

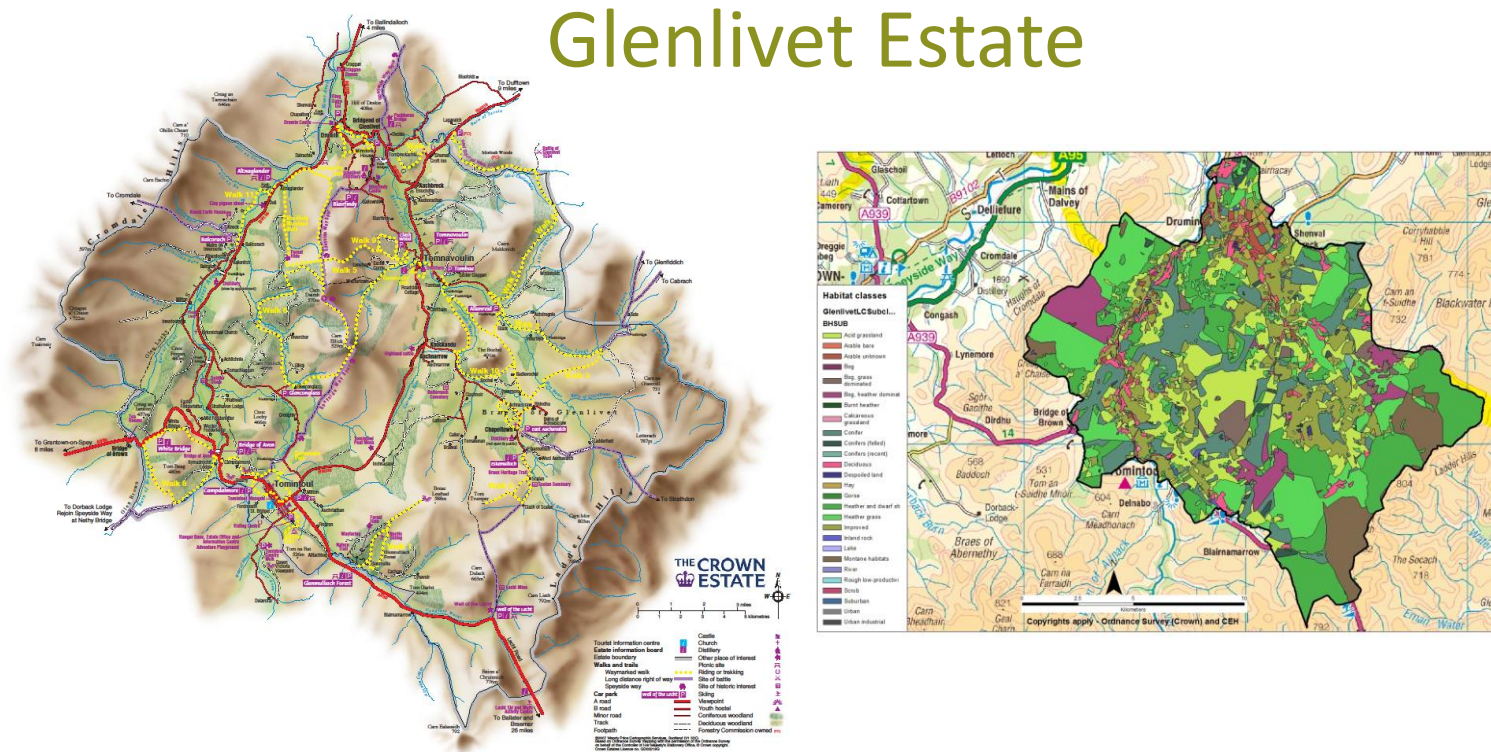


SOCIAL SURVEY TO ESTIMATE VALUE OF RECREATION ACTIVITIES TO GLENLIVET RESIDENTS

Strategy to combine money and non-monetary assessment of natures services

- The income to the Crown Estate from its tenants and forestry enterprise was estimated per land cover (data from land agent and head of forestry)
- The location and time spent conducting recreational activities by local people was collected (69 random semi-structured interviews)
- The recreational activities were converted to monetary values by multiplying time by annual income
- Values were plotted on land cover maps to show bundles of ecosystem services on the same land parcels

