

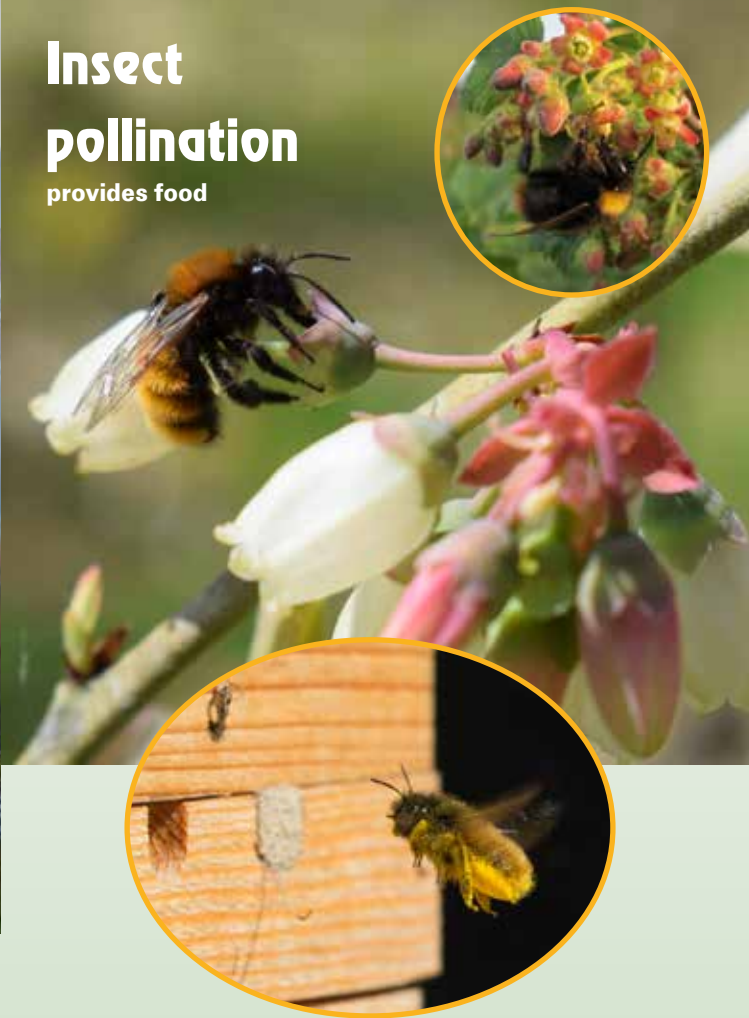
Ecosystem services - what are they?

We are connected with the ecosystems that surround us. Our lives depend on them, because they offer numerous benefits such as water and air cleaning, pollination, food, medicinal substances, building materials, energy sources, etc... Ecosystem services are so self-evident that we are most often aware of them only when something starts to run short.

Agriculture is highly dependent on ecosystem services such as pollination, water retention, biocontrol, circulation of matter, fertility of the soil...

Insect pollination

provides food



Biocontrol

the use of natural allies in the fight against pests

Biocontrol is the maintenance of pest populations by using other organisms. These organisms are an important part of biodiversity. By safeguarding their habitat (colorful meadows, borders, shelters, nutrient plants), we maintain their populations sufficiently strong. In that way we reduce the need for pesticide use.

Biodiversity is our ally in food production!



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REPUBLIC OF SLOVENIA
**MINISTRY OF THE ENVIRONMENT
AND SPATIAL PLANNING**

AGRICULTURE AND BIODIVERSITY HAND IN HAND



Future development and prosperity of our society will depend on how efficiently we will harmonize production of food and conservation of biodiversity.



Wetlands

useless land in the past,
today an important water retainer



Wetlands are defined as every area where water is retained for at least a part of the year. In the past wetlands were considered useless wasteland, therefore a lot of them were drained. Today we recognise their importance for the provision of drinking water supplies, because they maintain groundwater and improve its quality. They are natural wastewater treatment plants. Water is retained during the flood season and then dried up during the dry season, which is also a way of cooling the surrounding area. They stabilize the local microclimate and mitigate the effects of extreme weather events.

