

Executive summary

Fishtek Consulting Ltd. was commissioned by the River Exe and Tributaries Association (RETA) to carry out a catchment wide passability assessment of previously identified barriers to fish migration along the River Exe and its tributaries. The tributaries surveyed included the rivers Creedy, Yeo, Culm, Lowman and Barle.

The passability of six of the identified sites had already been assessed in previous Fishtek reports or have existing fish passage designs in place, the results of which are given in the following report. 22 sites were assessed for existing fish passage facilities, absence of fish passage facilities and potential passability for both migratory salmonids (*Salmo trutta*, *Salmo salar*) and European eels (*Anguilla anguilla*). In the case that existing fish passage facilities had been installed, the dimensions and design of these facilities were compared to the Environment Agency Best Practice Guidelines. In the absence of fish pass facilities the quantitative SNIFFER method was applied. In brief, the SNIFFER methodology compares depth and velocities to fish swimming capabilities and considers other factors, such as the overall structure dimensions and turbulence to classify the passability of a barrier.

For all barriers, a brief options appraisal, which outlines a number of approaches to mitigate the structures, is also given. Prioritisation of barrier mitigation was determined by the qualitatively assessed severity of the barrier and total upstream spawning habitat available (see below). This approach identified a number of high priority barriers. St James and Pynes weir were both identified as high priority due to the large hydraulic head, inefficient baulk passes and a relatively large amount of upstream spawning habitat. The Mill on the Exe weirs also pose a significant barrier, lack any technical fish passes and are relatively low in the catchment. Larinier technical fish passes will meet Best Practice Guidelines and are therefore the preferred mitigation option for these barriers. The full results for 28 weirs are given in the report. The River Exe is a heavily impounded river with a number of significant barriers, which are likely to delay or prevent the upstream migration of salmonids and eels. Mitigating these barriers is likely to improve the WFD status and population numbers within the River Exe catchment.

Site	Preferred mitigation strategy for salmonids	Cost / £000's	Total length of potential spawning habitat (strahler number 2 or 3) upstream / m	Barrier severity
St James	Larinier	417.4	497518	High impact
Trews	Do nothing	0	497518	Minimal impact
Mill on the Exe	Larinier	426.4	497518	High to moderate impact
Cowley	Introduce new pre-barrage and adjust existing pool and traverse pass	57.6	381674	Moderate impact
Pynes	Larinier	387.4	302770	High impact
Bickleigh Bridge	Larinier	157.2	199934	Moderate impact
Bickleigh Mill	Weir removal	52.8	183883	Moderate to minimal impact
Tiverton Town	Larinier	126	163659	Moderate impact
Heathcoats	Do nothing	0	161748	Minimal impact

Bolham	Larinier	122.4	156679	High to moderate impact
Washfield	Weir removal	55.2	156679	Moderate impact
Oakford Bridge	Larinier	195.6	113499	High to moderate impact
Bridgetown	Larinier	171.6	29281	Moderate impact
Exwick	Larinier	242.4	115844	High impact
Head	Larinier	199.2	72004	High impact
Fordton	Weir removal	49.2	47608	High impact
Silverton	Do nothing	0	137900	Minimal impact
Lower King's Mill	Larinier	108	87412	High impact
Higher King's Mill	Improve existing pre-barrages and close the sluice gate	36	58901	Moderate to minimal impact
Cold Harbour Mill	Weir removal	43.2	35936	Moderate to minimal impact
Whitehall	Weir removal	43.2	19651	Moderate to minimal impact
Chieflowman	Do nothing	0	4173	Minimal impact
Perry	Larinier	195.6	55004	High impact
Beasley	Do nothing	0	52268	Minimal impact
Dulverton	Formalise rock ramp structure	55.2	51153	Moderate impact
Simonsbath	Weir removal	38.4	5763	Moderate impact
Total cost / £			3,180,000	