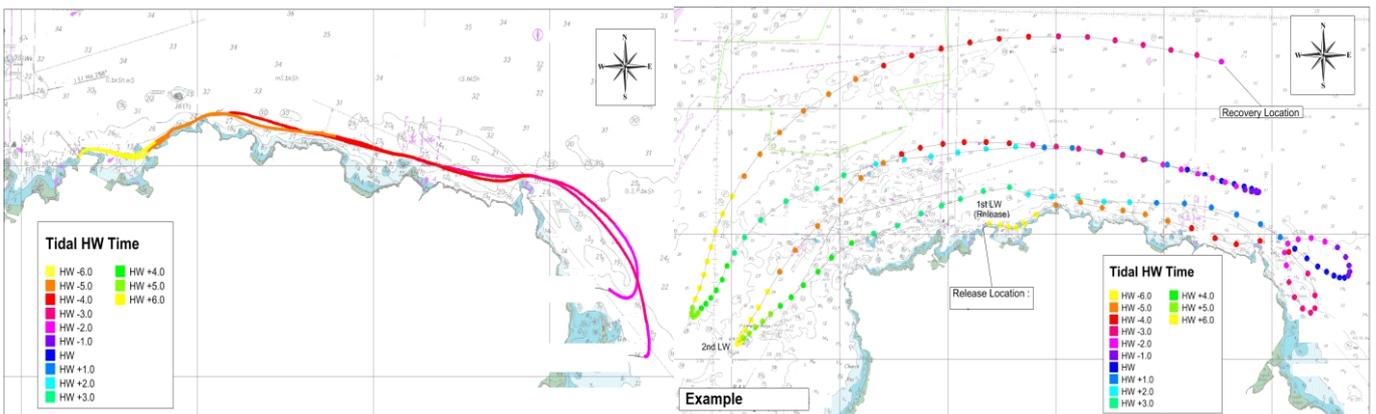


Dispersion and Tracking

Met Ocean Surveys

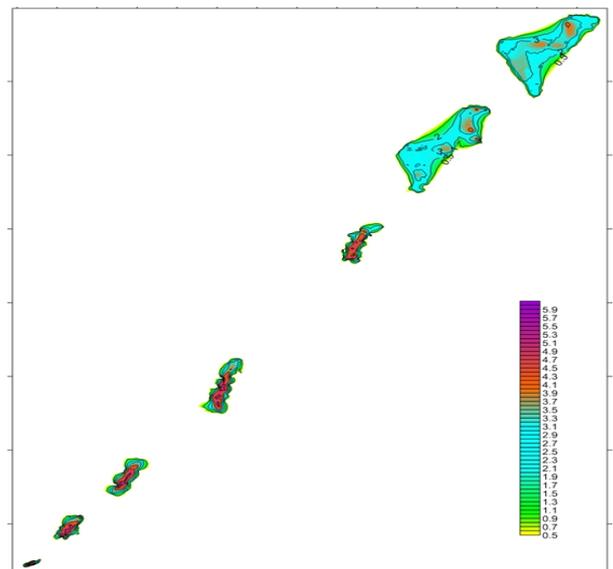


Data showing the course of a drogue over the duration of a survey

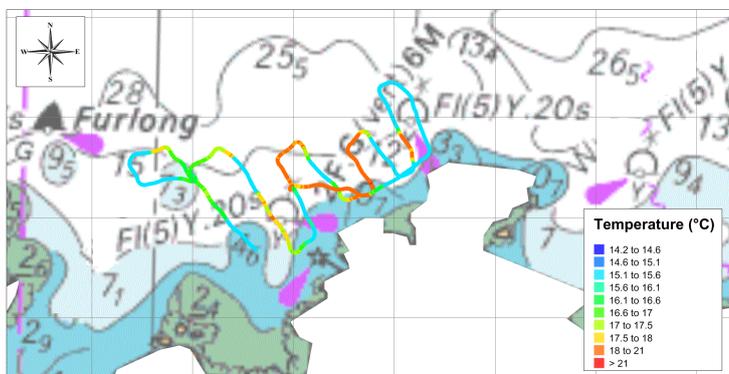
Titan have a wealth of experience at performing collecting dispersion and tracking surveys for coastal marine infrastructure projects. Typically these spatial monitoring events consist of the following surveys:

Dye Release

- Dye releases are the best way to accurately measure real dispersion insitu
- Titan offer survey design and we will perform license applications, data collection and processing
- The plot below shows an example dye release plot. Surveys are typically repeated over various tidal states and the dye patch parameters measured with a fluorimeter until fully dispersed



Dye Release Plot



Thermal Plume Temperature Plot

Thermal Plume Tracking

- For existing thermal plumes monitoring, the surveys are usually repeated on different tides throughout the year
- A vessel mounted thermistor is used in real-time to track in and out of a plume
- Additional thermistors record at set depth throughout the water column developing a 3D model of plume structure

Drogue Tracking :

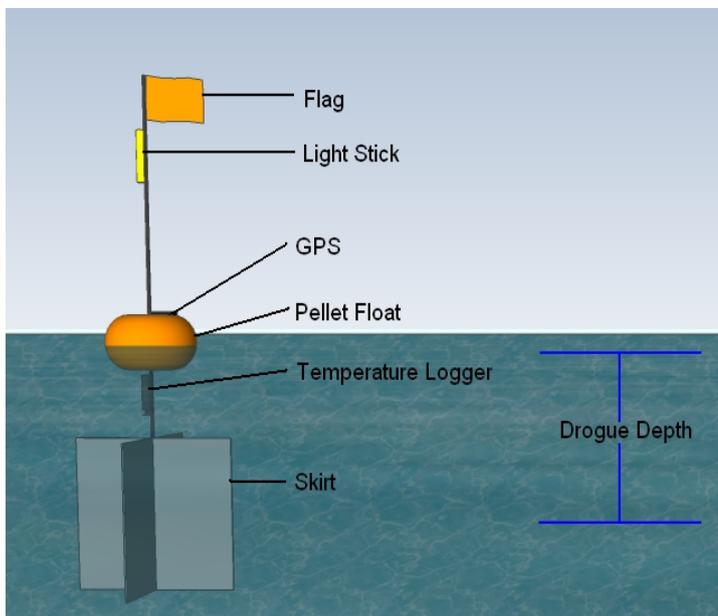
- Our base drogue consists of a depth adjustable sub-surface skirt and a surface marker
- Titan drogues are equipped high frequency logging GPS receivers and optional satellite transmitting GPS units
- Excursion surveys release multiple drogues at a known tidal state which are then tracked for a full tidal cycle
- Multiple surveys are carried out at the same release point across different tidal states to develop a complete understanding of local conditions
- Additional sensors such as temperature can be added if required
- Satellite drogues releases last up to 48 hours and are monitored from shore with a vessel on standby for recovery



iSphere Current Tracking Buoy

Processing:

- All data is processed in-house by our experts with bespoke software allowing data quality checking and comparison of parameters
- Datasets are supplied in ASCII or GIS compatible formats as required by clients
- All data can be reported graphically and with statistical analysis



Drogue Configuration Diagram

Survey Instrumentation:

- iSphere Current Tracking Buoy
- Aqua Tracker II Fluorometer
- Aquatec 210ty FRT
- Deployment Drogue
- Idronaut Multiparameter Sonde



For more details please contact:
Email: enquiries@titansurveys.com

Orion House, Parc Crescent, Waterton
Industrial Estate, Bridgend. CF31 3BQ.
Tel: +44 (0)1656 673673

www.titansurveys.com



Tracking Drogue