



## **Ultrasonic Control of Algae**

The Redgrave Pinsent Rowing Lake is a large linear gravel pit is a large lake just outside Reading. It is about 3- 4 m deep and is about 22 hectares total area. The lake is used by the British Rowing team, and must be weed free at all times, with no toxic blue green algae. We have used ultrasound in this lake since 2005, with various combinations of equipment over the years. The initial problem was blue green algae, which was brought under control in about 4-6 weeks of the first installation. The latest problem has been caused by growth of macrophytes, which were controlled by the use of a blue dye application, but this resulted in the blocking of ultrasound waves and growth of filamentous algae, dominated by *Cladophora glomerata*. We have recently installed two new much more powerful systems, where in the past we used 5 low power systems.

The systems are 24V DC powered by solar panels, using 290 Ah of battery storage. They are mounted on plinths to be above the maximum flood level, and have so far survived unscathed. One major service has been undertaken when units were replaced with more modern systems and the batteries were upgraded, but as with all EV-300 systems the face is self-cleaning and maintenance intervals are infrequent.

We use this site as a testing ground as we have 2,200 m of uninterrupted clear water to measure sound transmission distances, so far the furthest we have measured is 1.3km from the face of the transducer, in still conditions. Distance is reduced by any wave action and also by temperature variations in the surface layers. We compensate for this by mounting the transducer as deep as possible.

**Ecosystem Engineering** and **Restoration** using ultrasound is possible – Just ask!