

Valuing what we measure or measuring what we value?: Local and scientific understandings of ecosystem services in two Scottish catchments

Presentation to RGS-IBG conference 26-29th August 2014



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With thanks to Justin Irvine, Alessandro Gimona, Andreas Baggio, Carol Kyle, Rachel Creaney, Inge Alders, Mads Trolberg, James Davidson and Sarah Dunn



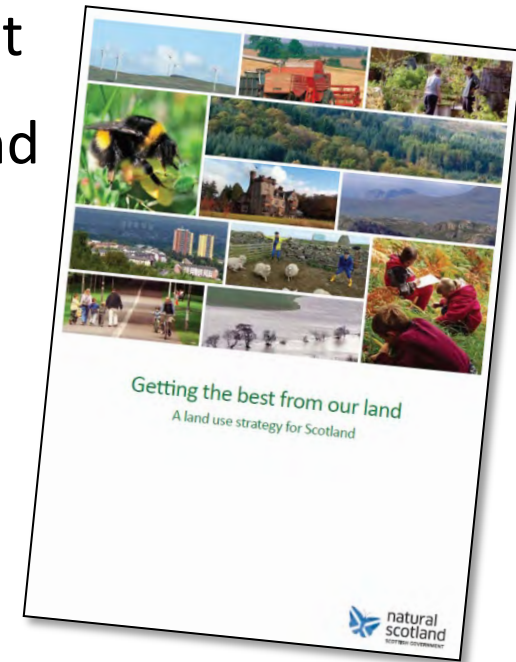
Catchments - hydro-social landscapes

- Intermediary level between national policies and local practices
- Biophysical focus on environmental processes fits natural science derived models and maps
- Lens to apply concepts like ecosystem services and the Ecosystem Approach
 - Inter-relationships between human and nature co-produce 'ecosystem services' for human well-being
 - Convention on Biological Diversity's Ecosystem Approach
- Challenge to combine these two very different concepts



Research Background

- Scottish Land Use Strategy (2011)
 - Ambitious, abstract, high-level document
 - Promote multiple benefits from rural land
 - Focus on land use decision making
 - Compulsory for public but not private
- Two pilots: Aberdeenshire & Scottish Borders
 - 2013-15 to assist revision of Strategy
 - ‘Mechanism to guide future decision making’



Case Study: Local Focus Areas

Upper Dee

Upper Dee catchment

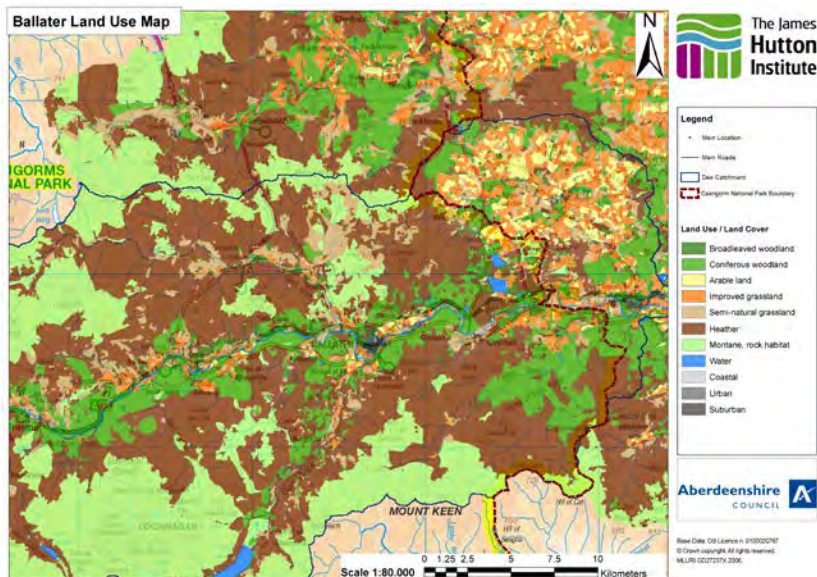
1, 319 Km²

Mostly large estates, few farms

Local settlements of Ballater (pop 1, 533)

Braemar (491) and Aboyne (2, 602)

