

The Life Project GRACE



Grazing and Restoration of Archipelago and Coastal Enviroments



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What is the GRACE Project?

The County Administrative Boards of Blekinge, Halland, Stockholm, Västra Götaland and The Archipelago Foundation have worked together to restore overgrown pastures. The GRACE Project ran between 2010 and 2016.

The Project has focused on clearing, burning and actions to secure grazing animals. The grazing animals are a requirement for the long term conservation of the restored areas. When bushes and trees are cleared, accessibility and opportunities for recreation improve. The management work has resulted in the return of threatened species associated with the rural landscape.

The GRACE Project has informed the general public, politicians, district councils and relevant civil servants regarding the importance of the rural landscape for biodiversity. When species disappear, human welfare is threatened according to researchers in the USA, Canada and Sweden.

The Project has been financed by the EU and the Swedish Environmental Protection Agency as well as by the County Administrative Boards involved in the Project. GRACE is an acronym for Grazing and Restoration of Archipelago and Coastal Environments.



Icelandic horses on Rörö in the County of Västra Götaland

The Project Actions in Brief

The Project has:

Undertaken 43 restoration burning events to open up and regenerate overgrown heathlands. Burning stimulates the germination of heather seeds.



965 hectares of overgrown areas have been cleared of bushes and trees on islands. Now, flowers, insects and animals have a chance to return to the landscape.

Built an animal shed at Arholma in the Stockholm Archipelago. The animal shed is essential for having grazing animals out on Arholma-Idö.



Arranged grazing animals for 927 hectares of pasture where access is difficult. The grazing and trampling of the animals is required to keep the areas open and accessible as well as for conserving a rich plant and animal life.

The Project has improved the habitats for a number of rare species including ten birds and four insects. The management has also favoured many other species.



Erected 12 160 metres of fencing and 41 gates to allow visitors to pass through.

Invested in docking points and mobile corrals to make the transportation of animals easier. Simple hay cutting machines have been purchased for the management of meadows.



Produced information material in the form of signs, folders, demonstration sites, a website and an app.

Informed the public, experts and decision-makers regarding the value of the Project, management and the results during excursions in the Grace sites. In addition local information meetings and seminars have been organised.



Historic Land

Man has exploited the coast for thousands of years. The valuable plant and animal life in the archipelago is there as a consequence of centuries of traditional agriculture. Prior to industrialisation, the majority of the population lived in the countryside. The land was intensively farmed up until the middle of the 1900s. In 1870, seventy percent of the population worked in agriculture. Today it is less than two percent that make a living from farming, forestry and fishing.

Difficult to Farm

Many small farms have been abandoned over the last hundred years, primarily because they are difficult to access and thus difficult to farm. Expensive transportation costs for animals, milk and fodder with boats makes it difficult to make a living from farming on the coast.

Rationalised Farming

Food production has become large scale in order to try and deal with the lack of profitability and increased competition from abroad. Today, one third of our food is imported. This has led to the abandonment of pastures. When the animals disappear there is no longer any need for winter fodder and the meadows no longer need to be cut.

Electricity and Oil Replace Wood

In the past wood was collected from the surroundings to be used for heating and cooking. It was not only wood from trees that were used, but bushes and woody plants were also collected. When households gained access to electricity and oil, wood was no longer collected and the land began to become overgrown.

Conservation in its time

The management actions in GRACE have prepared the land for sustainable farming into the future. Current societal trends mean that diversification in the archipelago is making a comeback. There is great interest in local and organic food products. More also choose ecotourism in terms of accommodation and other activities in beautiful environments. This means that the conditions for the plant and animal life as well as small businesses in the archipelago are better than they have been for a long time. We are therefore very hopeful that our Swedish archipelago will live on.



Traditional landscape on Härön, the County of Västergötland

Restoration Actions

Overgrown Islands get a New Lease of Life

A large amount of clearance has been carried out in the Project. On the west coast, restoration burning has also been carried out. The islands are inaccessible which makes significant demands on the contractors with regard to the transport of equipment and machines. The Project has arranged grazing animals to secure the long term future management. After the end of the Project, the environmental subsidies via the Swedish Board of Agriculture make continued grazing on the islands possible.



Restoration Burning, Halland



Clearing on Filjeholmen,
Västra Götaland



Transport following clearing,
Villinge boskapsö, Stockholm



Extraction on Slädö, Blekinge

Rare Species

The Project has specifically taken into account some of the rare species identified by the EU. In Blekinge this included five terns and five wading birds on the coastal meadows as well as three insects associated with old oaks. In Stockholm this includes the rare fern *Botrychium simplex* on Idö.



