



Aquatic Control Engineering



# Fish & Eel Passage



We believe in the need for fish and eel preservation. We have worked tirelessly with experts nationwide to develop a range of passage equipment to reduce the impact of the installation of our flow control equipment.



We are employed nationwide to advise and supply eel passes around existing and new structures.

We design, supply and manufacture fish and elver pass solutions in the UK and Ireland. Our Fish Migration team have completed numerous projects across the UK adding to our knowledge centre.

We are constantly improving and developing our design by monitoring, research and development through Environmental bodies and Universities. This has confirmed our product effectiveness. Consequently, helped us to refine our designs into their modern form.



**Modular design allows for endless combinations to optimise the route**

We offer a full turnkey service, which allows for survey of existing structures, advice on routing and best practice application, 3D design and installation of the manufactured equipment. We pride ourselves on constant development of the design of equipment in line with Environment Agency guidance and site specific requirements.

The passes offered are a modular V-shaped design, with integrated bristle substrate (typically 30 x 30mm pitch, but alternative pitches/substrates are available on request), allowing a great degree of flexibility for installation.



The design of the channel and the splitter box has been developed and tested alongside specialists from various regions of the Environment Agency and other organisations. This means a wide range of knowledge has been incorporated in our design, to suit passage requirements nationwide.

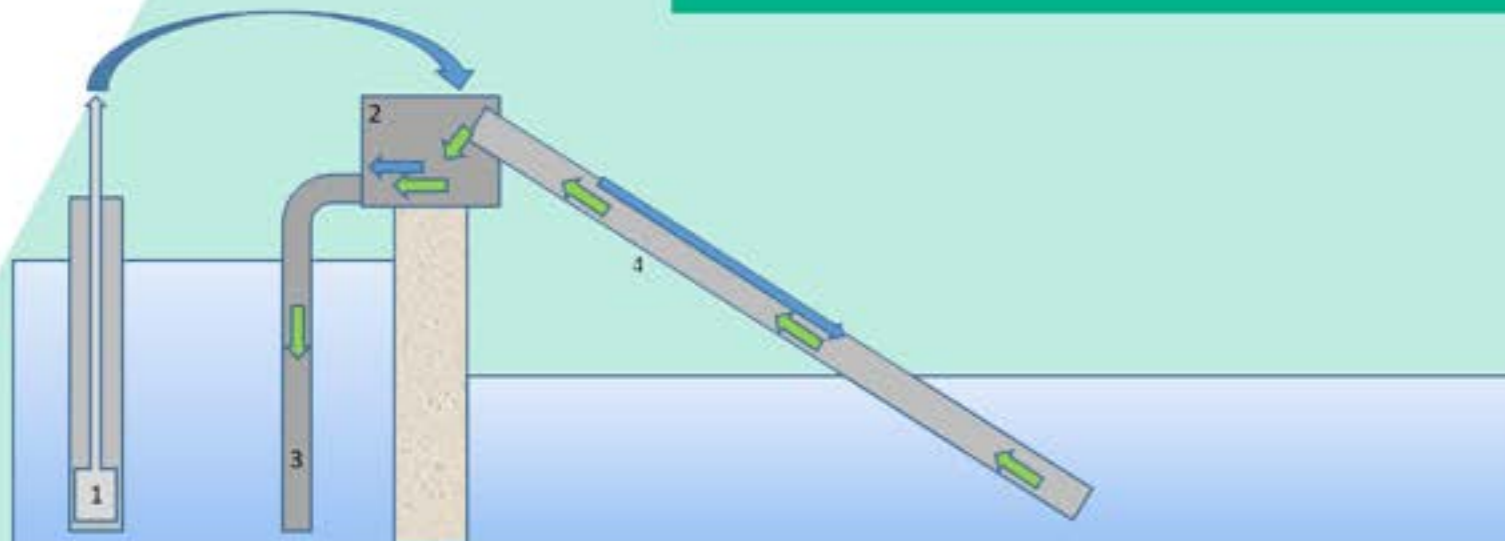




# Eel Passage

Eelers migrate upstream, to allow them to grow in suitable habitat, however modern watercourse management often presents obstacles in the form of weirs, pumping stations and dams. Traditionally, Eelers would not pass these structures. An eel pass therefore provides a suitable route with substrate around the structure.

