

Laura Evans

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I studied for my bachelor's degree in Biology at Cardiff University between 2008 and 2012 which included a professional placement year at Oxford University's Wildlife Conservation Research Unit (WildCRU). During my placement I investigated the benefits of removing invasive signal crayfish from sections of the Upper Thames for macroinvertebrate populations.

Moving from rivers to farmland, my final year dissertation project investigated the benefits of agri-environment schemes for reptiles and amphibians in Oxfordshire. After developing a strong interest in research I applied for a KESS-funded research masters (MRes) supervised by Dr Sian Griffiths and Dr Isabelle Durance as part of the DURESS project, in collaboration with Afonydd Cymru.

My research focuses on the ecosystem services generated by a common freshwater fish species, the European Bullhead, as a keystone species within a freshwater ecosystem.

This freshwater fish is endangered across much of mainland Europe however the UK acts as a stronghold population thereby aiding its conservation. I hope that my work will be important for bullhead conservation in Europe as well as Wales. This small fish species (~100mm) is a voracious predator that has a strong impact on the ecosystem. They act as predators on aquatic invertebrates, and some studies suggest they also have a negative impact for juvenile salmonids. The bullhead also supports river bird populations like the dipper and the kingfisher (Figure 1).

By studying this species I hope to provide an ecosystem based approach to assess the impact of the bullhead on two extremely valuable ecosystem services for the Welsh economy:

1. The provision of Atlantic Salmon and Brown Trout for fisheries and angling valued at around £100 million pounds a year
2. Supporting river birds as culturally valued organisms

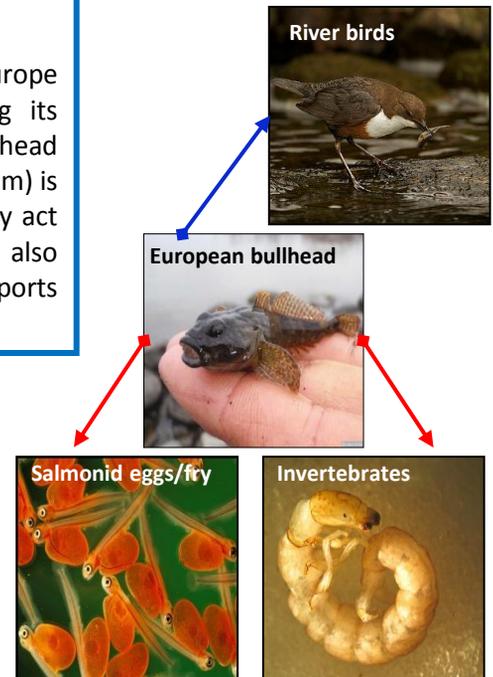


Figure 1. Keystone role of the European bullhead within the river ecosystem. Predates upon invertebrates and salmonid eggs (red arrow) and acts as an important prey item for river birds e.g. European dipper (Blue arrow)



So far in DURESS we have used electric fishing techniques to obtain data on fish populations from 50 streams across upland Wales. This data will enable us to calculate fish abundance and morphometric measurements will allow us to determine the overall health of the fish populations in upland Wales.