were drawn from nature. Plants were needed in everyday life, so importance was attached to them. They were often also the subject of folk art. The interconnections, similarities and differences fascinated not only simple people. Thanks to scientists' interest in botany, knowledge of plants continues to grow and changes constantly.









The Herbarium

Field pansy, St. John's wort and woodland hawthorn. These three plants were widely used in everyday life. Here they are described and illustrated by 19th century naturalists.
Thanks to these illustrations, we can take a close look at all the characteristics of the plant.

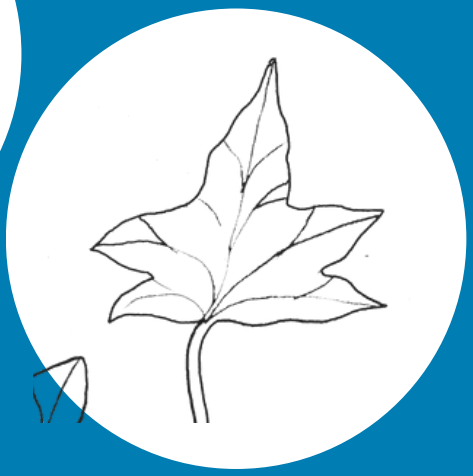
Task I: compare the appearance of the stem, leaf and flower for pansy, st. john's wort and hawthorn.

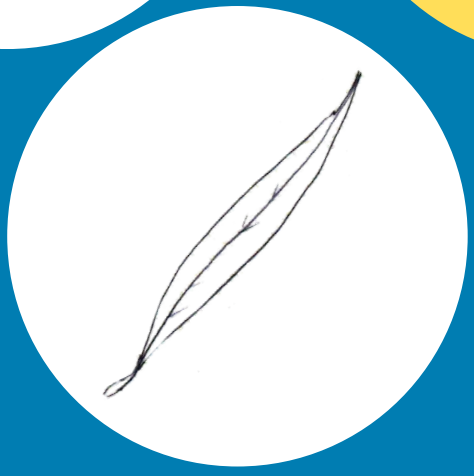
Task II: Find the information and indicate which of these plants contains active substances that alleviate the following conditions:

a. heart diseases
b. skin diseases
c. depression and anxiety

Forms of leaves

Rules of the game: Take a look at the drawn leaves. Do you recognize them?
The plants to which they belong were of great utilitarian importance in the past.
Roll a dice or flip a coin to decide the order of players. Each player makes his own counter – it can be made of a pebble or a stick.
You move to the next field when you guess the name of the plant by looking at the drawn shape of the leaf. The player who does not guess the name of the plant drawn on the field moves back one field. The player who is the fastest to guess the names of all the plants shown in the drawings wins.
Do you know what value ivy, hawthorn, poplar
elderberry, linden, willow and oak have for us? How can they be used, what can be obtained from them?





Three families of flowers: a guessing game

A game for 2 people. Fold the sheet along the fold or print in duplicate. One person reads the names of the flowers, the other must answer to which family a given flower belongs.

Amaryllidaceae:

bear's garlic, lily of the valley, daffodil

Asteraceae:

