RIVER MAPPING

& DATA COLLECTION TIPS

WATER CUBE

Data Collection Tips

Subject	Tip
Boat selection	Consider a combination of motorized boats and smaller platforms, like kayaks or remote controlled boat. This can improve access to river edges, and allow flexibility in areas that need more detailed data collection. Smaller boats can be loaded onto large boats for transport back to the start of the data collection area for increased efficiency.
Remote controlled boats	Although remote controlled boats have a somewhat high up-front cost, they can greatly increase the efficiency of data collection. The improved efficiency can more than offset their cost of operation.
Navigation	Consider investing in navigation tools that allow you to plan and follow a predetermined set of lines. This ensures data is collected in exactly the locations that were planned.
Water level monitoring	Locate and acquire data from any nearby flow monitoring stations that record time series of water level and/or flow rate. If no appropriate data is available, consider establishing a temporary station to monitor water level during the data collection project. Be sure to note the location and elevation of any reference stations used.
Discharge data	Collect discharge measurement at least at the start and end of the data collection period. If tributaries are present, be sure to collect measurements at sufficient locations to document their contribution to the total flow.

Line spacing	Plan line spacing to provide the data needed to resolve key features in study area. 8-12 parallel downstream transects are typical. Higher resolution can be used in specific "sub-cube" area to improve resolution.
Line location	Make sure that there are at least two transect lines as close as possible to the river edges. These transects can become difficult to collect because of shallow depths and/or obstructions so care must be taken to find the correct distance away from the bank to maximize the coverage.
Line location	Avoid "zig-zag" track patterns during the survey. It is better and more efficient to collect data either parallel to flow and along perpendicular cross-sections.
Line extent	Begin and end a main cube survey beyond the planned survey start and end points. This will always ensure that data is captured within the survey section of interest.
Line direction	Collect the along-stream transects while traversing downstream to minimize the potential for flow disturbance below the ADCP transducer. While data can be collected traversing in the upstream direction to save time, this required extra care to avoid reducing data quality.
ADCP file size	Limit ADCP/GPS file duration to 20-30 minutes.
ADCP data collection	Turn ADCP/GPS data collection off when data is invalid (i.e. shallow depth, obstructions, loss of GPS) to avoid additional data editing efforts.
ADCP data review	Make sure to always have a set of trained "eyes" looking at the ADCP/GPS data while it is being collected.