BIOBASE
Aquatic Mapping System

Hydroacoustics: from fish surveys by specialised scientists to habitat monitoring by citizen scientists

Ian J. Winfield

CEH Centre for Ecology & Hydrology
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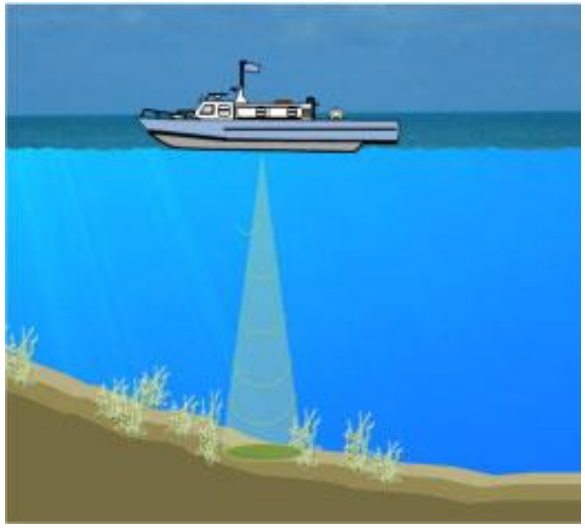
Developments in hydroacoustics

- Basic principles
- Early commercial systems for fishers
- Sophisticated systems for specialised scientists
- Consumer systems suitable for citizen scientists



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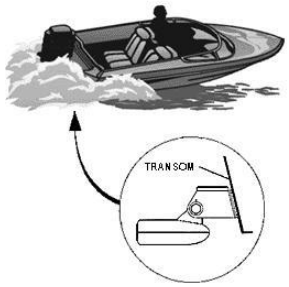
Demonstration of BioSonics system

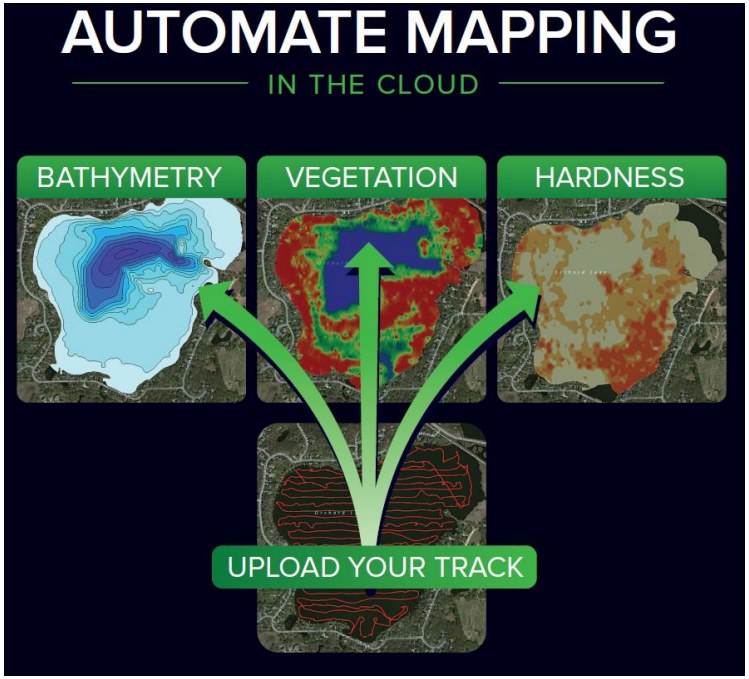
Developments in other technologies

- GPS ‘proliferation’
- Cloud computing

Hydroacoustic mapping of habitat and biology

- *BioBase* (www.cibiobase.com) combines consumer hardware and cloud computing
- Simple field operation logs data to SD card
- Data subsequently uploaded to the Cloud for processing by automated system with QC
- Produces automated reports and ‘raw’ data for bathymetry, macrophytes and bottom typing





