

Farming for Conservation in the Burren

Sustainable Grazing of Burren Winterages

BURRENLIFE BEST PRACTICE GUIDE No. 3



The BurrenLIFE Project

The Burren, also known as *An Bhoireann* - the 'place of stone' - and described by Cistercian monks as the 'fertile rock', is a unique and very special place. It is one of Ireland's most outstanding landscapes: a place of great beauty and fascination, steeped in history, teeming with wildlife and blessed with a rich culture and strong sense of community.

For some the Burren is a home, for others a place to visit, to study or simply to enjoy. But the importance of the Burren extends far beyond its borders - its heritage is of outstanding universal value. This value has been recognized at European level by the designation of much of the area as Natura 2000 Sites, or Special Areas of Conservation (SACs), under the EU Habitats Directive. As such we are obliged to manage the Burren in such a way that future generations from near and far can continue to benefit from it.

To look after the Burren properly we must appreciate that the Burren has been shaped, not just by natural forces, but by countless generations of farmers as well. The BurrenLIFE Project has worked closely with Burren farmers and other experts to create a blueprint for farming in the Burren, through which farmers can earn a decent living from the land and continue their longstanding role as producers of quality food and custodians of a magnificent heritage and landscape.

The information contained in these guides is based on five years of applied research which took place on 20 farms across the Burren. The practical, locally-targeted solutions contained herein have been tried and tested by Burren farmers on their land and closely monitored by the project team.

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WHY GRAZING MATTERS

Over the past five thousand years, the Burren has been greatly influenced by farming practices, in particular grazing. The practice of overwintering livestock on the rocky hills of the Burren is one of the defining features of the region: a wonderful sight to behold, a tradition of great antiquity and of major cultural and ecological significance.

For many generations, farmers from near and far have prized the 'dry lie' of the Burren as a place for storing cattle over winter. The warmth of the limestone, as well as the calcium-rich water and herb-rich diet, produced beef and lamb of superior quality described as far back as 1681 as 'much sweeter [than any land in this kingdom] by reason of the sweet herbs intermixed and distributed everywhere'.

But great store cattle, and more recently suckler calves, are not the only products that Burren farmers can claim credit for. Research has shown that by 'hoovering up' the standing crop of vegetation during winter time, livestock create the perfect environment for the Burren's rich annual crop of gentians and orchids to prosper, unhindered, in spring and summer.

If the Burren hills were bereft of grazers, plants such as blue moor-grass and heather would soon start to dominate, out-competing the flowers for which the Burren is famous. Over time shrubs such as hazel and blackthorn would spread over this grassy thatch,

smothering the grasslands and any monuments they might contain. Cattle tracks would soon close up, further restricting access and movement.

Removing scrub is very costly and difficult, and maintaining a good grazing regime is the most cost-effective way of avoiding, or at least delaying, scrub encroachment. Grazing animals offer other benefits as well: animal's hooves create pockets for new plant species to colonise, animal dung is an important habitat for a range of insects (a vital link in the animal food chain) and animal carcasses support a range of bird, mammal and insect species.

Simply put, *grazing by livestock* is the key to the conservation of the biodiversity and landscape of the Burren. Too little grazing, or too much - particularly in summertime or with heavy feeding - can badly damage the Burren. Getting the grazing balance right requires skill, experience and time, but also ongoing work by the farmer such as maintaining walls, providing clean fresh water for livestock and improving access.

This best practice guide is designed to complement the farmer's knowledge of the land and the livestock so that grazing can continue in the Burren in a manner consistent with the needs of farming for conservation and of quality food production.

GETTING THE GRAZING BALANCE RIGHT

What we see in the Burren today reflects how it was managed in the past. Two key principles applied to farming during this time: nothing was wasted and equally nothing was abused. This simple approach to managing the land is what we need to replicate in the Burren today: land that is well grazed and managed, neither under-used and wasted nor over-used and abused.

