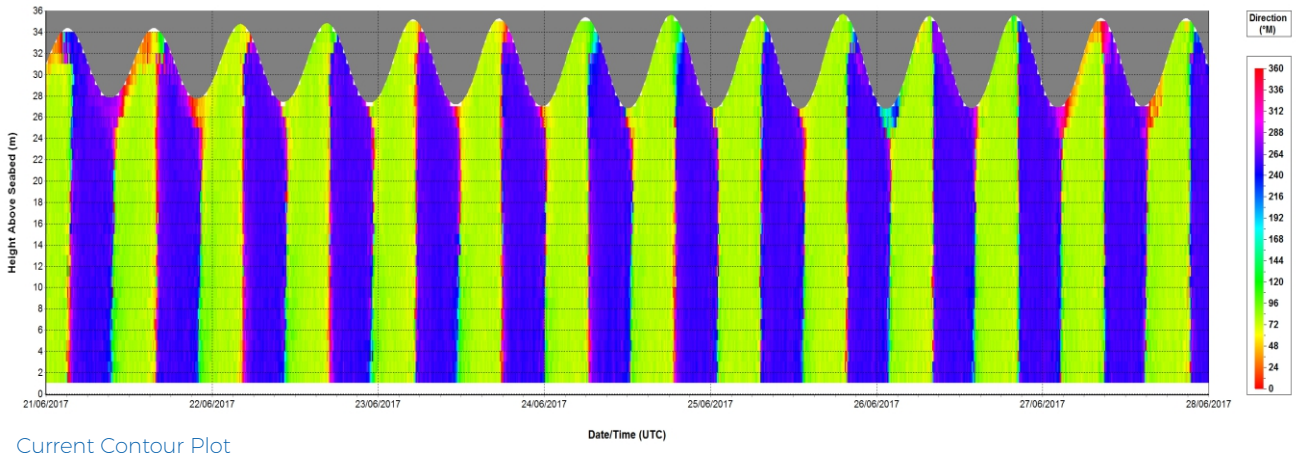
Titan Environmental Surveys Limited
A GARDLINE COMPANY

Currents, Waves and Tides

Met Ocean Surveys

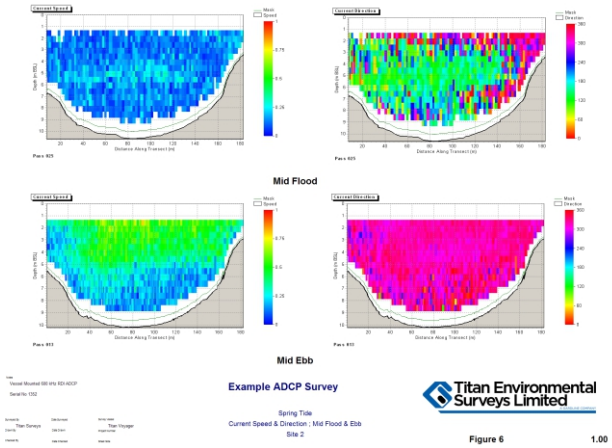


Current Contour Plot

Titan are highly experienced at collecting and processing current, wave and tidal data for coastal infrastructure projects. The data is typically used to assess site conditions, develop baseline knowledge, support model production and monitor during and after construction.

Waves

- Waves are either measured with an instrument at the surface (waverider) providing real-time data or a fixed instrument on the seabed
- Typically a seabed instrument will also collect current data through the water column
- Data is typically collected at 10 minute to 3 hour intervals from 1 month to over a year