Eastern side of Cairngorms National Park



Huntly

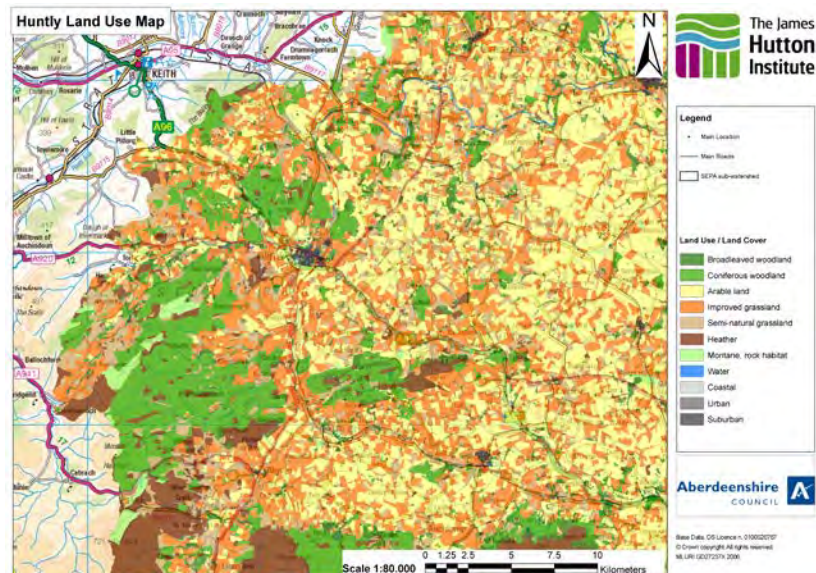
Deveron and Bogie catchments

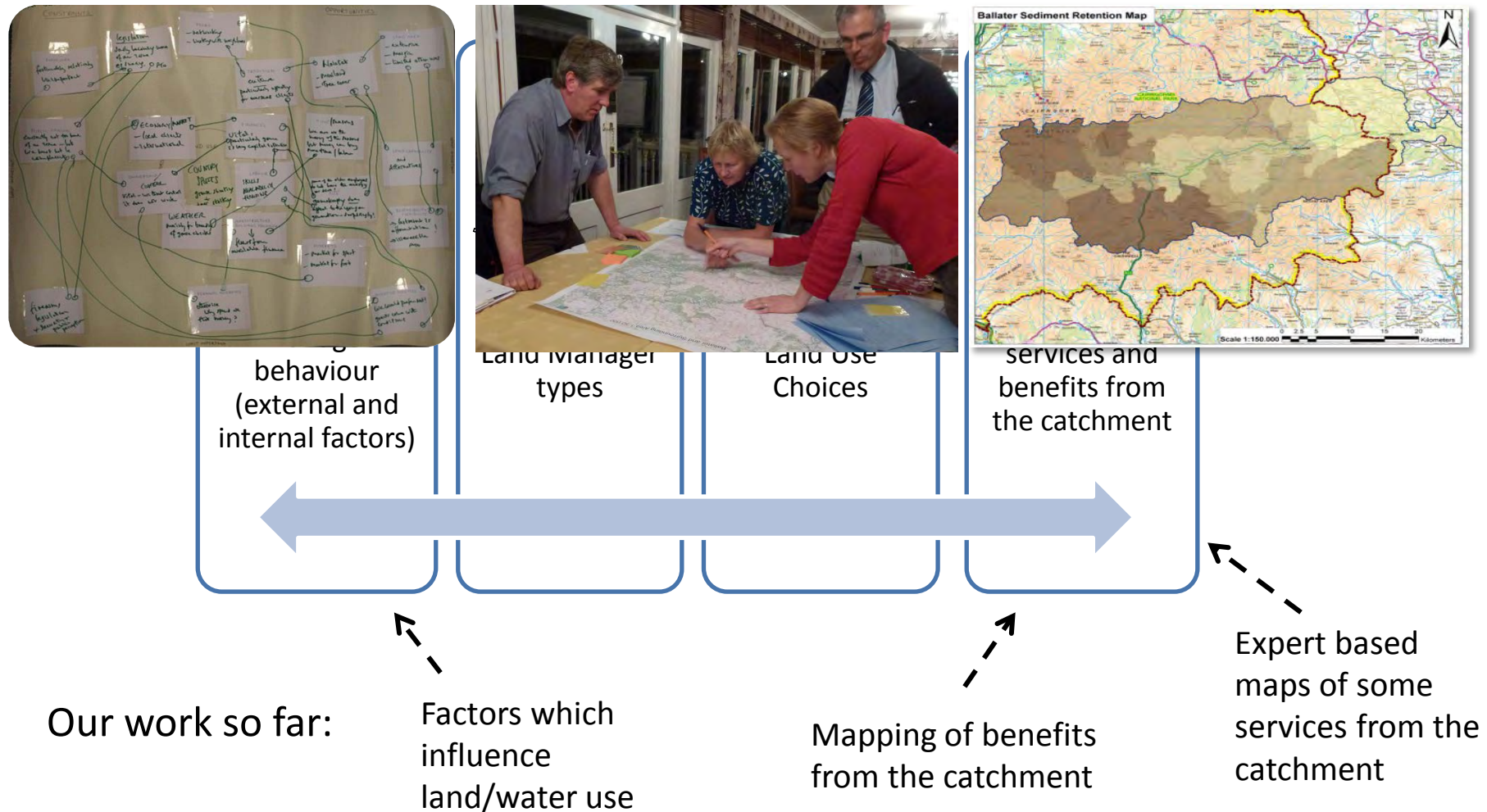
637 Km²

Many farms, plus forestry, sporting estates and historic monuments

Local settlements of Huntly (pop 4, 768)

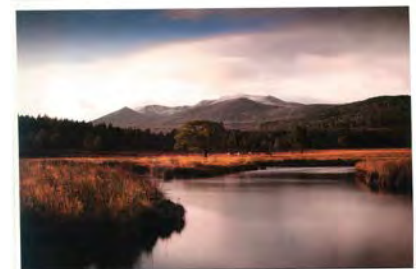
Rhynie (454) and Aberchirder (1, 237)





1: Catchment based benefits

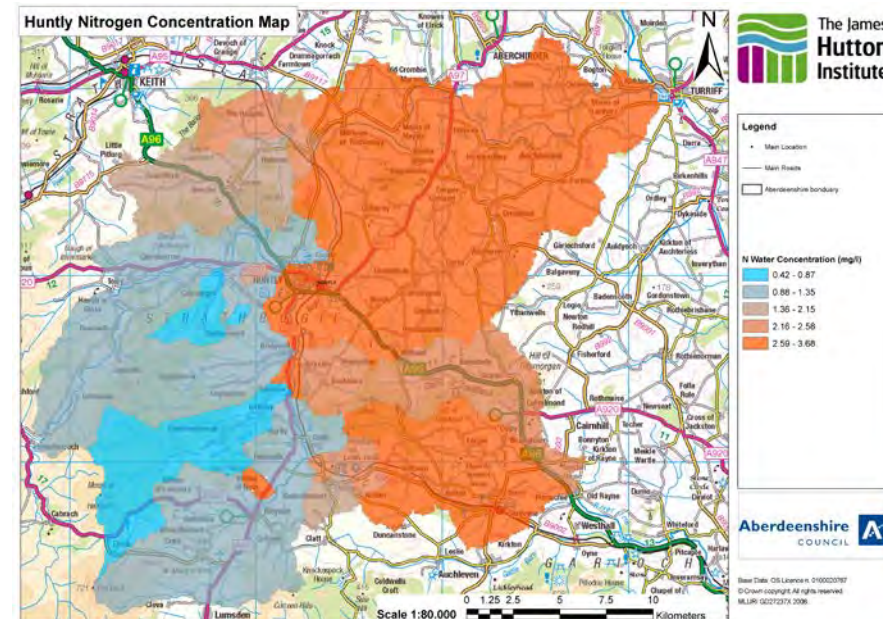
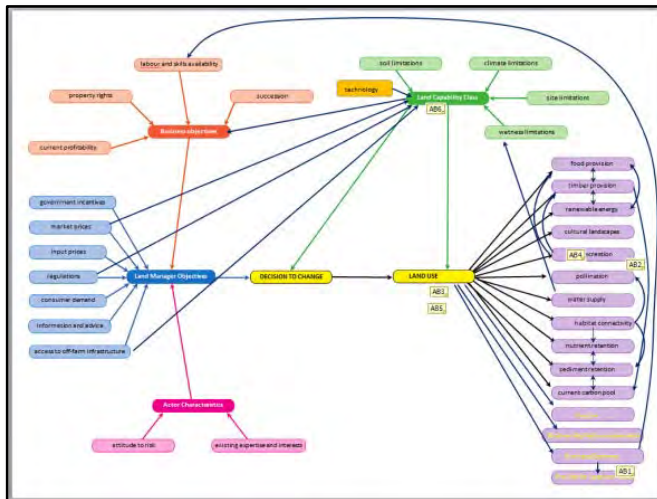
- +80 benefits identified by +40 participants
- Many refer to mosaic of land and water = landscape
“iconic views of mountains and river”
- Water is multi-functional – *“energy for hydro-scheme for estate and national grid, private water provision to holiday cottages, salmon spawning grounds”*
- Catchment not just water based services
 - Water benefits = Flow and flood regulation
 - Beyond water benefits = Recreation; biodiversity conservation etc;
 - Wider benefits = Improvement of human health; employment opportunities and poverty reduction etc





