



LIFE
Sandrasen

LIFE in the Sand





Where people enter the stage, it is often no more easy for nature. But it can be the opposite, as in the case of the diverse sand landscapes of Brandenburg, Germany. These were largely created by grazing or the production of bedding material and have been influenced by people for centuries. Sand landscapes are characteristic habitat types for the region that is historically known as Mark Brandenburg. Without land use and maintenance, these characteristic landscapes are about to disappear. Due to the loss of their nutrient-poor environment, typical inhabitants of the sand landscapes are also increasingly under threat. These are rare plants that are very well adapted to meagre conditions, heat and dry soils, surprise us with the rich variety of their colour.

With the project LIFE Sandrasen, the foundation “Stiftung NaturSchutzFonds Brandenburg” has supported the protection of sandy habitats in several Natura 2000 areas. This covered the administrative districts of Dahme-Spreewald, Oder-Spree and Teltow-Fläming. The project organised the use of and maintenance of nutrient-poor habitats together with land users. Furthermore, it also reintroduced plants at high risk of extinction.

I am very grateful for the engagement and successful work of the Stiftung NaturSchutzFonds Brandenburg and all other individuals and organisations. The trusting cooperation between those wanting to protect nature and land users has been the foundation for the success of the project. It continues to be an important condition for the long-term protection of sand landscapes.

Politicians and agencies are required to provide a reliable support for land users who care for heather landscapes, nutrient-poor sandy grasslands and inland dunes. Agri-environment schemes as well as nature conservation and management contract programmes are essential to finance the care and maintenance of the landscape. They pay livestock owners for the traditional use of cultural landscapes. For their future, the unique landscapes of the Mark Brandenburg need our support, as well as people who use and maintain them with great enthusiasm.

Dr. Carolin Schilde
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Environment and Agriculture of the Federal State of
Brandenburg and chair of the board for the Stiftung
NaturSchutzFonds Brandenburg.

History of the sand landscapes

When Frederick the Great ruled in the 18th century, his “Margraviate Sand Shaker” looked quite different than today. The doctor and botanist Johann Gottlieb Gleditsch wrote in 1766 about the small pasque flower: “in March and April, and later in the most infertile areas, heathlands, sandhills and bad nutrient-poor fields, it is one of the most common flowers.”*

At Frederick’s time, a network of pastures and paths span the settlements, fields and gardens. People kept horses, cattle, calves, sheep, geese and pigs separately. Almost daily they drove them to the pastures and shepherded there. Different types of grazing and different intensities of use formed the landscape at small and large scales.

The large diversity of habitat types in the cultural landscapes of the Mark Brandenburg was also created by different types of land use. This included the use of leaves, needle litter, moss cushions, carpets of lichens, algae and other biomass removed from water bodies. People used it as bedding material for livestock or brought it onto the fields to make the soil more fertile. The areas and woodlands where the bedding material had been removed created the germination ground for a diversity of plants that only germinate on nearly bare soil.

Since then a lot has changed in Brandenburg. Especially the use of sand landscapes has changed. Nutrients are deposited from the air. Grazing animals have disappeared from the woodlands and the so-called “bad and nutrient-poor fields”.



That made the previously abundant small pasqueflower a rarity. Today, this plant is threatened by extinction and has disappeared from many parts of the Mark Brandenburg.

From 2013 to 2019, the LIFE Sandrasen project aimed to maintain valuable sand landscapes and nutrient-poor habitats in the Natura 2000 areas of the Dahme Lake District South East of Berlin and to protect it for the future.

* Johann Gottlieb Gleditsch. Observations on the state of bees in the Mark Brandenburg. Combined physicalbotanical-economic essays, second part, Halle, 1766.

