MONTHLY BRIEFING

Spey Fishery Board

October 2007 www.speyfisheryboard.com

VAKI Fish Counter Installed on the River Dullan

Mortlach weir with Denil fish pass completed. The VAKI counter is housed in the upper chamber of the fish pass.

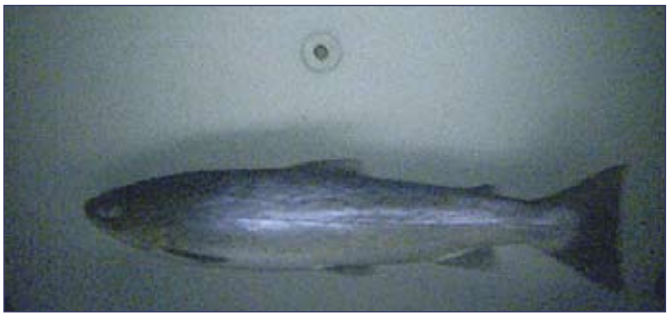
An exciting project to make two weirs on the River Dullan, a tributary of the Fiddich that provides cooling water for the Mortlach and Dufftown distilleries is now complete and the results are very encouraging.

Difficulty Ascending

Over the years the lower Mortlach weir had become undercut and as a result fish had difficulty ascending it. The upper Dufftown weir did have a fish pass installed but analysis indicated that the design could be improved to allow better fish access. Given suitable flows, which are not always present, sea trout managed to ascend both weirs. However over the years juvenile surveys have indicated that salmon only occasionally ascended the Mortlach weir and never progressed above the Dufftown one. The weirs are owned and operated by Diageo and with their support and funding through the CASS LIFE project the Spey Fishery Board have installed two new fish passes on the offtake weirs during 2005 – 07 to improve fish access.

As part of the project to encourage salmon to re-establish in the Dullan some supplementary stocking with hatchery reared progeny from the nearby Fiddich has been initiated and monitoring the success of the operation through electrofishing has also been underway. To further improve monitoring of fish stocks in the Dullan the fish pass on the Mortlach weir was designed to accommodate a VAKI fish counter at the upstream end. The counter was successfully installed during July 2007 and has already provided new insights into fish passage in the Dullan.

Shortly after installation in July fish were recorded ascending the fish pass. There were some initial problems with the camera system which were resolved and images of the ascending fish were successfully collected from early August onwards. Using the digital images the species of fish ascending can be determined and so far all images have been either sea trout or brown trout. The majority of the trout have migrated soon after spates and typically at night. However, even in low steady flows few trout make their way up the fish passage each evening. Two particular aspects of the project have been a surprise. Firstly the migration started much earlier than anticipated with trout progressing through the counter from July onwards. Secondly, the size range was



In clear water flow conditions upstream fish, like this sea trout, can be readily identified.

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surprising with trout of 20cm successfully ascending the fast flowing waters of the fish pass.

Great Success

So far the counter has been a great success but considerable work remains to improve the system. In practical terms the chamber and fittings holding the counter and camera will need to be redesigned and modified in 2008 to make it more robust and better able to deal with the high leaf load that occurs in the river during Autumn. Fish can also ascend the weir under certain flows without having to use the fish pass and this requires assessment. In addition the data collected requires careful analysis to ensure that accurate estimates of the population are produced. For example some trout have made several back and forth movements through the scanner!

By early October 2007 over 300 trout had ascended the weir although we still await the first salmon!

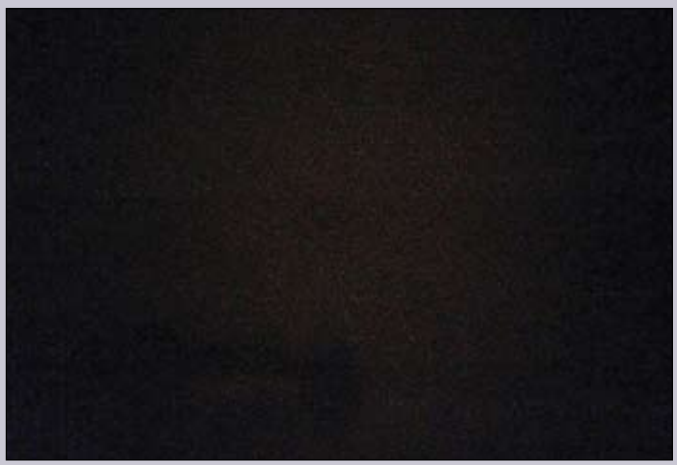
Summer student, Alan Wickham, views the VAKI counter before installation.

Ascending fish swim through two infra red scanners (the black panels at this end of the device). An infrared image is then produced and stored in the operating computer. When a fish moves up through the scanner the camera and lights are triggered and upto five photographic images are collected as it swims through the chamber. The camera can also be adjusted to collect video footage of the fish passing through. Downstream fish are also detected by the infrared scanners but so is debris. Currently no photographic images are available for downstream passage. For more information on VAKI counters go to **www.vaki.is.**

Infra-red scan image from the VAKI counter.

In clear water flow conditions upstream fish, like this sea trout, can be readily identified.

Upstream migrating Brown Trout (approx 25cm).



There is a fish there! During and after spates the Dullan becomes very coloured and although fish images are captured, species identification can be difficult if not impossible!

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