



# NATUURPUNT: The Damvallei restoration project

↑ At the start of the 19th century, peat-cutting on the Schelde floodplain was at its peak. The flooded workings are important historical and environmental features of the reserve.  
*Susan Burke*

Frederik Hendrickx, one of two voluntary conservators who manage approximately 100ha of reserve at Damvallei, near Ghent, on behalf of the Belgian environmental organisation Natuurpunt, showed Susan Burke around the reserve and explained the restoration work that had been carried out.

**T**he fenland of Damvallei lies alongside the River Schelde beneath one of Belgium's busiest motorway interchanges, a short distance to the east of the industrial inland port of Ghent. Its important ecosystem falls within the proposed Site of Conservation Interest (pSCI) 'Schelde and Durme estuarium from the Dutch border to Ghent.' Funded as a European LIFE project, the restoration of an approximately 6km-long former meander of the River Schelde, connected to an alluvial plain featuring a central sandy ridge, has recently been completed.

Hendrickx's interest in the Damvallei was prompted by his childhood experience of the area. Still resident in the locality, when he and fellow conservator Dirk Bogaert saw a small parcel of land for sale 15 years ago they recognised it as a trigger-point for Natuurpunt. 'The community couldn't afford to buy the property or to take out a loan. Natuurpunt not only has access to funding, it can advise on the legalities and practicalities.'

### Declining hay meadows

Strangely enough, the original acquisition is not one of the Damvallei's most environmentally important

ecological sites. The field is still rented out to a local farmer, with agreements on mowing and grazing schedules. The mature willow pollards continue to be lopped every seven years, in traditional Flemish fashion. It can take almost a century to bring nutrient-rich land back to its former state, and with land in the region being so expensive, Natuurpunt is prepared to exchange land which has largely lost its nature conservation interest for that which still retains some value for wildlife.

Only a few hundred metres beyond Natuurpunt's first holding, one of the Damvallei's last traditionally worked hay meadows is following in the path of so many others. Regularly cut until four years ago by the owner, the plot has now been invaded by reeds. Hendrickx made the point that these nature reserves inevitably suffer from species impoverishment unless they are managed. 'Man's activities have allowed these species to enter and flourish. We try to go back to the ecosystems of 50 years ago.'

In the reserve's eastern extremity, at De Bochten, land was mown until the 1970s. Until it was abandoned, hand-cut hay was transported from the 'day parcels' to the farmsteads in small boats.



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The shallow access canal has now been blocked by fallen trees from neighbouring poplar plantations and alder carr that has encroached into the hay meadows. The restoration of such a degraded area required innovative, low-impact measures.

### Restoration work

The removal of felled timber and stumps, where possible, was carried out using Natuurpunt's Softrak all-terrain carrier. In the wettest areas, the timber was extracted by a cable-way system. The Softrak machine also undertook mowing duties (see box, page 14). Hendrickx was impressed with its performance. 'After we took the trees away and mowed once, we were amazed at how much nettle and bramble had disappeared. Seeds from some species we thought lost were also viable in the ground and these reappeared.'

Marsh lousewort has reappeared, but it is suspected that this local rarity was reintroduced by harvesting machinery. Marsh valerian, which has also benefited, had been identified in certain locations before restoration work began. Special care has been taken to protect the plants, and the Damvallei colonies of marsh valerian are now the largest of the few occurrences in Flanders. With a

balanced mix of male and female plants, the species is establishing well. There are now over 2,000 plants on three parcels at Damvallei.

Marking areas where rarities were to be found was only one aspect of the co-operative planning process. Both Natuurpunt volunteers and employees worked together throughout the restoration, and the project was largely guided by the volunteers, many of whom are experts in their own fields. Hendrickx himself is an evolutionary biologist working at the Belgian Institute of Natural Sciences.

It is now readily accepted at Damvallei that technology and nature conservation can work positively together. Hence the decision to use the Softrak 'Cut and Collect System' on the recovering meadows. Designed by Loglogic, the combination



↑ Marsh valerian had been identified in certain Damvallei locations before restoration work began. Three parcels on the reserve now form the largest of the few colonies found in Flanders.  
*Susan Burke*

## Natuurpunt

The Flemish organisation, Natuurpunt, is based in Belgium's ancient ecclesiastical capital, Mechelen. Formed in the 1960s in response to public concern relating to environmental issues, 50 years on, membership of the NGO exceeds 90,000. Some 5,000 are active volunteers, engaged in the reinstatement, maintenance and protection of 19,000ha of Flanders' varied environments. Bert Delanoëje (Chief Management Executive) and Tom De Beelde (Head of LIFE Unit) manage Natuurpunt's 400 employees. Both men began their careers after long periods of voluntary service with the organisation.

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## The Softrak 'Cut and Collect System'



Produced in the United Kingdom by the Devon-based company, Loglogic, the Softrak is a multi-purpose, all-terrain carrier. Specifically designed for use in sensitive habitats for the restoration and harvesting of all types of vegetation, the Loglogic Softrak 'Cut and Collect System' is a purpose-built low ground-pressure vehicle. When employed on environmentally sensitive wetland habitats, its extremely low ground-pressure and unique flexible-edge rubber track ensures minimal damage to both flora and fauna.

