

# Project Proposal Into the Sticks

Four Rivers for LIFE large-scale project to transform the SAC Rivers in South Wales by restoring the rivers and their surroundings back to a natural state. The habitat improvements will improve the habitat for the SAC features, including, Bullhead, Otter, Lamprey, water crowfoot. This will have multiple benefits for the wider ecosystem.



Figure 1: The section to be restored.

## Into the Sticks River Restoration

The section of the Western Cleddau from the bridge where the river flows under the B4331 until Welsh Hook has been heavily impacted by dredging throughout the 19<sup>th</sup> and 20<sup>th</sup> centuries. The river has been straightened, widened, and deepened along its length. As part of the dredging works it was customary for large rocks and boulders to be removed from the river to allow water



Figure 2: The boulder pile hidden by some vegetation.

to flow freely in the channel. This has multiple undesirable effects on habitat diversity in the river. A great deal of habitat modifications will self-restore given enough time. Boulders, however, are mostly of a size too big for the river to move and therefore will not self-restore.



Therefore, it is desirable where they are evident and it is possible, to return boulders back into the river channel.

Into the sticks, near Letterston, is a site where piles of large boulders can be found on the riverbank where they were removed from the channel as part of historic dredging. The pile of boulders extends for around 100m. We plan to return the boulders to the channel, which will create greater flow diversity, creating scour and deposition increasing the overall habitat diversity in the channel. (See figure 4 for possible configurations) We plan to use long reach machinery so that boulders can be sensitively placed in the channel.

Supplementary to the boulder reintroduction we may need to seed the channel with gravel, depending on the sediment regimen of the river here. An assessment will be made by a geomorphologist, to decide if it is likely that the river will deposit the gravels needed for the site or whether it would be better to do this during the works.



Figure 3: Proposed reach for re-bouldering.

Alongside the boulder reintroduction we plan to create a floodplain scrape/pond. This will be up to 500mm at the deepest point, most of the area between 50mm and 200mm deep and having shallow shelving banks. The total area highlighted for the pond/scrape is 900m<sup>2</sup>.

Figure 5. Boulder Constellations

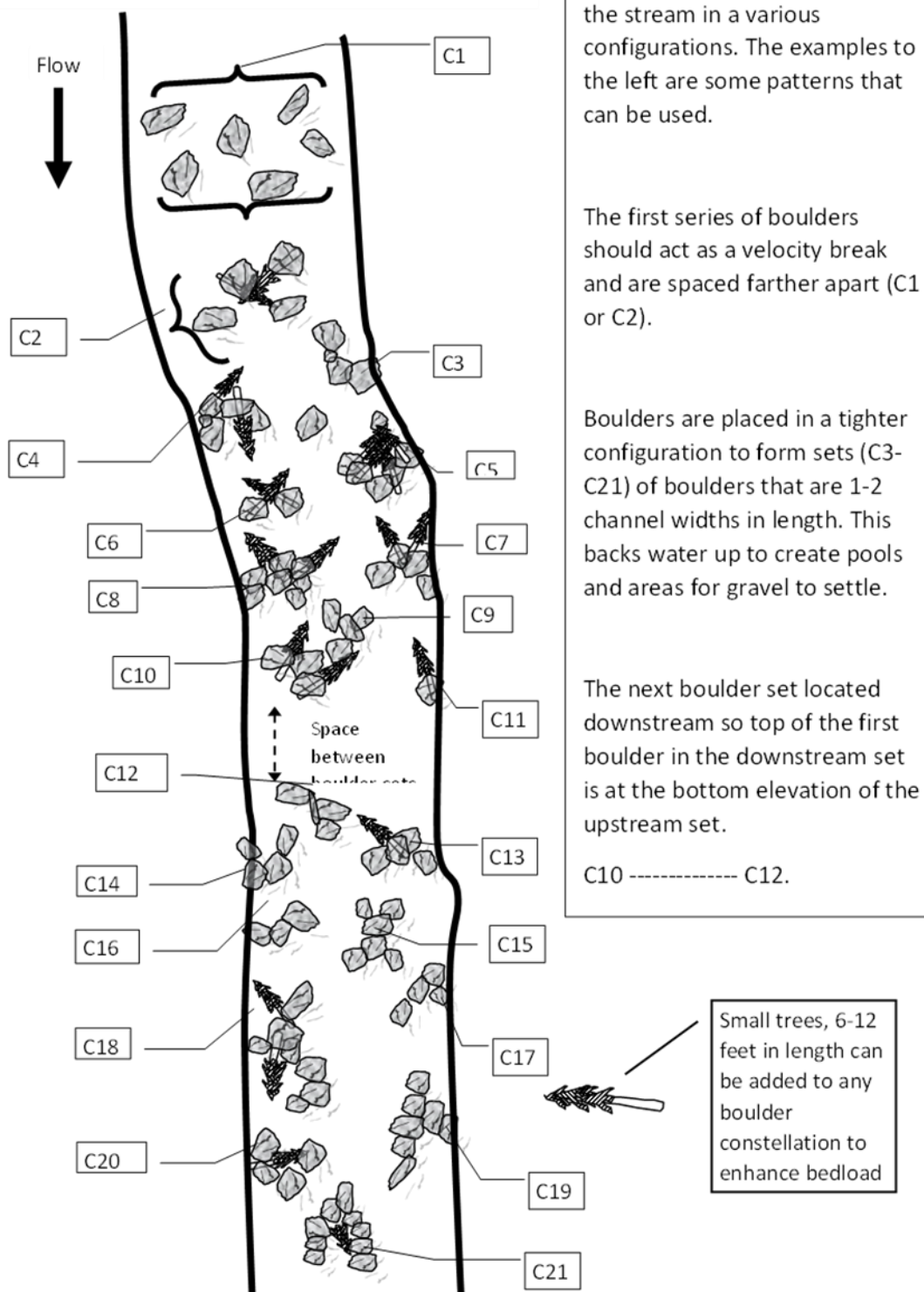


Figure 4: Possible boulder configurations.

