

## Supercomputing for environmental consultancy

### HPC-Competence Center

High Performance Computing (HPC) Wales is Wales' national super-computing service provider. Host to the UK's largest national distributed supercomputing network, HPCWales provides businesses and researchers with local access to world-class technology and the support to fully exploit it.



### Enterprise

Knowtra, a small environmental consultancy located in Bangor, North Wales, was established in 2007 by Dr Steve Spall. Having spent 14 years working with computer simulations of weather, ocean and climate, Steve set up Knowtra to make environmental knowledge accessible and relevant for business needs.

### How HPC makes the difference

Ocean, weather and climate science lie at the core of Knowtra's expertise. Simulation studies are vital in these areas, as it is impossible to carry out experiments on the very large scales needed to understand the physical processes that govern an ocean or the atmosphere on desktop machines alone.

HPC Wales has allowed Knowtra to access much larger compute resources than were previously available to them. Dr Spall, Knowtra's founder says that the business is already seeing benefits from this: "In many of my projects I run computer simulations of the ocean and, in general, these get better the more computer power you have. So, having access to powerful computing resources means I can do more and better simulations in order to obtain more realistic results".

One area where HPC Wales has helped Knowtra to achieve more has been in carrying out simulations of

ports within West Africa. Knowtra is now able to do better quality simulations of the ports in the area which leads to more realistic predictions of how future port developments might impact on the currents in the surrounding ocean.



*Fig: Dr Steve Spall describes the impact HPC has had on his business*