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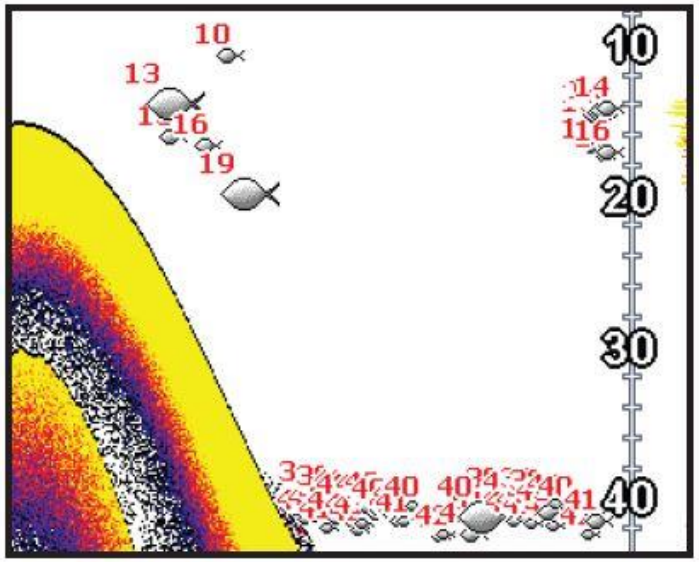
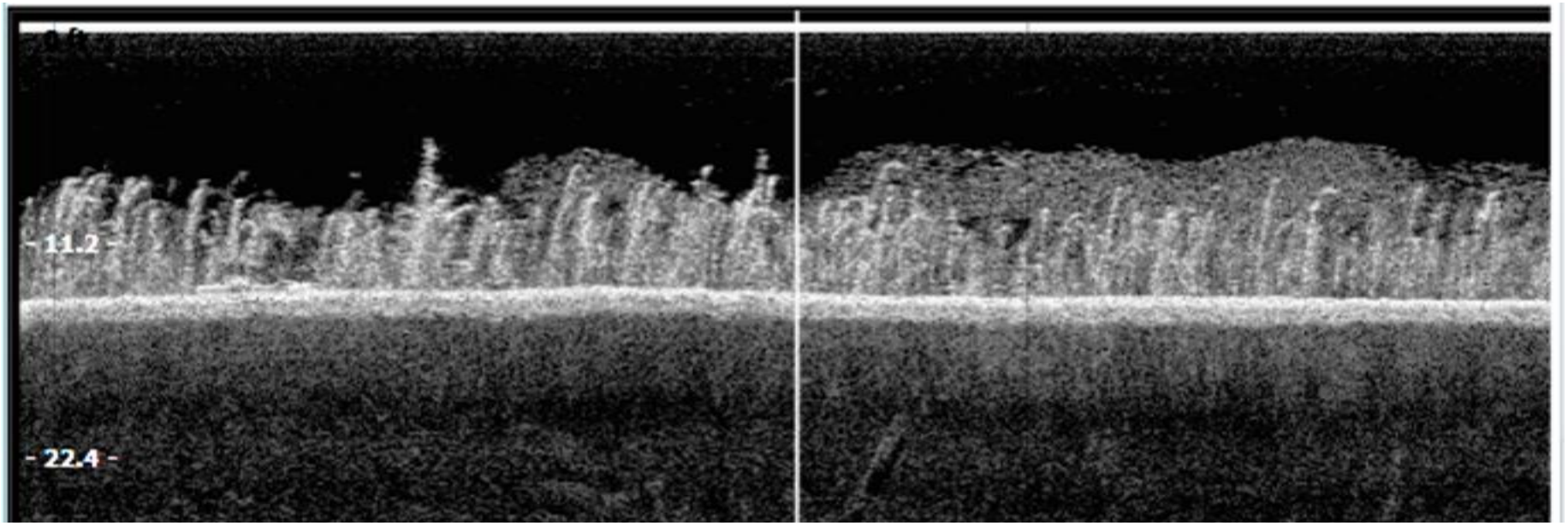
Demonstration of BioBase system

