

Natural flood management on Crompton Moor.

Community Forest Trust



Crompton Moor landscape (Friends of Crompton Moor)

Date carried out

January 2018 - March 2020

Location

Crompton Moor, Oldham

Background

Crompton Moor is a combination of peatland, pine plantation and mixed woodland. Part of it is designated a Site of Biological Importance. Sphagnum moss, the main plant species found in the peatlands, acts like a sponge holding up to 20 times its own weight in water. When Sphagnum moss disappears, grasses such as *Molinia caerulea* grow in its place and these hold very little water. Water then runs off the moor and can contribute to flooding of nearby towns. Sphagnum moss is therefore an important plant as not only can it help reduce flood risk, it also helps to clean water as it filters through the peatlands.

A combination of industrial pollution, over-grazing and wild fires have damaged peatland areas, and there is a pressing need to address the damage.

Project

This project studied a number of options to hold water back up on the moor, helping to relieve downstream flood risk. The various techniques investigated included tree planting test plots and peatland restoration.

Partners

Oldham Council, Moors for the Future Partnership, Friends of Crompton Moor, Oldham Countryside Volunteer Ranger Service, Manchester Metropolitan University, Environment Agency, City of Trees.

Themes



Evidence & tools



Water quality



Water quantity



Community engagement



Green infrastructure

Tree planting test plots:

The aim was to determine how cross-slope tree planting may affect surface water runoff, compared to the existing *Molinia caerulea* dominated landscape. An additional variable involved different ground preparation techniques for tree planting, the aim being to discover whether an optimised planting specification could be devised for intercepting and attenuating surface water runoff on upland areas.

The planting plots comprised three replications of six surface cover types.

Each plot had a water interception system installed where surface water runoff was diverted to a container allowing volume to be recorded. Rain gauges were also installed discretely across the site to enable rainfall data to be captured.



Ground preparation of test plots (City of Trees)



Planting in quadrats (Moors for the Future)

Once the plots were completed, tree planting was undertaken on nine test plots where trees had been specified.

In addition to the tree planting test plots, a wider programme of tree planting on the moor was undertaken, and the impact of these trees on quantity of water running off the moor will be calculated.



Cross-slope tree planting (City of Trees)

Peatland restoration trial:

The aim of this trial was to determine how well bog building, hummock-forming species of Sphagnum colonise the moor's shallow and drier peat conditions, and compare their establishment to the broader mix of Sphagnum species that have been planted in quadrats in the *Molinia* dominated areas of the moor.

3,750 hummock-forming Sphagnum plugs were previously planted in quadrats at 30 test sites across an area of 3 hectares on the moor.

Different species of Sphagnum plugs were planted and monitored to assess which (either 'type of plug' or 'Sphagnum species') survived and grew most successfully, and so retained the most water.

Outcomes

Tree planting: 4,000 trees were planted covering an area of 2 hectares (expected to attenuate approximately 1,000m³ of water).

Peatland restoration: 3,750 Sphagnum plugs planted.

Next Steps

Both the tree planting plots and Sphagnum trial areas will continue to be monitored, assessing the ability of the species to attenuate water, and to colonise environments that are exposed to difficult weather conditions and human interference.

The Sphagnum species, which grows most successfully, and retains the most water will be planted out further across the moor, helping to maximise the water holding potential of this landscape.

The peatland restoration pilot will also investigate changes over time, and the amount of water that replanted peatland can hold.

This information will be used to influence other peatland restoration works where the existing peat conditions are similar to Crompton Moor.

Pete Stringer, City of Trees said:

"Crompton Moor is becoming a hub for natural flood management demonstration and evaluation work.

We hope that the findings can be used to influence what happens elsewhere in the South and West Pennines to increase the ability of these upland areas to hold back more water and reduce the risk of flooding down catchment."

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