

## Biodiversity meets music

# Orchard Meadows - rare cultural landscapes in the Rhineland



For centuries, orchards have been one of the elements of our cultural landscape. Fruit trees have always been an indispensable cultural companion of man. Farms and settlements were surrounded by green belts of fruit trees and thus enriched by a valuable habitat. The landscape was structured and enlivened by fruit plantations along roads and in the fields. Typical orchard meadows are cultivated and managed in an environmentally compatible manner, i.e. synthetic treatments such as pesticides and fertilisers are not used. In Germany, they date back to the Middle Ages and were initially limited to the immediate surroundings of settlements. This is how the orchard belts framed the villages.

At the early 20th centuries, fruit growing reached its greatest expansion. Until 1945, the tall orchard meadows of the farms were still the basis for fruit production, served the population for self-sufficiency and supplied the local markets. After the Second World War, the economic importance of the orchards declined. Agriculture and fruit growing became independent branches of business and fruit growing was concentrated in intensively cultivated low-trunk plantations. The apple became a standardised commercial product throughout the EU: high and consistent yields, uniform appearance in shape and size, good storability and transportability, and suitability for machine sorting. Diversity was lost because the care and harvesting of orchard meadows became too expensive for local fruit growers and they could not withstand foreign competition.

With this development, consumer behaviour changed, demanding only "immaculate" fruit. Due to the growing prosperity as well as the abundant and cheap fruit supply on the market, the interest in fruit self-sufficiency declined strongly among the population. The care of old trees was neglected, and young trees were no longer planted. This has led to the meadow orchard habitat being included in the "Red List of endangered and threatened biotope types". A large part of the existing orchard stands is over-aged and has only a limited life expectancy.

The **orchard meadows** offer numerous animal and plant species an important habitat in our cultural landscape and are at the same time a symbol of nature-friendly land management. Due to the diversity of habitats, there is a large food supply for animals, which is reflected in a high species richness. Animals benefit from seasonal food peaks such as blossoming, fruit fall and mowing, as well as from the use species such as rotting fruit, left deadwood piles and manure piles. The frequent integration into the surrounding structural diversity consisting of farms, semi-open fields, paths, ponds, avenues, and hedges also has a positive effect on species richness. With trees of all ages, orchards are particularly varied and provide a habitat for numerous invertebrate species. Blossoms, leaves, and wood provide food for many insect species. The abundance of caves in old orchards contributes to their special importance for numerous animal species. Besides more common bird species such as blackbird, chaffinch, starling, great tit, and blue tit, one often encounters rarer species such as tree sparrow, grey flycatcher, redstart, and green woodpecker. In orchard meadows, there are often other structural elements such as dry-stone walls, heaps of stones, brushwood and deadwood heaps or hedges and copses. Birds, bats, hornets, and other insects benefit from deadwood elements and cavities in old trees as well as artificial nesting aids.

A characteristic species of the meadow orchards is the **little owl**, which benefits from the numerous hanging little owl tubes.  $\frac{3}{4}$  of the nationwide little owl population lives in NRW. Advantages include the predominant use of grassland as pasture and the proximity to farms. Many mammals such as dormice, garden dormice and dormice also benefit from the abundance of caves. Bats use orchards as hunting grounds and tree hollows as hiding places: redstart, tree sparrow, red-backed shrike, great nightjar, hornet, dormouse, admiral, and hedgehog.

The **use of orchards** usually takes place in two storeys: In the upper storey of the treetops, the fruits are harvested, in the lower storey, the grass growth is used by mowing or grazing. Extensively tended meadows have a favourable effect, with up to 3000 animal species, especially insects, being found there. For the lowland regions in NRW, grazing by cattle or sheep is particularly typical. Particularly robust varieties on high trunks are typical for orchard meadows. A trunk length of at least 180 cm ensures extensive use of the undergrowth as meadow or pasture. Therefore, only high trunks should be used for replanting and new plantations. High trunk fruit trees can reach an age of 80 to 100 years, pear trees even up to 300 years. Continuous care of the cultivated biotope, especially tree and grassland care, is indispensable.

