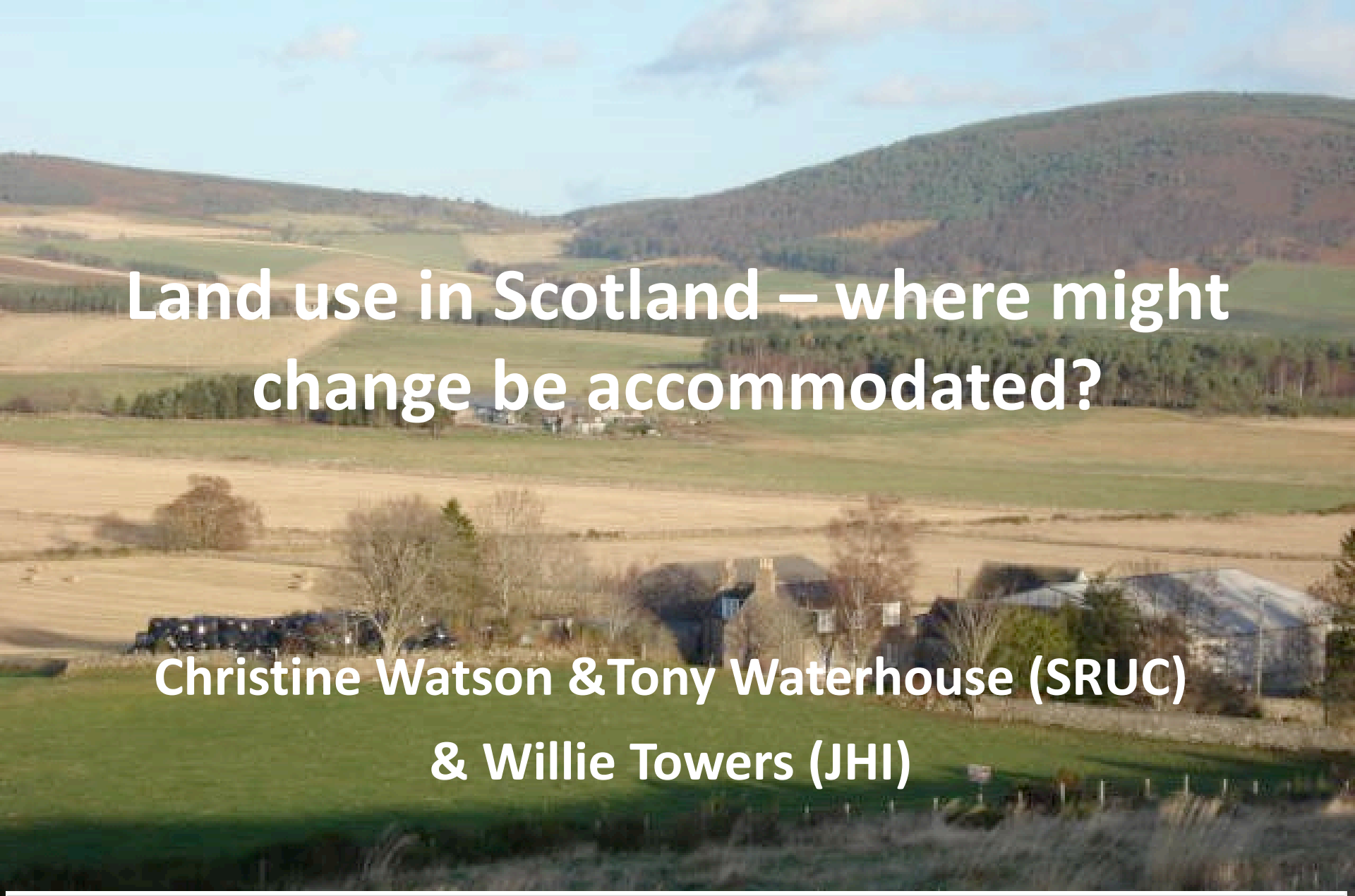


Land use in Scotland – where might change be accommodated?

