

Detection of an unknown parasite in rainbow trout at a fish farm in Sweden

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In 2011, the first symptoms in imported fish from US were observed and samples sent to the NRL

Farmed and wild populations were sampled

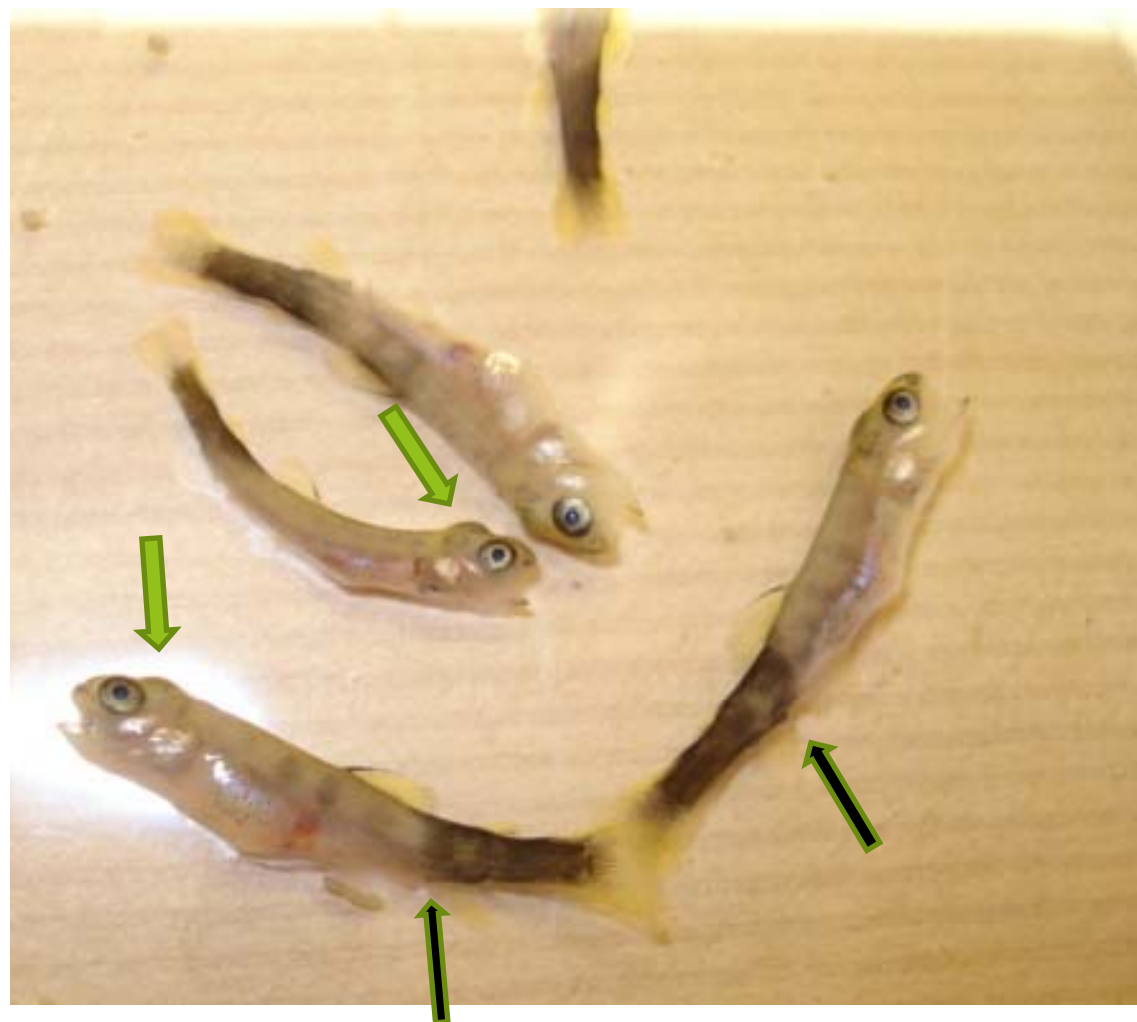
Transmission tests were conducted

Movement restrictions were put in place

Imported triploid fish were stamped out in beginning of 2012. Swedish rainbow trout -12 were stamped out in 2012 as well