Preserving the **genetic diversity** and taste of old fruit varieties is strongly based on voluntary work. Orchard meadows offer a good opportunity to preserve old, robust, and proven fruit varieties. In addition, they offer the space to test newer cultivars for their suitability for the meadow orchard.

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## An apple a day, keeps the doctor away!

### Full flavour through old cultivars - harvesting and marketing

With their wealth of varieties, orchards make a special contribution to the preservation of genetic diversity. Moreover, with their unsprayed aromatic fruits, they make a particularly valuable contribution to healthy nutrition. In addition to their ecological value, the meadows are increasingly regaining their economic value through regional marketing of the fruit. Voluntary nature conservation associations and local heritage societies that have joined together to form initiatives and networks regularly offer pruning courses, carry out maintenance work and ensure that the fruit is marketed. Picked fruit is often sold as dessert fruit, the fallen fruit is mainly processed into orchard juice. The fruit harvest is supported by many volunteers.

### Mobile juice presses

offer an additional service to the existing fruit juice presses. They give fruit deliverers the opportunity to take back the juice from their own apples and provide their services to owners of large orchards or associations on site. They combine crushers, pressing equipment, heating equipment (pasteuriser) and filling equipment on a mobile base. The filled bags are packed in cardboard boxes and the juice can now be kept for at least one year. In many regions of North Rhine-Westphalia, meadow orchard juice is sold in retail shops, organic shops, weekly markets, and farms. In addition to pure apple, pear and plum juices, mixed juices such as apple-mango or apple-elderberry juice are also available.

## Recommendations for action

### New planting and care of orchard meadows - Rejuvenation ensures sustainability

Anyone who enjoys the sight of beautiful old orchards today and is committed to their protection must know that the trees were usually planted many decades ago and have often already reached their natural age limit. To preserve the habitat "fruit meadow" in the long term, the planting of young trees, their continuous care is necessary as well as the maintenance of vital old trees. If the harvest is to be used in one's own household, a new orchard should have about 12 high fruit trees (cherry, plum, pear, apples). For new plantations, typical landscape locations should be chosen, e.g., on the outskirts of villages or in the vicinity of farms. Long distances to the orchards should be avoided, as they make control, care and harvesting more difficult. As the trees must be pruned regularly, it is advisable to take part in pruning courses and other training courses beforehand.

### Every individual citizen can...

- plant a high-trunk fruit tree in his or her sufficiently large garden; when choosing a variety, he or she should consider beforehand whether he or she would prefer to eat the fruit or use it for compote, cake or juice.
- As a landowner or tenant, secure orchards through professional tree care; orchard initiatives help with advice and often also with action.
- set a good example in one's own social environment through one's self-sufficiency in orchards; and the neighbours are happy when they can bake a delicious apple pie!
- contribute to the preservation of meadow orchards through his consumption behaviour by preferring fruit and fruit products grown close to nature and learning to evaluate apples according to their "inner quality" and not according to external characteristics; stains can be removed with a knife, chemical residues cannot!

### Nature conservation associations and local heritage societies can...

- promote public interest in orchards through public relations work.
- campaign for the permanent preservation of orchards.
- advise landowners on tree care and fruit marketing.
- organise marketing and thus create an economic incentive for orchard cultivation.
- carry out replanting and support the initiatives.

### The environmental and landscape authorities of the districts and municipalities can...

- record and map orchards and protect them within the framework of land use and urban land use planning.
- place endangered fruit meadows under legal protection as "protected landscape elements".
- financially support the preservation of orchard meadows (fruit meadow promotion programme), making full use of the available state funding. To this end, they conclude support contracts with a current term of five years with the owners or tenants.
- Consider meadow orchards within the framework of compensation and replacement measures.