

# HYDROFOR

## Assessment of the impacts of forest operations on the ecological quality of water

### PROJECT TEAM

#### *Steering committee*

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### BACKGROUND

HYDROFOR is a multi-disciplinary, multi-sector co-operative project to investigate the effects of forestry enterprises on Ireland's aquatic ecology and assess measures such as buffer strips to efficiently mitigate those effects. HYDROFOR will investigate the full range of forestry operations (i.e. planning and planting, maintenance, harvesting) and assess key associated mitigation measures to address acidification, sedimentation, eutrophication and hydromorphological impacts. Impacts will be analysed in selected catchments exhibiting high-risk pollutant source-receptor pathway conditions (e.g. peaty soils, high rainfall, steep slopes, etc.).

### OBJECTIVES

- Review the literature on forestry impacts on hydrochemistry, hydrology and ecology;
- Publish a review of this literature in an international forum;
- Assemble a database of relevant Irish data on forest surface water interactions;
- Collect hydrochemical, hydromorphological and ecological data from six catchments;
- Analyse data to establish controls and influences on impacts;
- Develop modelling tools to predict impacts and design control measures;
- Predict the future impact of forestry on hydro-ecology.

### PROGRESS

All relevant literature and datasets (numeric and GIS) were collected, reviewed and organised into structured, query-friendly online databases.

Draft literature review(s) were undertaken on the full range of relevant topics, including:

- Operations inherent to planting, maintenance and harvesting;
- Impacts including acidification, eutrophication, sedimentation and hydromorphological changes;
- Indicators of impacts, including various biological metrics (e.g. macroinvertebrate counts) and physico-chemical parameters (e.g. nitrate concentration measurements);
- High risk pollutant pathways, such as peaty soils, steep slopes and catchments with high precipitation levels;
- Measures to address these impacts, such as riparian buffers, forest restructuring and re-engineered drainage.

### ACTIVITIES PLANNED

- Complete literature review(s) and online literature portal.
- Document final detailed scope of work and schedule execution of work packages 2-7.
- Initiate field sampling and monitoring strategy.
- Establish and maintain the project web site (<http://www.ucd.ie/hydrofor/home.htm>)