Ideal grazing levels are difficult to define and even more difficult to deliver. In reality, different levels of grazing will suit different species, habitats, fields and farms. Animal health and financial viability are other key considerations. In general, the best grazing systems are those where external inputs are minimal, where land is maintained in good ecological condition and where stock are kept in good health.

Understocking - where areas are stocked below their natural carrying capacity over a number of years - will result in poorer forage quality on the winterage and may eventually lead to scrub encroachment. In the long run this will reduce the carrying capacity, leading to higher feed costs, and will result in greater herding difficulties. Many typical Burren plants will slowly disappear, no longer able to compete with the increasingly dominant rank grass.

In contrast, consistent overstocking of a winterage will lead to poaching (cutting up of ground), pollution and greater animal stress. This will impact on animal condition and health and will cost the farmer in additional feeding, vet bills and possibly penalties under cross-compliance. The character of the vegetation will change from a Burren-type flora to a weed-rich flora, typical of 'improved grassland' which tends to be 'softer' - easily poached and unsuited to winter grazing.

Only by grazing a winterage well will the farmer make the most of the available forage, thereby reducing feeding and housing costs while also maintaining animal health and keeping the winterage in prime condition for future grazing. It is useful, and fairly easy, for you as the farmer to be able to identify if your winterage is being under-used or over-used relative to its capacity. The behaviour and condition of your stock will tell you a lot but there are other simple, useful indicators as well.

SIGNS OF UNDER-USED WINTERAGES

- High levels of litter (dead vegetation) - particularly whitish, matted grass
- Large numbers of young scrub saplings (less so on exposed sites)
- Tall, rank vegetation throughout the year
- Little sign of recent livestock activity - dunging, hoof marks etc.

SIGNS OF WELL-USED WINTERAGES

- Relatively low litter levels and low poaching levels
- Relatively slow encroachment of scrub saplings
- Good variation in vegetation height from closely cropped to taller patches
- Good even spread of dunging and hoof marks across the site
- Few 'weeds' (plants such as docks, thistles and nettles)

SIGNS OF OVER-USED WINTERAGES

- High levels of animal poaching throughout site, not just by gates and along paths
- Excessive levels of dunging throughout the site
- Extremely short vegetation, in some cases causing soil or bedrock to be exposed
- Increased levels of weeds



Under-used winterage



Well-used winterage



Over- used winterage

TYPES OF GRAZING ANIMALS FOR BURREN WINTERAGES

We know from past records that Burren farmers used a combination of cows, cattle, sheep, goats, horses and other stock - with many different breeds of each - on the Burren. A survey in 1808 tells us that the Burren was grazed by 'immense numbers' of sheep at that time, with some store cattle. During the 20th century store cattle - particularly Shorthorns and later Hereford and Angus - began to dominate. From the 1980s to today, continental-cross suckler cows have prevailed.

In reality, over the years, farmers have selected the types and breeds of stock best suited to their farm, based on the markets and policies of the time. Some farmers also choose animals on their ease of management, while others have an inherent preference for a certain breed. The important thing to remember however, is that most types and breeds of stock, if properly managed, can contribute to sustainable grazing systems in the Burren. In fact, the suitability of an animal for overwintering on the Burren often depends more on the animal's experience of the local terrain and climate than on the breed or type of animal involved. In all cases it is very important that the animal goes onto the winterage in good condition, that is: in good health, with a good amount of flesh, good feet and healthy set of teeth.



COWS

Suckler cows are the main grazers on winterages today. If cows are familiar with a winterage they can cover the ground very well; if bought in, they should be sourced from limestone land or they are liable to suffer from 'red water'. Sucklers thrive on winterages up until Christmas when the grass is relatively nutritious. As the forage quality diminishes in the New Year, their nutrient requirements start to increase as they near calving, so targeted ration-based feeding will be required at this time (see Best Practice Guide No. 4 - A Guide to Feeding Cattle on Burren Winterages) if they are to remain on the winterage. Dairy cows are less suited to winterages as the modern breeds are not as hardy and require very high levels of feeding.

