Hydrometry and Telemetry

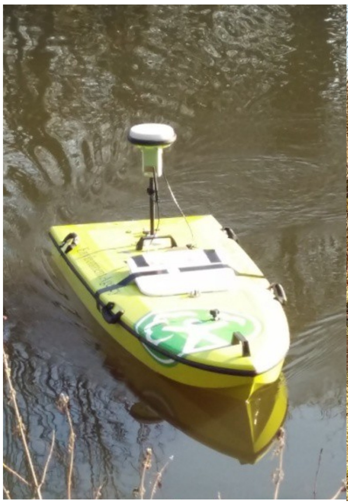
GMMC Bathymetry Survey

Irwell Old River Course, Irlam 11/02/2016

Summary

The GMMC Hydrometry team were asked by the Fisheries Team to undertake a Bathymetry survey of the Old River Irwell Course at Irlam in order to identify underwater features such as pools and shallow areas. The section surveyed was approximately 400m long and 25m wide.

This was undertaken using an ARC boat (remote control river gauging boat), a Sontek M9 acoustic sensor which is normally used for river flow measurement and a Leica Viva GPS system. Water level remained constant throughout the survey so results as presented below are as depths relative to the water level on the day. As the instrument also collects the data to a known physical datum (WGS84) levels could also be output in mAOD if required.