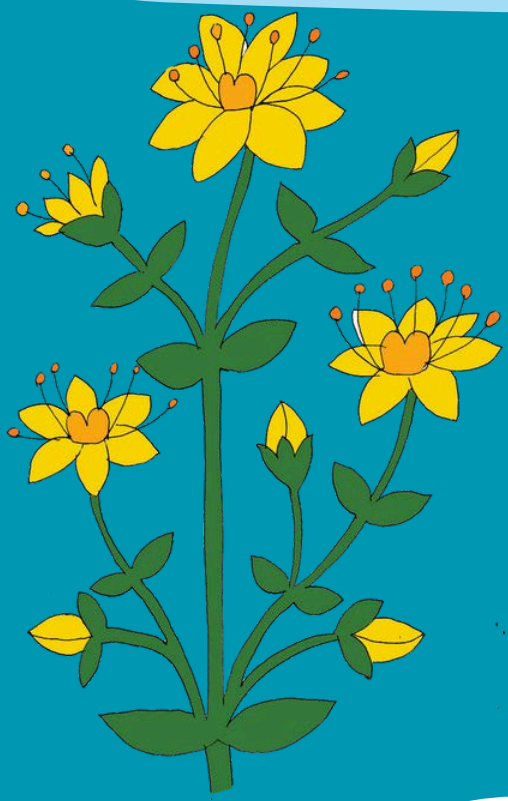
common yarrow, nineflower, thistle

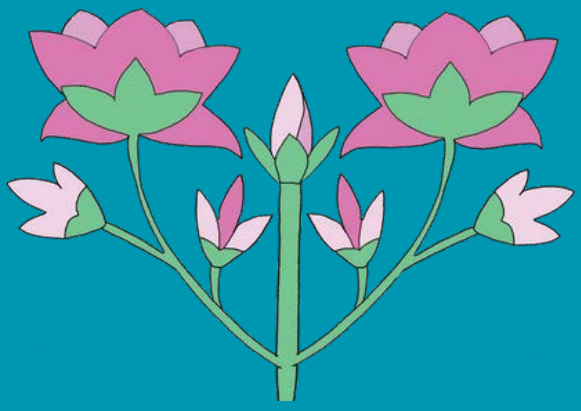
Orchidaceae

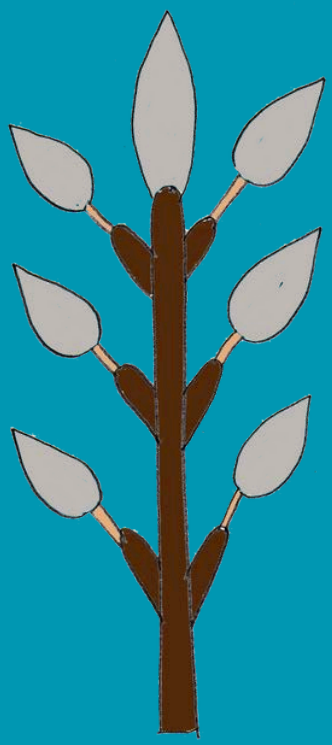
elder-flowered orchid, lesser butterfly-orchid

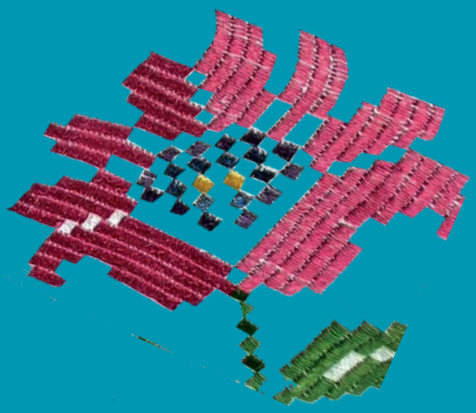
Plant motifs in folk art

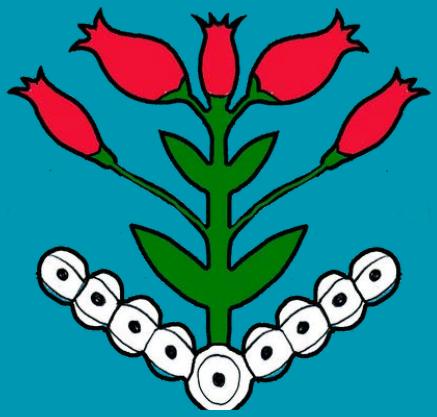
In Polish folk art, flowers were rarely reproduced as faithfully as in a naturalistic herbarium. In Polish tradition, there are plants characteristic of home gardens or valued for their practical benefits, as well as deeply rooted in old folk beliefs. These are simplified shapes that can nevertheless be read. Do you know what plants are hidden in these motifs?











How climate change affects nature

The increase in temperature due to climate change has an impact on the amount of water circulating in ecosystems. Long periods of high temperatures cause the phenomenon of drought. When the drought persists for too long and the autumn rains don't come, some plants extend their roots deep underground in order to find water, which allows them to find some moisture necessary to survive, even when the topsoil is very dry. Other plants just dry up and die. Some will not recover next spring.