The most of the site has been disinfected





Rainbow trout :
Length: 2.4-2.5 cm

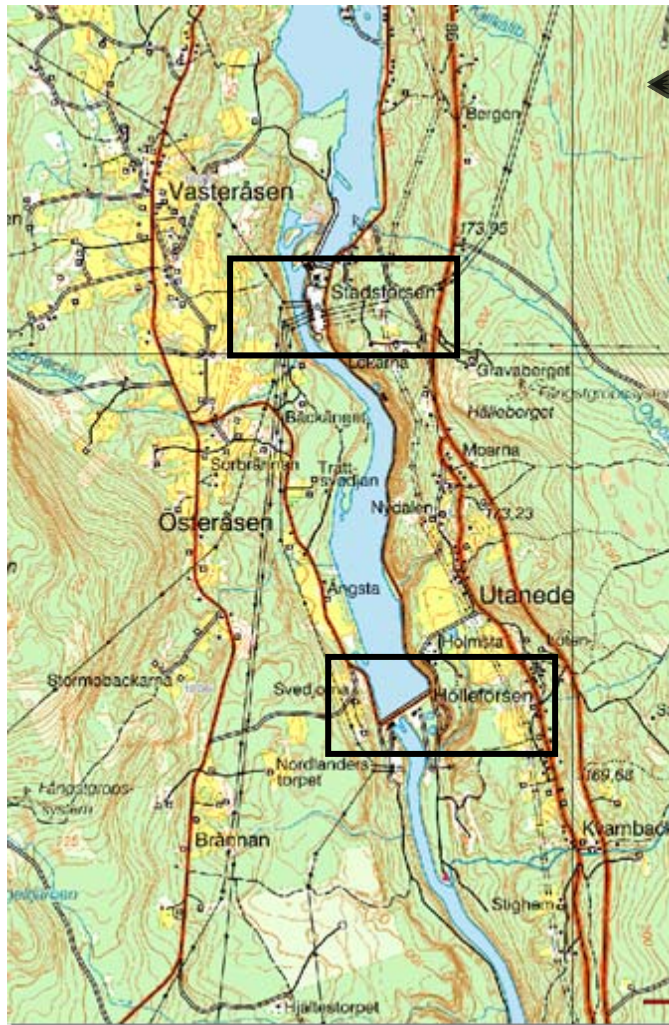
Age approximately
1 month post hatching

Movement restrictions from Stadsforsen hydropower plant to the coast line.

Samples have been collected at a fish farm down stream.

Further investigation will be conducted in wild populations in the same water catchment area, as well as in other water systems.





The map with the **red** frame shows Stadsforsens hydropower plant and Hölleforsens hydropower plant. Stadsforsen constitutes the northern border of the area with movement restrictions.



The map with the **blue** frame shows the coast line where the movement restrictions end.



Work by the National veterinary institute (SVA)

- Virology tests have been conducted on cell cultures with negative results
- Cultivation on different agar substrates have shown several bacterial and fungal secondary infections as *Flavobacterium psychrophilum* and *Saprolegnia* spp.
- Histological investigations show infiltration of small intracellular organisms of protozoan type in several organs. Histology indicates that several of these cells are apicomplexan cells of a coccidian type. SVA have also observed changes in muscle tissue including necrotic areas.
- Cytology; protozoan cells have been seen in blood and kidney smears. Investigation shows that the cells are free as well as intracellular in blood cells.
- Parallel investigations have been conducted by NRL in Denmark on fixed fish sampled from the farm. These investigations, histology and PCR supports several of the Swedish observations
- Further investigations are ongoing

Conclusions

The typical symptoms have never been recorded in Swedish fish before.

The parasite has only been detected at one fish farm so far.

Most likely the new parasite was introduced with the imported fish. However, it can't be excluded that the parasite was present in the area before it was detected.

Thank you for listening!