Hermit Beetle (*Osmoderma eremita*)

The hermit beetle is dependent on old, hollow oaks and other deciduous trees. The larvae of the beetle live in hollows with decayed wood. The same tree can be inhabited for many decades. The hermit beetle is a threatened species in Sweden. The population in Blekinge is of great national and international value. When the landscape becomes overgrown, the life of the old trees is shortened and thus the habitat for the hermit beetle is also under threat.

Stag Beetle (*Lucanus servus*)

The stag beetle has its stronghold in the wood pastures of Blekinge, Kalmar and the area south of Linköping. It is also found in the UK and southern Europe. The stag beetle is dependent upon habitats with old trees and dead wood, which is becoming increasingly rare in Sweden.



Common Tern (*Sterna hirundo*)

This species has reduced along the coast due to the fact that the coastal meadows have become overgrown. The bird regularly breeds in Blekinge. The possibility for the birds to find nesting sites on the islands has increased following the clearance work.

Arctic Tern (*Sterna paradisaea*)

This tern breeds regularly in Blekinge. The Project actions have increased the chances for the birds to find suitable islands for breeding.



Wood Sandpiper (*Tringa glareola*)

Blekinge is a regular resting site for the wood sandpiper. Since the middle of the 1980s, numbers of this species have declined in Southern Sweden due to the fact that the coastal meadows have become overgrown. The GRACE Project has thus created more open areas and thus improved the conditions for this bird.

Ripple Effects...

A viking relic exposed during restoration as a part of the GRACE Project in Blekinge.

Thanks to the clearance work that the County Administrative Board has carried out on for example Öppenskar, previously unknown relics have been exposed from the juniper thickets. An excavation of what was thought to be a grave from the middle of the 900s has been undertaken on the island of Öppenskar in the Eastern Archipelago in Karlskrona.

The discovery is very exciting, including for example 300–400 small cut fragments of Arabic coins. As well as the coin fragments, pieces of sword, pearls, whetstones and ring buckles for clothes have been found. Virtually no pieces of bone have been found and so the current theory is that it is more likely to have been a place where craftsmen worked. There are therefore a number of questions that remain to be answered. An archaeological survey was undertaken in the summer of 2016 on all of the Grace islands in the Karlskrona Archipelago.

Remains of Peat Extraction on the Bohus Coast

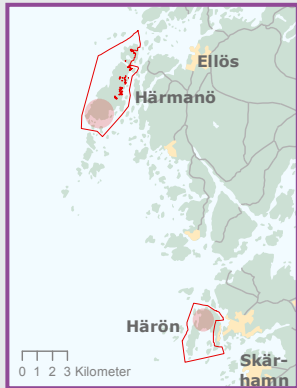
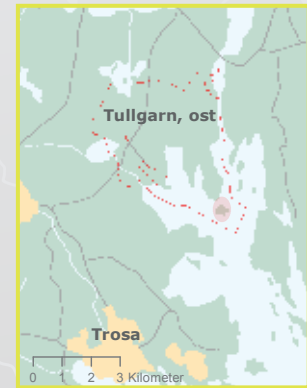
Peat was historically a very important resource in Bohuslän; a landscape with very little woodland. This fossil fuel was used for many things including heating and as building material. Peat was an important part of the local economy. Peat extraction was often carried out in the autumn, followed by a long drying process, which could take the larger part of a year. During the period in the 1700s when herring fishing was good, peat was the main source of fuel in the many train oil distilleries in Bohuslän.

In the 1800s the resource was so important to control that the Land Survey in some places undertook special land reforms just to divide the peat bogs between the local farmers. To take peat illegally often led to severe punishments, which illustrates the importance of this material.

On the island of Tjurpannan, the peat extraction was carefully regulated in the land reform from the middle of the 1800s. The restoration work that has been done within the GRACE Project has exposed several facilities that were historically needed for peat extraction. Several roads to transport the dried peat, the remains of a rectangular peat drying barn and four circular buildings which were previously hidden by dense bushes have been exposed as a result of the Project's work.



County of Västra Götaland




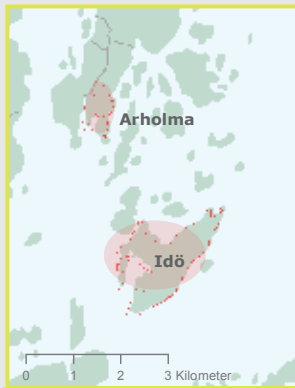
County of Halland

Project Sites

The GRACE Project includes 23 Natura 2000 sites in archipelago environments. In total, 49 islands and one peninsula have now had their meadows and pastures with a rich plant and animal life restored. Access for recreation is now better and the opportunities for enjoying the countryside are plenty.