In the context of climate change and associated weather extremes, such as floods and droughts, the role of wetlands will be increasingly important for agriculture.

About 4/5 of the cultural crops depend on insect pollination. It affects not only the quantity, but also the quality of the crop. Better pollinated flowers develop into more beautiful, more resilient and nutritious fruits. When we talk about pollination, we first think of honeybees, but they are by far not the only pollinators. Many wild pollinators are also important, such as wild bees, hoverflies and other insects. They are even more effective and they increase the yield even where honey bees are abundant.

More than 500 species of wild bees (bumblebees and solitary bees) have been found in Slovenia so far.

Biodiversity is all that lives

Biodiversity is multiplicity of life on Earth, from bacteria and fungi to plants and animals. It developed through billions of years of evolution. Important feature of biodiversity is an extraordinary interconnection of organisms, whose chances of survival are small, but together they form a unique interlace with strong influence on conditions on our planet.

What has agriculture to do with biodiversity?

Permanent settlement and development of agricultural practices were key factors that influenced natural habitats and formed cultural landscape. Cultural landscape is the ecosystem which evolved as the result of human activity and natural processes. Cutting the woods, pasturing, mowing and soil cultivation resulted in meadows, pastures, fields, orchards and gardens. The use of diverse and low intensity cultivation practices created varied environments that provided food, shelter and reproduction space for numerous organisms.

Agriculture intensified through time because of growing human population and with it the demand for more food. Fertilising, early and more frequent mowing and the use of phytopharmaceuticals provide more food, however as a consequence many insects and birds have less opportunities of survival. The area of fields is growing with fewer hedgerows between them. On the other hand the agricultural landscape is overtaken by the forest in some places due to the abandonment of farming. All this affects animal and plant species living in the cultural landscape, reduces biodiversity and also the extent and quality of ecosystem services.

Many farmers are aware of the importance of proper cultivation on biodiversity conservation areas. By integrating into the various agri-environmental climate measures, that are the part of the European Common Agricultural Policy, they help to improve favorable state of cultural landscapes.

Even minor changes in farming can contribute to the conservation of biodiversity. It benefits both the people and the nature. Cultivated areas are not the islands in the landscape, but are integrated part of it.



Flowering meadows

oases of life

In the past grasslands were mowed later than in today's time. Because of manual mowing they were not all mowed at the same time, but through longer periods. The plants could bloom and form seeds. The meadows were therefore full of flowers and rich food source for pollinators. There were also safe shelters for ground nesting birds. Today the meadows are fertilized, they are mowed earlier in the year and more frequently. Because of this it is mostly dandelion that thrives on these meadows and after its flowering, rarely any food remains for pollinators. This is why, such occurrence can be called a green desert. Some farmers have begun a practice of leaving unmown patches of meadows which are only harvested next year. That way plants can form seeds and at the same time provide living space for various animals of cultural landscape.

Diverse meadows are not only important for pollinators, but also for other insects such as predators and insects that are involved in the decomposition of organic matter, which is crucial for maintaining fertility of the soil.



Meadow orchards

biodiversity in the shelter of treetops

Fruits have always been an important source of food. Every homestead was surrounded by various types and varieties of high-stemmed fruit trees. Cultivation practices were completely different from what we know today in intensive plantations. The powerful branched trees of meadow orchards provide a living environment for many animals. When flowering they offer forage for bees and other pollinators and provide shelter for birds to nest in them.

Even old varieties of fruit trees and other agricultural plants and domestic animal breeds are an important part of biodiversity.



Hedgerows

a network that maintains life

Hedgerows are narrow bands of woody vegetation and are characteristic structural elements of our cultural landscape. In the past they were intended primarily for the separation of ownership plots and fencing of grazing livestock. They provide more favorable local microclimate, reduce wind erosion and dehumidification of soil. The roots of woody plants strengthen river banks and prevent soil erosion. This mitigates the effects of floods and reduces the influx of chemicals into the groundwater. Hedgerows also provide living space and shelter to pollinators and numerous birds.

Hedgerows serve as shelters, transit corridors and a source of food for many organisms, so it is right that we protect, preserve and restore them.