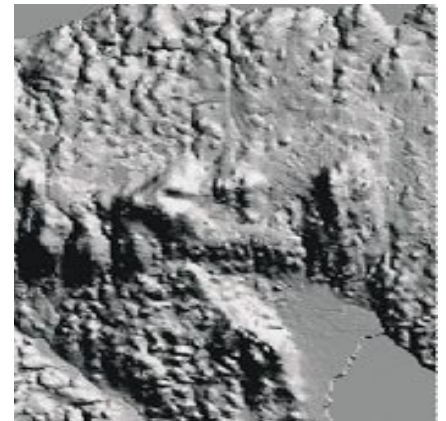
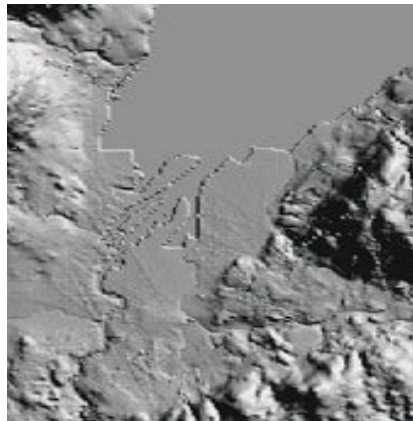
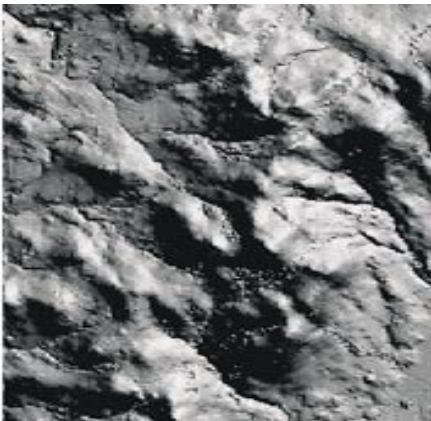


### What is an Enhanced Digital Terrain Model?

An Enhanced Digital Terrain Model (DTM) is a digital file consisting of break-lines and spot heights providing a highly detailed representation of the topographical variations in the Earth's surface. Break-lines represent linear features such as banks, ditches and rock faces.



*Triangular Irregular Network (TIN) created from Enhanced DTM*

### Key Features

The Enhanced DTM consists of a point file of heights, along with break-lines showing definite changes in height, giving a highly detailed representation of the Earth's surface.

Random spot heights are generated depending on gradient. An Enhanced DTM therefore carries a higher density of data where it is most needed.

The Enhanced DTM can be used in the electronic process of representing topography in 3 dimensions e.g. in a Geographical Information or CAD system.

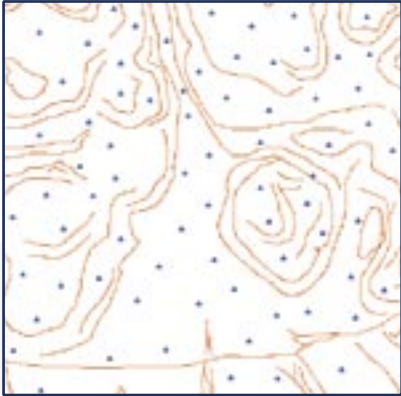


*Colour Triangular Irregular Network (TIN) created from Enhanced DTM*

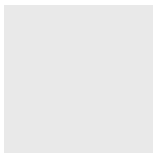
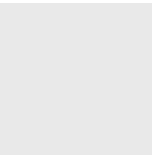
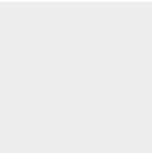
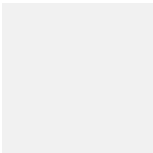
### Technical Information

- ◆ Derived from OSNI's Orthophotography dataset, the Enhanced DTM is generated using photogrammetric methods of data acquisition.
- ◆ All height measurements refer to elevation in metres above mean sea level at Belfast Lough.
- ◆ Enhanced DTMs can be used to generate 3D Triangular Irregular Networks (TIN).
- ◆ 95% of the data is within +/-1.0m accuracy.

# Enhanced Digital Terrain Model



Enhanced DTM Data showing break-lines and spot heights

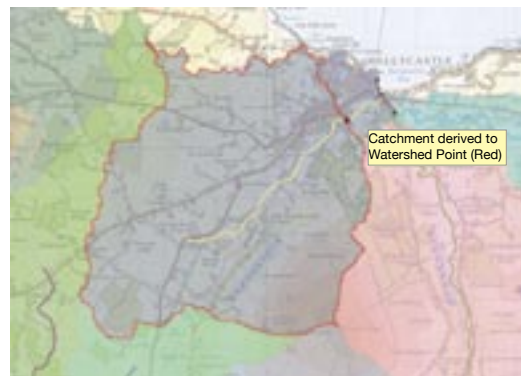


## Applications

- ◆ Planning
- ◆ Engineering
- ◆ Visualisation
- ◆ Height Analysis
- ◆ Environmental Impact Analysis
- ◆ Sight Lines
- ◆ Wind flow and pollution dispersion
- ◆ Soil erosion modelling
- ◆ Flow direction and accumulation
- ◆ Watershed delineation

## Enhanced DTMs in Action

Enhanced Digital Terrain Models (DTM) are utilised by a number of organisations and businesses. One such organisation is the Rivers Agency within Department of Agriculture and Regional Development (DARD). The Agency is using Enhanced DTM information to produce a series of National Flood Map products for Northern Ireland catchments. As part of the modelling process, the enhanced DTM is used to derive river catchment boundaries; these are subsequently processed in accordance with the latest Flood Estimation methods to produce a flood flow grid product. Both the flood flow grid and the Enhanced DTM are then applied within a flood modelling package to predict the extent of flooding. The accuracy of the Enhanced DTM is +/- 1m, which makes it suitable for this type of modelling at a strategic level.



Catchment Boundary derived from Enhanced DTM model

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