

Regional Genebank in The Province Of Östergötland Sweden

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Östergötland is a province in south-east Sweden with an area of approx. 10000 squarekilometers. In the south and in the north of the province you find woodland and in between open flat largely agricultural area.

In Östergötland 133 species of vascular plants are redlisted and the main reasons for the decreasing populations are overgrowth of land, changed agriculture management and changed forestry management. 23 of these plants are classified as Endangered (EN)

The genebank is situated at Naturcentrum in Linköping. Naturcentrum is a meeting point for people interested in nature and wildlife operated by Calluna, one of the leading swedish companies for ecological consultancy. We also have support from Linköping municipality.



Image 01: Genebank

We are the only genebank in Sweden who are working with wild redlisted plants but we hope that we can stimulate other regions of Sweden to start conserve local rare plants.

Everything started 1990 when the biological association Östergötlands Naturlistoriska Förening introduced the project Flora Guardians in Östergötland. About 25 flora guardians visited localities with rare plants and with the permission from the County Administrative Board they collected seeds from the redlisted plants. From the beginning it was a school science project so the pupils from Birgitta gymnasium sowed the seeds in pots.



Image 02: Pupils from Birgitta gymnasium saw the seed from some redlisted plants

After germination they planted out their cultivation at a nearby area belonging to Naturcentrum and they took care of their plants during one year. They removed weeds, water the plants and collected seeds. After one year a younger pupil took over the responsibility.



Image 03: Pupils from Birgitta gymnasium

The main focus from the beginning was to exhibit the most uncommon plants in our province and try to explain why plant conservation is important. 2005 we visited the Nordic genebank, a knowledge center for genetic resources, in Alnarp in south of Sweden. Two years later they changed name to NordGen. NordGen promised to take care of our seeds and store them in freezers for longtime conservation.

2006 it was time to inaugurate our regional genbank and by that time we had approx. 60 different species of redlisted plants. Until 2016 we had great help from the pupils at Birgitta gymnasium but nowadays me and the gardener Klas Schlichting are operating the cultivation. 2020 we accomplished a renovation by replacing the paving stones with stone dust and weather-resistant steel.



Image: 04: Cultivation area with *Petrorhagia saxifraga*, Tunic Flower

The genebank project is a cooperation between me as a botanist and Klas as a gardener. It is a win-win arrangement where I have the knowledges about plant and plantecology and Klas is an expert in cultivation.

I bring Klas to the original plant localities all around Östergötland to show him the environment. Home in the genebank Klas design the square with the plant of interest so every square has a unique design. Together we try to find out the most suitable soil. We have increased the number of species from 60 to 86 during the latest years and now we need more space to expand the cultivation area. There are more species of redlisted plants to add.

Here is a table showing the species we have in the genebank 2025.

Species	Redlist category	Species	Redlist category
<i>Agrostemma githago</i>	EN	<i>Lappula squarrosa</i>	EN
<i>Aira caryophyllea</i>	NT	<i>Lathyrus tuberosus</i>	VU
<i>Alchemilla samuelssonii</i>	VU	<i>Leonurus cardiaca</i>	VU
<i>Alyssum alyssoides</i>	NT	<i>Malva pusilla</i>	VU
<i>Anthemis arvensis</i>	NT	<i>Marrubium vulgare</i>	EN
<i>Anthericum liliago</i>	EN	<i>Melampyrum cristatum</i>	NT
<i>Apera spica-venti</i>	NT	<i>Mentha x gracilis</i>	EN
<i>Aristolochia clematitis</i>	EN	<i>Misopates orontium</i>	NT
<i>Arnica montana</i>	VU	<i>Nepeta cataria</i>	EN
<i>Asperugo procumbens</i>	NT	<i>Neslia paniculata</i>	EN
<i>Betonica officinalis</i>	EN	<i>Nonea versicolor</i>	RR

