



will grow again by about 30%, resulting in stable population sizes over longer periods of time. Ideally populations of grazers are not hunted, even when predators are absent, but practices are sometimes different. Because of conflicting interests with neighbouring parties, it might be necessary to prevent animals from moving (for example, to prevent animals moving into agricultural fields causing damage). Buffer zones with hunting regimes can be used, or areas could be fenced (Just to put fencing into a different context, even some of Africa's largest national parks like Kruger or Etosha are totally fenced). In smaller areas or with semi domestic animals, laws sometimes oblige that animals aren't 'allowed to suffer.' Population control is then needed, either by shooting or by catching animals.

### 12 Does natural grazing stop forest encroachment?

Large grazers influence forest encroachment on many levels, but they don't stop it. Instead they restructure the landscape by putting a hold on forest development and by grazing on existing trees and opening up older forest.

During evolution, woody species developed ways to avoid being eaten; some developed thorns or poisonous leaves. In open fields, young oaks, beeches or willows can't escape being eating: but among bramble, blackthorn or buckthorn thickets for example, they can find safe environments. While ungrazed areas are quickly overgrown by forest encroachment and intensive agricultural grazed landscapes consist of monotonous lawns of only a few species of grass, natural grazing leads to a mosaic of open meadows, herb and shrub fields, thickets and old growth forests. A mosaic landscape is one, which is constantly changing in time, but with sufficient land mass so that all phases can always be found present.

### 13 Should natural grazers be allowed into our forests?

Yes, natural grazing is just as necessary in forests,

as it is in open meadows. Due to cultural evolution, this insight has become lost. Nowadays, domesticated animals are kept in very high numbers in our open agricultural fields, while in our forests we consider wild herbivores to be pest species. It is true that, from a forestry perspective which demands rapid growth of straight stems, wild herbivores may cause damage – however, from a natural perspective, trees don't need to be straight and, with a lifespan of over a thousand years, you'd only need 1 oak sapling to survive every 300 years to maintain a viable forest. From nature's perspective, forests and meadows aren't divided.

### 14 Is natural grazing a form of extensive agriculture?

No, natural grazing isn't a form of agriculture. The connection is easily made because of the use of wild cattle and horses, but there are some major differences. Natural grazing isn't about production, but about wild animals: also, it can involve a process whereby cattle and horses are enabled to reclaim their wild ancestors' ecological niche. For this purpose, the animals are selected to be self-sufficient, whilst being de-domesticated or rewilded. This involves a drastically different approach. Cattle and horses used for natural grazing produce little or no milk, don't supply any labor and grow (meat) far slower than domesticated animals.

### 15 Natural grazing - management and tourism?

The aim of natural grazing is not only for the animals to live a natural life, but also for nature to be self-managed. This means that the active role of managers, foresters or rangers will change from being landscape architects towards being a host, proudly welcoming visitors and communicating about wildlife. The presence of wild animals attracts tourists and wildlife watchers, which have to be guided.

Wildlife holds an increasing attraction for people. Annually, many travel towards wildlife parks in Africa, India or the Americas and eco tourism is booming. In Europe, we have our own unique

wildlife, as is shown in this leaflet. Natural grazing is a unique marketing commodity and can be used as a tool to increase visitor numbers and local income. For this to work, several things have to be arranged:

- Animals must be visible, living under natural (high) densities and for populations not to be hunted (which causes animals to be shy and mainly active by night).
- Areas must be known, found on the internet or in tourism guides.
- Areas must be accessible and within the vicinity of good modern accommodation
- Well trained hosts and guides must be trained to give people the European wildlife experience of their lifetime.

New business models, which benefit both local economies and nature, are now being developed.



## INTERESTED?

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You can also contact us through [international@freenature.eu](mailto:international@freenature.eu).

If required, we can give advice, set up management plans or business models or supply animals. We warmly invite you to visit one of our example projects in the Netherlands, or elsewhere in Europe – you will be most welcome!

Photos by Leo Linnartz (cover, red deer, Iberian ibexes, heck cattle in winter landscape), [www.wildernisfoto.nl](http://www.wildernisfoto.nl) (group on top of dune, tree with sundown, galloway cattle in semi open riverine landscape) and Herman de Jong (Muskoxen). Rest FREE Nature photo archive.