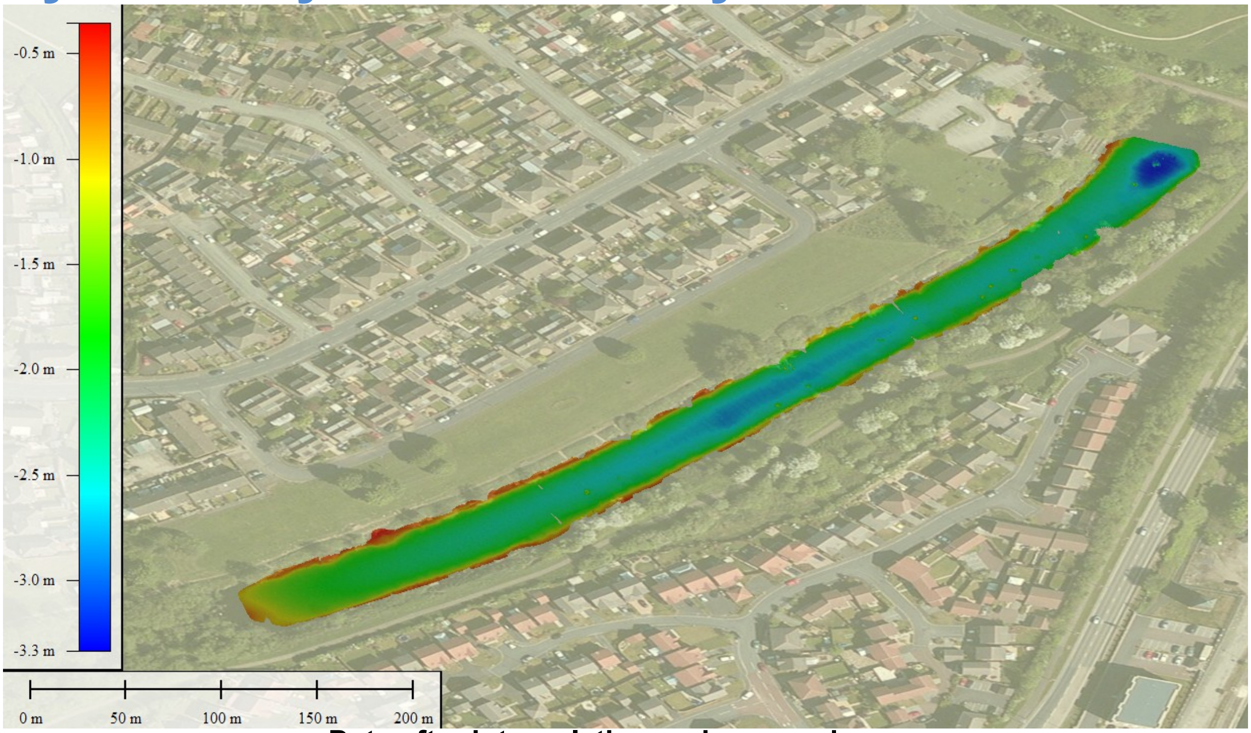


Time taken to undertake the survey: 6hrs including set up time

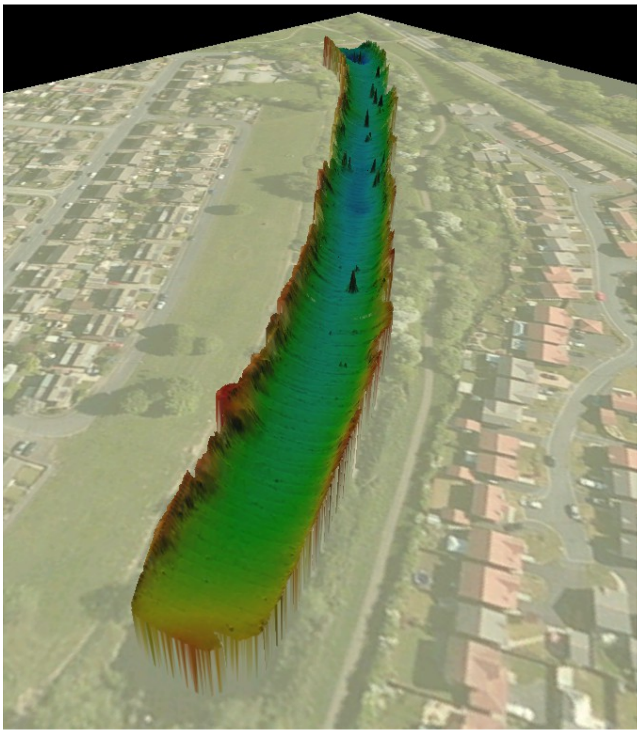
Time taken to post process data: 3.5hrs.

Results

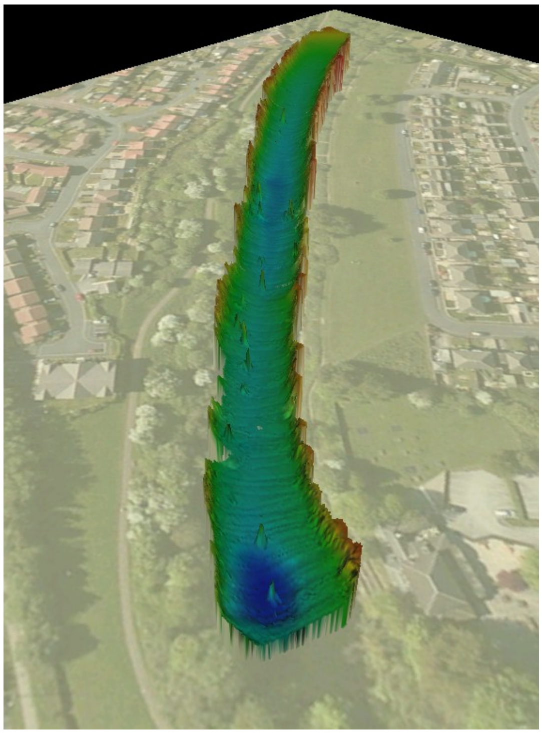
Raw data before interpolation / processing



Data after interpolation and processing



3D data looking NE



3D data looking SW

Within the 3D data the location of the floating islands can clearly be seen. These are poorly defined as we were unable to drive the boat directly over the blocks under the islands due to the floating wooden platforms on top.

