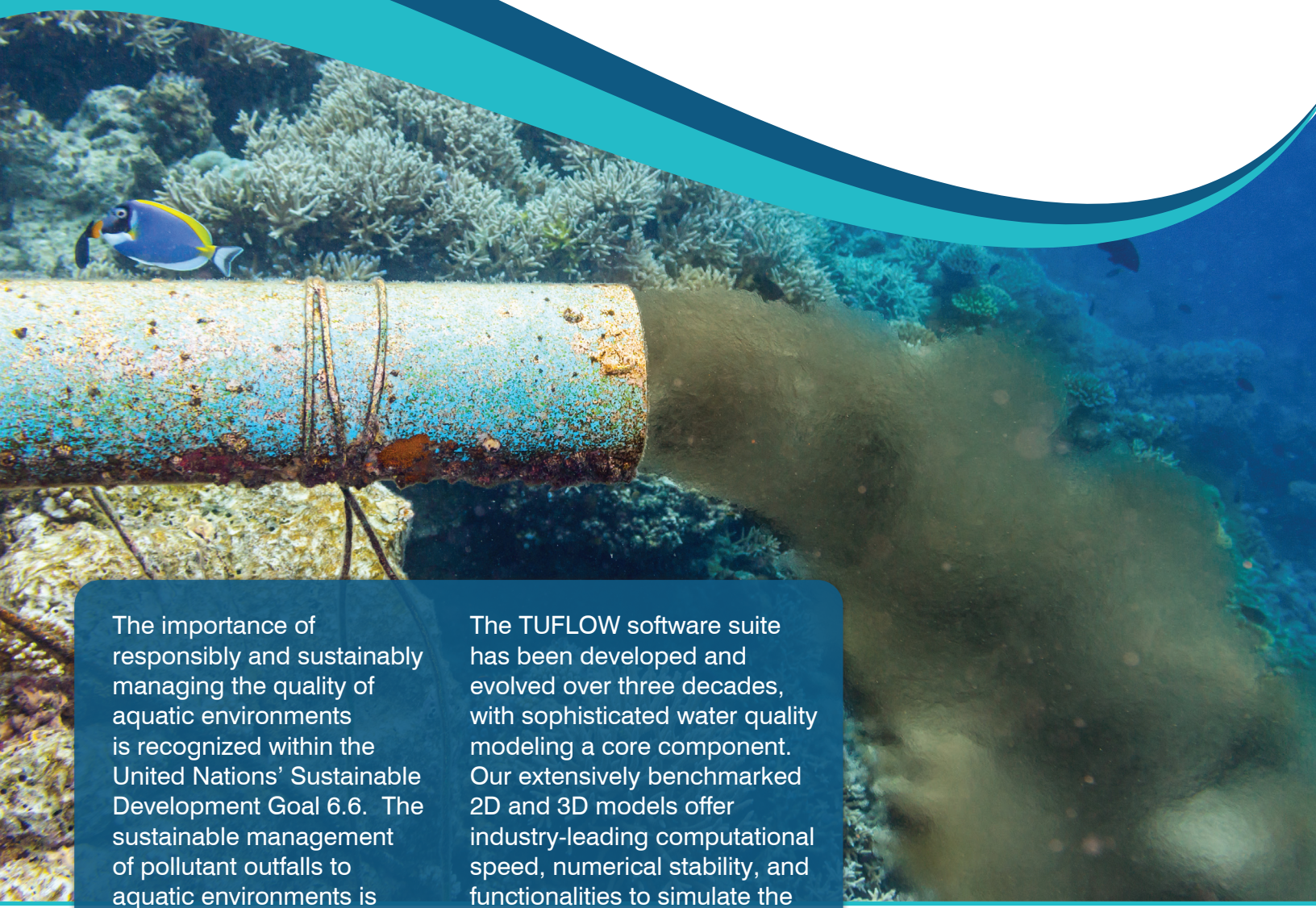
Outfall Water Quality



The importance of responsibly and sustainably managing the quality of aquatic environments is recognized within the United Nations' Sustainable Development Goal 6.6. The sustainable management of pollutant outfalls to aquatic environments is a quintessential aspect of aquatic ecosystem quality management, and an important public health and safety consideration.

With ever-increasing development pressures, now more than ever we must bring the most advanced and robust water quality science to the numerical simulation of pollutant outfalls.