The Softrak is capable of working in standing water to a depth of approximately 35cm, with a capability of cutting a wide range of vegetation, including bracken, heather, weeds and gorse. The Softrak 'Cut and Collect system' is equipped with a single-cut 1.4m flail harvester, with a remotely controlled electric discharge chute. Designed to pick up swath or directly cut material cleanly, the chopped vegetation is blown over the cab into an 8m<sup>3</sup> bin with an automatic opening rear door. This unique design of the Loglogic Softrak 'Cut and Collect System' combines efficiency with minimal maintenance costs.

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was deemed to be very effective by the Damvallei's Conservators. In addition, the impact on the sensitive grasslands caused by the combination continued to be minimal.

### Peat ponds

The 'day parcels' run right down to the edges of De Bochten's peat pond, the outflow of which has been fitted with a modern sluice. Water levels were once rigidly controlled, but research carried out in the Netherlands has convinced Natuurpunt's staff that it is not the norm for water levels to remain so stable. There was a high proportion of iron present in certain parts of the marsh. In dry periods, this locked-up the phosphorus needed by plants. Judicious use of the sluice can mimic natural winter flushing, removing excess iron and thus releasing phosphorus.

The 50 or so tranquil peat pools found in the reserve are a comparatively recent addition to the Damvallei landscape. For a relatively short period of 70 years, locals dug the area's thick layers of peat

to supply fuel for nearby villages, and probably also for the city of Ghent. By 1840 the trade had ceased, but the shallow workings soon flooded and have remained as important historical and environmental features ever since.

### Water quality and water-soldier

Famous for specialising in both botanical and historical studies, researchers from the University of Ghent have studied the area since the start of the 20th century. There has always been a rich wetland and open-water resource on the old floodplain of the Schelde and the peat pools, not usually more than 1m deep, have contributed a new dimension. In the 1970s, however, the stability of these ecosystems was under severe threat. Many pools had been used by angling clubs in the past, but a surge of interest in coarse fishing led to large numbers of unsuitable species being introduced.

Moreover, some developers were dredging vegetation from the pond beds in their quest to produce the largest fish for the sportsmen. The



← Poplar plantations have been established in some sections of what is now the reserve. Although clearance and restoration of these remains prohibitively expensive, some parts are reverting to a more natural form. *Susan Burke*

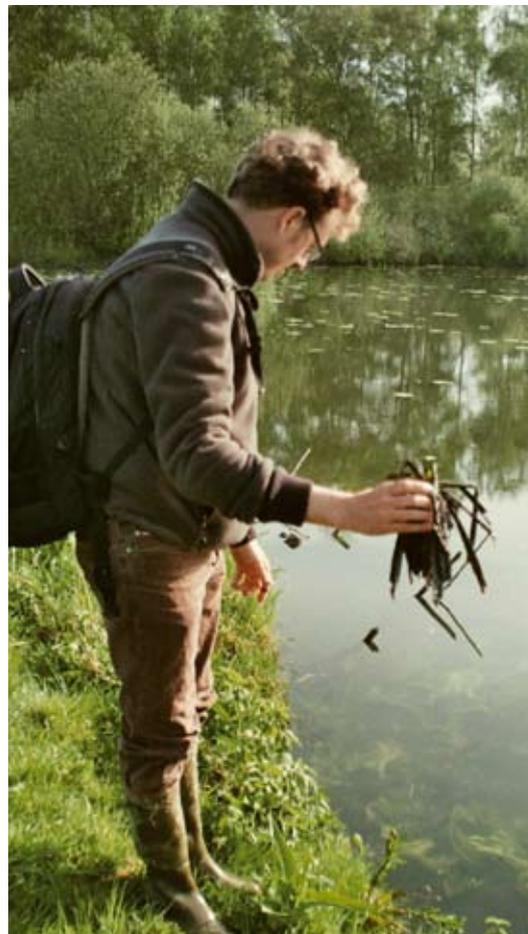
large carp and bream disturbed the water flow and caused turbidity. Natuurpunt's attitude when dealing with such issues is always to be non-confrontational. Consequently, when it came to restoring some ponds, any fish specimens removed were offered back to the angling clubs concerned for stocking fisheries outside the reserve.

Before these measures were taken, the water quality had already been checked by specialists from the Netherlands and found to be excellent, although turbid. 'Pike eat the small fish that feed on the water fleas that help keep the water clean. Within one month of the fish being removed, the pond was looking cleaner as the water flea population exploded,' explained Hendrickx.

Nevertheless, it was almost too late for one of the emblematic aquatics of the Schelde estuarine system. The survival of water-soldier was deemed to be so precarious that it was decided that the plant should be reintroduced with specimens gathered from local garden ponds. This plant has been a major driver of peat formation and a real 'biological engineer'. In winter, water-soldier dies back to a central core under the water, but it forms a life support system for many creatures. In addition, the plant stores a lot of excess nutrients from the water.

The small country of Belgium has a population of 10 million, so there is a considerable need for both conservation and recreational areas. With much of the relevant legislation dating from the 1970s, conflicts of interest are bound to occur from time to time. Targeted communication and open meetings have enabled Natuurpunt to avoid many of the problems sometimes associated with

major conservation projects. Furthermore, the inhabitants of Ghent and the surrounding area can now take advantage of the Damvallei reserve's new bird hide and 18km of waymarked footpaths.



← Frederik Hendrickx, one of two conservators managing part of the Damvallei reserve, with some fragments of water-soldier. *Susan Burke*

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