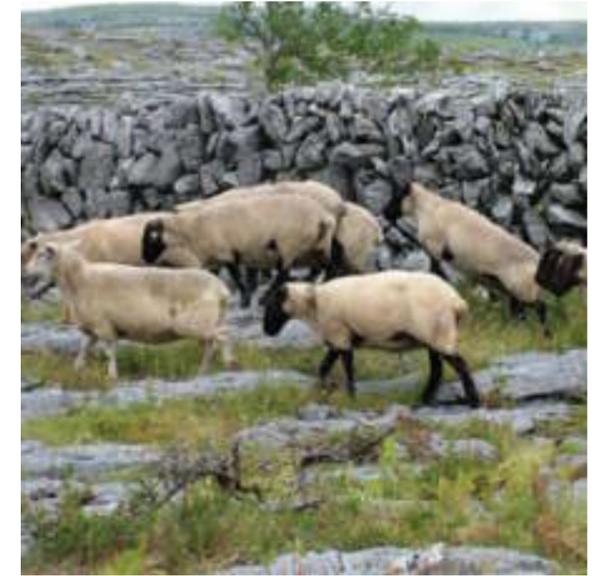


BEEF STORES

The Burren was once renowned for keeping store cattle over winter. Beef stores are very well suited to winter grazing. In recent years they have diminished in popularity due to policy and market changes (a preference for young 'weanlings' for export) but they are a very good low-cost option for grazing winterages. They require far less herding than in-calf suckler cows. On a good winterage they can survive without supplementation - unless the winterage is undergrazed, in which case a high protein ration will help to improve digestibility. Stores tend to be lighter and more agile than suckler cows. Though beef stores lose weight when overwintered, their compensatory growth in summer is tremendous. Younger cattle (1.5 yr olds) are thought to fare less well on winterages due to the tough vegetation and their shedding of teeth.

SHEEP

Sheep are tighter grazers than cattle. They tend to target particular plants which may result in reduced biodiversity. Balancing this, they can play an important role in controlling scrub, particularly in late spring when shrubs are leafing out and in late summer when leaves are still fresh. Few farmers keep sheep today as prices are poor and the labour input is high. While sheep are mostly used on winterage areas in summertime, this practice should be avoided - or stocking rates lowered - if possible during the main flowering months of May to July. Alternatively the winterage should be rested during the summer at least every second year.



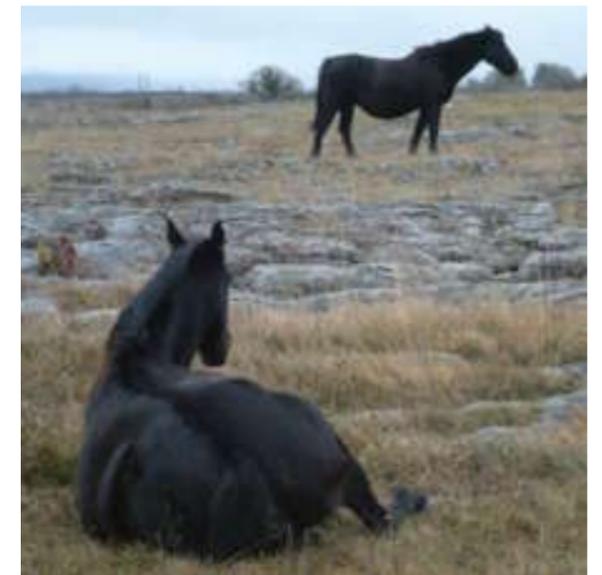
GOATS

Rearing goat kids for the Easter market was how many Burren youngsters once made their pocket-money. Today the majority of goats found in the Burren are feral, though some farmers keep a small number of domesticated goats for milking or for kid meat production. Different breeds and types of goat have different grazing and browsing habits: to be effective as conservation grazers, goats need to be managed and this requires a lot of work which is not always realistic.