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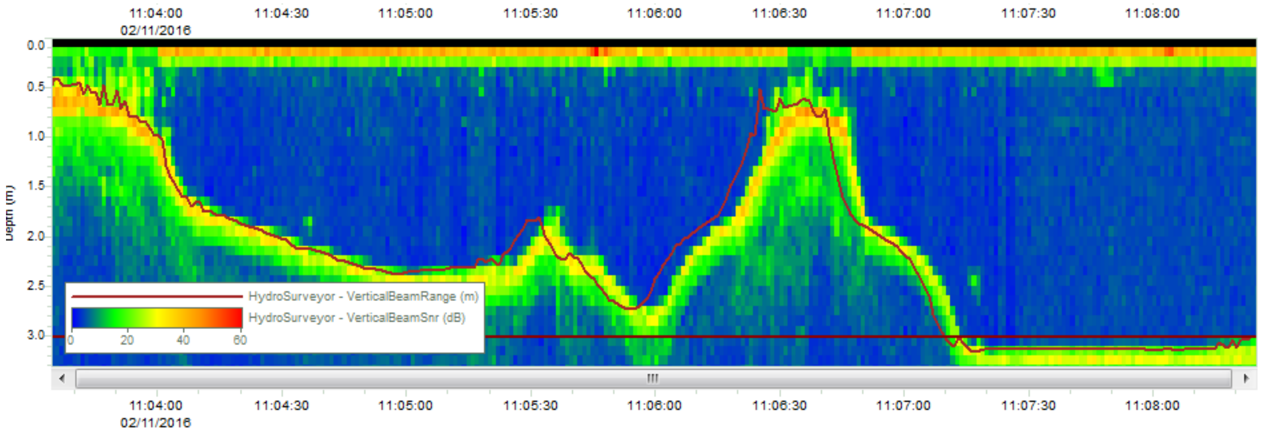
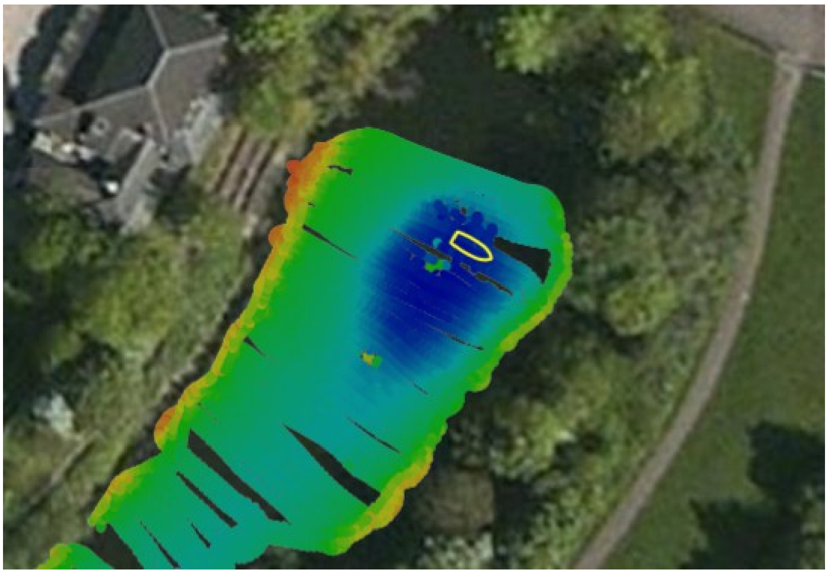
The data itself is stored as Lat, Long coordinates with an associated depth / level and can be exported as a CSV file and imported to any GIS / mapping software for further usage or analysis.

In addition Fisheries were also interested in locating any fish within the water body and attached a small sonar device to the ARC boat to try and find them. This worked with some success but unfortunately the device used is real-time and does not record data. However, the Bathymetry software also records an image of the signal to noise ratio of the vertical beam and an examination of this image seems to indicate this could potentially be used as a fish finder especially as we can pinpoint the exact location of the fish to within a couple of cm. More work on this is required!





Stuart Eckersley: GMMC Hydrometry and Telemetry Officer: February 2016