When it finally rains, many flowers close their inflorescences to prevent pollen and nectar from being washed away. More and more often there are so-called cloudburst, which wash away plant pollen, which means that plants will no longer be able to reproduce.

If spring comes too early and the weather gets too hot too soon, plants also grow and reproduce faster, and this in turn affects the entire balance in the ecosystems.

The ecosystem is a whole that remains in balance, linking together a community of living beings called a biocenosis (animals, plants, microorganisms) and the geological and atmospheric environment, i.e. biotope (climate, rocks, landform etc.).

Balance in biocenosis is very important because all species are organized into food chains also called trophic chains.

Wild orchids

Wild orchids are among those flowers that are gradually disappearing from our landscape as an effect of human activity. However, we can protect them:

They must not be picked or dug up from the places where they grow.

In addition, meadows and lawns need to be moved in a skilful way: if we mow them too early, that is, before orchids bear fruit and sow seeds (they are wind-pollinated), we can destroy their habitat. The same goes for roadsides and our gardens. Let's try not to trample the plants, let's avoid them.

Why are there fewer and fewer butterflies in our landscape?

Butterflies are a valuable indicator of the impact of climate change on biodiversity due to their sensitivity to temperature fluctuations. The life cycle of butterflies is complex. Some butterflies need a period of winter rest to complete the reproductive cycle. However, with milder winters, this period becomes shorter and shorter. In turn, other species of butterflies will increase the number of generations per year due to higher temperatures: these species will have more time to reproduce thanks to the extended summer time. The development time and the resources of available food for butterflies depend on the ambient temperature. Rising temperatures disrupt their life cycle.

The use of chemicals in crops and careless mowing of meadows are the two most important causes of butterfly extinction. What will their caterpillars eat, if we cut the host plant too early? What will happen to butterfly caterpillars, if we apply any chemicals to our meadow? They will not survive and will die!

Why are our flower meadows dying and what can we do to protect them?

Apart from drought and the process of transformation of grasslands into steppes due to lack of water, the most important reason why traditional meadows – called grasslands – are disappearing along with their flowering plants from our landscapes is the use of various chemicals collectively known as pesticides.

Have you ever wondered why some field flowers seem to move from one part of the meadow to another? The ants by stirring the soil and breaking it up while building the anthill, scarify it and help the plants. In addition they spread the seeds of many flowering plants. By destroying ants, pesticides destroy the possibility of spreading the seeds of flowers.

Flowers often have a relationship with insects, which is called mutualism: they open and close their petals at different times. This allows bees, butterflies, bumblebees and other insects to get enough food. We say that flowers have a biorhythm adapted to insect activity. Both sides benefit from this. For example, moths are the only insects capable of pollinating primroses, which is why primroses open flowers only at the end of the day. This relationship was noticed in the 18th century by the botanist and scholar Carl Linnaeus, who in Uppsala created a flower clock – a flower bed, on which every hour different flowers open and close. If the insects pollinate the flowers on time, the flowers close on time. However, if the bees do not arrive, the flowers extend their opening time, counting on pollination. If you notice deviations from the normal rhythm of the flower clock in your garden, it may mean that there are not enough pollinators in your area.

What is landscape connectivity?

We should also remember that if there is less and less open space, not enclosed by fences, the habitat fragmentation occurs. When there is more and more roads, buildings, houses and infrastructure around us and it is difficult to walk from a meadow to a forest without crossing an asphalt road or going around the fence of someone's property, it means that landscape connectivity and opportunities for free migration are beginning to be lacking. Habitat fragmentation affects plant populations: they are becoming smaller and more isolated. This, of course, affects all other organisms that depend on them.

H**ow do trees respond to climate change?**

On a hot summer day, a large deciduous tree can absorb up to 400 litres of water. The roots of trees reach much deeper than the roots of many other plants. If the rain does not provide enough water, the tree draws water from under the ground, but uses these resources in moderate amounts, only to not die of thirst. On the underside of the leaves are tiny stomata, that is openings resembling small mouths, which have a respiratory function. Thanks to these organs the tree can breathe. Trees excrete and lose water by respiration. If the climate becomes drier, they gradually close their stomata. Thanks to this method, they reduce water consumption, but also produce much less oxygen, grow less and have less fruit.

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