Legend

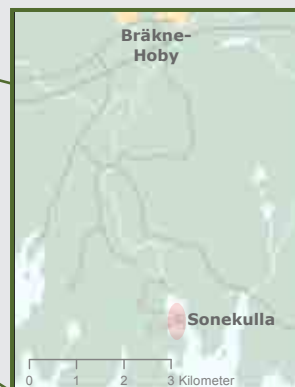
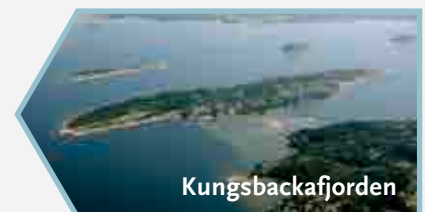
 Natura 2000 sites  GRACE site



County of Stockholm



County of Blekinge





Grazing cows on Klåverön, Västra Götaland

Coastal Meadows – Saline and Brackish

(EU-habitat type 1330 and 1630)

Coastal meadows which are kept open by hay cutting or grazing are important habitats for birds. Many wading birds are attracted here because there are plenty of insects and amphibians. The meadows shimmer with thrift and butterflies in the spring. The type of plants which you can find in the meadows depends on the salinity of the water. On the West Coast and down to Falsterbo in Southern Skåne, the sea is salty. When the water floods the meadows at high tide and then evaporates, salty patches are created. The plants and insects that live here are adapted to the saline environment. The Baltic Sea however, has a much lower salinity.



Oyster Catcher
Haematopus ostralegus



Coastal meadow, Stockholm



Cattle on their way to Järkö, Blekinge

Threat

There is a rich bird life on the coastal meadows. Many wading birds are attracted here to breed due to all the insects that live in the open, occasionally flooded habitats. If the coastal meadows are not grazed, they become overgrown. The eggs and chicks then come under threat from crows and other birds which search for food using the bushes and trees. Many of the plants that live by the sea are small and are easily shaded out by tall plants, bushes and trees if the grazing animals disappear.

Project actions

Coastal meadows have been cleared from trees and bushes in the Project. Hay cutting machines (small motorised machines which cut vegetation) have been purchased for a number of sites to cut the meadows and stop any overgrowing in the future.

Results

The clearance of bushes and trees has created an open landscape where flowering plants, butterflies and birds characteristic of this type of habitat are beginning to re-establish. Some 15 ha of coastal meadow have been restored in the Counties of Stockholm and Västra Götaland. Grazing animals are introduced to keep the tall plants grazed down.

Summary

Coastal meadows are under threat. Seven coastal meadows have been restored within the Project. The Project actions have created the right conditions for a species rich habitat with many different species of plants, birds and insects. To conserve the biodiversity, the meadows must be regularly grazed.



Heathland on Rörö following restoration. Cross-leaved heath grows in the wet hollows.

Heathlands

(EU habitat types 4010 and 4030)

Heathland is one of the oldest landscapes in Europe influenced by man. Several of the heathland species along the coastline from Portugal to Norway thrive in the mild, damp climate. Heathlands must be regularly grazed. Due to the fact that the grazing animals do not eat old heather, the heathlands are also burned regularly to keep them open and rich in species. Heather seed germination is stimulated by burning and thus new, delicate and tasty heather plants begin to grow. In Scandinavia, the beautiful cross-leaved heath can be seen in the small wet hollows in the heathlands. Bees like heather and honey is one of the things that heathlands produce.



Heathland

Threats

Historically, heather was used for fuel and as filling for mattresses. Heather contains a substance which keeps unwanted guests away and kills off parasites found on grazing animals. When the island residents gained access to oil and electricity, the heather and other woody plants were no longer collected. At the same time, livestock farming became unprofitable. New hygiene requirements meant that the milk needed to be transported to the mainland before it could be sold. Together, these issues resulted in the heathlands becoming overgrown.

When the alcohol monopoly was introduced to improve the health of the Swedish people, the Rural Economy and Agricultural Societies were given the profits from the monopoly (Systembolaget). This profit was used to plant pine on the heathlands, which worsened conditions even further for the heathland species.

Project actions

A total of 43 heathland burning events have been carried out within the project. Burning events on heathland are difficult to plan and implement due to the fact that the weather and the wind must be optimal. Contractors need to be on “stand-by” to be able to take advantage of those days when the conditions are suitable.