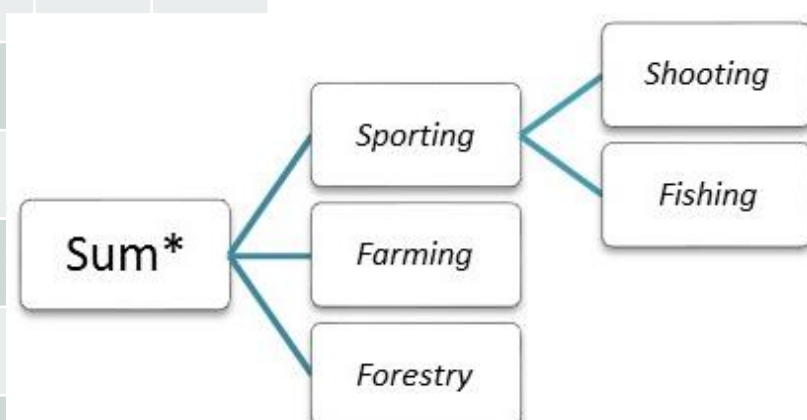
Social and broad habitat maps of Glenlivet Estate



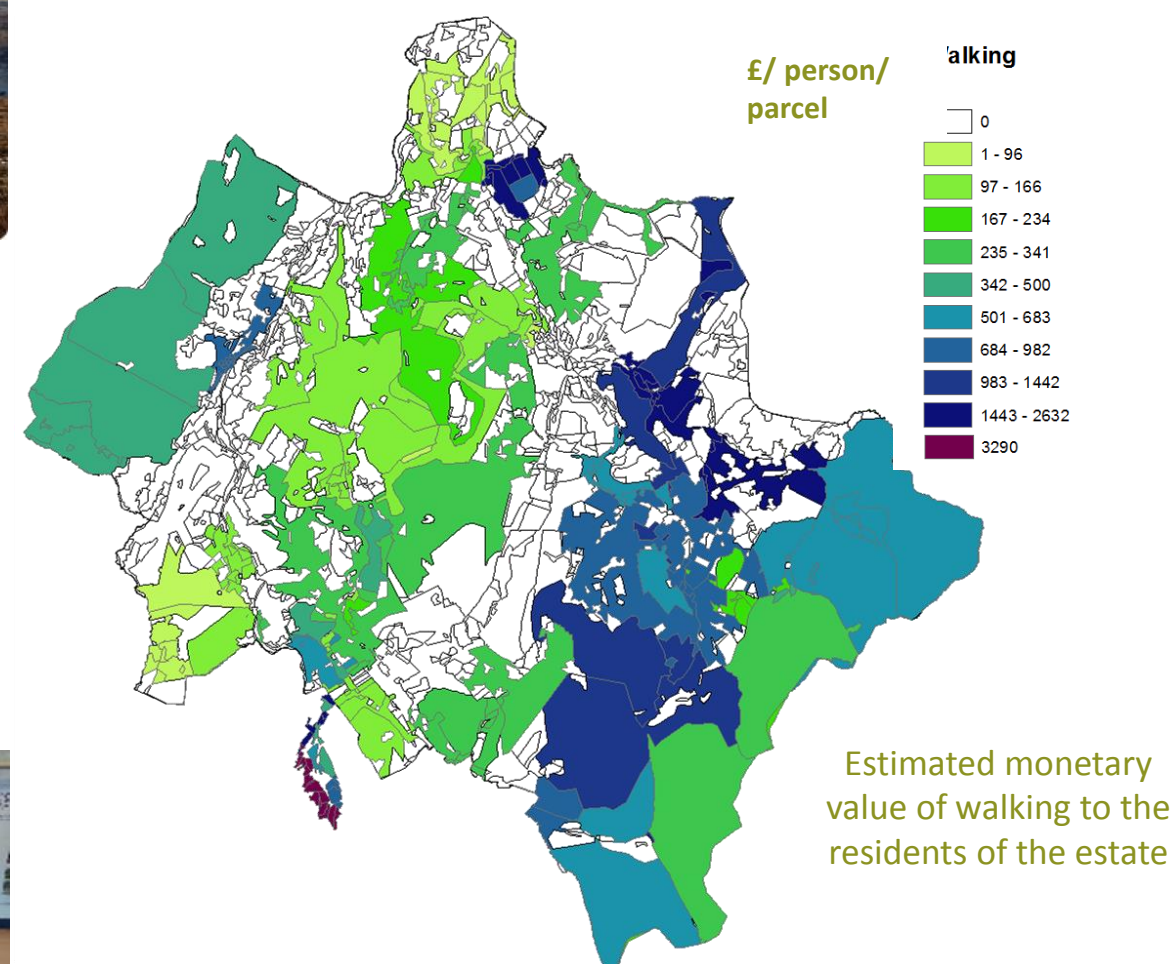
Income to estate - Summed per land cover

