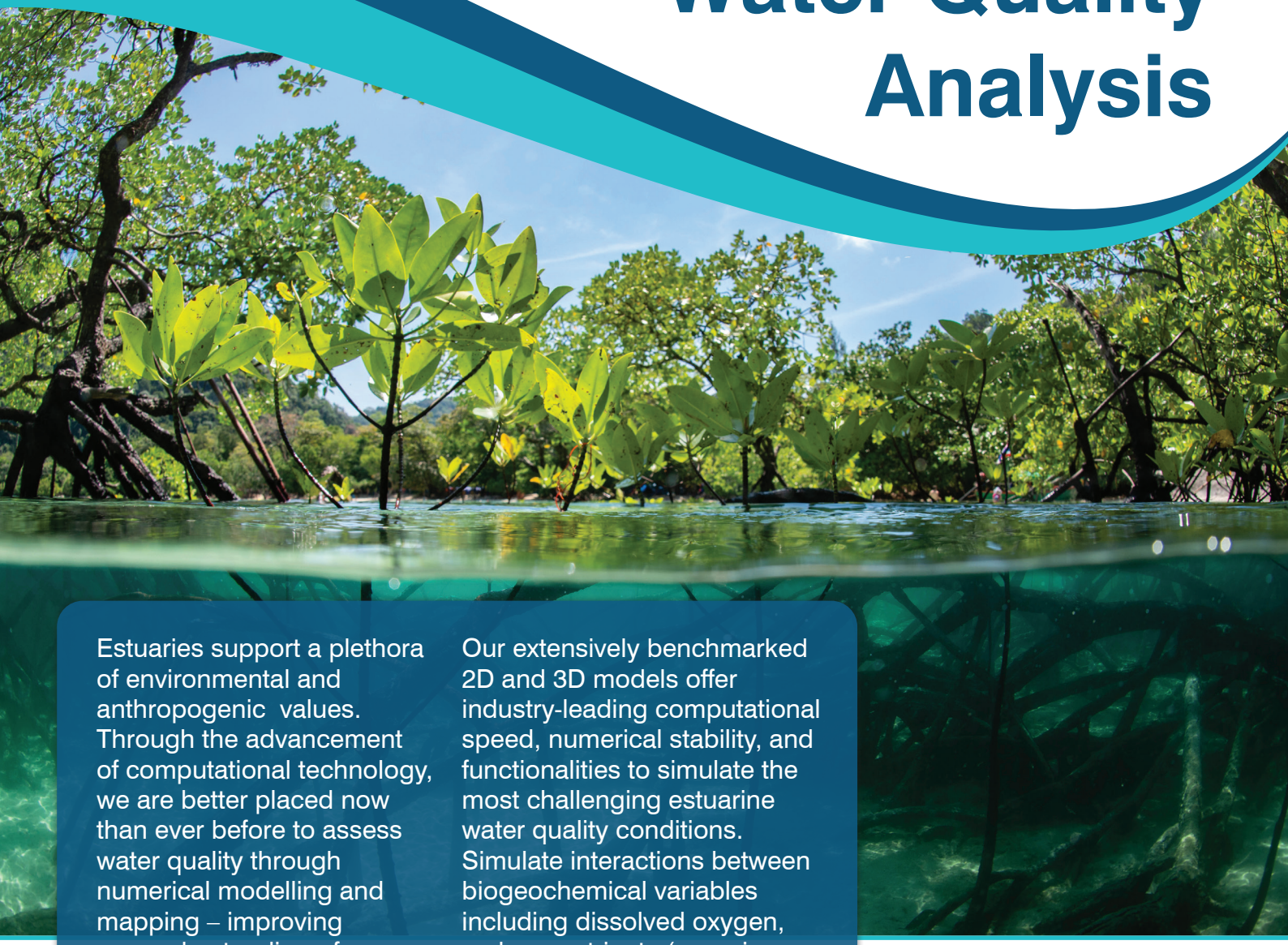
Estuarine Water Quality Analysis



Estuaries support a plethora of environmental and anthropogenic values. Through the advancement of computational technology, we are better placed now than ever before to assess water quality through numerical modelling and mapping – improving our understanding of the relationship between biogeochemical variables on the estuarine environment. Knowledge gained through modelling will assist us to preserve and protect our natural and constructed aquatic resources for future generations.

The TUFLOW software suite has been developed and evolved over three decades.

Our extensively benchmarked 2D and 3D models offer industry-leading computational speed, numerical stability, and functionalities to simulate the most challenging estuarine water quality conditions. Simulate interactions between biogeochemical variables including dissolved oxygen, carbon, nutrients (organic and inorganic), sediment, light temperature, phytoplankton, zooplankton and geochemistry.

Enable your team to tackle the most complex estuarine environmental problems with TUFLOW.