From left to right:

Kahlkopf hill near the village of Pätz (about 1920)

Use of needle litter (1982)

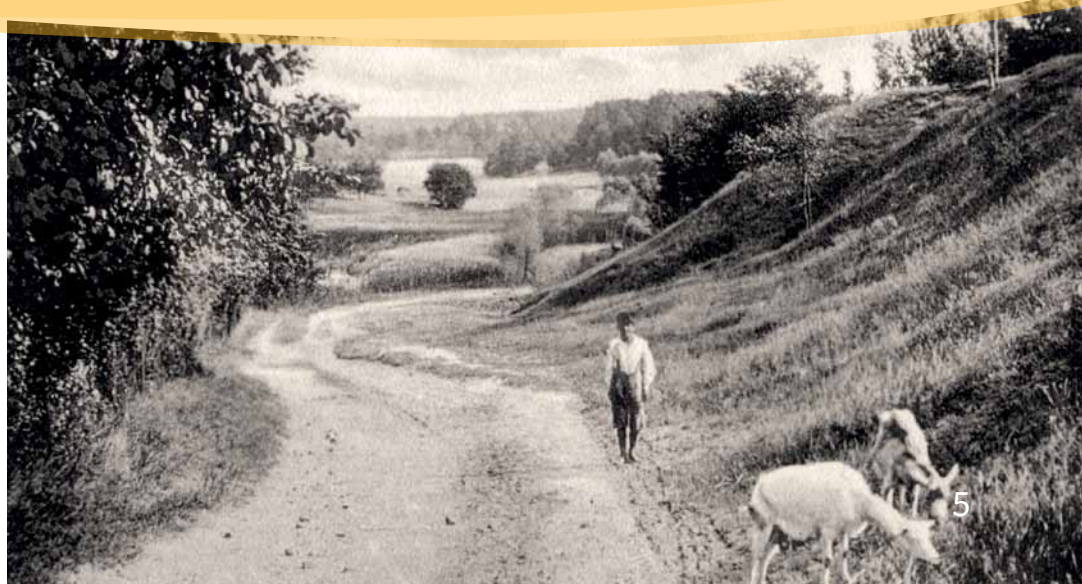
Landscape around Lake Krummensee (1929)



Small pasque flower
(*Pulsatilla pratensis*)



Valley Sutschketal (1967)



Sandy grasslands

What the botanist Gleditsch described in the 18th century as “sandy hills and bad nutrient-poor fields” is best described as sandy nutrient-poor grasslands today. The sandy and very nutrient-poor soils have a low capacity to store water. Already in the spring, they can heat up and then dry up during the following months. Heat and dry conditions help the specialists living here to have a competitive advantage.

Where the slopes are steep and facing South, the soils remained free from trees and shrubs for a long time, even without human interference. However, many sandy grasslands in Brandenburg are located in flat landscapes. Without any use, they will be grown over by grass, shrubs and trees. 100 years ago, grass and meagre hay were an essential element on the menu for grazing animals. But today, many owners of animals shy away from using sandy nutrient-poor grasslands. The offer is too meagre, even for many breeds of sheep.

That does not take away from the attraction of the sandy grasslands, especially in the summer. A large palette of light colours develops in the sunlight. This includes the bright yellow dwarf everlast, pink thrift and the blue fragrant scabious. The flowers attract many insects. This transforms the dry sand into a meadow full of life. The valley of the river Dahme near the village of Freidorf, the place called “Liepe” near the village of Pätz and the area around Lake Töpchiner See are all places where you can enjoy the beauty of the sandy grassland and observe the life in the sand.



Blue-winged grasshopper
(*Oedipoda caerulescens*)



Dwarf everlast
(*Helichrysum arenarium*)





Inland dunes

Many people only know dunes from the coast. Inland dunes are actually not that rare in the Dahme Lake District in Brandenburg. But they have disappeared from our sights. Many places have “white hills”, but they are often covered in pine trees. Only the diverse relief of the area has been conserved underneath the trees and creates surprises for wanderers.

Inland dunes are open sand areas. They used to be characteristic in the landscape of the Dahme Lake District over thousands of years. They were created during the last Ice Age, when wind blew the sand from place to place and moved it about.

Where the dunes are not covered by woodland, the grey hair-grass is often the dominating feature in the patchy vegetation. You can also often find Morison’s spurry or shepherd’s cress on these nutrient-poor sites. The antlion uses the light sand for his funnel traps. And when the wind is stronger, it still gets the sand into motion.

Particularly impressive is the inland dune Waltersberge towering 30 metres over Lake Storkower See. But open dunes are also hiding among the woodland areas of the villages of Teupitz and Freidorf. Watch out for inconspicuous differences in relief along field or woodland margins on one of your next excursions: Often these are small dunes on which old pine trees have grown.