Christine Watson &Tony Waterhouse (SRUC)

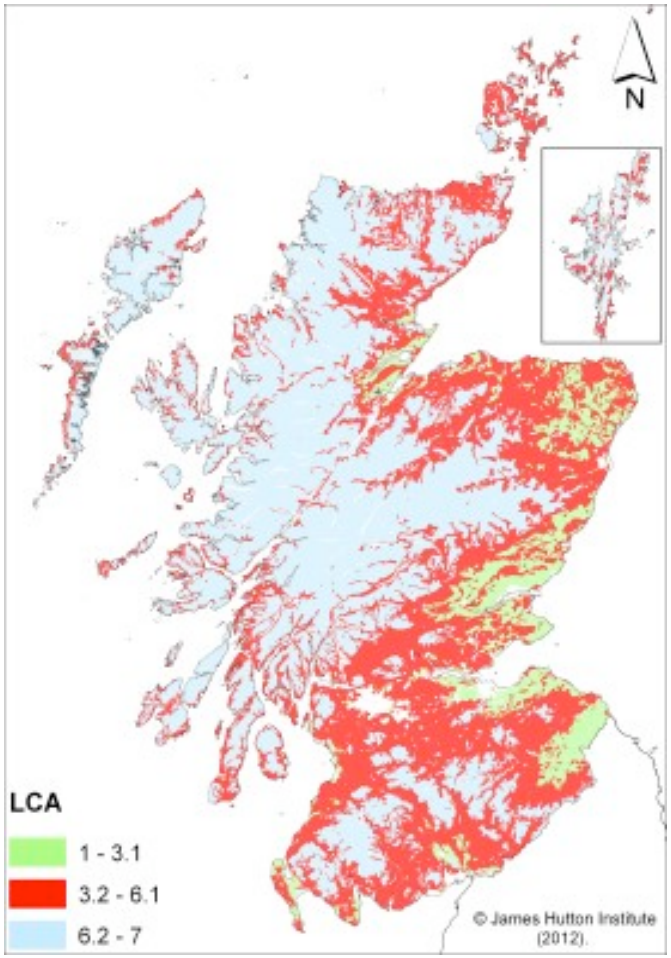
& Willie Towers (JHI)

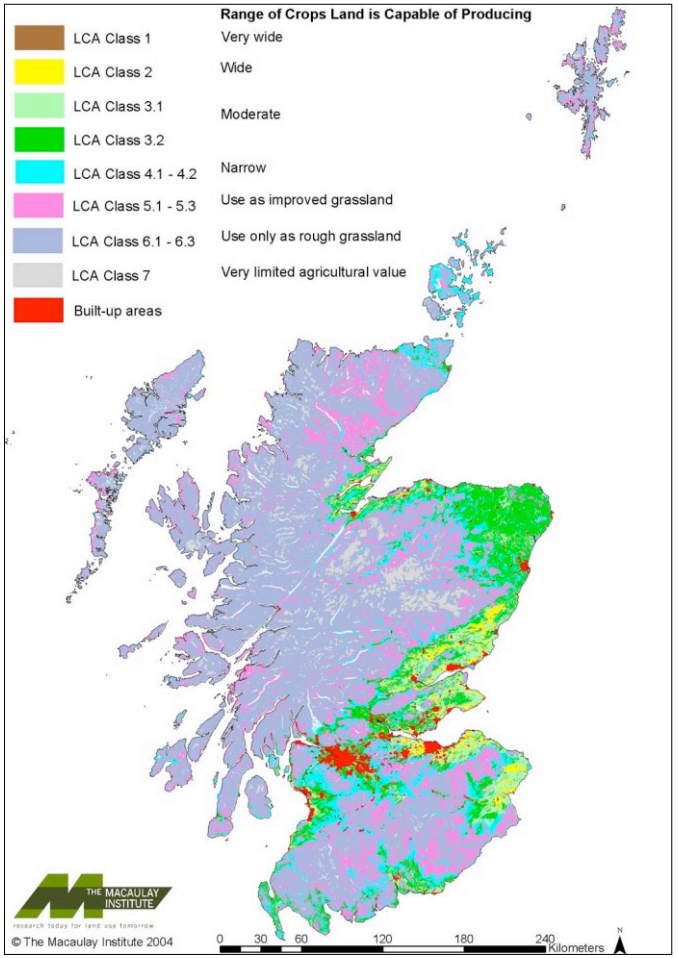
The James Hutton Institute | Moredun | Royal Botanic Garden Edinburgh | BioSS | SRUC Research | The Scottish Government

What determines how land is used?

