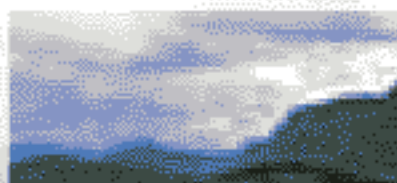


# PLANNING SUSTAINABLE LAND USE SOLUTIONS

---

**W**elcome to the first edition of the LADSS newsletter. LADSS is the Land Allocation Decision Support System developed by the Macaulay Land Use Research Institute in Aberdeen.

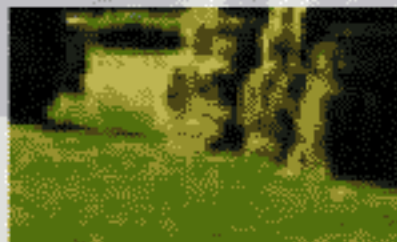


## *What is LADSS?*

LADSS is a package of interactive software which combines data from diverse sources, lets people explore land use options and quantify economic social and environmental outcomes of a particular land use decision.

## *Why LADSS?*

Changes in Scotland over the next 10-20 years seem inevitable as the CAP is reformed and Agenda 2000 is introduced. Less land will be used for food production and there will be changes in the relative intensity with which land is farmed, depending on farm size, type and land quality. In Scotland, alternative land uses such as forestry, crops for energy generation, nature conservation management and facilities for sport, recreation and tourism will become increasingly important. Many ideas are being floated about replacing agricultural subsidies with schemes to reward environmental protection and conservation, and many alternative commercial land uses are being proposed. Land users and policy makers are having to integrate biophysical, ecological, geographical, climatic, social and economic factors in their decision making.



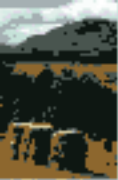
Some experts, like those at the Macaulay, have been doing this for years, advising clients on the best land use for their situation. What hasn't been available until now, and what LADSS provides, is a transparent, objective, reproducible way to model the 'what-ifs' and 'why-nots' of such a decision making process. You need more than a simple spreadsheet to produce convincing multi-objective analysis.

## *Future product... Where we are now!*

LADSS will be an authoritative, comprehensive and reliable land use planning tool enabling complex land use decisions to be quickly evaluated, analysed and optimised. It will be made available initially as a consultancy and subsequently via Internet access to a central facility.

LADSS currently is a usable software system, shown to be robust on a limited number of test sites. It needs work to extend and enhance certain features of the software. And that's where you come in...





## *LADSS development - what we are doing this year.*

To make LADSS reliable we are engaging in extensive software engineering. To make it comprehensive we are selecting and gathering data from two more test sites this year (in addition to the existing 4) and to make it authoritative we are gathering input from various practitioners, including a (2<sup>nd</sup>) user focus group before the end of the year.



LADSS Development Plan 1999 - 2000

## *Market Research - what do our potential users say?*

We have tried to develop LADSS in close consultation with potential users and other interested parties. The prototype has been demonstrated at a number of open days. A group of potential users were given a demonstration and asked for feedback during 1998. Additional, systematic information was sought in a wider telephone and postal survey at the end of 1998. The respondents included rural estate managers, corporate land owners, farm businesses, land use agents, national parks, environmental bodies, nature charities, and rural local authorities.

### *Key findings from this research were:*

- There is no direct equivalent product to LADSS available to land use decision makers;
- While there are models which duplicate part(s) of the LADSS functionality, there are none which replicate its 'holistic' approach - two-thirds of respondents thought this was a key advantage as it would yield better results and more effective decisions.
- Around two thirds also felt that the ability to rapidly and objectively appraise and visualise alternative land use scenarios would be of value;
- There is clearly a degree of dissatisfaction with existing decision support systems - around one third of respondents are likely to consider changing their systems over the next 12 months.

Much other useful information was gathered, including a list of 'must-have' and 'nice to have' features which can be incorporated into parts of the software development programme.

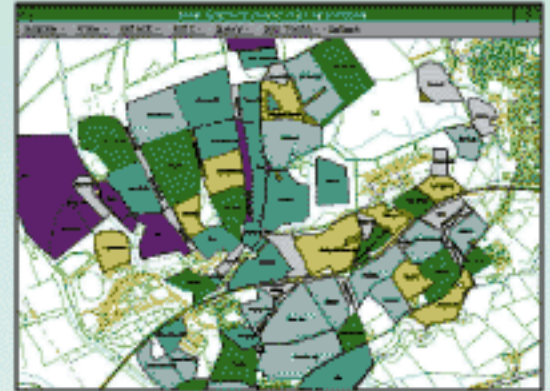


## A LADSS Case study - Hartwood

The LADSS model has been developed and verified by using real site data from three different upland sites - Glenshagh in Kincardineshire, an estate with tenanted farms in Moray, and Hartwood in Lanarkshire. A fourth test site at a crofting township in the West of Scotland is currently being added.