Grey hair-grass
(*Corynephorus canescens*)



Antlion
(*Euroleon nostras*)

Heathlands

The large-scale heathland areas in the Dahme Lake District were created as a consequence of military use, as nearly everywhere in Brandenburg. By now, the tanks have been scrapped, the firing ranges are unused. But without grazing, mowing or fire, trees and then woodlands are appearing. The heather plant is disappearing.

The LIFE Sandrasen project worked with the forest administration of Hatzfeldt-Wildenburg and the agricultural co-operative Löpten-Briesen e. G. to



care for the Massow heathland. Despite great efforts and conservation activities, the heather stands had become old and starting to build woody growth. This reduced the quality of food for animals. The LIFE Sandrasen project introduced the use of a controlled fire in the area around Massow. Fire rejuvenates the heathland very effectively and it never burns all heather plants. There are always islands left for insects and other invertebrates, where they can survive.



Sheep and goats will graze the Massow heathland and will also keep young pine trees in check. To make the work easier for the shepherds, there are several water wells and night enclosures. This is to protect the sheep and goats from wolves, which have returned to the Dahme Lake District during the last decade.

Between August and September, the heather is in purple flower. It offers one of the most fascinating colour experiences that nature has to offer anywhere in Brandenburg.



Common heather
(*Calluna vulgaris*)



Woodlark
(*Lullula arborea*)



Lichen rich pine woodlands

Many people don't realise, how nutrient-poor the sand landscapes in the Dahme Lake District are. Up to the 20th century, farmers and people living in the countryside depended on any possible source of nutrients to offer food and a resting place to animals. For this purpose, they did not only take straw from the fields and hay from the meadows, but also needles from the woodlands. Up to the 1950s, needle litter from the woodlands was used in the area known as Niederlausitz (Lower Lusatia). It is a historical region in the southeast of the German state of Brandenburg.



Today's lichen rich pine forests used to be mainly in private ownership. The use of timber and needle litter as well as grazing repeatedly removed biomass and nutrients from these woodlands. The soils became poorer in nutrients. Sunlight managed to get through to the soil surface. Under such conditions, lichens could form large cushions on the woodland floor. In these light woodlands, pine trees grew undisturbed and have taken very fascinating forms. Many of these "farmer pine forests" disappeared no later than the 1960s as part of reforestation efforts.

Small woodlands near the villages of Dornswalde and Bugk have maintained their fairy-tale character until today. Over the next decades, you will be able to observe if and how a former reforested area will develop into light-flooded lichen-pine woodland at the village of Töpchin. The LIFE Sandrasen project supported woodland owners here and elsewhere, to give the lichens enough light to flourish.



Iceland moss
(*Cetraria islandica*)



Pine chafer, also known as June beetle
(*Polyphyllo fullo*)







Woodland glades and open sand areas

Sand has influenced the life of people in the Dahme Lake District for thousands of years. Not much wanted to grow from the sand. Whatever little grew was needed for the survival of people and animals. But when people started moving to the cities and life became easier, slowly the traditional landscape disappeared. The German author Theodor Fontane described the area around the village of Teupitz in 1882 as “Always the same, well-known elements: Lakes and sand and pine trees and more little pine trees with stunted growth, but as homogeneous as these things may be, so striking is their assembly in this area around Teupitz. The pine tree, large and small, does nowhere appear in big numbers or in straight lines, but rather in a staggered formation.” *

* Theodor Fontane. Walks through the Mark Brandenburg, volume 4: Spreeland, Berlin, 1862.



Last century, the pine trees were made to grow more densely. Sand and the bush-like pine trees with stunted growth, locally known as “Kussel”, had nearly disappeared from many areas in the Dahme Lake District. The Bugk Sahara, created by winds, or the dune landscape between the settlements of Märkisch Buchholz and Münchehofe disappeared between the stems of the pine trees.

The work of the LIFE Sandrasen project has made the sand visible again for everybody in small areas. There are now “sand windows” in the pine forest at the Bugk Sahara, at Lake Roßkardtsee and at the area known as “Wustrick” near the village of Groß Köris as well as at the lake Grubensee near Limsdorf. This is where pioneer plants adapted to sand finds places to thrive. The specialists will take over the open sand areas and transform it over the next decades.



The project LIFE Sandrasen has supported the restoration of sparse woodlands and open sand landscapes. The total area restored is over 90 hectares across the Dahme Lake District.

This included:

- The removal of shrub from nutrient-poor grasslands
- Thinning of woodlands
- Removal and bark stripping of non-indigenous trees and shrubs.