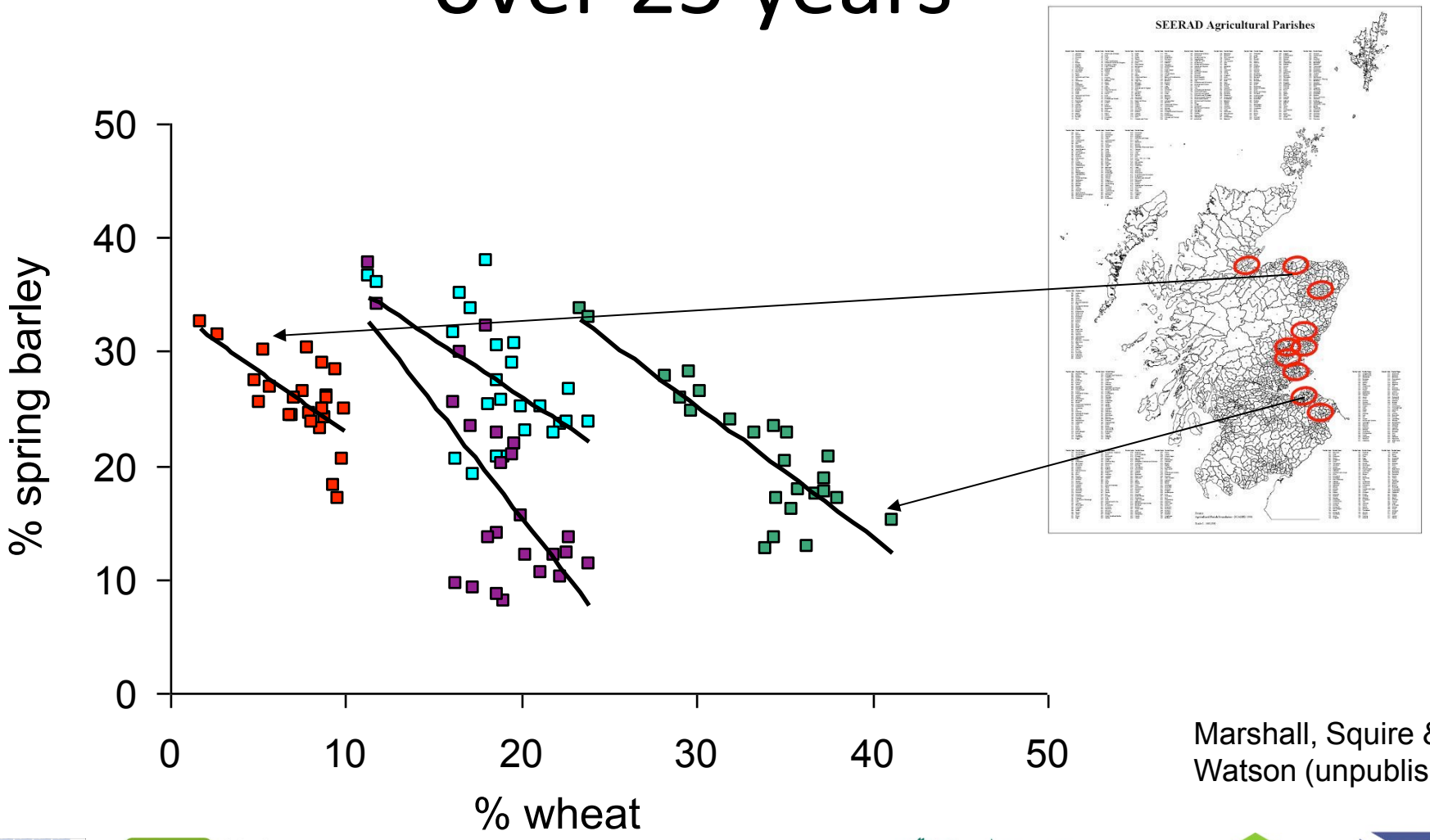
- Financial incentives?
- The aspirations of personal and financial circumstances of individual land managers?
- Tradition and culture?
- Opportunities and limitations imposed by the biophysical context?
- Policy, regulations, strategies…..?
- Market demand?
- All of the above and more

TODAY: Address 3 areas – prime agricultural land, the “squeezed middle” and the hills





Historical change in cropping over 25 years



Marshall, Squire & Watson (unpublished)