2: Representing catchment benefits

- Scientific modelling focussed on: carbon storage; nutrient and sediment retention; land cover change and pollination
 - Awareness raising – important when prompted
- Participants listed many benefits that were not easily measured or mapped e.g. sense of place; peacefulness; heritage
- Struggle to insert local views of benefits into modelling & make meaningful



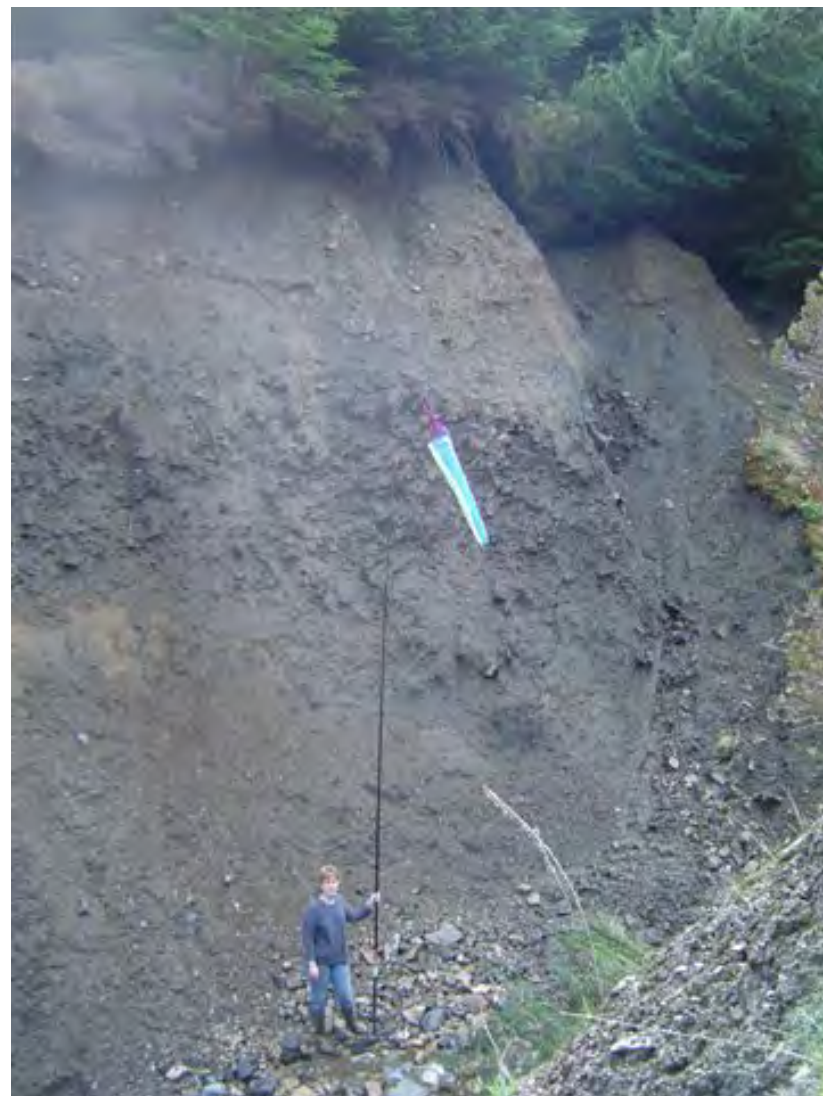
3: Management not (only) change

- Focus on management not land use change
 - Preference for small scale LUC e.g. shelter belts not plantations
 - Discourses around behaviours: e.g. responsible access taking in new riparian woodlands/paths
 - Discourses around technologies: e.g. precision agriculture; solar panels farms etc
 - Discourses around sharing knowledge: e.g. learning from overseas good practice on reducing emissions from livestock
- Concern about what might be lost with whole-scale changes e.g. extensive grazing provides landscape character and cultural heritage