-  Elver Migration
-  Water Flow
- 1 Pump on lifting rails
- 2 Splitter Box
- 3 Exit pipe
- 4 Climbing substrate



Eelers have a natural instinct to seek out fresh water. When they encounter a barrier, they attempt to migrate upstream via wet grass, or other sources of fresh water. This has been hampered in recent years following improvements in seal designs on sluices, removal of vegetation and urbanisation.

However, the installation of ACE eel passes can reduce this decline. By simulating wet grass and providing an attraction flow, eelers can find a safe route to continue their journey inland.



When designing an eel pass, the section that enters the water would ideally have easy access, near the edge of the watercourse, and have a strong attraction flow. The climbing section(4) should have a substrate suitable for the eels, this leads up to a crest, at this point flow is introduced, usually in the form of a splitter box(2).



The eels should be “washed down” from the crest, either into a holding tank (if trapping for monitoring) or into an exit chute to the upstream watercourse(3). The wash down flow needs to ensure eels cannot congregate around the flushing source, and if used for trapping, the box would require a flow of water to maintain water freshness.

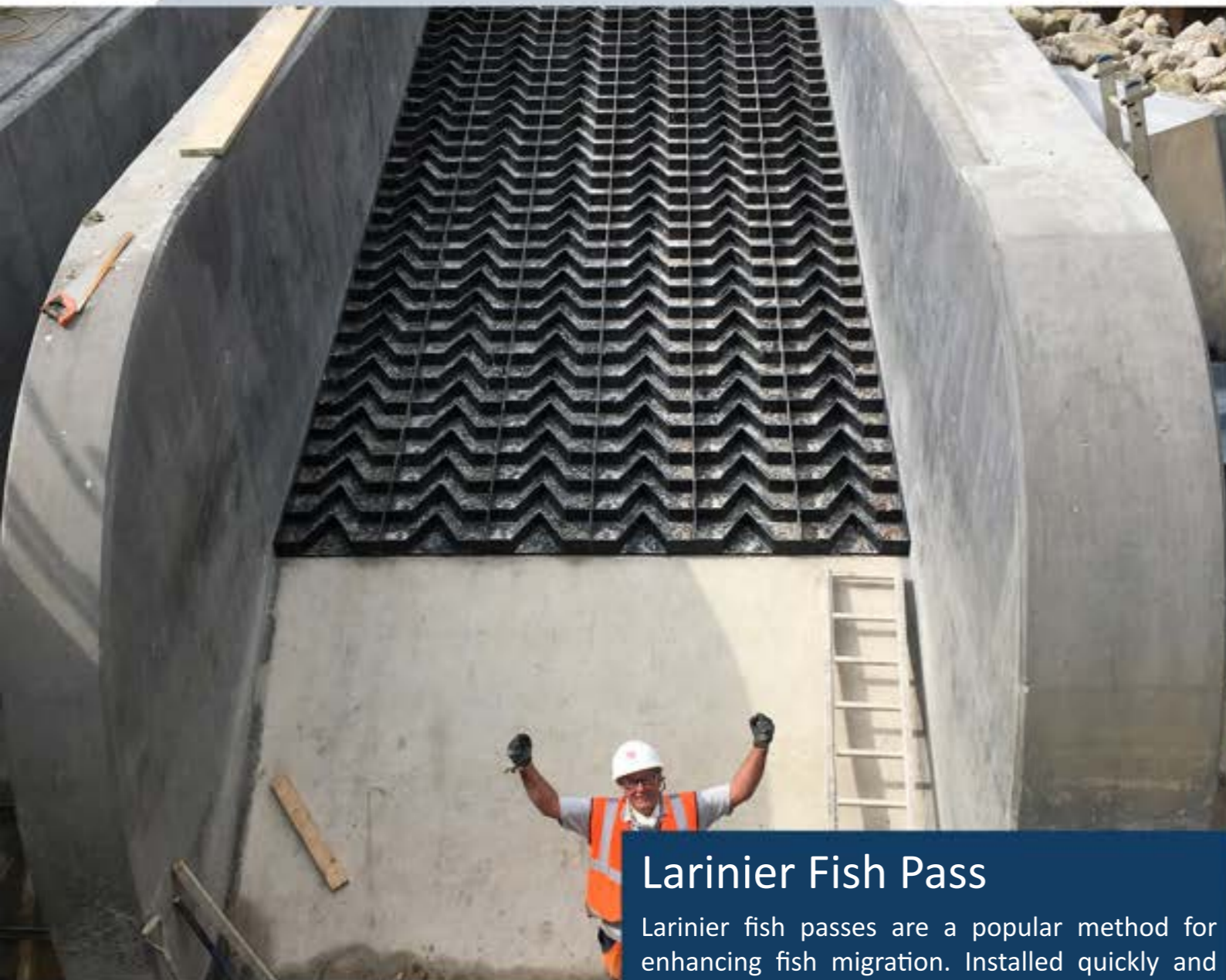
A typical pass is indicated left, however please contact us for advice if in any doubt.



