
AS
MOTOR
REASONABLE MOWING
ECOLOGICALLY-ORIENTATED GREEN SPACE MAINTENANCE

BACKGROUND

OPEN LANDSCAPES AND MARGINAL AREAS AS THE BASIS FOR SPECIES RICHNESS ARE DISAPPEARING

Particularly species-rich marginal areas have been increasingly reduced and fragmented in recent decades due to intensive land use, infrastructure measures and development. Remaining marginal areas are being maintained less and less or not at all. The formerly typical transitional landscapes between farmland and forest are becoming rare.

BIODIVERSITY IS AN EXISTENTIAL BASIS FOR HUMAN LIFE

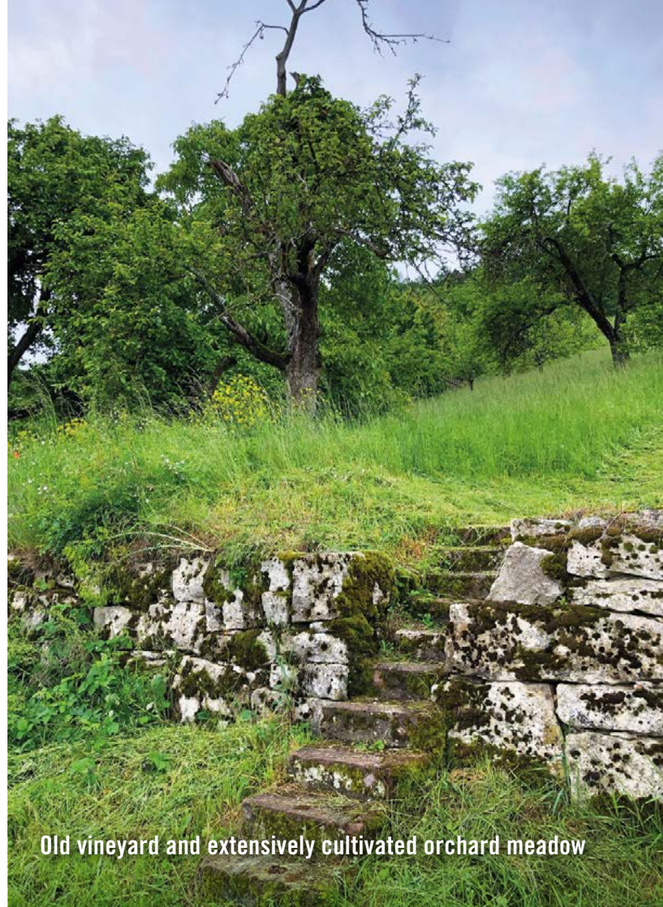
Grassland, orchards, field margins, roadsides and meadows on steep slopes in particular are often the only areas used extensively (with little or no intervention) in an era of increasingly intensive land use. They form valuable habitats and retreats for a variety of animal and plant species.

PARTICULARLY VALUABLE MARGINAL AREAS MUST BE PRESERVED THROUGH EXTENSIVE CULTIVATION

Many of today‘s botanically most valuable areas are the result of centuries of sheep grazing, steep-slope viticulture, fruit growing and haymaking. If these marginal areas, which are difficult to manage, are not maintained, unique habitats for rare animal and plant species are lost

Modern large-scale farming

Traditional, small-scale agriculture



Old vineyard and extensively cultivated orchard meadow

BASIC PRINCIPLES

NOT MOWING IS NOT A SOLUTION EITHER

When we think of biodiversity, we tend to think of the tropics, oceans and forests. Old cultivated landscapes, which are highly diverse habitats, are largely underestimated.
These landscapes have evolved over centuries from the interaction between land nature and land use.
Without any maintenance and management measures, these ecologically important areas and peripheral locations are exposed to scrub encroachment and reforestation.
In order to limit or avert the loss of species, the landscape and peripheral areas must be extensively managed. No maintenance reduces biodiversity.