The LIFE Sandrasen project removed humus and litter layers on a total area of 10 hectares to create open sand areas.





The return of the plants

Have you ever heard of the spanish catchfly or noticed the sand-gipsurt? No? That is a shame, but you are not the only one. Often only botanists and people interested in plants know these rare plants. These – as well as the mountain-parsley and the blue hair grass – belong to the characteristic species of the calcareous and nutrient-poor grasslands.

The distribution of these plants has shrunk to a scarce presence in the Dahme Lake District over the last years.

When the LIFE Sandrasen project started in 2013, it was literally five minutes to twelve for many types of plants. The project wanted to help the last remaining, often isolated appearances of these plants. Ranger collected seeds, for example from the

maiden pink and the St. Bernard's lily. They brought them to a horticultural nursery in the Lausitz region. Under the care of gardeners, the seeds could germinate and grow into plants. The plants started flowering and formed new seeds.



By now, plants grow and flourish in many places of the Dahme Lake District. Together with many volunteers, the LIFE Sandrasen Project has sown plants such as Boehmer's cat's-tail or the fragrant scabious and other rare plants in their original habitats. They also planted thousands of seedlings. The project made a start, so that the genetic information stored in these plants over thousands of years can continue to live on in the Dahme Lake District.



The LIFE Sandrasen Project collected the seeds of 12 plant species characteristic of calcareous dry sandy grassland. It also propagated the seeds in cultures. This happened in collaboration with the botanical garden of Potsdam University and the NagolaRe GmbH.

From these cultures

- 15 kilograms of seeds have been produced
- 27.000 plant seedlings have been grown and planted out in 14 Natura 2000 areas.

At least 25 hectares of nutrient-poor grassland will blossom in new diversity and support plant biodiversity thanks to these measures.



Land use and landscape maintenance

When have you last seen a migrating shepherd, a shepherd who walks across the land with his animals and leads them from grazing site to grazing site? In the Dahme Lake District, you may occasionally experience a flock of sheep stopping your car or meeting animals in the woodland or on footpaths. As well as elsewhere, migrating grazing animals and their shepherds have become a rare sight. This is not a very good prospect for nutrient-poor grasslands and heathland, as they largely depend on this type of land use.

For this reason, it was an important issue for the LIFE Sandrasen project to facilitate the use and care for these nutrient-poor habitats. Sheep, goats and cattle will not be fed from the nutrient-poor grasslands and heathland alone. Only when the care of such habitats is paid for, it is worth the effort for the shepherd. This is now

well recognised and nature conservation and management contract programs finance this type of land use.

We had a lot of conversations with livestock owners and sought to find out together, how to help livestock owners, habitats and the grazing animals. This resulted in many small projects on these sites. They were all tailored towards the site-specific requirements.



Mobile grazing fences were in high demand, as well as night enclosures. This is because sometimes an area is only of interest for grazing, if the shepherd can quickly erect the grazing fence from his vehicle. The project installed wells on heathlands and on nutrient-poor grasslands. This improved the provision of water for the animals during the summer.



The LIFE Sandrasen project supported the land users of the Natura 2000 areas with the provision of

- 7500m of permanent fencing
- 3000m of mobile fencing
- Three permanent night pens
- One permanent grazing shelter and
- Eight wells for grazing animals

This will allow the land users to graze at least 100 hectares of nutrient-poor grassland and heathland in a reliable way in the future.

LIFE connects people

After visiting the project SandLIFE in Sweden we all thought: "If this project name was not already taken, we would call our project SandLIFE." LIFE in the sand – is there any better way to imagine a nature conservation project? Possibly not. But our colleagues from Sweden, who have become our friends, were just faster. Their project SandLIFE set the European standard for how to awake coastal dunes, heathland and nutrient-poor grassland to new life.

LIFE does not just connect nature conservation areas within the European Natura 2000 network. LIFE also connects people, who look after these protected areas. LIFE overcomes borders.

The LIFE Sandrasen project team attended workshops in Belgium, the Netherlands, Luxembourg, Sweden, Slovakia and the Czech Republic. This experience was an enriching and inspiring opportunity.



At these occasions the landscapes and their people always have their very own story to tell. This is also true for other parts of Germany, like Hesse, Thuringia, Schleswig-Holstein and the lower Rhine Valley, where the project team was able to exchange many experiences with other projects.



