

# *Biofouling prediction and control*



Mussel fouled power station culvert

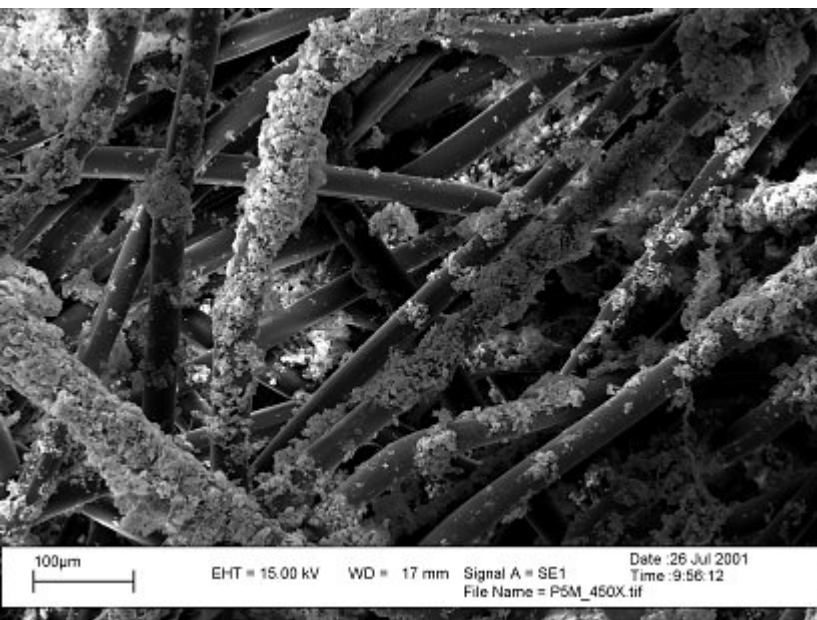
Bivalve animals, especially mussels, can and do settle and grow in cooling systems; their larvae and juvenile stages pass through intake filter screens. Within the system the animals can cause blockages, while detached mussel shells can cause erosion-corrosion in condenser tubes, thereby threatening plant integrity. Historically mussels had to be cleared by hand from culverts on a regular basis. Many coastal power stations control fouling by chlorination. In freshwaters, a variety of approaches are used including heat treatment and the use of intake screens which reduce

We have been able to recommend to stations with no threat of mussel fouling that they need only a minimal chlorination for bacterial slime control, saving costs. At other sites, where the threat is real, but unlikely, we have suggested cost-effective monitoring schemes to allow chlorination only when required.

Dechlorination procedures and the use of alternative biocides to chlorine are kept under review. The environmental acceptability of discharged residual biocides, including interaction with other chemicals in the receiving water, is also studied to meet regulatory standards and ensure ecologically sound operation. Pisces scientists are available to advise power stations on alternative antifouling methods.



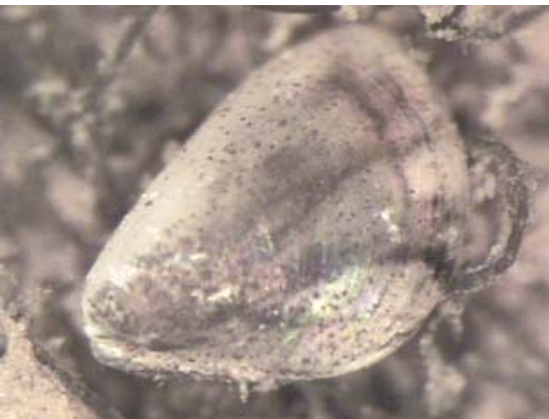
Mussels within the condenser tubes of a power station.



Bacterial fouling on the surface of a fabric filter

Pisces have also studied biofouling by bacteria and other microorganisms. For example, we have undertaken field trials on the use of microfiltration systems such as the Gunderboom to reduce entrainment losses at power station intakes.

Other areas of expertise include the build-up of algae and fungi in evaporative cooling towers.



A newly settled zebra mussel – one of the most damaging fouling organisms of freshwater systems



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