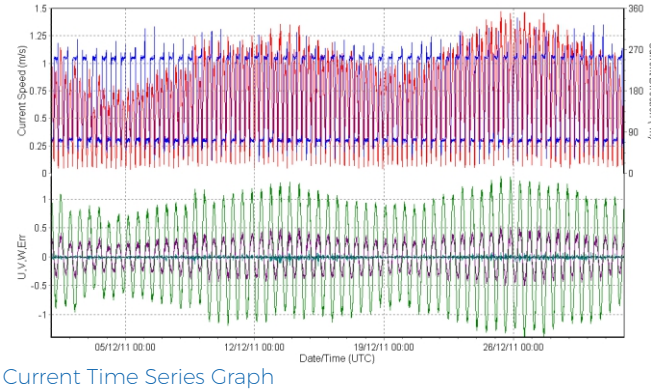


Speed and Direction Contour Plot

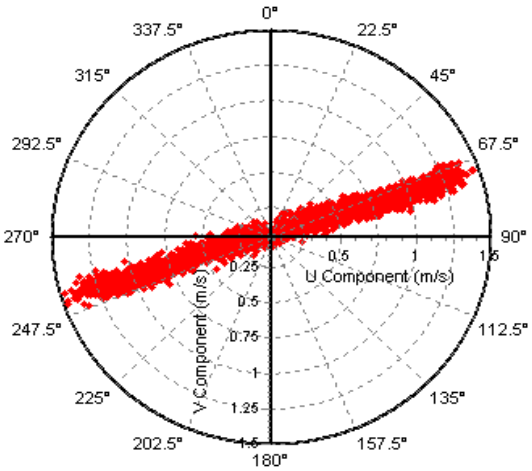
Waverider Buoy

Currents

- Temporal datasets are collected by deploying a seabed instrument from 1 to 365 days, recording speed and direction throughout the water column for e.g. 1 metre intervals every 10 minutes
- Spatial datasets are collected from a vessel with transects designed to cover an area and be repeated hourly over a full flood and ebb tidal cycle (13hours). Instrumentation is mounted on the vessel looking downward through the water column collecting current velocities at selectable intervals



Current Time Series Graph



Current Direction Scatter Plot

Survey Equipment

Acoustic Doppler Current Profilers (ADCPs):

- RDI 300kHz to 600kHz
- Nortek 600kHz to 2MHz for river to shallow marine applications

Wave Sensors

- Waverider - realtime website displays
- Valeport Midas Wave and Tide Recorder
- Nortek AWAC

Tide Sensors:

- Aanderaa tide sensors
- Valeport Midas and Tidemaster

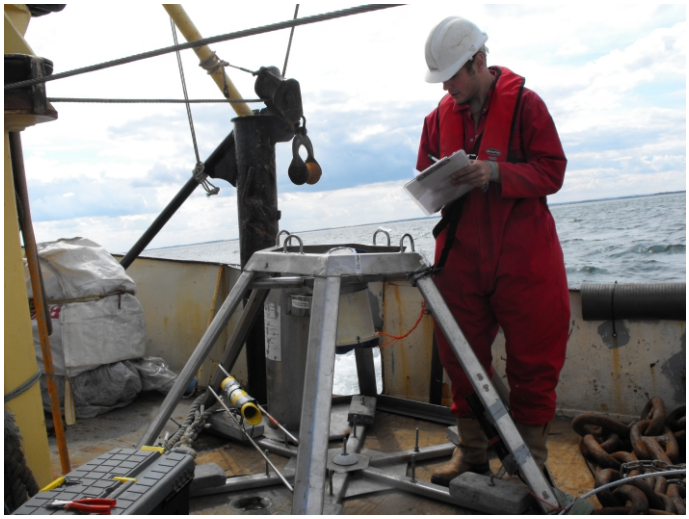
Tides

- Tidal data is collected with deployed instruments on the seabed or attached to local infrastructure.
- Data can be supplied in real-time and is corrected for atmospheric variations.
- Data is often collected at 10 minute intervals installed on semi-permanent and permanent projects.

Processing

- All data is processed in-house by our experts with bespoke software allowing data quality monitoring and comparison of parameters e.g. wind vs wave.
- Datasets are supplied in ASCII or GIS compatible formats to clients specifications.
- All data can be presented graphically and with statistical analysis.


Deployment of AWAC mounted in seabed frame


Preparation of mooring before deployment

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