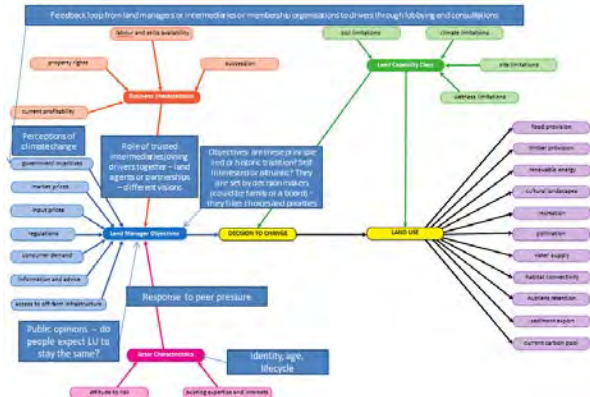
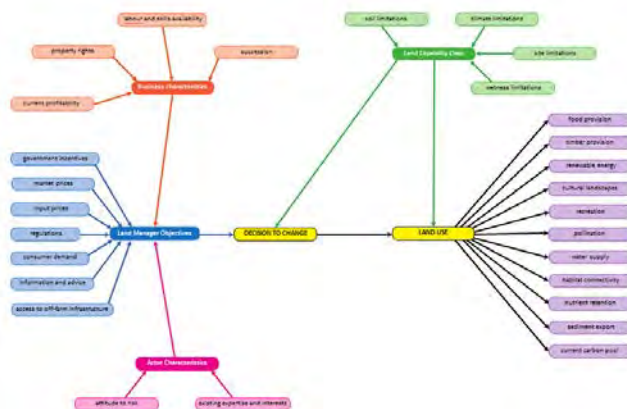


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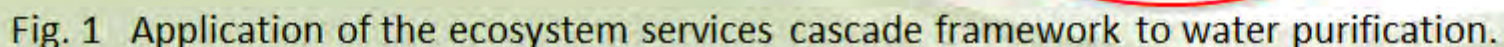


4: Who changes and why?

- RLUP premised on land use change by land managers
- Participants reflected on political and institutional drivers
 - Land capability constrained by protected area designations e.g. wader breeding grounds
 - Inappropriate and inflexible woodland plantings due to recent incentives acidifying catchments
 - Complex interactions of incentives, regulations and markets



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6: An Ecosystem Approach?

- Participants highlighted many of the Malawi Principles (e.g. spatial and temporal dynamics; impacts on adjacent ecosystems; building on multiple forms of knowledge etc)
- Focus on how ‘benefits’ linked to economic development, skills, migration, housing, community development, social cohesion
- CBD ‘fair and equitable distribution of benefits’ - narratives about distribution of benefits and costs e.g.

There is a problem with absentee owners who can change the landscape considerably yet do not live in the place. This is linked to a problem with zonation: why for example are wind turbines banned in the National Park yet allowed in Huntly area when Huntly also has landscape and tourist attractiveness. If stakeholder participation in policy is serious, policy makers need to engage with people better. How do decisions about protecting landscapes get made? (Tourism operator, Huntly)



Concluding Discussion

- RLUP about *implementation* of LUS but participants opened up debates about goals and options for change
- Participants' narratives combined governance strategies: technological, behavioural, political and institutional change in polycentric and multi-level processes
- Ecosystem services assessment allowed local knowledge to connect with administrative and scientific knowledge
- Challenging 'optimising catchment management' – not getting maps/models 'right' but conflicting ideals about desired outcomes and distribution of impacts
- Tinkering with the status quo not radical reimagining of the hydro-social environment



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Thank you for listening ...

Before I sit down, a quick plug...





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