Are Scotland's soils really wetter in winter than in the past?

Project details on "Effect of Soil Structure and Field Drainage on Water Quality and Flood Risk" can be found at: http://www.crew.ac.uk/projects/soil%20structure%20and%20water

The problem:
Good soil structure and field drainage systems are key to achieving good water quality and minimising flood risk. They are also vital for agricultural productivity and in the greenhouse gas balance of many soil systems. Feedback from farmers, regulatory bodies and the public suggests soils are wetter in winter, with many expecting that degraded field drainage and soil compaction could affect the capacity of soils to transport and store water. Water may sit or move across the surface, with negative impacts on water quality and potentially increasing the risk of flooding. Sediment washed off the land can block drainage channels and is a major source of pollution of freshwater. Moreover, as the land is inaccessible to grazing or cultivation, agricultural productivity is affected.

Visual assays will quickly assess compaction damage and drainage issues. A subset of farms will have detailed monitoring.

A University of Aberdeen led study:
SEPA have recently commissioned Scotland's Centre of Expertise for Waters (CREW) to assess the extent of drainage problems on agricultural fields, the potential underlying causes including soil structural degradation, and the potential implications to flood risk and water quality. This project, led by the University of Aberdeen in collaboration with the James Hutton Institute, will visit farms to conduct a field survey of soil structure, examine drainage systems and discuss issues with farmers. At a subset of farms water transport, run-off and erosion in the field will be measured, and soil cores taken for more detailed laboratory analysis. Added to this work will be predictions of soil vulnerability to structural damage, an examination of satellite images and a review of existing reports to assess the extent of the problem.

What Scotland will learn from the project:
The outputs of this project will be used to guide future policy and research in Scotland aimed at improving water quality, reducing flood risk and helping farming in Scotland manage soils to the advantage of both the business and the environment. Each farm will be provided with a report on the soil structure condition observed on their farm and data included in the report will provide a broad assessment of soil structure and drainage issues in selected catchments.

UNIVERSITY OF ABERDEEN · UNIVERSITY OF DUNDEE · The James Hutton Institute · SRUC · crew Scotland's centre of expertise for waters