Results

Restoration burning and clearing have resulted in the return of the traditional heathland landscape, with its characteristic plants, butterflies and birds. Some 50 ha of heathland have been restored in the Counties of Halland and Västra Götaland. The areas that have been restored also have a very high recreation value.



Heathland on Balgö, Halland, before restoration



Heathland on Balgö, Halland, after restoration



Burning, Rörö, Västra Götaland

Summary

People have been burning heathland for a long, long time. The 43 burning events that have taken place within the project as well as the clearing work have created an open landscape with heather of different ages. The new heather plants are tasty and the animals happily graze them. The threatened eyebright plant has returned. Another bonus from the work is that the risk of unplanned fires has also reduced.



Cleared and overgrown juniper areas on Långskär, Blekinge

Juniper heaths

(EU habitat type 5130)

The nutrient poor coastal heathlands with lots of juniper are characteristic of the islands in the Blekinge archipelago. Following clearance and grazing of the dense scrub areas, light and warmth once again reach the ground, benefiting many insects, frogs, reptiles and birds.



Crimson Waxcap
Hydrocybe punicea



Öppenskär before restoration



Öppenskär after restoration



Burning juniper scrub

Threats

It is difficult to achieve profitability in livestock farming from the pastures which are difficult to access in the archipelago as well as on the islands without permanent connections with the mainland. The transport and daily checks involve high costs for the livestock farmers. The overgrown areas are not either entitled to any agricultural subsidies before restoration has been carried out. Without grazing animals, the juniper areas become dense and impenetrable which means that many plants and animals cannot survive.

Project actions

Discussions have been held with the local communities and contractors. A large amount of clearing and processing of woody material has been undertaken. The woody material has largely been chipped and driven to the mainland, but some has also been burned. Lots of the larger juniper wood has been used for making handicrafts. Grazing animals have been reintroduced where they were previously lacking. In addition some islands have been complemented with other grazing animals.

Results

Just over 122 hectares in six different sites in Blekinge have been restored with very good results. There have been positive responses from the press, the local communities as well as from visitors.

Summary

The juniper heaths in the Blekinge archipelago are seriously under threat because of overgrowing due to the fact that grazing in the archipelago involves extra work and extra costs. The GRACE Project has, as a consequence of the restoration work, made the land eligible for agricultural subsidies and thus improved the conditions for continued grazing. The areas that have been restored have also become accessible again, which has been much appreciated by the local population and visitors.



Fridö, County of Stockholm

Calcareous bedrock with grassland

(EU habitat type 6110)

The limestone rocky areas in the Stockholm archipelago have a very rich plant and animal life. The limestone erodes, creating cracks and a thin layer of chalky material where many plants live; a plant richness that has virtually no equivalent on the normal granite rock. There are also odd mosses and lichens, small fungi, snails and insects. Butterflies also live on the rich flora. On these exposed rocks in the archipelago, there are many species, which are otherwise only found on the calcareous bedrock in the mountains or on the alvar on the islands of Öland and Gotland.



Silver Spotted Skipper
Hesperia comma

Threats

The exposed limestone bedrock areas are seemingly eternally open with beautiful flowering herbs. On the actual bedrock, few changes actually do occur. The best flowering meadows are however in the cracks and hollows where there is little soil and where historic grazing kept the bushes and small trees in check. Many of the exposed limestone bedrock areas are today overgrown in the narrow cracks, but it is still easy to walk across the rocks, so that the overgrowing can be difficult to appreciate. If however, you consider the fact that some butterfly species have reduced drastically or even completely disappeared, the overgrowing becomes more obvious.

Project actions

The trees and bushes in the cracks in the limestone bedrock and where the soils are thin have been significantly reduced as a part of the Project on a calcareous island. Grazing with sheep has been reintroduced and the Project has purchased corrals which makes it easier to graze and transport the animals by boat.

Results

In the County of Stockholm, grazing has been reintroduced on 14 ha of the island of Fridö, of which five hectares are exposed limestone bedrock areas. Clearing of often dense bushes, has taken place on these five hectares. This habitat has responded quickly to the management and in the spring following the clearance work, the flower meadows were once again rich and beautiful.



Summary

The exposed limestone bedrock areas were historically included in the grazed pastures. Although it is not always obvious that grazing has been abandoned, the overgrowing has occurred primarily only in the areas where the rich flora and insect life were concentrated. In order to restore the wonderful show of flowers and for the wide range of butterflies, bushes and small trees needed to be removed and grazing reintroduced.