As researchers, scientists and engineers we work in a range of industries that solve complex environmental problems. Our assessments span scales from the molecular, to the global, from the instantaneous to the inter-decadal. Our projects require flexible, accurate, fast and powerful tools backed up by research, benchmarking and support.

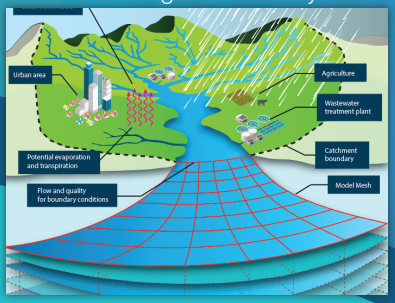
TUFLOW

Access world-leading estuarine water quality science with TUFLOW

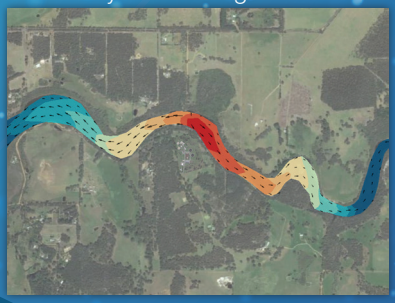
TUFLOW Feature Focus

- Fully integrated with existing TUFLOW products that draw on the compute power of GPUs and domain decomposition.
- Robust water quality simulation in 1, 2 or 3 dimensions.
- Selectable water quality modules to simulate interactions between biogeochemical variables including dissolved oxygen, carbon, nutrients (organic and inorganic), sediment, light temperature, phytoplankton, zooplankton and geochemistry.
- Flexibility and freedom to customise for your own water quality modelling project. Add your own water quality modules using equations of your choosing.
- Access to research quality science through a tried and tested commercial interface.
- Work with our expert user support team.

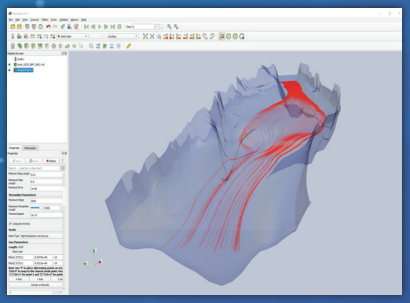
Receiving Water Quality



Buoyant Sewerage Plume



3D Visualisation with Paraview



TUFLOW software is developed with three primary goals in mind; accuracy, simulation speed and useability. TUFLOW offers industry-leading estuarine water quality modelling science that also exploits the computational speed of GPU based simulation: never again wait days or weeks for your hydrodynamic simulations to finish before embarking on your estuarine water quality project. Applied with a 2D and/or 3D TUFLOW flexible mesh framework, TUFLOW WQ allows for simulation of interactions between biogeochemical variables in the following estuarine environments:

- Estuaries in their natural and perturbed states.
- The impacts of salt wedge dynamics on estuarine dissolved oxygen and ecology.
- Estuarine flushing and residence time assessments.
- Far field impacts of point source pollutant discharges such as wastewater outfalls and desalination return waters.
- Full ecological modelling up to varying levels of environmental complexity to suit your project.

TUFLOW hydraulic modelling software is uniquely integrated with numerous Geographic Information System (GIS) and Graphical User Interfaces (GUI) software such as ArcGIS, QGIS, SMS and Blue Kanu. Create models and view results in your choice of development environment. These complimentary GIS and GUI software are supported by program specific plugins and also Matlab and Python script toolboxes to increase model build, 2D and 3D result visualisation, analysis, and reporting efficiency.

For more information:
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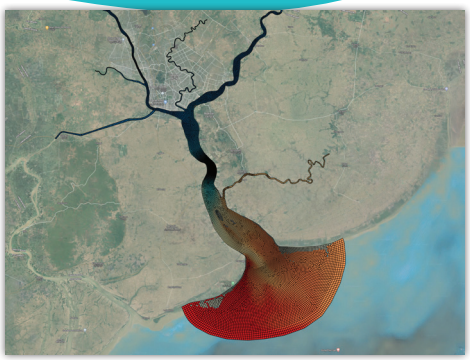
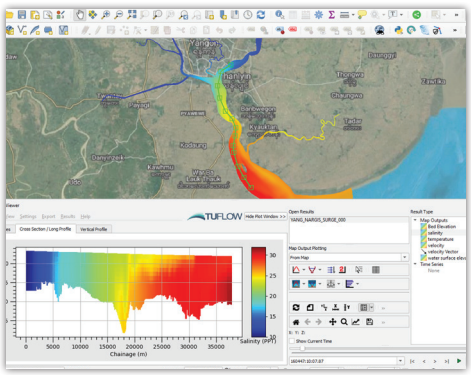
www.tuflow.com





Complex estuary easily resolved with flexible mesh

BMT TUFLOW