CINDERELLA SCORES A HAT-TRICK!
3 years, 3 projects, 3km of winterbourne chalkstream restored

Introduction
The Dorset Wild Rivers project and the Environment Agency have created three successful winterbourne restoration projects that have delivered a number of outcomes including Biodiversity Action Plan (BAP) targets, working towards Good Ecological Status (GES under the Water Framework Directive 2000) and building resilience to climate change.

Winterbournes are rare chalk streams which are groundwater fed and only flow at certain times of the year as groundwater levels in the aquifer fluctuate. They support a range of specialist wildlife adapted to this unusual flow regime, including a number of rare or scarce invertebrates.

So called “Cinderella” chalkstreams because they are so often overlooked. Their ecological value is often degraded as a result of pressures from agricultural practices, land drainage, urban and infrastructure development, abstraction and flood defences.

Over centuries, the spring-fed South Winterbourne in Dorset has been degraded. This has resulted in very straight, steep-sided and over-deepened channels with little resemblance to a Winterbourne.

The South Winterbourne is a tributary of the Winterborne Frome which is currently failing under WFD for fish, macrophytes and diamict. The Winterbourne is an important juvenile fish habitat and feeder reach to the Lower Frome.

Winterbourne specialist, Paraleptophlebia werneri is a genus of mayflies in the family Leptophlebiidae.

It is particularly adapted to living in winterbourne streams which run during the winter but dry up in the summer. It lays drought resistant eggs in the river gravels which can survive the dry season and then hatch when the winterbourne starts flowing again.

Monitoring & Results
In order to measure the impacts of our work, pre and post work macroinvertebrate and fish monitoring is being carried out as part of the project.

A more diverse habitat supporting diverse wildlife has been created. The bankside vegetation has been manipulated to provide a mixture of both shaded and more open sections of channel and a more species rich margin.

Our macro invertebrate sampling indicates that the work has been a great success: the rare mayfly larva Paraleptophlebia werneri (Red Data Book 3), and the notable blackfly larva Metacricotopus amphiros, were found in the stream 6 months after the work was completed.

The Conservation value of the new channel was reassessed using the scientific Community Conservation Index (CCI). With the old channel before restoration had a moderate conservation value, the new channel has a very high value.

Brown trout spawned throughout this stretch this winter.

How did we do it?

The ground works undertaken when the Winterbourne was dry. The works recreated the original route where it could be found, by excavating new channels and re-profiling the existing one.

This was a joint project between Dorset Wildlife Trust and the EA’s Biodiversity & Fisheries team in Blandford, where expertise was used from other organisations in order to create a successful project.

Funding was secured from the Environment Agency, Dorset Wild Rivers Project and from the Weymouth Relief Flood environmental enhancement section 106 grant, totalling just £35,500.

Dorset Wild Rivers is a partnership project led by Dorset Wildlife Trust and FJWAGM and is funded by Wessex Water and Dorset AONB. It also includes the Environment Agency, Natural England, Wild Trout Trust, Frome, Piddle and W.Dorset Fisheries Association.

Legacy and future...

This project will be used as a demonstration site for similar projects and will be a model of winterbourne chalkstreams across Dorset, where enhancement opportunities have been identified and where GES is less than good. Workshops will allow landowners to see how their channel could look.

The Partnership project continues to work with landowners and scope other sections of Dorset Winterbournes for enhancement work. A number of restoration plans have been drawn up for further degraded priority winterbournes sites and with funding can go ahead in 2013/14.

What did we do?

In total, approximately 3km of the South Winterbourne was enhanced over 3 projects in 3 years. The length of the stream has been increased by 1km.

2009 – 400m of meandering winterbourne channel created and a further 350m was enhanced.
2010 – 630m of the winterbourne was moved to its original route of across the middle field of the field, and it was reconnected to its floodplain.
2012 – A further 1.2 km of winterbourne was enhanced.

All of the work was undertaken via low cost earthworks and by working with in situ features and materials.

The winterbourne was restored to a more natural course and profile: the route meanders and the banks have been re-profiled so that the sides are more varied and some are now gently sloping; riffles, pools, glides, wet berms and gravel bars have been created and lots of large woody debris has been incorporated into the channel; most of the channel has been re-connected to the floodplain; 1ha of adjacent wet woodland has been planted and pond creation and stock management has taken place.

The diverse habitats created should see the return of wildlife, such as water voles, amphibians, brown trout.

Aim
The overall aim of this work was to restore, enhance and create UK Biodiversity Action Plan (BAP) Priority Habitat and work towards achieving GES.

Also to reconnect the floodplain, kick-start and recreate a range of geomorphological processes and features and incorporate large woody debris (LWD) back into the channel.

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