Calcareous grasslands

Calcareous grasslands

(EU habitat type 6210)

Calcareous grasslands are normally very species rich. Along the coast the grasslands have a unique composition of plants that are dependent upon the calcareous shell bearing gravels in Bohuslän. The damp climate, the large number of hours of sunshine and the mosaic landscape with many different habitats in the archipelago, also contributes to the diversity of plants and animals.



Small Blue
Cupido minimus



Bloody Crane's Bill (*Geranium sanguineum*)



Dropwort (*Filipendula vulgaris*)



Field Gentian
(*Gentianella campestris*)

Threats

This habitat type is threatened in Sweden, because it quickly becomes overgrown when grazing is abandoned. Many of the typical species are small and poor competitors. They quickly disappear when the area becomes overgrown. At the same time, the areas which remain open are under increasing pressure from recreation. The erosion is thus greater due to more people being concentrated within a small area.

Project actions

Restoration has been undertaken including burning and clearing. Fences and gates and a corral have been put up to allow for grazing. A hay cutting machine has also been purchased to make management easier.

Results

Successful restoration of 8 ha of calcareous grassland has been carried out on the islands of Tjurpannan and Hällsö in the County of Västra Götaland. Thanks to the fact that the areas are calcareous, the flora has recovered quickly.

Summary

Restoration by clearance and burning has been carried out in total over an area of 8 ha of calcareous grassland. The project actions mean that the long term management of this habitat can now be eligible for financing via agricultural subsidies.



Nardus Grassland

Species-rich Nardus grasslands

(EU habitat type 6230)

Nardus grasslands are dominated by the grass species mat grass (*Nardus stricta*). This type of grassland in the archipelago grows where there are shell-bearing gravels (gravel which is mixed with shells primarily from mussels and other shells) in the ground. The grasslands contain many calcareous species which are very threatened in Sweden, such as gentians and seaside centaury. The grasslands are often very species rich and you can find species such as mountain everlasting, leopard's bane, lousewort and heath grass. The many different herbs attract insects and their pollen and nectar provide important food for butterfly species such as fritillaries, the grizzled skipper, the scarce copper and several other species of bee. Along the coast this habitat type is often a part of a mosaic.



Kidney Vetch
Anthyllis vulneraria

Threats

This habitat type is dependent upon grazing. It is threatened by nitrogen deposition and modern farming and forestry. Those species that are dependent upon the habitat type are threatened with extinction if the areas become overgrown. This habitat type is declining in Sweden due to a lack of management.

Project actions

The Project has restored a small area of Nardus grassland. Nardus grassland is often only found in small patches interspersed with other habitat types. The habitat type is declining more and more in Sweden and is now rare and thus important to conserve due to the species richness.

Resultat

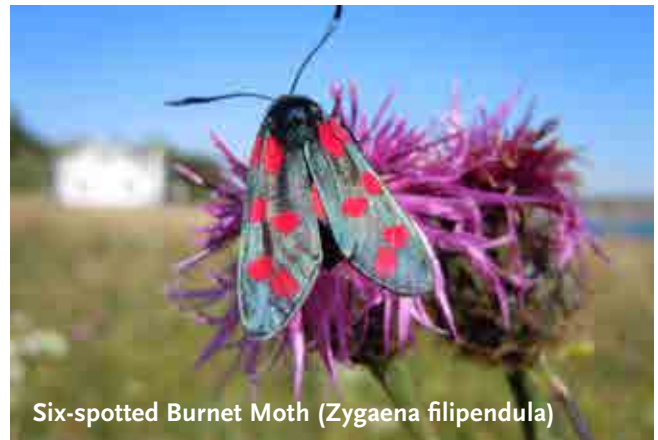
In total 0.3 ha of Nardus grassland have been restored in the County of Västra Götaland. This grassland occurs in small patches in an extensive landscape.



Swallowtail (*Papilio machaon*) on
Spotted Cat's Ear (*Hypochoeris maculata*)



Quaking Grass (*Briza media*)



Six-spotted Burnet Moth (*Zygaena filipendula*)

Summary

Due to the fact that the Nardus grasslands are threatened and several of the species associated with this habitat are very rare, the Project considered that it was important to work with the restoration of this habitat type even if the actual area is very small. Mountain everlasting is a species which was once much more common in unimproved grasslands, but this has also significantly declined along the coast. In several of the areas that have been restored, mountain everlasting has quickly returned.



