Document title: *Staverton Hydropower Project: Gauged flow in Staverton side channel*
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Method

A spot gauging was undertaken at the site below Staverton Weir on the River Dart, Devon to assess the flow split between the main channel and the side channel to the East end of the weir. The side channel is supplied with water via a notch in the stone weir crest. The channel consists of a gravel riffle approximately 50m long that re-joins the main stem River Dart 100m below Staverton weir. Figure 1 below gives the offtake to the channel (white arrow) and the downstream end that re-joins the river channel (yellow arrow). A Valeport 801 flow meter was used to measure water velocity and depth was recorded using a staff. Chainage at metre intervals was measured using a tape.

Water depth (m)	Velocity m/s	Flow m^3/s
0.20	0.01	0.002
0.50	0.05	0.025
0.65	0.31	0.202
0.85	0.43	0.365
0.90	0.82	0.738
0.91	0.90	0.819
0.82	1.05	0.861
0.80	1.10	0.880
0.81	0.89	0.721
Total		**4.613**

Water depth (m)	Velocity m/s	Flow m^3/s
0.21	0.34	0.071
0.53	0.31	0.164
0.45	0.29	0.130
0.40	0.32	0.128
0.23	0.19	0.043
Total		**0.532**

Results

Flow in the side channel was just over 500 l/s. Approximately 11% of the main channel flow when measured at Q70. Under the proposed hydro power abstraction regime, flow in the channel would be maintained at the existing level, 500 l/s at Q95 with 1170 l/s in the new Larinier fish pass. Flow in the channel would continue to be variable, increasing with river flow. A small sweetening flow of 20-30 l/s should also be maintained in the leat when the turbine is not abstracting. This would ensure that the functional new habitat generated in the leat (if the project proceeds) would be maintained during periods of non-generation.