	Farming			Sporting (Shooting & Fishing)			Forestry		
	ERV (£/acre /yr)	Capital (£/acre)	Income (£/acre /yr)	ERV (£/acre /yr)	Capital (£/acre)	Income (£/acre /yr)	ERV (£/acre /yr)	Capital (£/acre)	Income (£/acre /yr)
Arable	40	3000	100						
Improved	27	2000	162						
Hay	27	2000	162						
Acid grassland	27	2000	162						
Heather and dwarf shrub	10	1000	20	1	405	2			
Heather grass	10	1000	20	1	405	2			
Bog grass dominated	1	750	20	1	663	2			
Bog heather dominated	0	600	20	1	663	2			
Montane	0	500	0	1	663	2			
Rough low-productivity	0	500	0	1	0	2			
Lake/River (*per lake parcel)				1959 *	144025	NE			
Conifer									

*=Per parcel – divided value by parcel area in spatial analysis



Respondents were asked to indicated which recreational activities they undertook on the estate and identified the location of recreational activities e.g. walking and estimate how often and for how long



Estimated monetary value of walking to the residents of the estate

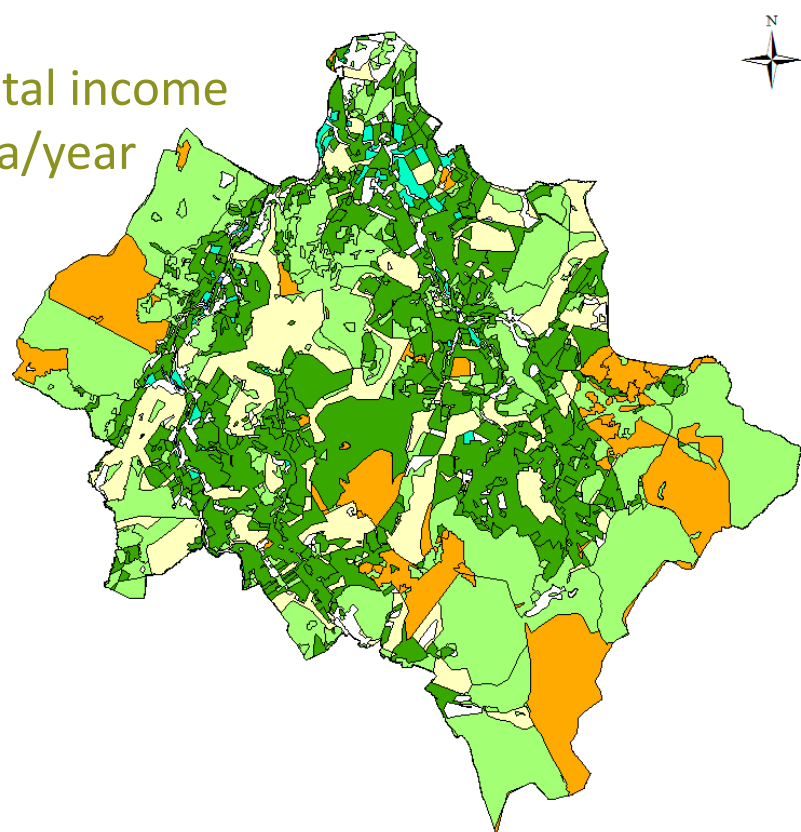
Conclusion

In practice the methodology was considered to have relevance as part of additional qualitative methods of consultation such as stakeholder consultation and engagement through the use of standard public participatory methods (workshops, questionnaires, public meetings, surveys etc.) which can inform relative stakeholder values, when making land use decisions at a landscape scale.