Grazing on Stora Tjälleskär

Species rich lowland grasslands

(EU habitat type 6270)

Species rich grasslands in the archipelago are few and small. They usually consist of scattered small patches in the hollows between the exposed bedrock. The small amount of land in the archipelago where it was possible to farm was ploughed up and the grazing animals had to satisfy themselves with the small amount of vegetation in the cracks. You find completely different species and a significantly richer flora on the islands than on the mainland.



Mountain Everlasting
Antennaria dioica

Threats

The grasslands are generally threatened due to the fact that livestock farming is not very profitable and that modern farming methods often lead to fertilisation which depletes the flora. In the archipelago, the costs for livestock farming are significantly higher than on the mainland and in many archipelago areas, livestock farming has drastically declined. The grasslands have thus been abandoned and become overgrown.

Project actions

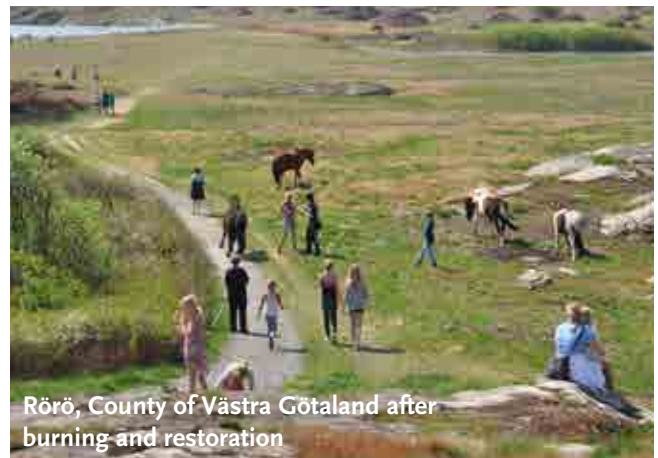
The Project includes both restoration of grassland where there is lots of exposed bedrock, but also larger areas of grassland on flat, sandy and gravelly ground. The latter is more reminiscent of grasslands on the mainland, but this is a quite unusual habitat out in the archipelago. Grazing has been reinstated in the restored grasslands within just over ten different areas within the Project. Restoration by burning began in April 2012. In total, 6 burning events have been undertaken.

Results

Some 45 ha of species rich grassland on lowlands have been restored in total in the four counties. On several of the islands, there is already a well-developed grassland structure in a primarily open landscape. On other islands, the project actions have only just finished and it is too early to evaluate the results.



Burning on Röro, County of Västra Götaland



Röro, County of Västra Götaland after burning and restoration

Summary

The Project actions have provided a long term opportunity to conserve the species rich and valuable grasslands by keeping them open and accessible.



Wet meadow on Klåverön

Wet meadows

(EU habitat type 6410)

The habitat type wet meadows often grows on calcareous soils along the Bohus coast. The chalk comes from shell bearing gravel banks in the sea. Interesting species such as lesser centaury, gentians, lousewort and heath spotted orchid can be found. The wet meadows are important for resting and breeding birds.



Marsh Helleborine
Epipactis palustris

Threats

Wet meadows, become quickly overgrown without management. Historically they were cut providing winter fodder for the animals. Today, the few wet meadows that are still open are commonly grazed, which means that there is a risk that species favoured by cutting rather than grazing may disappear. It is also awkward to get the grazing animals to the areas where access is difficult in the archipelago.

Project actions

Within the GRACE Project, wet meadows have been cleared on eight islands. Grazing animals and cutting are necessary for the long term management of these areas. The actions have made it possible for the management of the meadows after the end of the project to be financed with the help of agricultural subsidies.

Results

Over 20 ha of wet meadow have been restored in the Counties of Halland and Västra Götaland. The negative trend for the habitat type has turned and several of the species typical of the wet meadows have returned.



Summary

The restoration of the calcareous wet meadows has resulted in the creation of the right conditions for a long list of threatened plants to disperse. The actions have also been valuable for the bird life.



Wooded meadow, Arholma

Wooded meadows

(EU habitat type 6530)

In the past, much of the winter fodder for the grazing animals was in the form of leaf hay taken from different broadleaved trees. Evidence from this so-called pollarding can be seen today, especially on Gotland and Öland, but also in Roslagen. In the wooded meadows, the grass and herbs were cut for hay as well as the leaves and branches by pollarding. This habitat thus contains both a rich meadow flora as well as a species rich and special plant and animal life on the old, gnarly pollarded trees. Strangely enough, the tough treatment of the pollarded trees means that they can often be very old. The trees have short trunks and many gnarly branches, often in the shape of a candelabra.



