



The Carbon Stocks of Peatlands Under Forestry in the Republic of Ireland.

M Wellock (1), C LaPerle (1), G Kiely (1), B Reidy (2), C Duffy (2), and B Tobin (2)

(1) Centre for Hydrology, Micrometeorology and Climate Change, Department of Civil and Environmental Engineering, University College Cork, Cork, Republic of Ireland (m.wellock@student.ucc.ie / phone +353 21 490 3025), (2) Department of Zoology, School of Biological and Environmental Science, University College Dublin, Belfield, Dublin 4, Republic of Ireland

Under the Kyoto Protocol it is necessary for all industries (including forestry) within the Republic of Ireland to report their GHG emission sinks and sources. Forestry plays an important role within the global carbon cycle as a carbon store within the biomass (above- and below-ground), litter and soil. Along with forests, peatlands are another important store for carbon, holding around one third of the global soil carbon pool. Peatlands held very important roles for Irish society for hundreds of years, i.e. agriculture, horticulture, energy etc, and cover approximately 17.2 % or 1.34 million ha of the total Irish land area (Hammond, 1981) with around 260,000 ha of the peatland forested (NFI, 2007). Afforestation of peatlands began in Ireland in the 1950s with the majority of the planting being done by the state. At present the state doesn't forest peatland, but there is still substantial planting from the private sector. Afforested peatland in Ireland represents a large store of C and so far there has been no quantification of the total carbon stock of the soil.

The project FORESTC is aiming to provide an analysis of the stocks of C that are stored within the afforested peatlands of Ireland. To achieve this 20 forested peatland sites around Ireland will be sampled, comprising 5 conifer, low level blanket peat sites (peats located at elevations lower than 150 m), 5 conifer, high level blanket peat sites (peats located at elevations greater than 150 m), 5 conifer basin peats and 5 mixed conifer and broadleaf basin peats. The peat will be sampled down the entire soil profile up to 10 m deep for both bulk density and carbon % every 50 cm using a peat sampler (Eijkelkamp, NL). Along with the peat samples, litter and F/H layer samples will be taken to quantify the carbon stock of the litter layer atop the peat. This data shall then be able to provide a total carbon stock of these 20 forest sites that hopefully will allow for the estimation of the total C stock of the soil and litter of afforested peatland in Ireland.

References.

Hammond, R.F. (1981). The Peatlands of Ireland. An Foras Taluntais, Dublin, Ireland.
National Forest Inventory: NFI Results. (2007). Forest Service, The Department of Agriculture, Fisheries, and Food, Wexford, Ireland.