Blitum bonus-henricus	VU	Onobrychis viciifolia	RR
Blysmus compressus	VU	Oxytropis pillosa	EN
Bromopsis benekenii	RR	Petrorhagia saxifraga	NT
Bromopsis ramosa	NT	Phleum phleoides	NT
Bromus arvensis	EN	Pilularia globulifera	VU
Bromus commutatus	EN	Pleurospermum austriacum	VU
Bromus secalinus	EN	Poa remota	NT
Buglossoides arvensis	NT	Potentilla recta	RR
Camelina microcarpa	VU	Primula farinosa	NT
Campanula cervicaria	NT	Pulsatilla vernalis	EN
Cardamine parviflora	VU	Pulsatilla vulgaris	VU
Carex caryophyllea	NT	Ranunculus arvensis	NT
Carex hartmanii	VU	Rubus hartmanii	RR
Carex hostiana	NT	Salix hastata ssp vegeta	VU
Catabrosa aquatica	VU	Salvia pratensis	VU
Cerastium brachypetalum	VU	Scolochloa festucae	NT
Chenopodiastrum murale	CR	Sibbaldianthe bifurca	RR
Chenopodium vulvaria	EN	Silene dichotoma	RR
Chimaphila umbellata	EN	Taraxacum maculigerum	VU
Consolida regalis	NT	Taraxacum pseudosuecicum	CR
Cypripedium calceolus	RR	Thesium alpinum	NT
Dianthus armeria	VU	Thymus pulegioides	VU
Draba nemorosa	VU	Trifolium aureum	NT
Dracocephalum ruyschiana	EN	Trifolium montanum	NT
Dracocephalum thymiflorum	EN	Vicia dumetorum	EN
Drymochloa sylvatica	NT	Vicia pisiformis	EN
Erucastrum gallicum	RR	Vicia villosa	VU
Euphrasia micrantha	VU	Viola uliginosa	NT
Euphrasia officinalis ssp officinalis	EN		
Falcaria vulgaris	EN	CR Critically endangered	
Genista germanica	CR	EN Endangered	
Geranium bohemicum	NT	VU Vulnerable	
Geranium lanuginosum	EN	NT Near threatened	
Gypsophila muralis	EN	RR Regionally Redlisted	
Helianthemum nummularium	NT		
Holosteum umbellatum	NT		

During 2006 – 2024 we have sent a lot of seeds to NordGen but four years ago we also started in-situ conservation. In Östergötland we just have one locality with *Cerastium brachypetalum*, Gray Chickweed. It's a spring blooming annual plant species. 2021 we sowed seeds from our genebank and reinforced the population.

We have cultivated *Salix hastata ssp vegeta* several years in the genebank and 2023 we struck cuttings and placed them in a suitable wetland with only a few original specimen. About 50 % of our cuttings have survived after one year.



Image 05: *Cerastium brachypetalum*, Gray Chickweed

Dracocephalum ruyschiana, Dragonhead, is a rare plant in Sweden. It is classified as Endangered. You can find it in two places in Östergötland but the total population is small. 2024 we replant the dragonhead at four new places not far from place of origin.

This year we have chosen to replant *Oxytropis pilosa*, Hairy Oxytrope, at places where they were growing about 50 years ago. It was a tricky project because the slopes of western Omberg are very steep so next year we will continue the replanting from the seaside with a boat.



Image 06: Locality with *Cerastium brachypetalum*, Gray Chickweed



Image 07: *Dracocephalum ruyschiana*, Dragonhead



Image 08: Klas replant *Oxytropis pilosa*, Hairy Oxytrope

20 years ago *Cypripedium calceolus*, Lady`s-slipper orchid was found in 12 different places around Östergötland. Today there are only four different localities left and we decided to increase the population in our region. 2022 we collected seeds from Lady`s-slipper orchid at four different localities around Östergötland and a company called Orchis Natur helped us to germinate and cultivate them. 2024 we get the small plants back and in October 2025 we have replanted them. 88 mini plants are waiting for reintroduction hopefully already 2027.



Image 09: Transplanting of *Cypripedium calceolus*, Lady's-slipper Orchid

Our plans for 2026 is to expand our garden area and incorporate some recently built wetlands in order to grow aquatic plants. We also like to continue with in-situ conservation.

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