Quaking Grass, *Briza media*
Common Milkwort, *Polygala vulgaris*
Bird's Foot Trefoil, *Lotus corniculatus*



Threats

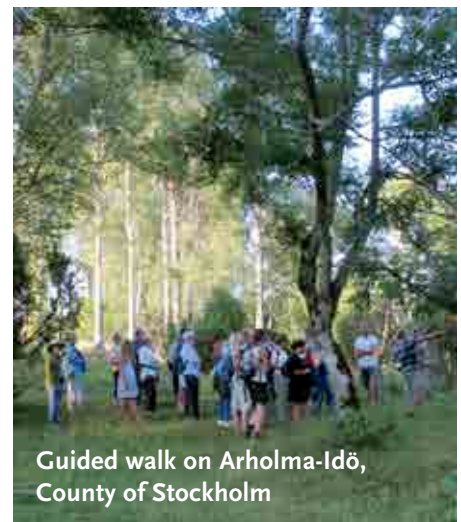
The use of leaf hay as winter fodder has long since been abandoned and there are very few wooded meadows remaining in the County of Stockholm, managed only to conserve the old cultural and high nature conservation values. When pollarding is abandoned, the crowns of the trees grow much larger and shade out the plants on the ground, so that the flora significantly changes, even if grazing or hay cutting continues. In order to conserve the values both hay cutting and pollarding are required. A new and serious threat is ash dieback which may well completely destroy the most commonly pollarded tree, ash. As far as we know, there is currently nothing we can do about this disease.

Project actions

The old wooded meadows on Idö have been thinned out and the pollards have been cleared around. A new, modern animal shed ensures that there are the best possible conditions for having grazing animals on Arholma and Idö in the long term. The shed also means that the farm can have more grazing animals which can also graze the newly restored areas. Due to concerns that pollarding may increase the risk for infection of ash dieback, the old pollarded trees have not been repollarded, but young ash trees in sunny spots have been pollarded for the first time.

Results

Over 13 ha of wooded meadows have been restored in the County of Stockholm. The actions were carried out late in the project and the overgrown vegetation was very dense. It is therefore too early to see the positive effects on the herb flora. It also takes time for the tree crowns to adapt to the improved light conditions. It may take some patience before the site really feels appealing once again.



Summary

Wooded meadows are a habitat type that has almost disappeared due to the fact that the original agricultural need has also completely disappeared. The high nature and cultural values can only continue to survive if they are managed purely for conservation. A real worry is ash dieback and how extensively this will hit the ash trees in the region in the long term.



Thrift and Wild Pansy on dry meadows on exposed bedrock

Dry meadows on exposed bedrock

(EU habitat type 8230)

When management of these areas is abandoned, they quickly become overgrown. This habitat type creates a mosaic together with the exposed bedrock, which often has rare lichens growing on the rock. In the small water pools, species such as natterjack toad (*Bufo calamita*) can be found. The habitat type is very valuable in the open coastal areas, where it becomes especially species rich. Here it is possible to find many species of plants, mosses and lichens, which are unique to the coast.

Threats

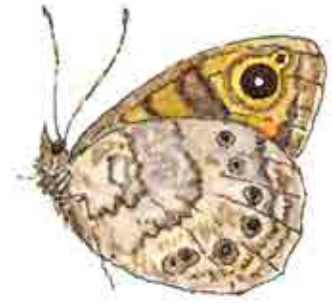
When management of these dry meadows on exposed bedrock is abandoned they quickly become overgrown. These nutrient poor areas are the first to be abandoned. Large areas have been planted with pine species from Southern Europe, which results in a shady, species poor acidified environment.

Project actions

The dry meadows on exposed bedrock together with the surrounding areas create a mosaic. These areas are often found in a dense network with normal pastures and meadows. In order to achieve the economic conditions required to manage the islands and peninsulas with these mosaics, different subsidy systems need to work together. The restoration actions within the GRACE Project have been extensive and large areas have been burned.

Results

Just over 60 hectares of dry meadow on the exposed bedrock have been restored in the Counties of Halland and Västra Götaland. The restoration has in several places resulted in the quick return of many species. In other places it will take longer before all the typical species return. The foundations are now laid for the long term conservation of the biodiversity with the help of agricultural subsidies.



Wall Butterfly
Lasiomata megera

Summary

The dry meadows on exposed bedrock have long been threatened by overgrowing. Now 60 hectares of this habitat type have been restored. Many species have already returned. The open areas are now easy to access for visitors and the project has had lots of positive feedback from local residents on the islands and visitors.