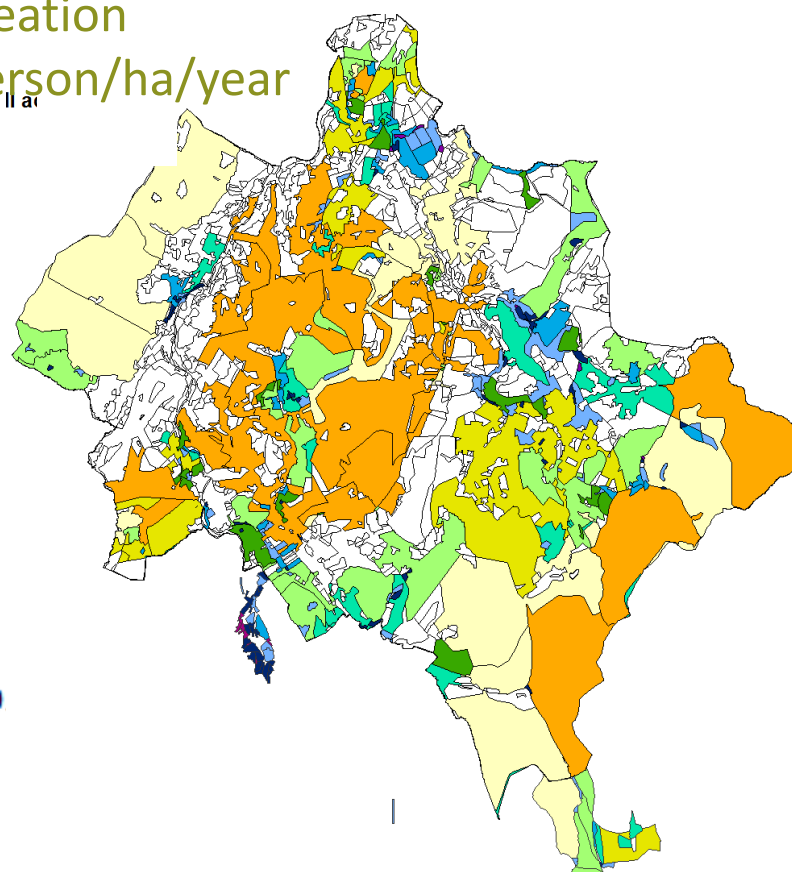
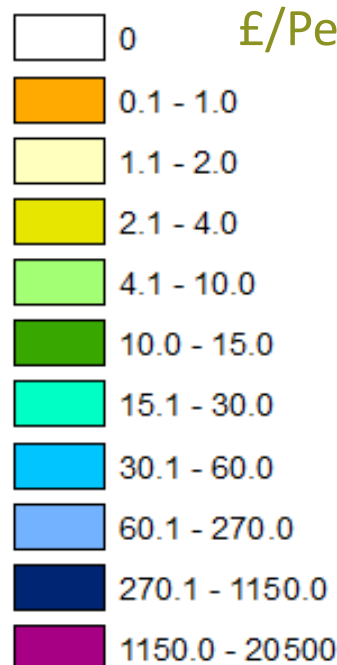
However, land use decision making also requires an understanding of the components of that value (i.e. what are the landscape elements, topography, vegetation, heritage, infrastructure, land use type that contribute to that value). In this context the methodology could form part of a broader approach to data assessment.

What do you think?

Rental income
£/ha/year



Added value of
recreation
£/Person/ha/year



Survey conducted January 2015



Semi-structured interviews examining 3 overarching natural service categories:

- recreation,
- cultural and
- cultural disservices

Respondents asked to marked location on map and record frequency and duration of recreation

Socio-demographic data gender, age, household composition, years lived on the Estate, employment and income collected (~12% of Glenlivet residents sampled)

Prompts on recreation

CES	Definition/Probing statement
Recreation	
Walking	I value this site for recreational walking or hiking.
Fishing	I value this site for recreational fishing.
Shooting	I value this site for recreational shooting.
Biking	I value this site for recreational biking.
Wildlife watching	I value this site for recreational wildlife observation.
Gathering wild products	I value this site for recreational harvesting of wild plant material and fungi.
Snow sports	I value this site for recreational skiing (or other snow-based recreational activity).
Photography	I value this site for recreational photography.
Other recreation (within living natural environment)	I value this site for the undertaking of other recreational activities in the natural environment and landscape, including forms of sport leisure and outdoor pursuit.
Other recreation (within non-living built environment)	I value this site for the undertaking of other recreational activities in the built environment.