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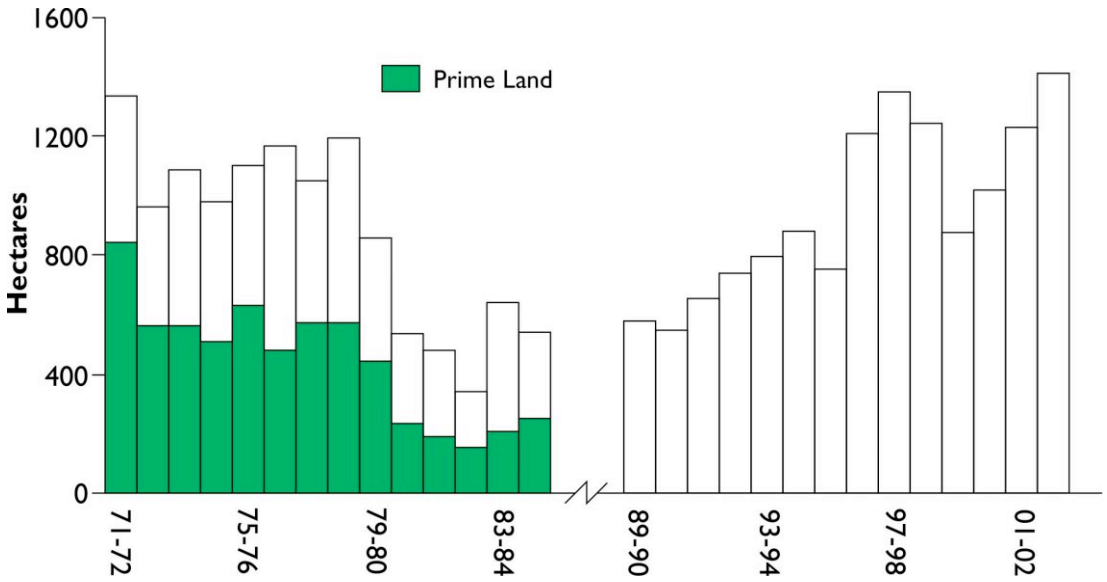
Some conflicts on prime land



- Soil sealing for development
- Flood control
- Biofuels – Foresight recommends only abandoned land
- Biodiversity
- Climate change

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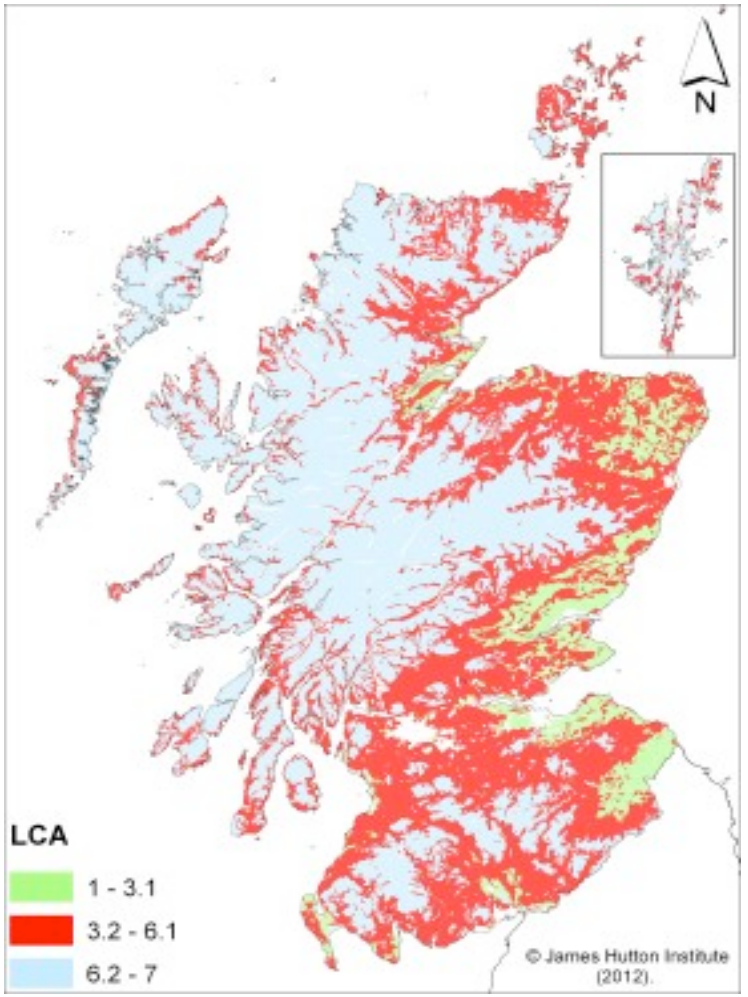
The squeezed middle (Slee et al. 2013)