HORSES, PONIES AND DONKEYS

Equines are also very tight grazers and do well on winterages. They have both upper and lower teeth at the front which means they are better able to bite through tough, rank vegetation than cattle. In some cases they are used to complement the grazing of cows or cattle. Numbers of equines tend to be rather low and quite variable. Hardy animals should be used, otherwise they usually need some supplementary feeding in late winter when grassland values diminish. As with sheep, excessive summer grazing with equines can reduce biodiversity.



STOCK MANAGEMENT ON BURREN GRASSLANDS THROUGH THE SEASONS

Traditionally, farmers put their cattle on winterages from early October to early May, though dates varied from year to year and from farm to farm. For example, stronger winterages were often grazed lightly in late summer by herdsman or local farmers. During the 'winter' months there was very little grass on the green land and winter feed was much harder to save than today when farmers can use silage. Having a dry, well-watered place with a good standing crop of vegetation to outwinter animals was - and still is - a great asset and it was at this time of the year that the Burren really came into its own.

As well as winterages, most Burren farms also contain areas of 'improved' land which are vital 'support areas' for conservation. They allow stock to regain condition while winterages are rested during the flowering season. To ensure good, early spring grass, summer fields should be closed off in early Autumn (Sept - Oct) and stock moved to the winterage. Stock should be moved back on to the green land in April or May. Of course the timing of grazing will depend on the farming system in question and on the weather, market and disease conditions that prevail on the farm, but there are some standard recommendations on grazing in the Burren through the seasons.

SUMMER (MAY - JUNE - JULY)

During summer months, livestock should be kept on the 'green land' (the improved fields of the farm) and the winterage areas should be rested. These are the main flowering months in the Burren and if livestock were put on winterages they would be inclined to eat and trample the flowering plants before they had a chance to set seed. Over time this would result in a change in, and ultimately a loss of, biodiversity. On weaker winterages, summer grazing would deplete the amount of winter grazing available and undermine the ability of these areas to sustain outwintering animals.

AUTUMN (AUGUST - SEPTEMBER - OCTOBER)

Following the summer break, it was common for farmers and herdsman to put some stock on stronger winterages. Light grazing for a few weeks in August is recommended to 'top-off' strong winterages, the vegetation of which otherwise would be trampled and/or lodged by the winter. Some vegetation, such as purple moor grass, is at its most nutritious in late summer and so is a valuable resource. Most winterages are not restocked until October, though on some farms they can, and should, be restocked from mid to late September onwards.

WINTER (NOVEMBER - DECEMBER - JANUARY)

These are the key months on the winterage and all winterages should be grazed at this time. The vegetation is more nutritious - the equivalent of good hay - in early winter (up to December) than in late winter and so stock should require little or no additional feeding. The vegetation remains upstanding and is easier for cattle to get at in early winter, thus they make best use of the winterage. As the green fields may be very wet at this time, the winterages provide an excellent and extremely valuable alternative.

SPRING (FEBRUARY - MARCH - APRIL)

Typically, these are the hungry months on the farm, and on the winterage. The best of the vegetation is gone or has been trampled and the rest is declining in quality - equivalent to straw. Suckler cows are heavy in calf or have calved and have to work harder to get their daily nutritional needs. In most cases, supplementary feeding is required at this time, ideally with concentrate ration if there is sufficient forage. If not, stock will need to be fed with hay or silage but, when possible, this should be done off the winterage in slatted houses or on green field sites where there is a lower risk of pollution than on winterages (see Best Practice Guide No. 4 - A Guide to Feeding Cattle on Burren Winterages).