Oak wood pastures

Wood pastures

(EU habitat type 9070)

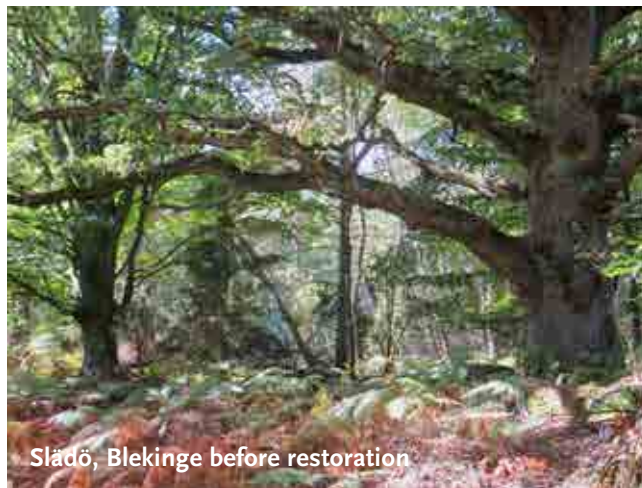
Wood pastures with large old trees are one of the most species rich terrestrial habitats in Sweden and occur in the Counties of Blekinge and Stockholm, even far out in the archipelago. Large broadleaved trees in sunny locations, primarily of oak, are especially valuable for biodiversity. Lichens and mosses grow on the bark and inside the tree, beetles, birds and bats make their homes. In the restored tree-covered areas, many large trees have been cleared from the surrounding small trees and bushes at the same time as younger trees have been given the space to grow up. These younger trees will in time replace the now old trees when they die.



Dryad's Saddle
(*Inonotus dryadeus*)

Threats

In the pastures where access is difficult in the archipelago, and islands that are not connected to the mainland, it is difficult to make livestock farming profitable. Animal transport as well as the daily checks means high costs for the livestock farmer. The overgrown areas are not either eligible for subsidies via the agricultural system before restoration has taken place. Without grazing animals, the archipelago becomes overgrown and the natural continuity of large old trees is significantly threatened.



Project actions

Discussions have been held with the local population and contractors. Significant clearing and thinning as well as processing of the brush and timber has been undertaken. The timber has either been transported to the mainland to be sold or used as firewood. Some has also been left to contribute to the biodiversity. The branches and twigs have been chipped primarily and then transported to the mainland, but some have also been burned.

Grazing animals have been reintroduced on the islands where they were previously missing. Some islands have also been complemented with different species of grazing animals.



Results

In total 150 hectares in seven different sites have been restored in the Blekinge and Stockholm with very good results. There have been very positive responses from the local populations as well as visitors and good media attention. There is a problem with bracken (a fern) in some places and management is ongoing.

Summary

Wood pastures far out in the archipelago are currently heavily threatened by overgrowing due to the fact that grazing in the archipelago involves extra work and is more expensive. The GRACE Project has as a consequence of the restoration work that has been carried out, created the conditions so that the areas can be eligible for environmental subsidies thus improving conditions for continued grazing.

The restored areas have also once again become accessible, which is much appreciated by the local population and visitors.

The GRACE Project sharing information

The GRACE Project has focused on sharing knowledge regarding the importance of grazing animals for keeping the rural landscape open and the significance of conserving biodiversity for human survival and well-being. With information provided to the general public, land-owners, decision makers and civil servants at meetings, guided walks, website, leaflets and demonstration sites we aim to achieve our objective.



Guided walk on Rörö, Västra Götaland



Life Anniversary on Härön, Västra Götaland



Final seminar, guided walk on Vendelsö, Halland



Networking provides knowledge

An important part in the work of a Life project is to exchange experience and expand our horizons. This has taken place at the international platform meetings that the EU arrange, annual meetings with the Swedish Life projects, the European Heathland Network as well as different forms of seminars and meetings both in and outside of Sweden.

Visit to the Life Project Pollards and Biodiversity, Basque County 2011



Life Project in Asturias, 2011



Life Project on Gotland 2015



Heathland Network, Denmark, 2013

Life+ Fund

The LIFE Fund supports the conservation of the environment and nature within the whole of the EU. It is the EU contribution to achieving a favourable environment and to stop the extinction of species. With co-financing, the EU member countries should work together to achieve the EU environmental objectives and ensure that the Natura 2000 network is upheld.

Natura 2000

Natura 2000 is an ecological network of protected sites. The network has been created to ensure that the most valuable species and habitats in Europe are conserved. This green infrastructure should conserve many ecosystem services and be a guarantee that the nature in Europe is retained, in good condition and with the ability to be restored.

Partners



Co-financiers