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Foundation for Restoring European Ecosystems

# NATURAL GRAZING WILD AND SEMI-WILD ANIMALS AS LANDSCAPE ARCHITECTS

Natural grazing is all about the return of wild and semi-wild animals to their natural habitats. Natural grazing maintains a 'mosaic landscape' of rich, open fields, shrubs, thickets and old growth forests. Natural grazing is not only about rewilding large areas: even with just a few hectares, natural grazing can make a huge contribution to biodiversity. It is also about creating landscapes in which people feel at home.

This leaflet shows what natural grazing is about - an explosion of life within the footprints of Europe's large herbivores.





# 1 What is Natural grazing?

Natural grazing is grazing by indigenous herbivores living a 'wild life'. A 'wild life' means that animals are self-sufficient and human intervention is minimized as much as possible. Animals determine their own social order, fend off predators themselves and find their own resources. Natural grazing is not about one species of herbivore, but about all indigenous species, interacting with each other. Also, it is about animals living together in natural densities.

## 2 What are wild grazers?

Wild grazers are our indigenous wild herbivores. Before humans colonized Europe, before they started hunting, clearing forests, managing fields and keeping livestock, Europe had a rich, diverse wildlife. This wildlife was comparable to what we now only see in Africa or India. Over a dozen species of large herbivores grazed the European continent - species like red deer, European bison and Ibex were abundant. (See below for an overview of Europe's indigenous herbivores.)

## 3 Does natural grazing only work on large-scale re-wilding projects?

No. Natural grazing also works in areas of only a few hectares. The smallest area managed by natural grazing in the Netherlands measures only 8 hectares. In contrast, larger areas can be managed more naturally. Ideally, natural grazing starts in areas of about a few hundred hectares and with at least 2 or 3 species of herbivores (including wild cattle and horses). With increasing land-mass, more species can be re-introduced.



## 4 Can't we work with just one species of grazer?

The more complete an ecosystem, the more naturally it works. Because different species occupy different niches and have a different grazing behavior, it is always best to use as many indigenous species as possible. Each species fills its own unique niche. Some prefer to consume grasses, others are intermediate feeders consuming grasses, herbs, flowers and shrubs, and some are tree eaters focusing on leaves, twigs and bark. Species like water buffalo and elk have a big influence on aquatic vegetation. Species weren't evenly distributed over Europe: some could only be found in the north, like muskoxen; others were more prevalent in southern or eastern Europe, like Eurasian ass or saiga. Species also interact. Some species support and facilitate others' existence: for example, horses prefer fresh re-growth of grasses already grazed by others. During leaner times, during winter or dry periods, species compete for food sources and, as a result, have to search for alternatives (twigs, bark, old herbs, roots). Different species find these alternatives at different sites. Increasing the diversity of grazing species increases the scope and influence they can have on their surroundings.

## 5 Why cattle and horses?

Unfortunately, the wild ancestors of cattle and horses, aurochs and wild horses are extinct.

However, their genes are still present in today's domestic animals. Both wild ancestors filled a unique niche: in most ecosystems they were the only true grazing animals (as compared to browsers or intermediate feeders). They are among the first animals to have influenced natural succession starting from open fields. They are also amongst the bulkiest animals, with the power to push over small shrubs and trees.

## 6 Which breeds of cattle and horses are suitable for natural grazing?

Not all cattle and horses are capable of living in the wild. Some have been bred to such an extent that they have to be milked every day, cannot give birth without a cesarean incision, have a high fertility resulting in being susceptible at too young an age and risk giving birth while they themselves haven't fully grown or are not yet capable to fend off predators. For natural grazing, animals have to be self-sufficient.

Currently, several projects are being undertaken to de-domesticate or re-wild cattle and horses in order to enable them to reclaim their ancestors' niche – the projects are using breeds which are more primitive, like highland cattle, steppe cattle, Rodopian shorthorn or sayaguesa; horse breeds include, konik, hucel, exmoor or soraia. Attempts have been made to re-breed aurochs, resulting in heck cattle (at the beginning of 20th century) and tauros (work-in-progress currently, with the first significant results expected round 2020).

## 7 What about rewilding sheep?

Just like cattle and horses, sheep are domesticated animals: however, unlike cattle and horses, their wild ancestors, moufflons, have survived. All over Europe, shepherds used to graze their lands with their sheep. Wild sheep, but also chamois and ibex, are typically mountainous animals. To escape from predators they run up steep cliffs and rocky outcrops. From an evolutionary perspective, wild sheep aren't part of lowland

European indigenous mega fauna, but belong to mountainous Europe. Currently, shepherding as an agricultural business is no longer a viable profession. Shepherding is now either highly subsidized or shepherds have some form of additional income.