Weaker winterage



Middling winterage



Stronger winterage

GETTING THE STOCKING LEVEL RIGHT

Suitable stocking rates vary greatly between winterage fields because of diverse factors including terrain, soil cover, livestock type and management history. Traditionally, Burren winterages were sold or rented, not on their acreage, but on their carrying capacity over the winter. So today when we are proposing stocking rates for winterages, we cannot use a standard rate per hectare as is done on uniform grasslands, rather we have to be more conscious of the huge variation within and between sites. We must also realise that this rate is not absolute and may vary from year to year.

By speaking with older farmers the BurrenLIFE project has recorded information on traditional grazing levels on a number of Burren winterages. In addition, BurrenLIFE has compiled detailed records from over 70 winterage fields on 20 Burren farms. This information, collected by the farmers themselves, comprises of the number of 'grazing days' (one grazing day is one Livestock Unit for one day) per field per annum. All of this information allows us to estimate guideline stocking rates for different types of winterage. For simplicity we have used three main winterage types - weak, middling and strong - which reflects their relative productivity. While most fields will have a combination of all three types it is usually possible to fit a winterage into one category or another.

It is important to stress that these are only guidelines and ultimately the farmer is best placed to decide on actual stocking rates. The farmer is the best judge of the land and livestock and stocking rates can be expected to vary year on year based on factors such as the health and condition of the livestock, the weather and the condition of the winterage.

WEAKER WINTERAGES

These winterages usually have a lot of exposed rock interspersed with a very thin soil cover (<2cm). The vegetation is generally short, dominated by tough, drought-resistant plants such as mountain avens and blue moor-grass which are characteristic of the Burren.

- Feeding value: Relatively low. Low productivity, lower nutritional quality
- Grazing Period: Winter only (October - April)
- Winter Grazing Rate: < 0.2 LU/ha (< 35 grazing days/ha). (Avg. rate 0.14LU/ha)

MIDLING WINTERAGES

These winterages typically have some exposed rock but in general sport a good cover of relatively thin soils (2-5cm). The vegetation is dominated by a diverse mixture of plants including blue moor-grass, fescue grasses and herbs such as bird's-foot-trefoil.

- Feeding value: Middling. Average productivity, quality diminishes post-December
- Grazing Period: This is classic Burren winterage grassland but may require some late summer grazing (August) on richer parts of the site
- Winter Grazing Rate: c. 0.2 - 0.4 LU/ha (35 - 70 grazing days /ha) (Avg. rate 0.28 LU/ha)

STRONGER WINTERAGES

These winterages usually have very little exposed rock and a good soil depth (>5cm). The vegetation is dominated by stronger meadow-type grasses and taller herbs such as devil's-bit scabious and knapweed; they can become quite rank and lodged unless grazed in late summer/early winter.

- Feeding value: Good. Relatively productive and nutritious. Quality and accessibility of forage diminishes post-Dec so late summer/early winter grazing is needed
- Grazing Period: Light grazing in late summer (August), full graze in winter
- Winter Grazing Rate: > 0.4 Lu/ha (>70 grazing days /ha) (Avg. rate 0.56 LU/ha)

MAKING MANAGEMENT EASIER - SOME KEY NEEDS

WALLS AND FENCING

The Burren is renowned for its stone walls. Some of these walls are thousands of years old - mound and slab walls for example - and are important archaeological sites. Burren walls come in all shapes and sizes and no two walls are quite the same. The majority of the walls we see today were built over the last 200 years.

Stone walls are not 'ornaments', they were built to define boundaries and ownership and to subdivide land into defined blocks so that land parcels could be used in rotation. Repairing these walls can be a lot of work but this can be a good long-term investment in helping to manage land and livestock more effectively, and making the job of herding livestock much easier.

