

Renaturalising the watercourses in Cwmparc



Salix's Spider Machine placing large woody debris in the river

Salix worked with Natural Resources Wales at Cwmparc in the Rhondda Valley to renaturalise the water courses in order to reduce flood risk and increase biodiversity.

In the 1970s many of the rivers in the south Wales valleys were concrete and block lined to rapidly drain old colliery sites; the result has been a massive reduction in biodiversity and increased flows.

The blockstone river beds increase the speed of the water such that it scours out any gravel, leaving no habitat for invertebrates and thus reducing biodiversity.

The natural processes within the river are now being restored using large woody debris and locally sourced brushwood fascines.

Materials Used

- **Large Woody Debris**
- **Brushwood Fascines**



Brushwood fascines act as sediment traps

Trapping sediment and slowing the flow

By securely pinning large sections of woody debris in the watercourse to create dams, the flow becomes more like that of a natural river or stream, with pools and eddies developing, areas of sediment building up and variances in flow rates within the channel.

Not only does this slow the flow, giving the catchment area downstream more time to absorb and convey water, but it also provides habitat for a wide range of invertebrates, fish and amphibians.

In contrast, the existing stone or concrete lined channels are largely devoid of life, as the speed of the water washes everything away.

If biodiversity within the stream is improved, other wildlife will also benefit and there is the potential for otters to feed along these watercourses in the future.



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Large woody debris tied onto the stream bank

Building with nature

Salix's incredibly strong and versatile four-legged walking spider machine climbed in and out of the river and carefully positioned the large woody debris – made up of whole trees and large branches – at intervals within the channel.

The pieces of wood can weigh up to a tonne and are held securely with stainless steel cables that are anchored into the concrete bed. This will ensure the trees can withstand the high flows of water conveyed by the channel without washing away.

Locally harvested brushwood fascines have also been used to slow the flow and act as deflectors. These will encourage gravels and sediments to drop out behind and allow vegetated berms to develop, creating natural flood defences as well new habitats for wildlife.

This is all part of a wider project which will reduce flood risk and restore more ecologically diverse habitats, including the restoration of 11ha of peatbog.

Find out more about both the spider machine and the work at Cwmparc on Salix's YouTube channel

<http://bit.ly/SpiderCwmparc>



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Locally sourced brushwood fascines



Creative working

“By working creatively and smartly together, the agencies which manage the area can use the area’s rich natural resources to reduce flooding, reconnect wildlife habitats and enhance biodiversity.

“The concept of using local woody debris to ‘naturalise’ and slow down watercourses in man-made channels, is both simple and an efficient use of local resources.” Becky Davies - Natural Resources Wales

This project has been achieved thanks to the Welsh Government’s Nature Fund



Invertebrate habitat will be created

Large woody debris creates riffles, pools and eddies