The TUFLOW software suite has been developed and evolved over three decades, with sophisticated water quality modeling a core component. Our extensively benchmarked 2D and 3D models offer industry-leading computational speed, numerical stability, and functionalities to simulate the most challenging freshwater, estuarine and aquatic water quality conditions, simulating 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 outfall assessments 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.

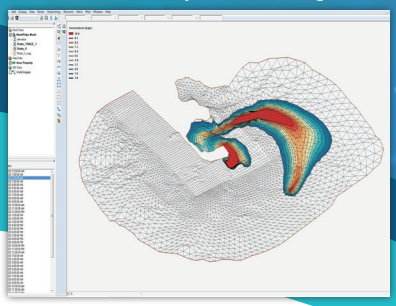
TUFLOW

Access world-leading outfall water quality simulation power

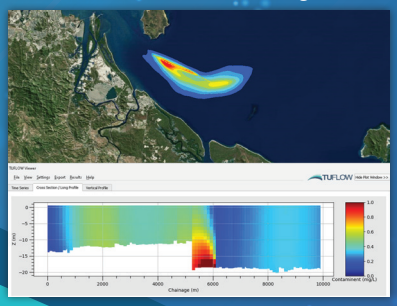
TUFLOW Feature Focus

- Fully integrated with existing TUFLOW products that draw on the compute power of GPUs and domain decomposition.
- Robust water quality simulation in 2D or 3D.
- Accurately simulate density stratification and/or mixing in 3D simulations.
- 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 customize for your own water quality modeling 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 who can provide training and professional guidance.

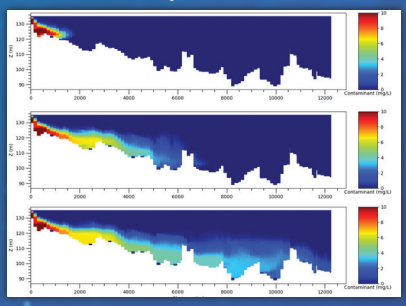
Coastal Buoyant Discharge



Coastal Point Discharge



Potable Recycled Water Outfall



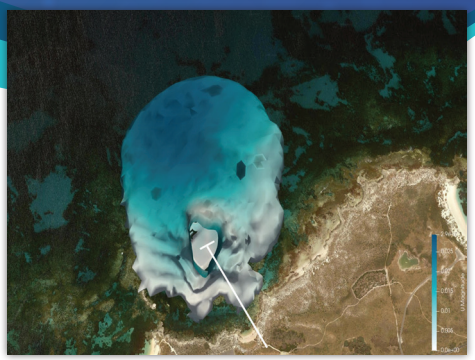
TUFLOW software is developed with three primary goals in mind: accuracy, simulation speed and workflow efficiency. TUFLOW offers industry-leading freshwater, estuarine and aquatic water quality modeling science that exploits the computational speed of GPU accelerated simulations: never again wait days for your hydrodynamic simulations to finish before embarking on your outfall 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 situations:

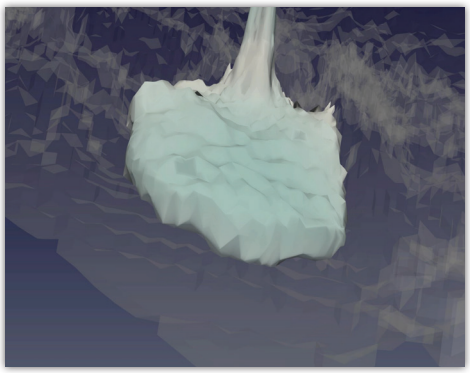
- Wastewater treatment plant discharges.
- Desalination plant discharges.
- Industrial discharges with boutique chemical constituents – we can help you add your own.
- Point source stormwater discharges to lakes or estuaries.
- TUFLOW is unique in its level of user flexibility and integration with CFD modeling. By simulating the outfall diffuser in CFD linked to TUFLOW to assess the near and far field mixing characteristics and water quality processes.

TUFLOW is integrated with mainstream GIS and GUIs such as ArcGIS, QGIS, SMS and Blue Kenue. Develop models and view results in your choice of model development environment, and greatly enhance your workflow efficiency with the GIS plugins, and MATLAB and Python script toolboxes freely provided for: model build; results mapping; curtain and other specialized plots for 3D simulation result visualization; post-processing analysis; and reporting efficiency.

Take your outfall modeling to the next level using TUFLOW.

For more information:
info@tuflow.com
www.tuflow.com





Dense Ocean Outfall in Paraview

BMT TUFLOW