

## Z-BOAT 1800HS - HYDROGRAPHIC SURVEY BOAT

The Wyoming NRCS state office engineering staff recently acquired new technology to perform bathymetric surveys of ponds and/or reservoirs. The technology is in the form of a remote controlled survey boat known as the Z-Boat (Figure 1)



Figure 1

that also has the flexibility with its twin-outdrives to operate in fast flowing rivers. The system was originally purchased for use to gather data necessary to determine sediment accumulation that may have occurred over the years at Dull Knife Reservoir located in Johnson County.

The Z-Boat is equipped with GPS and echo sounder, remote control electronics, and an integrated data telemetry system. During operation data is gathered from the Z-Boat and transmitted to a laptop that

has specialized mapping software installed known as the Eye4hydromagic software that was developed from The Oceanscience Group. The software shows real time location and depths on the screen during the survey and with the ability to upload a background map into the software, it is easy to tell exactly where you are at in order to perform a complete survey (Figure 2). Survey data is typically exported from the software in the format of northings, eastings, and depths. The data

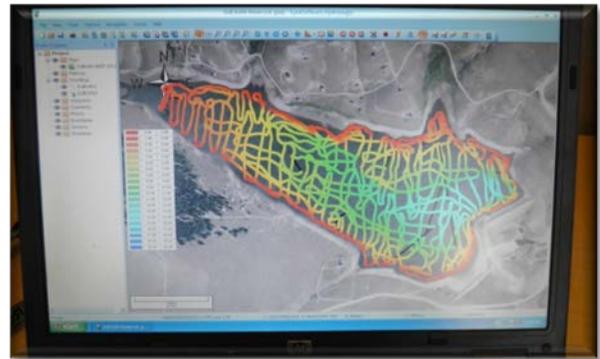


Figure 2

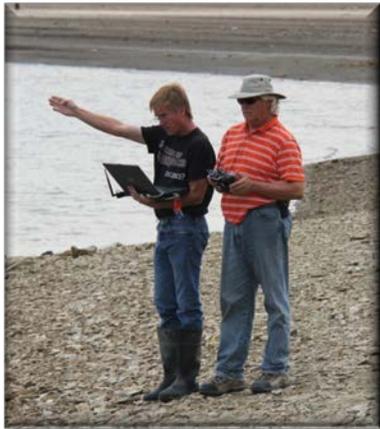


Figure 3

can be easily imported into Microsoft Excel where the depths can be converted into elevations from a known water surface elevation taken at the time of the survey. The system requires a minimum of 2 personnel to complete a survey. One person is needed to run the remote control while the other person becomes the “navigator” watching the boat move across the laptop screen (Figure 3). In order to assist personnel in mobilizing and demobilizing the boat, a PVC carriage was constructed by Lynn Cornia, ASCE (Figure 4).

It is anticipated that this equipment will be widely used throughout the state

in the future to gather survey data of other ponds and reservoirs and assist in gathering survey data for stream morphology work. Other states have also expressed interest in the use of the boat. For further information, feel free to contact anyone from the Wyoming NRCS state office engineering staff.



Figure 4