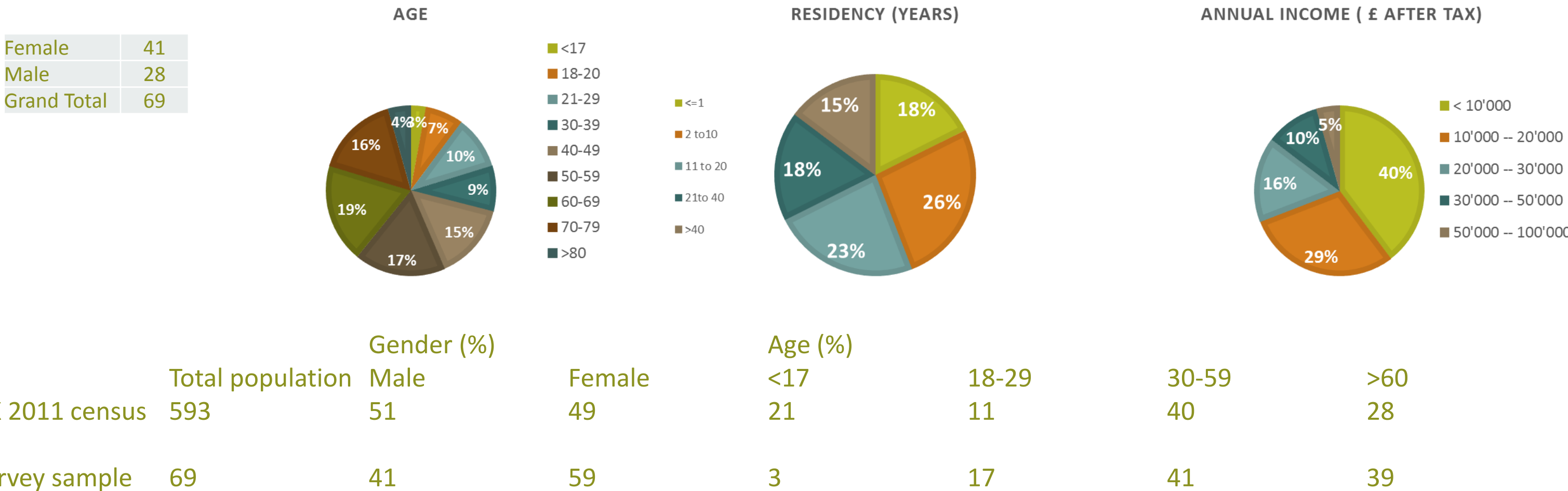
Prompts on negative aspects

Disservice	
Unpleasantness (human driven)	I perceive this site to be unpleasant because of factors caused by human activities (including visually unattractive landscapes, often neglected, abused or damaged).
Unpleasantness (nature driven)	I perceive this site to be unpleasant because of factors caused by the natural environment, and discomfort associated with the existing wildlife.
Scariness (human driven)	I perceive this site to be scary as it evokes a sense of danger or threat caused by human activities or man-made features.
Scariness (nature driven)	I perceive this site to be scary as it evokes a sense of danger or threat caused by the natural environment.
Noisiness (human driven)	I perceive this site to be noisy as a result of human activity.
Noisiness (nature driven)	I perceive this site to be noisy as a result of the natural environment.
Other disservice	I perceive this site, defined by specific environmental functions and attributes, to be negative for my human well-being.

Prompts on cultural aspects

Cultural	
Scientific knowledge and education	I value this site as it increases my knowledge about plant and animal species via providing scientific knowledge and education.
Cultural heritage	I value this site for its historical and cultural importance (including particular landscapes or land management practices).
Aesthetic values	I value the landscape(s) or ecosystem(s) at this site because of its particular beauty which positively influences my well-being, by inspiring a need to create something or by stimulating new thoughts or ideas that may foster a sense of place.
Spiritual and religious values	I value this site because of its associated spiritual or religious meaning (may or may not include associated manmade features).
Existence and bequest	I value this site because of its sole existence; I wish to preserve the present species and ecosystems for the enjoyment of future generations.
Other cultural values	I value this site because its environmental gives rise to cultural goods and services which positively contribute to my personal well-being.