Experience sand landscapes

People often know sand from their childhood days, may that be from the sandpit or a holiday at the seaside. So, it comes as no surprise, that the inland dunes of Waltersberge are one of the favourite places for the kindergarten from the village of Storkow.

Whether you like flowers or hiking or walks; whether you prefer to read stories or to go on the search for something unusual: The sand landscapes of the Dahme Lake District have something to offer in every season.

The best way to explore the sand landscapes is by foot. For example, there is a circular walk through the so-called Bugk Sahara. Fife interpretation boards inform walkers about the special features of this area.

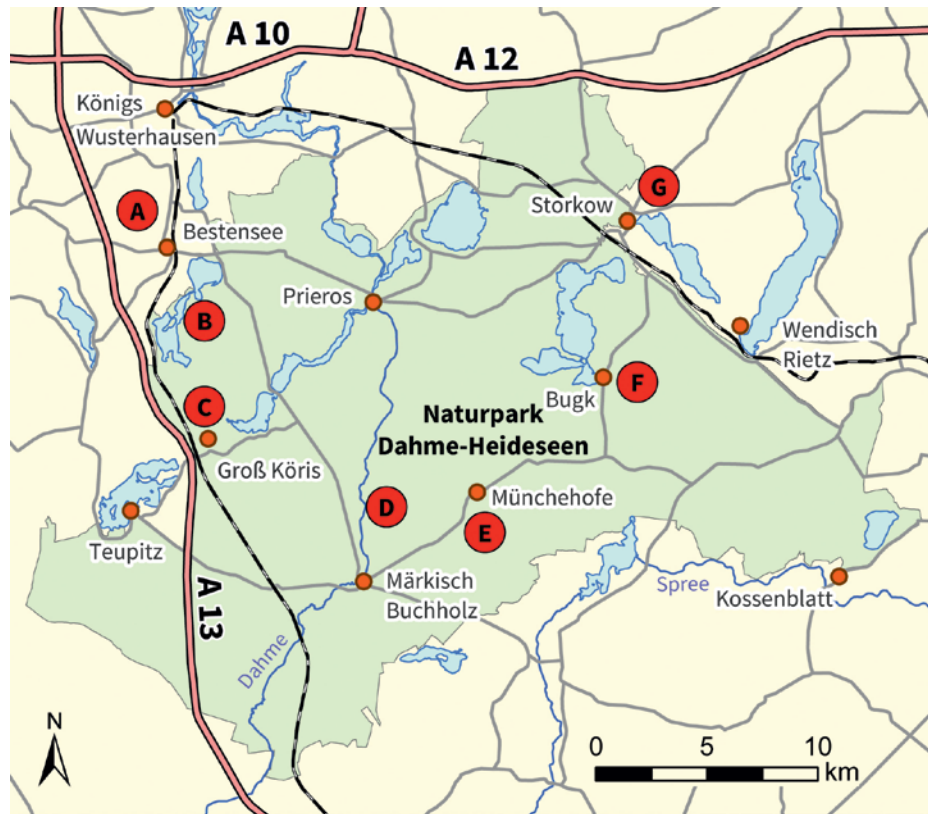
A boardwalk leads you through the diverse valley Sutschketal between the villages of Bestensee and Krummensee. It then follows along magical wet alder woodlands towards the sunny and warm slopes of nutrient-poor grassland. Interpretation board invite you to have a little break and to explore the landscape in more depth.

Discovery tours with the rangers and footpaths lead you to the landscape near the settlement of Münchehofe, known as Miethsluch, around the lakes near the village of Groß Körös or to the inland dune Waltersberge near Storkow. You can find more detailed information at www.sandrasen.de/erleben (in German). For those who would like to explore the sand landscapes with their children or grandchildren from the comfort of their own home, we recommend the Wonderful Adventures of Lilian and her friends in Sandrasia. You can order these magazines for children for free. More information at www.lillysabenteuer.de (in German).





LIFE Sandrasen in the Dahme Lake District



Wanderempfehlungen

- | | |
|-----------------------------------|----------------------------------|
| A Sutschketal | D Lesefährte Waldweisen |
| B Pätzer Hintersee | E Miethsluch |
| C Heideseen bei Groß Köris | F Bugker Sahara |
| | G Binnendüne Waltersberge |







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