Anguillicoloides crassus

What is Anguillicoloides crassus

Anguillicoloides crassus is a parasitic nematode worm that infects the swim bladder of the European eel, *Anguilla anguilla*. *A. crassus* is non-native to Europe, being first introduced into Germany from Asia in the early 1980s with trade in eels for aquaculture. The parasite has since spread widely across Europe, and was first detected in the UK during the mid-1980s. It is now considered to be one of the most important disease threats to European eels.

An adult A.crassus

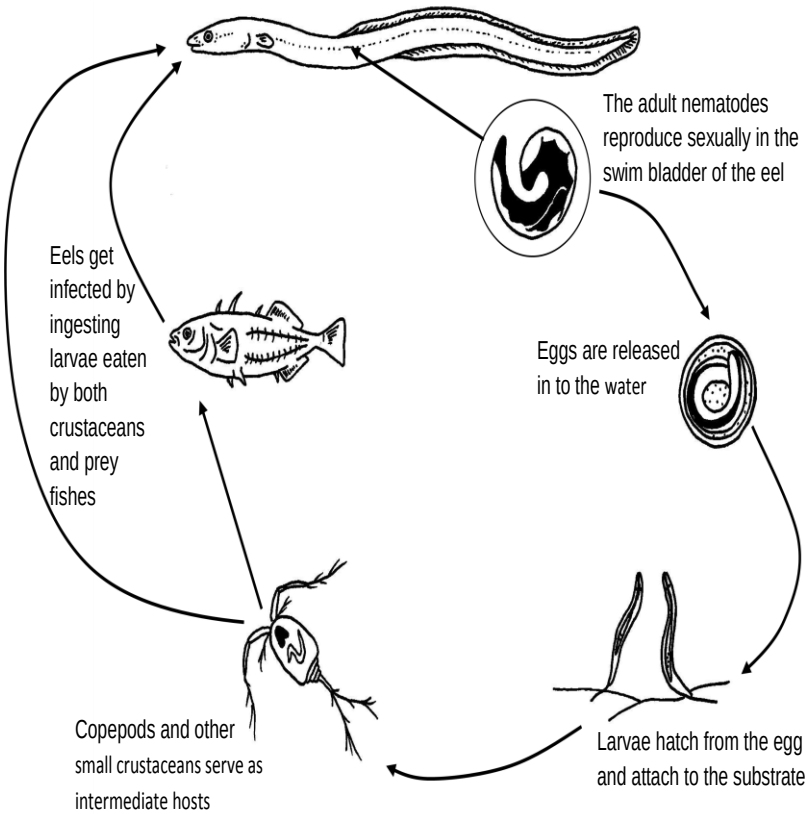
A heavy infection of A.crassus

What does *A.crassus* do?

Infections of *Anguillicoloides crassus* can cause severe damage to the swim bladder, including thickening of the wall and inflammation. These changes can compromise the function of the swim bladder. Heavy infections can also reduce buoyancy control, energy reserves and swimming performance, decreasing the chances of eels reaching their spawning grounds.

The life cycle of *Anguillicoloides crassus*

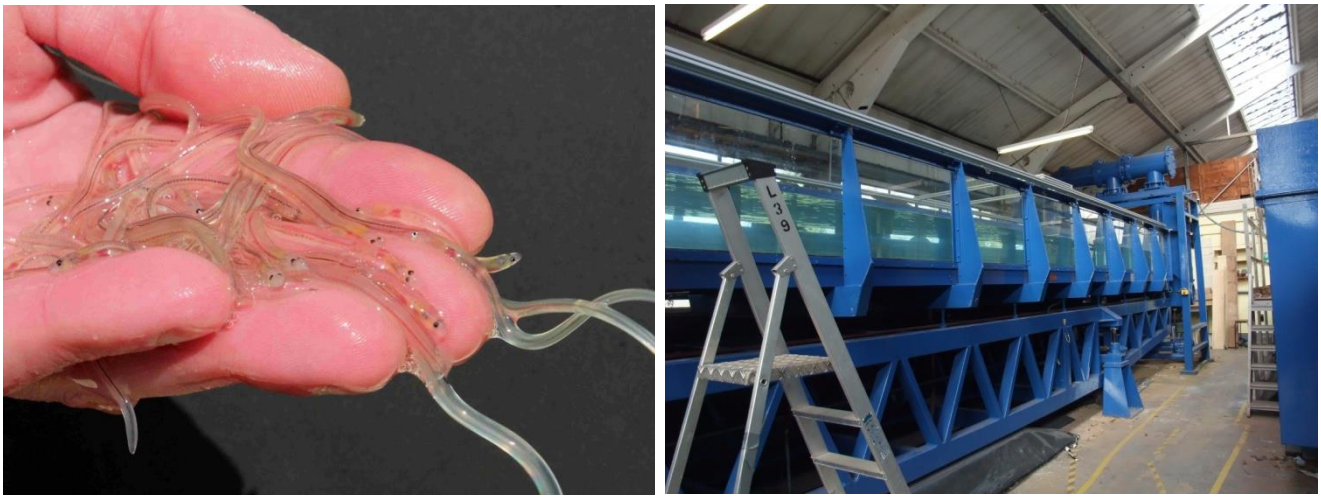
Anguillicoloides crassus has a complex life cycle that involves numerous hosts and developmental stages. Parasites mature and release eggs in the swim bladder. Larvae hatching from these eggs can be passed into the water along with faeces into the water. Once in the water, the larval nematodes are eaten by copepods which are the first intermediate host of the parasite. Eels can become infected by eating these copepods or by predating other fish species that have also ingested infected copepods. A wide range of different fish species can serve as an intermediate host for the parasite. Once ingested by the eel, the larvae migrate through the intestinal wall towards the swim bladder where they mature and mate, completing the life cycle.



How does this affect our eels?

The European eel is now a critically endangered species, facing many environmental and man-made pressures across Europe. Health is a key factor affecting the ability of eels to migrate to spawning grounds in the Sargasso Sea, and parasites play a key role in determining health. Simulated migration trials have shown silver eels with high infection levels of *A. crassus* are more likely to suffer migration failure. There is also growing recognition that these infections could disrupt the migration of eels in freshwater.

A partnership project between the Environment Agency, Cardiff and Southampton Universities using flumes (below) revealed that *A. crassus* alters the behaviour of eels during downstream migration, with infected eels less willing to pass downstream obstacles. This could further delay successful passage and migration.



Health checks are also vital to ensure the glass eels we stock (left) are not carrying harmful parasites or diseases. Use of flumes (right) to understand the effect of A. crassus infection on eel passage.

Eel management and monitoring diseases

There are many management measures in place to promote recovery of the European eel. These include efforts to reduce exploitation and entrainment, facilitate passage and maximise the escapement of eels. We are working closely with partners across Europe to co-ordinate and implement these measures to protect the European eel stock. We also monitor eel health and diseases, which underpins many of these management measures. This includes health checks to ensure only healthy eels are stocked and serious diseases are not spread to new catchments. We also investigate any new and emerging disease threats, like certain viruses, helping to understand their distribution, impact and management at local, national and international scales.

For more information on this fact sheet, or any other health problem in fisheries please contact:

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