Socio-demographics of respondents

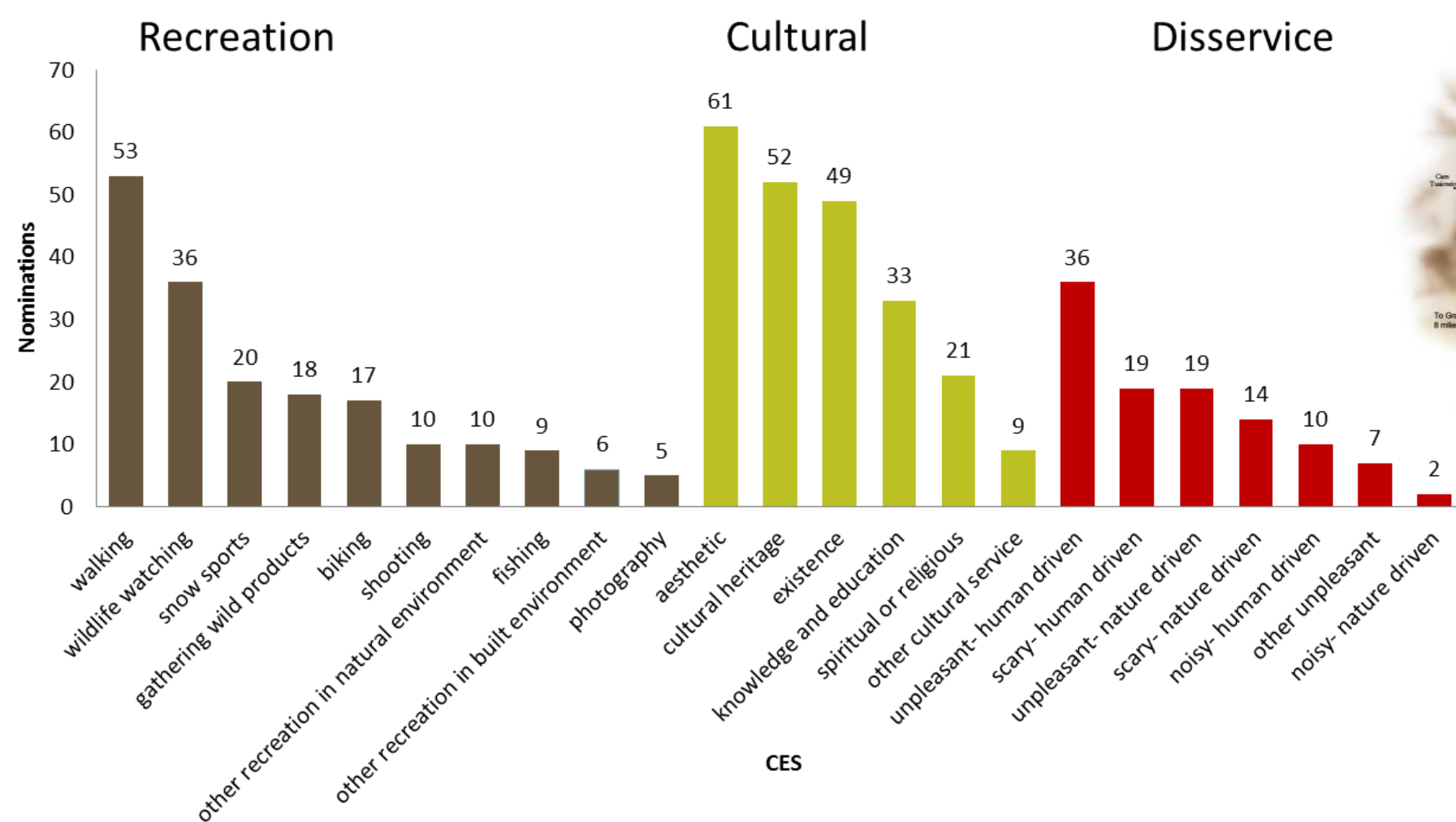




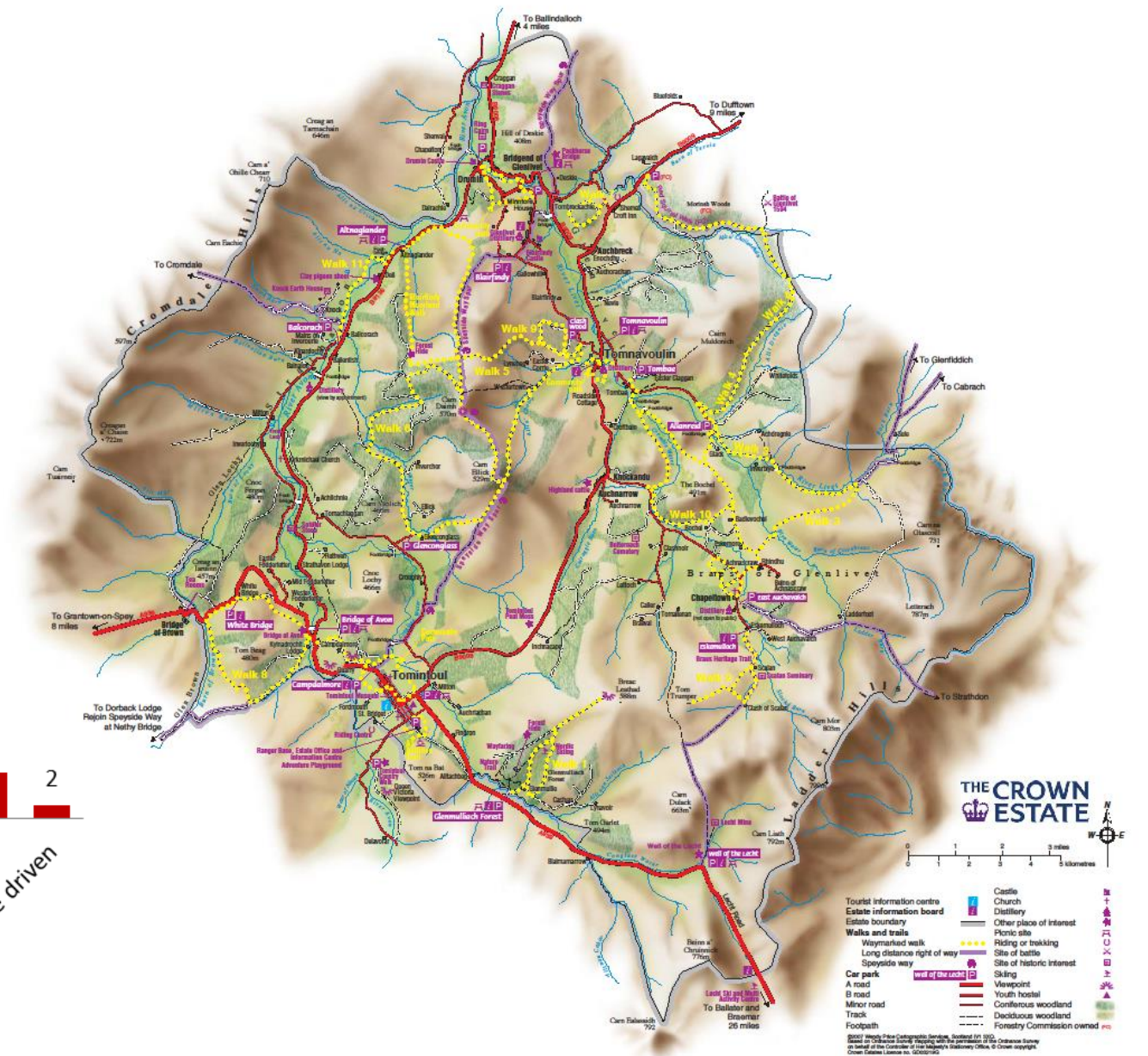
Results of survey conducted January 2015

Estimating the recreational value of the natural services
 Social value – time spent recreating
 Economic value – time spent recreating multiplied by annual income (after tax)