THE PRINCIPLES OF SENSIBLE EXTENSIVE GRASSLAND MANAGEMENT SHOULD BE:

- **as little** intervention in the area as possible but **as much as necessary,** focus on species diversity
- Utilisation of all possibilities of **animal-friendly meadow management**
- **in terms of time:** when is mowing most appropriate to protect insects and animals?
- **spatially:** creation of refuges and escape routes
- **Maintaining a balance** between nature conservation, economic efficiency and occupational safety

The demand for exclusive, gentle mowing with a cutter-bar mower and subsequent collection of the cuttings has proved to be impractical in reality. The amount of hard, human labour required is too high. Lack of maintenance and neglected maintenance are counterproductive.
As is so often the case, the solution is a compromise.


No maintenance: progressive scrub encroachment


Intensively cultivated apple orchard


Extensively managed flower strips

GUIDELINES

Keeping peripheral areas open

MOWING: AS LITTLE AS POSSIBLE, AS OFTEN AS NECESSARY

The following recommendations are relatively easy to implement for ecologically orientated landscape management and should become standard practice.

FREQUENCY OF CARE:

- Principle: **Keep to a minimum**
- Align with the species to be promoted and the meadow type to be promoted
- For Central European meadows, the minimum is **about one to two cuts per year**
- **Prevent** the spread of woody plants (scrub encroachment)
- A few nutrient-poor meadows can also be mowed and collected every two to three years
- To level out a nutrient-rich site two to three cuts per year are initially necessary followed by collecting the cuttings
- No maintenance measures at all are not an option. Plants worth protecting lose their habitat as a result.

Insect-friendly mowing in the morning or evening hours

Very late mowing in autumn protects ground nesting birds

Scaring off fawns and wild animals on the eve of mowing

MAINTENANCE PERIOD:

- Complete mowing work **before the onset of spring** by 15 March
- **Flower-rich areas:** After the majority of the plants (50-70%) have faded. This corresponds to ‘care after sowing’
- **Areas with a high insect population:** In the early morning or late evening hours for flower-seeking insects
- Generally on cooler, windy days and overcast skies for many insect species
- **Bird protection:** start in mid-July at the earliest, August/September is better
- **Wild animals:** similar to bird protection. The best way to protect deer and wild animals is to scare them away on the eve of mowing by walking off the area and setting odour markers
- **Delayed mowing** from spring to summer is generally considered favourable for plants, insects and spiders
- **Very late mowing** in autumn is perfect for birds, mammals, amphibians and reptiles. However, it is detrimental to plant biodiversity
- **Mowing outside the growing season** is not recommended, as the cuttings cannot decompose and animals are disturbed in their hibernation period

GUIDELINES

MOWING DIRECTION:

- The direction of mowing is essential for the protection of animals
- Mowing from the centre of the area outwards is recommended. This allows animals to escape under the protection of the vegetation and be pushed towards the outside **(see Figure 1).**
- Alternatively, strip mowing can be used. In this case, the animals are also pushed towards the outside **(see Figure 2)**

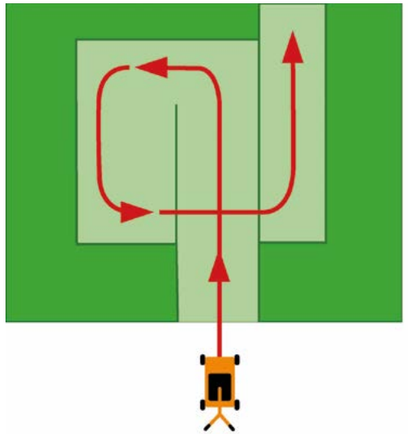


Figure 1:
Mowing from the inside to the outside

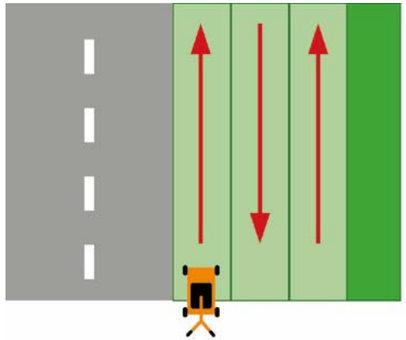


Figure 2:
Strip mowing

MAINTAIN IN SECTIONS:

- Avoid large-scale and simultaneous mowing
- Retain unmown areas as escape routes (old grass strips). Here, subpopulations can develop undisturbed and then recolonise the mown areas
- Ideally, old grass strips should be 10 x 50 m in size and are mown the following year
- Depending on possibilities and conservation objectives, 10 to 20 % of the area should be left unmown
- Mowing areas in sections according to the principle of ‘wandering or rotating fallow strips’ **(see figure 3)**
- Strip mowing (mosaic mowing) makes sense if the entire area should or must be mowed in a fortnight **(see figure 4)**

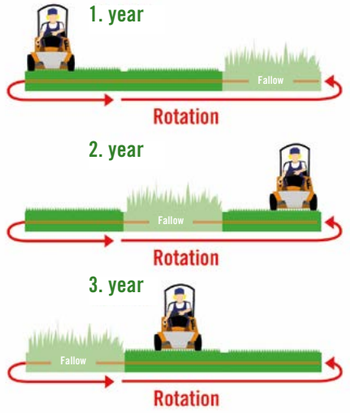


Figure 3:
Rotational fallow contributes to the preservation of biodiversity

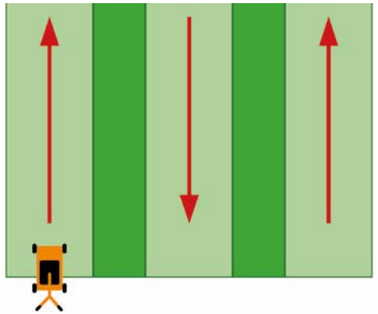


Figure 4:
Strip mowing creates escape areas for insects and animals

PROTECTING ANIMALS AND INSECTS

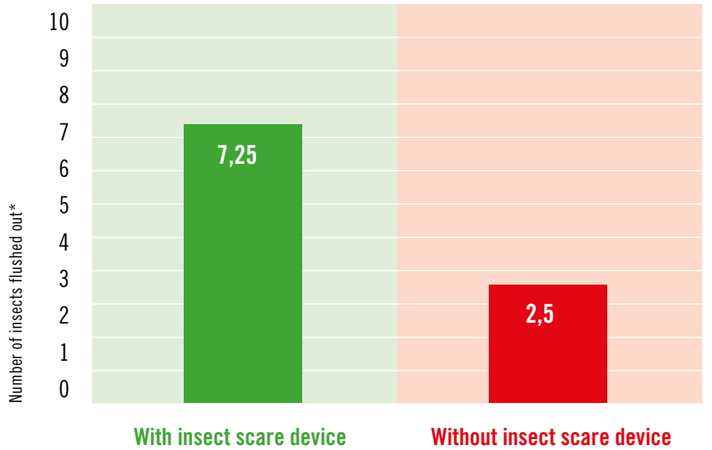
Unfortunately, there is no ideal maintenance period for all animal and plant species at the same time. There is also no such thing as mowing that protects animals in particular. However, in order to minimize the impact of mowing on fauna, the relatively easy-to-implement recommendations in this guide should become standard practice.

USEFUL AID: INSECT SCARE DEVICE

Insect deterrents for mowers scare away flying insects at a distance from the mower. This gives them time to flee from the danger zone. At the same time, more beetles and caterpillars are repelled and fall to the safe ground outside the cut area.

PROVEN EFFECTIVENESS: SCARING DEVICE

A scientific field trial conducted by the University of Hohenheim with an AS 63 high grass mower has shown that the insect repellent device scares away almost three times as many insects in front of the mower as mowing without a scare device.