- ‘Medium quality’ agricultural land has most flexibility for change and to deliver to new challenges
- Encompasses LCA Classes 3.2 -6.1….but not to be interpreted too rigidly
- Offers a range of options that differentiates it from land ‘on either side’



Squeezed Middle Challenges

- High agricultural subsidy dependence….but contains much of Scotland's valued and iconic livestock industry
- Cultural barriers to increase woodland cover
    - WEAG report has identified a number of farm forestry models to progress this aspect
- Source of some water quality issues related to livestock
- Increased deer numbers and movement 'downhill'

Squeezed Middle Challenges

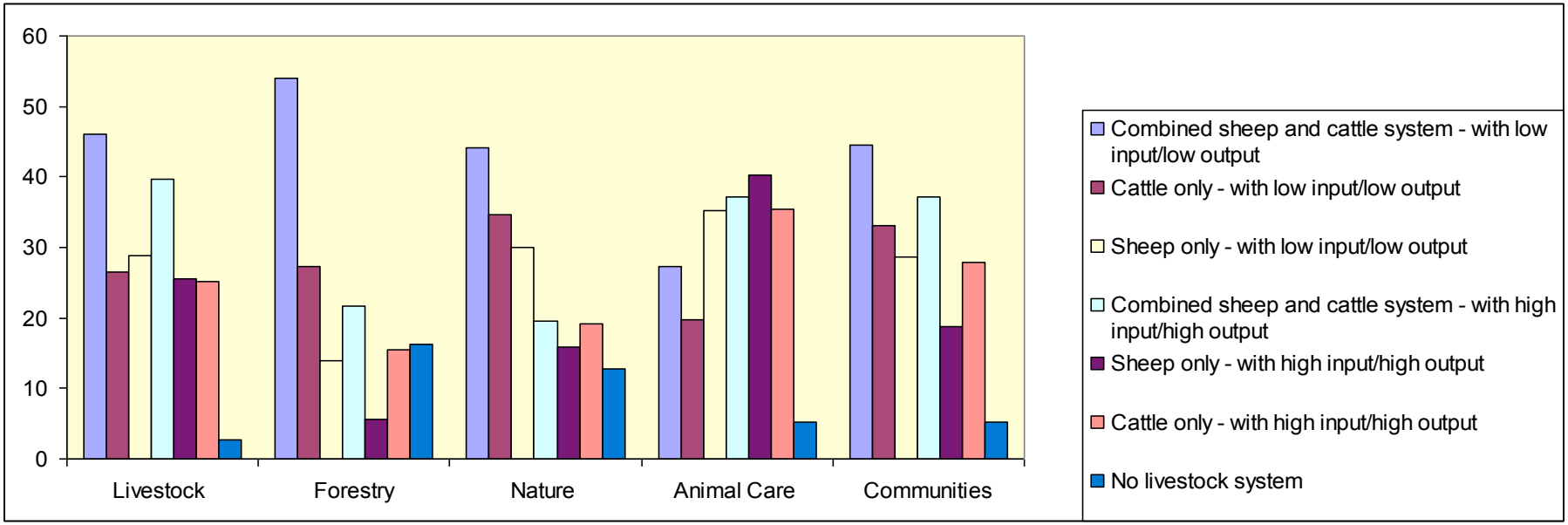
- Habitat fragmentation
- Accommodating renewable energy production
- Squeezed Middle sits adjacent to a large proportion of Scotland's population and the diverse views that they represent.

The Squeezed Middle is diverse and different pressures and solutions will occur in different places…..but represents the zone with the widest range of options

Hill systems

- Limited choices; extensive sheep and cattle vs forestry/woodland vs game management
- Some issues
  - Maintenance of high quality grouse and/or grazing moors - on relatively carbon-rich soils
  - Grazing issues (whether sheep or deer)
    - Compatibility with woodlands
    - Habitat quality and biodiversity targets
    - Poor performance and profitability
- Wind turbine footprints increasing
- 'Farming's Retreat from Hills' paused but...

Further up the hill – different stakeholders want different things!



