

Anguillid herpesvirus (AngHV-1)

Anguillid Herpesvirus (AngHV-1, formerly known as Herpesvirus anguillae or HVA) was first detected in the summer of 2009 following investigations into an eel specific mortality by staff at our National Fisheries Laboratory. This was the first confirmed outbreak of AngHV-1 in wild eels in the UK. The virus has since been confirmed at other river and still water fisheries in England following large scale losses of eels. Efforts are underway to improve understanding of this virus, as well as other important viral diseases of European eels.

Anguillid herpesvirus (AngHV-1)

As the name suggests, Anguillid herpesvirus is a herpes virus that infects eels. This includes adult and juvenile stages of the European eel (*Anguilla anguilla*), Japanese eel (*Anguilla japonica*) and American eel (*Anguilla rostrata*). AngHV-1 is not known to infect any other fish species.

AngHV-1 is a warm water virus and is most active between 10°C and 26°C. Disease outbreaks have all been reported during summer and early autumn. Like other herpesviruses, disease is usually triggered by stress, which can include poor water quality, high stock levels and barriers to migration.



What AngHV-1 does

Eels infected with AngHV1 can develop a range of disease signs and symptoms. Diseased eels may appear lethargic and swim near the surface or the water's edge. They may have reddened fins and a mottled appearance to the skin.

The main damage caused by this virus is to the gills, with severe necrosis (cell death) and loss of normal gill structure.

These changes are often seen in combination with bacterial and fungal infection. The internal organs can also be affected with inflammation and further necrosis, leading to organ failure, debilitation and death.

Distribution of AngHV-1

Relatively little is known about the distribution of AngHV-1 in the UK. So far, the mortality incidents recorded are the only confirmed cases of this disease in the wild in the UK.

It is thought that the virus may be widespread in Europe and it is feasible that large numbers of eels carry the virus without developing disease problems. In some European fish farms young eels may be purposely exposed to the virus to promote resistance in the

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surviving fish. However, these outwardly healthy eels can potentially retain and shed the virus when stocked into wider environments.

An Environment Agency led study in partnership with Cefas is underway to establish the distribution of AngHV-1 in England and Wales. This involves taking blood samples from live wild eels captured during our eel monitoring surveys. All fish are returned alive to their rivers and the blood samples are used to detect antibodies to the virus. This information will tell us how widespread the virus is, what proportion of eels are affected and which river catchments are most at risk. This information can help identify risks of disease transfer through fish movements and is key to understanding the health of our eels, both in freshwater and during their marine migrations.

Other eel viruses in England

There are three important viruses that pose a threat to European eels. These are the herpesvirus AngHV-1, the aquabirnavirus Eel Virus European (EVE) and the rhabdovirus Eel Virus European X (EVEX). So far both AngHV-1 and EVEX have been recorded as the cause of disease in our wild eels. These viruses are capable of mortality, reduced swimming performance and may prevent eels from reaching their spawning grounds in the Sargasso Sea. Work is underway to develop the necessary diagnostic tools to detect all three viruses in our eel stocks. This will be the first time such comprehensive surveys have been conducted, and they will tell us a lot about the status of these pathogens in the wild.

Viruses and eel management

Health is critical to the successful management of any fish species. Disease has the potential to undermine many eel management measures. For example, the effective stocking of elvers requires knowledge of disease risks to minimise the spread of pathogens and to promote survival of the fish being stocked. Disease is also important to the reproductive health or 'spawner quality' or migrating silver eels, potentially limiting their ability to successfully reach the Sargasso Sea.



What you can do

Please report any signs of dead or dying eels to us immediately. If you see any fish dying or in distress please contact our incident hotline - 0800 80 70 60. Prompt reporting of problems can allow us to respond quickly and effectively to disease outbreaks in fisheries.

Find out more

For more information on eel diseases, or any health problem in fisheries please contact: National Fisheries Laboratory, Environment Agency, Bromholme Lane, Brampton, Huntingdon, PE28 4NE.

Tel: 02084 745244 or 07825 111723; Email: fish.health@environment-agency.gov.uk