

Cost effective system for monitoring of fish migration with a camera

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Within the European LIFE project Ljubljana connects (LIFE10 NAT/SI/000142) we have developed a cost-effective solution for the monitoring of fish migration through the fish passes with the underwater camera. In the fish pass at Ambrožev trg and in the fish pass near the Fužine castle we installed a video camera called “Fishcam” to be able to monitor the migration of fish through the fish passes and success of its reconstruction. Live stream from fishcams installed in the fishpasses is available on our project website (http://ksh.fgg.uni-lj.si/ljubljanaconnects/ang/12_camera).

The system for the fish monitoring is made from two parts. First is the waterproof box for the computer with charger and the second part is the camera itself. We used a high sensitive Sony analogue camera. The advantage of this camera is that it has very good sensitivity in low light conditions, so it can take good quality pictures even at night with a minimum additional lighting. For the night recording we use additional IR reflector to illuminate passing fishes. The camera is connected to an 8-inch tablet PC. We decided to use a tablet PC because it is quite small, cheap, it is relatively fast and has a low power consumption. On the computer we use software which has advanced motion detection capabilities, so we can also detect the small fishes. When the fish is detected by a software, its photograph is automatically saved to local hard drive and for backup also on Google drive.

The system for monitoring of fish migration has turned out to work very well. From the beginning of monitoring in June 2015 to end of the year there were more than 100.000 photographs produced. The first analysis of them was already prepared estimating fish species and their frequency in passing the fish pass.