Hydroacoustic mapping of habitat and biology

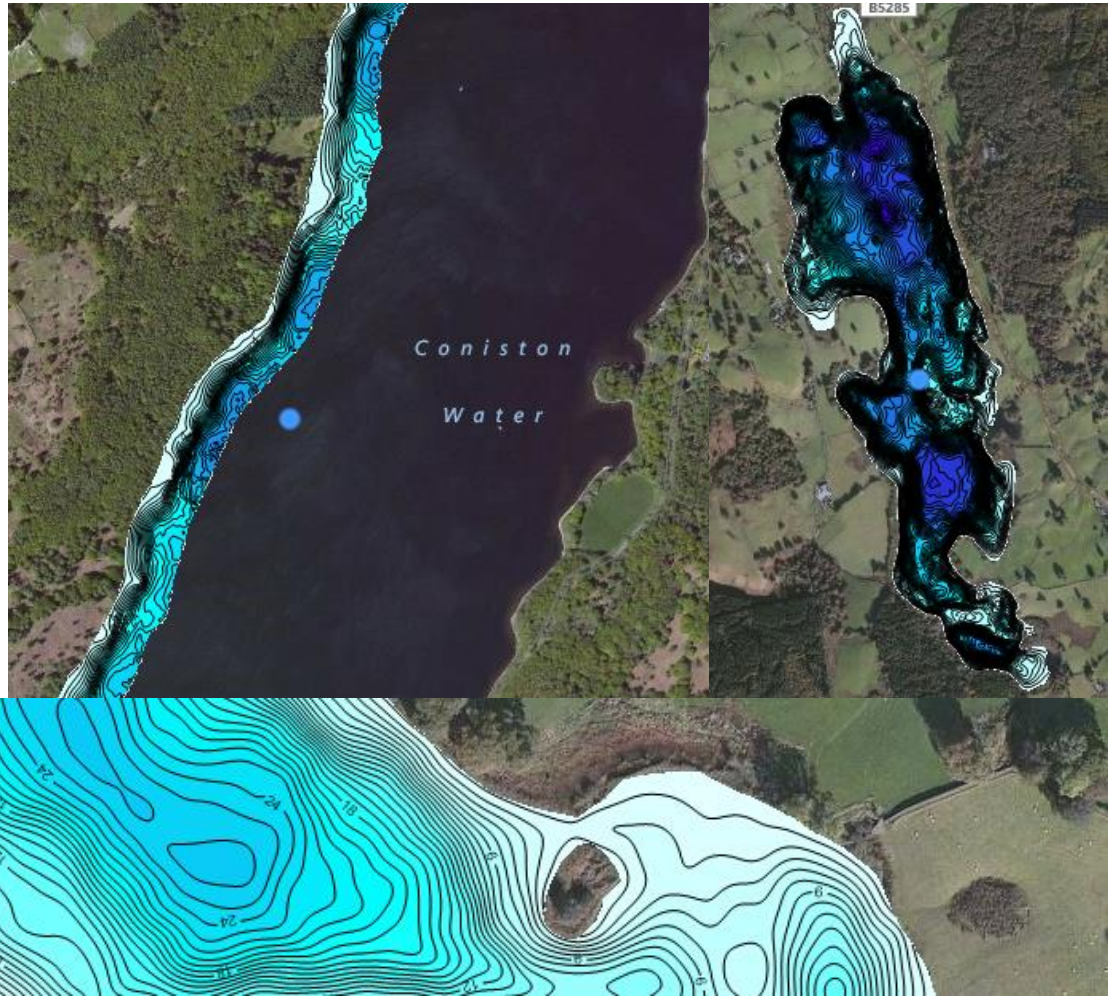
- Future incorporation of higher frequency sound data for higher resolution macrophyte ‘images’ for species ID
- Future incorporation of existing real-time fish detection algorithms for post-survey quantitative analysis





Hydroacoustic mapping and citizen scientists

- Lowrance's free *Insight Genesis* is already producing 'social maps' of lake bathymetries
- Opportunities for citizen science on macrophytes, bottom typing, fish and water surface temperature



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