- Livestock interests prefer combined cattle and sheep systems
- Foresters just don't like sheep
- Animal Care interests (vets, advisers, suppliers) like high input and output
- Nature and forestry interests have comparatively most support for a 'no livestock' option

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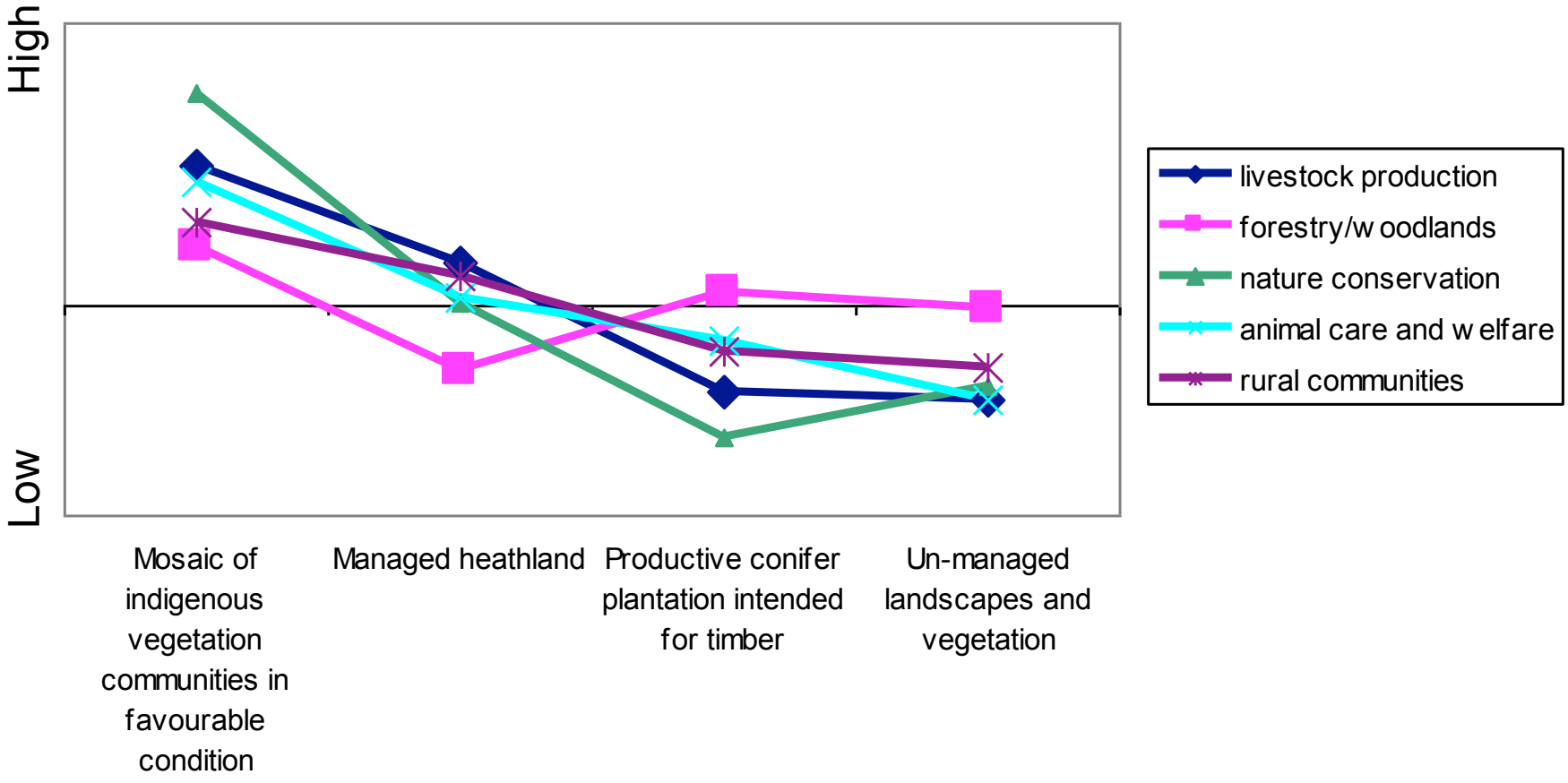
Vegetation Cover