# Fish Passage



All fish pass technology offered by ACE conforms with the Environment Agency fish pass manual. We are happy to assist with the approval process as part of fish pass packages. Providing full survey and design using high-tech 3d modelling for clear visuals and accurate dimensions.



## Larinier Fish Pass

Larinier fish passes are a popular method for enhancing fish migration. Installed quickly and easily on or near slopes and weirs around a migratory obstacle they work by slowing down river flows to enable fish passage.

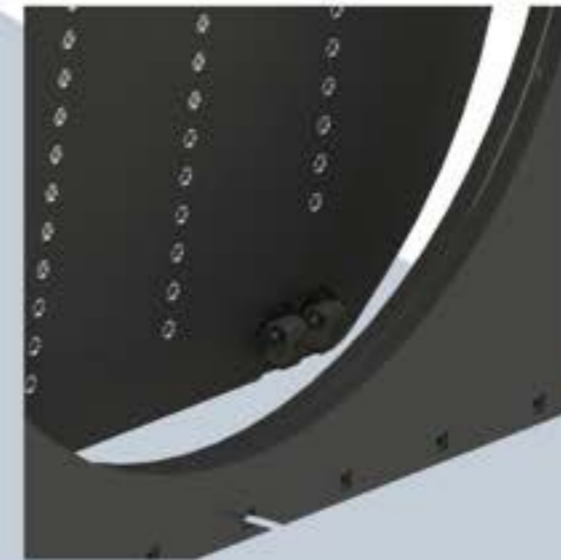
ACE larinier fish pass tiles feature a number of baffles on a "ready to install" back plate, for quick fixture to an existing or constructed slope.

Spacing of the baffles are adjusted depending on the fish species and the flows and slopes of the river.

## Fish Friendly Flap Valve

As flapped outfalls often pose a barrier to fish migration, particularly at the point of entry from the sea, we offer a range of Fish Friendly Flap Valves .

Our Fish Friendly Flap Valves offer the same benefits as the standard Flap Valve range, and integrate float regulated portals to allow a small opening for fish to use as the tide turns, which then close before a critical water level is reached.



## Eel Dampers

The Standard AQUIKO Flap Valve is designed to completely shut under equal pressures. The AQUIKO Eel Damper ensures the AQUIKO Flap Valve remains slightly open under equal pressure to allow eel and elver passage.

The exact closing level is dependant on the number of dampers fitted and can be calculated by the AQUIKO team. Eel dampers can be fitted to any size AQUIKO Flap Valve.

## Fish Friendly Pumps

Our pump partners have developed fish friendly pump designs, which ensures fish can enter and exit the pump system without damage. The impeller has a unique leading edge which ensures fish are not struck on entering the pump. The pump also incorporates vanes to guide fish unharmed through the system. Independent testing demonstrated that over 97% of fish and 100% of eels sampled, passed through the pump with no harm. This has been proven through multiple independent studies.







[www.aquaticcontrol.co.uk](http://www.aquaticcontrol.co.uk)  
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