* Source: “Possibilities for evaluating fauna-friendly modifications to hand-guided high grass mowers”, field trials. Elias Windmüller, University of Hohenheim, Institute of Agricultural Engineering, 02/2023

Double cutter bar for insect-friendly mowing

IN FOCUS: THE CUTTER BAR MOWER

Oscillating grass cutting techniques, better known as ‘cutter bar mowers’, are particularly gentle on insects and small creatures when mowing. The triangular blades, which slide against each other, cut the grass cleanly like scissors. The grass and plants remain unshredded and in full length on the surface and begin to dry. The dried grass can then be collected at short intervals and used as hay.

TiPP: DO NOT MOW TOO LOW - PROTECT ANIMALS

To protect mammals and reptiles living close to the ground, the mowing height should be as high as possible. At least 8 cm, preferably 10 cm. This also gives insects swiped by a scaring device a better chance of escaping unharmed.

HELPFUL: CULTIVATION BAND RAKE

Grassland maintenance often doesn‘t end with mowing. The next step is to remove the cuttings from the area to prevent nutrient accumulation. The scarcity of nutrients on certain grassland sites is an important prerequisite for the flowering of numerous herbs.

Nutrient-poor sites therefore produce a more colourful and species-rich plant composition. These nutrient-poor sites are maintained extensively, i.e. only once or twice a year. A belt rake is a very helpful tool for removing the cuttings.

However, the belt rake can also be used for small-scale farming or private livestock farmers in various functions for forage harvesting. In the first step, the machine functions as a tedder with a higher engine speed and without swath cloth. With a swath cloth and lower speed, the forage is then conveniently raked into windrows.

Belt rake for turning and swathing hay

AS 700 KM rotary mower at work

ROTARY MOWERS - THE CLEVER ALTERNATIVE TO THE CUTTER BAR MOWER

In the past, the cutter bar mower was the most commonly used motorised mower for the daily production of green fodder. However, the disadvantages of the bar mower have always been its susceptibility to maintenance, its high weight and the increased wear on the blades. Today, a new generation of rotary mowers (also known as drum mowers) makes the production of animal feed and hay much easier.

ADVANTAGES OF A ROTARY MOWER

Rotary mowers run more quietly than cutter bar mowers. The tiring ‘shaking’ of a cutter bar mower does not occur with rotating blades. The flexibly mounted cutting blades of the rotary mower fold away when they hit obstacles. The blades are easy to sharpen, can be used on both sides and are very simple to fit. The fixed disc below the blade disc glides over the ground and follows the contours of the ground precisely for an even cut.

When working on gentle slopes or uneven ground, the drive axle can be locked by inserting a locking pin (AS 585 km and AS 585 EKM). This ensures that both wheels are driven evenly and the machine drives straight ahead with precision. When driving around obstacles and trees, the differential lock is opened again to make steering and manoeuvring easier. The AS 700 km is equipped with an automatic limited slip differential and is particularly suitable for off-road use.

PERFECT FOR SMALL ANIMAL BREEDERS AND HORSE OWNERS

Anyone who has to provide animals with forage grass every day knows the problem: you want to feed them fresh every day if possible, but you don‘t want to go out to mow the meadow every day. The forage cut with a roundabout mower stays fresh for a longer time. And thanks to the sturdy mowing disc with hardened reversible blades ground on both sides, you can enjoy your robust, reliable forage mower for a long time to come.

Placement of the unshredded grass in a swath

AS MOTOR

MAINTAINING A BALANCE BETWEEN NATURE CONSERVATION, ECONOMIC EFFICIENCY AND OCCUPATIONAL SAFETY

Many different mowing systems are available on the market. The traditional Swabian manufacturer AS-Motor has specialised in high grass mowers since 1959. Whether cutter bar mowers, sichel mowers, sichel mulchers, rotary mowers or flail mowers, you will find the largest selection of machines at the No.1 in high grass mowing. Weighing up the advantages and disadvantages of each system is not easy. To give you a little help, we have compiled a guide to ecologically orientated green space maintenance. It also contains a brief and clear comparison of AS-Motor high grass mowers.

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GUIDELINES FOR ECOLOGICALLY ORIENTATED GREEN SPACE MAINTENANCE