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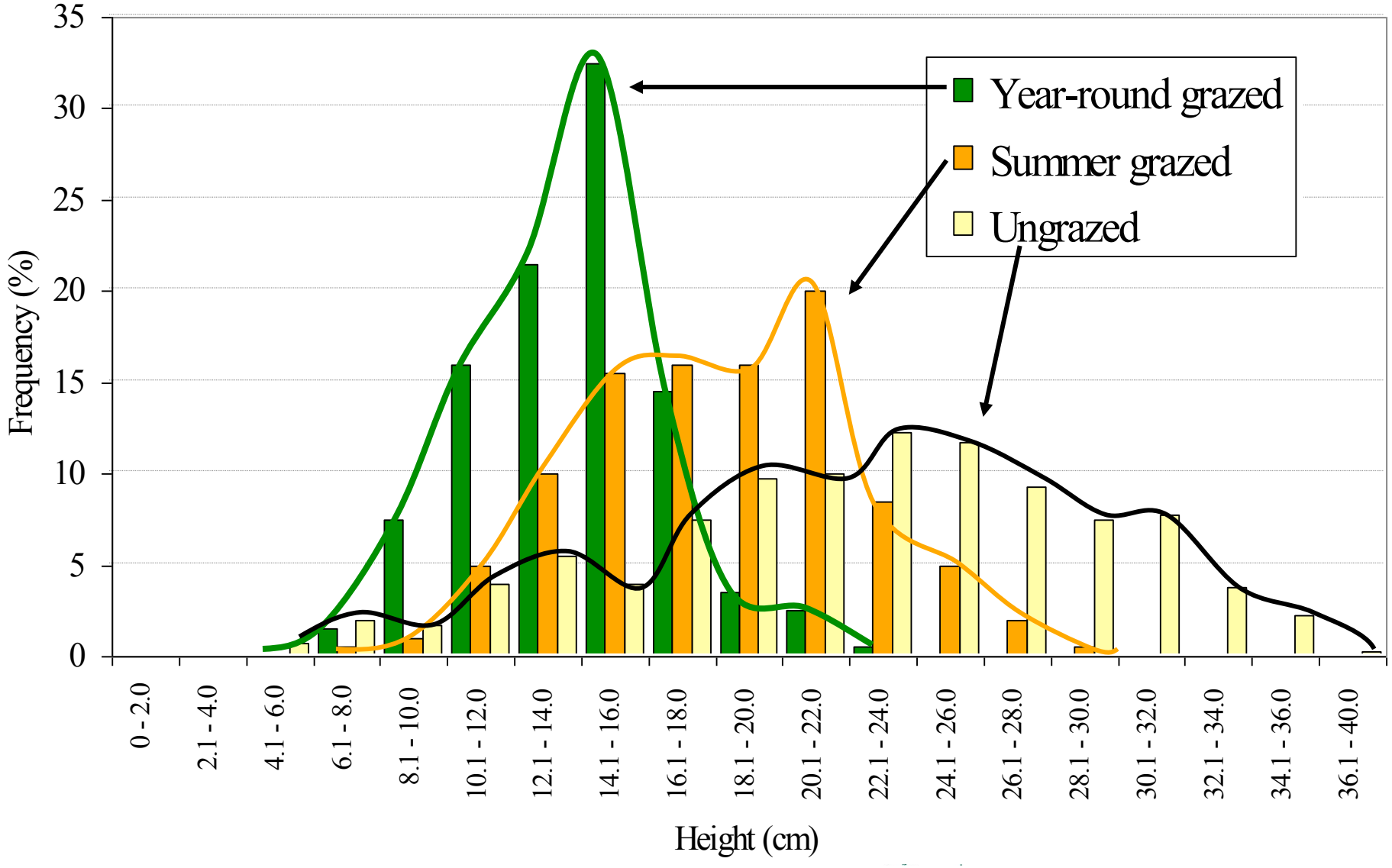
Grazing is major land use

Complex – interactions with wildlife and greenhouse gas emissions

People – less and less willing to take on challenges of farming in practice

Impact of grazing system on acid grassland sward structure



And people/interest groups change their minds!

- **"There is a crisis in the hills. Wildlife habitats are literally being gobbled up by millions of sheep that roam and are even foddered above the fenceline"**

  David Bellamy Wildlife Trusts (1996) '*Crisis in the hills: Over-grazing in the Uplands*'.

- **'The...loss of sheep from...upland areas could have potentially...serious environmental consequences'**

  RSPB Submission to RSE Inquiry in to the Future of Scotland's Hill & Island Areas, 2007

Conclusions

- Land use challenges vary between our 3 areas – no one size fits all for the future
- Squeezed middle appears to have most flexibility
- In uplands a change from traditional systems will change the nature of the area
- Never make everyone happy