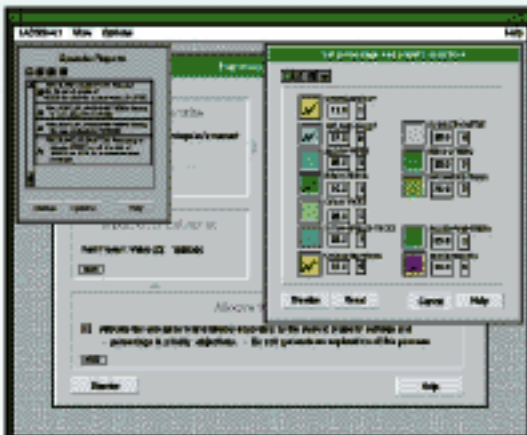


Hartwood Research Station



Hartwood Plan

Hartwood Research Station is in north-east Lanarkshire. It is a high, wet and exposed upland farm with significant areas of poorly drained soil. It's normal use might be solely as a livestock farm – access for farm machinery frequently being limited by soil conditions. The LADSS team collected a range of climate, soil and topographic data; aerial photos were also taken. They used these data to generate detailed field by field predictions, for arable cropping, sheep and cattle and farm woodlands, of productivity in areas determined as suitable. A number of scenarios were run, including the removal of livestock subsidies and the introduction of areas of farm woodland. The land manager, who has been running the site for the Macaulay for eight years, confirmed that LADSS suitability and productivity estimates were correct and that the patterns of land use allocations were sensible. What he couldn't comment on was the suitability of sites within Hartwood for farm forestry, the nature conservation value of the habitats created or the long-term impact on labour requirements. This is where LADSS will be uniquely capable.



LADSS Interface

We do need to test and develop LADSS at additional sites facing complex land use options and to do that we need your help. In short we are looking for volunteers to become LADSS development test sites.

Turn the page to see what's involved.

## Volunteering for a LADSS Assessment - What's involved?

If you volunteer for an assessment, several things will happen. Firstly, there will be a field survey. This will include soil sampling, aerial photography, analysis of past records and interviews with the site manager.

After the survey is completed you will receive a survey report including maps and summaries of the field and laboratory data. Subsequently the site will be flown to capture large-scale colour aerial photography – with a set of prints being made available. Following the creation of a LADSS database you will be provided with the results, (in map and report form), for a range of scenarios including selected economic, social and environmental impact indicators

Thirdly we will ask you to participate in LADSS focus group meetings at the Macaulay (the next one will be during winter 1999/2000). Finally we will want to revisit and retest as we develop and improve new features of the software.

### What kind of Sites are we looking for?

We are especially interested in upland sites where we can model complex agricultural, environmental and social factors. It would be nice if the site has existing woodland or woodland opportunities. We would like the sites to be big enough to require fairly complex analysis, but at this point would probably not want to analyse an entire highland estate (a farm on such an estate would be fine). We probably would not prefer a comparatively prosperous lowland arable site to start with, unless it incorporates a particularly intriguing land use issue. Apart from that we are open to suggestions. N.B. volunteers do not have to be practising farmers - you could be a land owner or agent, or a professional such as a surveyor or banker with an interesting client site.

### What's the catch?

No, you don't have to pay anything; in fact you are getting a free farm soil survey and mapping including high resolution aerial photography.

What we do need is some of your time. Time to meet and be interviewed by our soil mapping team; time to choose some land use scenarios you'd like to see evaluated; time to review the results and suggest improvements; and time to meet and speak to other interested parties about LADSS and how it has helped your land use decisions. We reckon that altogether it might be 5 days of your time over the course of a year, with an absolute outside maximum of 10 days.

--- Please cut along line or photocopy and return. ---

### RESPONSE FORM

Senders Name: \_\_\_\_\_ Address: \_\_\_\_\_

- |   |                          |                             |
|---|--------------------------|-----------------------------|
| 1. Please keep me informed about LADSS development.                         | <input type="checkbox"/> | Please tick appropriate box |
| 2. I'm interested in participating in a LADSS focus group.                  | <input type="checkbox"/> |                             |
| 3. I'm interested in providing a test site - please tell me more.           | <input type="checkbox"/> |                             |
| 4. I'm not the right person to receive this newsletter - please send it to: | <input type="checkbox"/> |                             |

Name: \_\_\_\_\_ Address: \_\_\_\_\_

Please return to: Keith Matthews (address as below).