

Name: Keybridge Weir

Grid Ref: SX 08818 73751

River: De Lank River

Catchment: Camel

Designations: River Camel Special Area of Conservation (SAC) and the River Camel Valley and Tributaries Site of Special Scientific Interest (SSSI).

Keybridge Weir is located on the De Lank river 600m upstream of the De Lank-Camel confluence. Until the 1950's it provided the water offtake for an hydroelectric power generation plant (HEP) that supplied the nearby Keybridge Farm; the HEP became redundant with the availability of mains electricity supply in the 1950's, there is no remaining evidence of a leat or control structures on site.

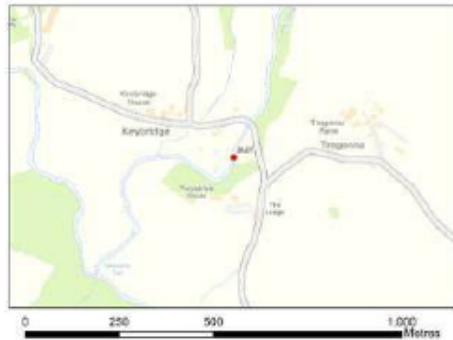
The weir appears to be constructed from rounded granite stones, possibly sourced from the granite quarries that once operated in the area. From a visual inspection, the hydraulic head difference over the structure appears to be at least 500mm, as such the structure is likely to be a high impact obstruction for salmonids both up and downstream. Atlantic Salmon populations, a Qualifying Species for the SAC designation, are at historically low levels within the catchment.

Removal of the weir would, following renaturalisation, allow the reinstatement of channel form and function. This approach aligns with the River Camel Restoration Plan, please refer to the River Camel Restoration Plan - Geomorphological assessment of physical modifications, 23rd March 2012 (site specific extract included overleaf). Discussions are currently taking place with the landowner in this regard.



Reach DL07 – Key Bridge Weir – NGR SX088737

Extract from the River Camel Restoration Plan - Geomorphological assessment of physical modifications, 23rd March 2012, P40



Key Bridge Weir

Boulder weir approximately 15m across and 1.5m high at the downstream end of the De Lank. The De Lank Quarry is ca. 2.5km upstream. The River Camel is ca. 0.5km downstream. Grazed right bank with limited riparian vegetation. Steep, wooded left bank. High levels of woody debris present.

Rehabilitation

Impacts on favourable condition – medium overall

- Flow impounded for approximately 70m upstream
- Sediment significantly attenuated upstream–reduced downstream supply
- Channel bank scour and local channel width increase
- Channel bed scour downstream
- Barrier to migratory fish passage – especially during low flows
- Fish spawning downstream affected by reduced gravel supply

Opportunity

To improve the sediment and biological continuity between the De Lank and the River Camel



Measure	Impacts addressed	Comment
Do nothing	All – but only over a long period of time	This option would support deterioration of the structure over time. The structure appears to be in good condition. Sediment transport downstream and fish passage would only improve very gradually.
Remove	All	This option would support reinstatement of channel form and function following a period of dynamic adjustment of the channel bed and banks. Geomorphological and ecological connectivity would be restored from the De Lank Quarry to the River Camel.
Modify	All	This option could involve removal of selected portions of the structure and could lead to incremental removal of the structure over time. The ultimate benefits would be as for removal. The nature and extent of dynamic adjustment would be more controlled and the associated risks would be lower.

Additional considerations

- Geomorphological response – additional consideration of likely geomorphological response is required – including future quarry restoration
- Landowner liaison – there will be dynamic adjustment with the ‘remove’ and ‘modify’ options but flows may be lower for smaller flood events
- Geotechnical investigation – the left bank is steep and the potential impacts of dynamic adjustment will need to be confirmed

Next step

Feasibility and options appraisal