## 8 What are 'social herds'?

Each species has its own social order. Among some species, males and females live apart most of the year, except during the rutting season. In contrast, species like wild cattle and European bison live in matriarchal societies, wild horses make up harems and others live solitary lives. Social herds show a natural balance between males and females and a natural age distribution.

Social herds result in a natural distribution with-

in species and between animals. Young males form bachelor groups, romping and fighting to gain strength, kicking up dust and dirt as they do. Adult bulls dig bull pits to impress others, favoring pioneer plant species and heat loving insect and reptiles. Old individuals are expelled to less favorable grazing grounds. Stallions not only keep a harem together, but also defend it against predators. Older experienced females lead others to new grazing grounds during leaner times and pass on their knowledge to new generations. Social herds benefit the animals, as well as biodiversity.

## 9 Natural grazing: explosion of life?

Large herbivores lie at the basis of rich mosaic

Europe's wildlife distinguished between feeding behavior (adjusted after Hofmann 1989). Among Europe's indigenous wildlife are species like auroch (wild cattle), European bison (Wisent), water buffalo, wild horses, Eurasian ass, elk (moose), red deer, fallow deer, roe deer, reindeer, ibex, chamois, moufflon, muskoxen, saiga and wild boar.

illustrations by Esther Linnartz

### Browsers



### Intermediate feeders



### Grazers



landscapes of open meadows, shrubs, thickets, bushes and old growth forests. Thousands of plant and animal species flourish in mosaic landscapes, and many depend on open landscapes. These sun loving pioneer species existed long before people started cutting down trees, mowing or keeping livestock and could not have existed if Europe was totally covered by forests. These species owe their existence to large herbivores.

Under natural conditions (without hunting or additional feeding), herbivore numbers are determined by food availability, especially during times of scarcity such as in winter or dry periods. During summers, primary production exceeds grazing capabilities: only the tastiest plants, rich in nutrition, are eaten, leaving space for many herbs to flourish, producing nectar and seeds and providing rich food sources for insects, birds and

rodents. Less nutrition is available during winter and grazers change their feeding behavior: at first, they consume left over herbs from last summer, which will by now have turned yellow, before starting to consume bark, buds and twigs. During such periods, the grazing animals have the biggest influence on their structural surroundings, curtailing forest encroachment or even opening up old established forests.

Besides consuming plants, large grazers influence their environments in many other ways. In their coats or dung, for example, they distribute a wealth of seeds. Some species make latrines, which create local high soil fertility hotspots, right next to poor nutritious spots. In this way, nutrients are re-distributed. Dung also serves as a food source for many fungi and beetles, larger dung beetles being eaten by birds. Sand bathing,

by bison, horses or rutting deer, creates open lawns, attracting heath loving insects and reptiles. Water buffalo dig out new water holes, perfect for amphibians or dragonfly larvae: they are also able to digest rushes and sedges, something other grazers can't. Diving elk stop succession within lakes and ponds, keeping them open. Animal footprints provide germination sites for plants. Afterbirths, are a food source for scavengers, as are the carcasses of perished animals. During winter, these can be a vital lifeline for eagles, vultures, foxes or wild boar. Wild grazers can also be hunted by wolf, bear or lynx.

## 10 Do predators threaten natural grazers?

No they don't. They do threaten individual animals, but by preying on the weakest, they keep herds healthy. Disease and sickness among grazers is less easily passed-on, limited by sick animals dying to predation, a process commonly known as survival of the fittest.

Predation is also a natural process in itself, distributing grazing animals more naturally. High-risk areas will be less grazed, and safe areas more intensively – this creates greater structural differences and higher biodiversity. By influencing the behavior of grazers, predators also contribute to rich and varied landscapes.

## 11 Is population control required with natural grazing?

Under natural conditions, animal populations are determined naturally, numbers being influenced by both predators and food availability. Many studies have shown that predation has less influence on densities of large herbivores than previously thought. Because predators are territorial, there can only be a limited amount of predators in one area.

Under natural conditions, about 30% of the population dies annually with most perishing near the end of winter. Next spring the population