Many Burren farmers are very skilled at stone wall restoration. There are a few general guidelines which should be adhered to:

DO

- Assess which are the priority walls for repair on your holding and work accordingly
- Repair broken walls using fallen stones where possible
- Get permission if you need to source stone from elsewhere on the farm
- Repair your wall in a manner and with materials which are consistent with its existing design
- Hang small metal gates for access between fields - rather than using pallets, bushes etc.
- Remove scrub where it is in close contact with a wall

DON'T

- Remove stone from another structure (e.g old wall or building) to repair a broken wall - you could damage important archaeological monuments
- Use stone from an unapproved source
- Repair broken walls by mining undamaged areas of limestone
- Use wire if it is realistic to repair a stone wall instead
- Pile stones on a wall that is already unstable - it's a waste of time



WATER PROVISION

Water is life. Without water we cannot survive, nor can our livestock. In spite of high rainfall levels, water is not always freely available in the karst terrain of the Burren. Most of the water quickly flows underground and so surface streams and water bodies are scarce and springs are unpredictable. In fact the lack of water on the Burren in summertime may be one of the main reasons behind the ancient practice of winterage.

Traditionally, farmers in the Burren and Aran Islands built rainwater collection tanks to gather drinking water for their stock. These are a robust, low-maintenance way of providing free water to livestock and some of these structures have become heritage sites in their own right. Springs, lakes and turloughs are other very important sources of water but supplies may fail after prolonged periods of dry weather. Springs can become polluted if large numbers of cattle congregate at the one spot: in such cases it may be sensible to fence off these areas and pump or pipe water to nearby storage tanks and troughs.

Many Burren farmers are very skilled at managing the often-scarce supply of water on their land. There are a few general guidelines which should be adhered to:

DO

- Assess the watering needs on your winterages and how they might best be addressed
- Fence off springs and other water bodies where stock are damaging the water source
- Pump or pipe water away from sensitive water bodies to water troughs situated in less sensitive areas
- Keep water troughs up off the ground, ideally at a height where wildlife can't easily access them
- If piping in water, check regularly for leaks and use a stop valve to turn off the supply when there are no stock on the land

DON'T

- Build water tanks or collectors on SACs without getting permission
- Continue to allow stock access to damaged springs



ACCESS PROVISION

By most standards, the Burren is a very rough, inaccessible place for farming. Winterage areas in particular tend to be rocky, scrubby and very extensive, accessible only on foot, to be navigated with care. Traditionally, small pathways were opened by hand to allow cattle access to areas of grazing and farmers access to their livestock.

Access to upland areas is very important for efficient herding and moving of livestock and for tending sick or injured animals. Access is more important than ever today as many farmers work off-farm and they have limited time for herding stock. Also, feeding rations to cattle requires better access to ensure that the feed is well distributed across the grazing area.

It is important to remember that the need for access must be balanced by the need to protect the priority upland habitats for which the Burren is famed. It is no longer acceptable to bulldoze paths up hillsides or across limestone pavements and grasslands. BurrenLIFE have piloted methods of minimising the damage caused to the Burren through the construction of access tracks. There are a few important principles which need to be adhered to when considering access:

DO

- Assess the priority areas for access provision on your winterages, how best these access needs might be met, and how feasible it is to do this work
- Consult the relevant authorities - including the National Parks and Wildlife Service and the National Monuments Service - before starting work as you need to be sure that you are not damaging protected monuments or habitats
- Select a route that will minimise damage to priority habitats and monuments - often old livestock tracks or cart trails offer good potential routes
- Try to minimise the amount of damage done and materials used when building tracks, use a 'light touch' where possible e.g. infill to level a surface rather than remove
- Use local, legally-sourced limestone chip for track surfaces
- Use protective material (e.g. Terram geotextile membrane) to protect mound walls when building tracks

DON'T

- Use shale or other 'foreign' material for lining tracks on limestone
- Build tracks without consulting the relevant authorities - NPWS, NMS etc.
- Use heavy track-machines as these will crush the limestone bedrock underneath





BurrenLIFE - Farming for Conservation in the Burren

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