



# HillPlan Newsletter #2

## September 2003



### 1. Welcome back

This is the second HillPlan newsletter; the first was published in July last year. HillPlan has undergone considerable testing and validation over the intervening months and is more robust and reliable as a result.

### 2. HillPlan on Hoy

HillPlan has been used on a project for Scottish Natural Heritage for the assessment of the impact of current herbivore management and the potential impact of changes to that management on the Site of Special Scientific Interest (SSSI) area on Hoy in the Orkneys. A vegetation survey was carried out and the grazing management modelled by HillPlan for 14 areas of interest.

In addition to the output for the project itself, a great deal of useful information on the use of HillPlan was obtained. Some areas for improvement in the underlying models were identified and also some insights were gained into ways in which the models, user interface and data collection methods could be improved.

The exercise also identified the potential of the system in coping with new situations, for example:

- Shetland ponies are not uncommon on Hoy and as they are not currently handled by HillPlan they were modelled as an equivalent grazing pressure of sheep at a rate of c. 6 sheep : 1 pony.
- The production level of heather shoots observed 'in the field' was much lower than that predicted by HillPlan which meant that the heather production sub-model had to be amended for this project to match the observed production levels (more on this issue below).
- Supplementary feed was supplied to livestock in several of the areas. This was dealt with in the model by reducing the number of grazing animals in the simulations to compensate for the reduced grazing pressure due to the availability of the supplementary feed.

### 3. HillPlan developments

Progress on HillPlan includes detailed investigation, testing and improvement in several parts of the system:

- heather shoot production rates and digestibility profiles;
- heather ageing and burning;
- animal bite depth calculations;
- multi-year variations in stocking rates;
- Hill Area Data Sheet improved to allow up to nine patches per Hill Area instead of five;
- performance improvements and bug fixes throughout.

### 4. Heather production

A review of data from several studies of heather production throughout the UK revealed problems in predicting heather shoot production. This is due, mainly, to large (and as yet unexplained) variations in heather production within individual sites. Our current thinking is that it may be necessary to collect site-specific data to allow estimation of heather production rates. This might be based on the measurement of heather shoot length.

### 5. Contact

Address: Jim McLeod  
Macaulay Institute  
Craigiebuckler  
Aberdeen  
AB15 8QH

Tel: 01224 498200  
Fax: 01224 311556  
Web: [www.macaulay.ac.uk](http://www.macaulay.ac.uk)  
E-Mail: [j.mcleod@macaulay.ac.uk](mailto:j.mcleod@macaulay.ac.uk)