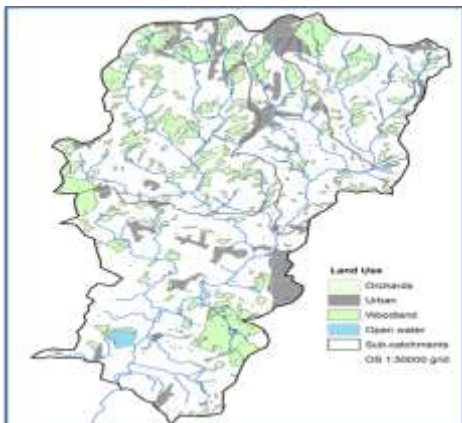


Hydro-GIS have been included in project teams to contribute specialist GIS expertise. This expertise dates back to the early 1990s when hydrological and water quality models were developed within an Arc Info under a Unix environment on a Sun workstation. We currently run ESRI Arc GIS/Arc Info Version 9.3 and Spatial Analyst software. Examples of specific projects are included below:

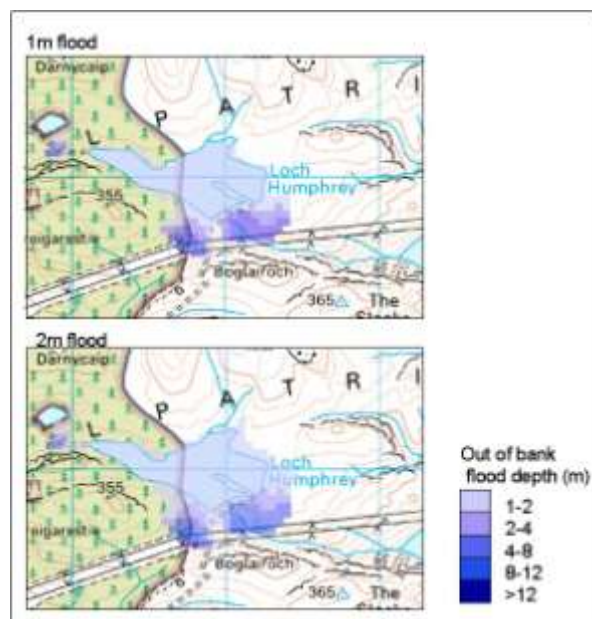
## 1. Water Resources Modelling



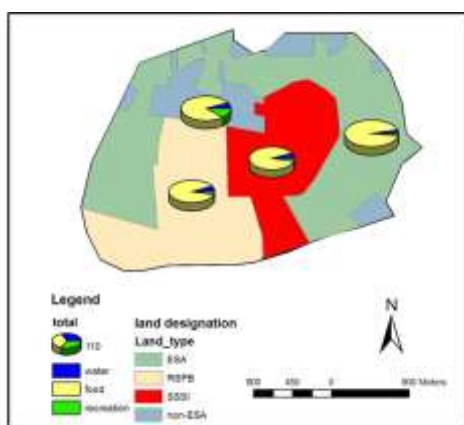
Hydro-GIS provided GIS expertise as part of a water resources modelling study in South-East England. This included the production of topography, geology, soils and land use maps; the application of Arc GIS Spatial Analyst to define model parameters such as proportions of urban, forest on open water per catchment, drainage path length and catchment slope; and the derivation of Thiessen polygons. Arc GIS was also used to provide figures for the final report.

## 2. Locations of Potential Wetland Sites

As part of a SNIFFER funded project for an inventory of Scottish wetland sites, Hydro-GIS undertook a pilot study which applied GIS to identify potential wetlands prior to undertaking any field mapping. Three cell based modelling techniques using Spatial Analyst were applied to selected areas of the River Clyde basin. These were identifying stream lines based on the topography, the automated derivation of a topographic index used in a process hydrology model, and mapping of potential flood extents using a 2-dimensional hydrodynamic model. The results for each approach showed a good spatial correlation compared with mapped data and field surveys of vegetation types.



## 3. Evaluation of Wetland Services Using the Ecosystem Approach



As part of a team working on a DEFRA funded study on the Evaluation of Wetland Services, Hydro-GIS produced background maps for the study area, applied Spatial Analyst to generate potential flood extents using a simple 2-d model, used Arc GIS to identify the length of footpaths passing through land of different designation and produced thematic maps including charts showing the results of questionnaire surveys.