What people value



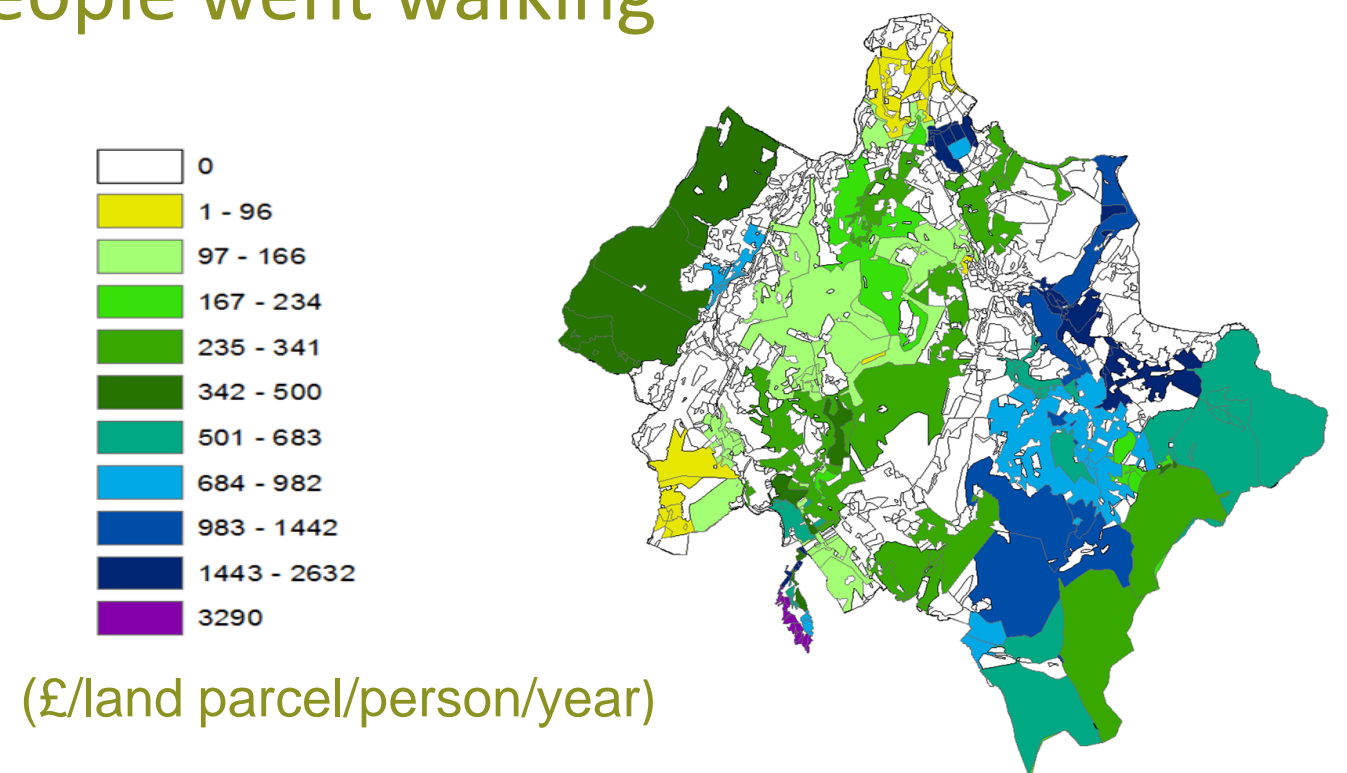
Map provided to respondents



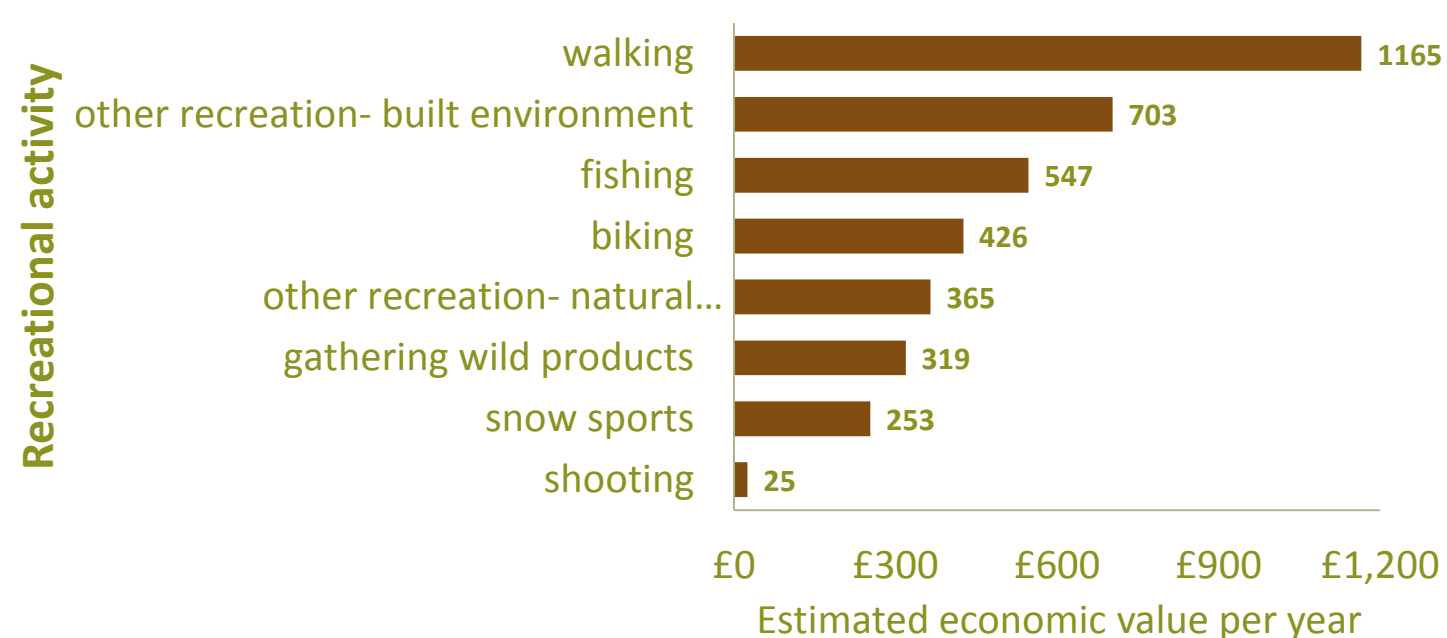
Social value of recreational activities i.e. Time spend on activity



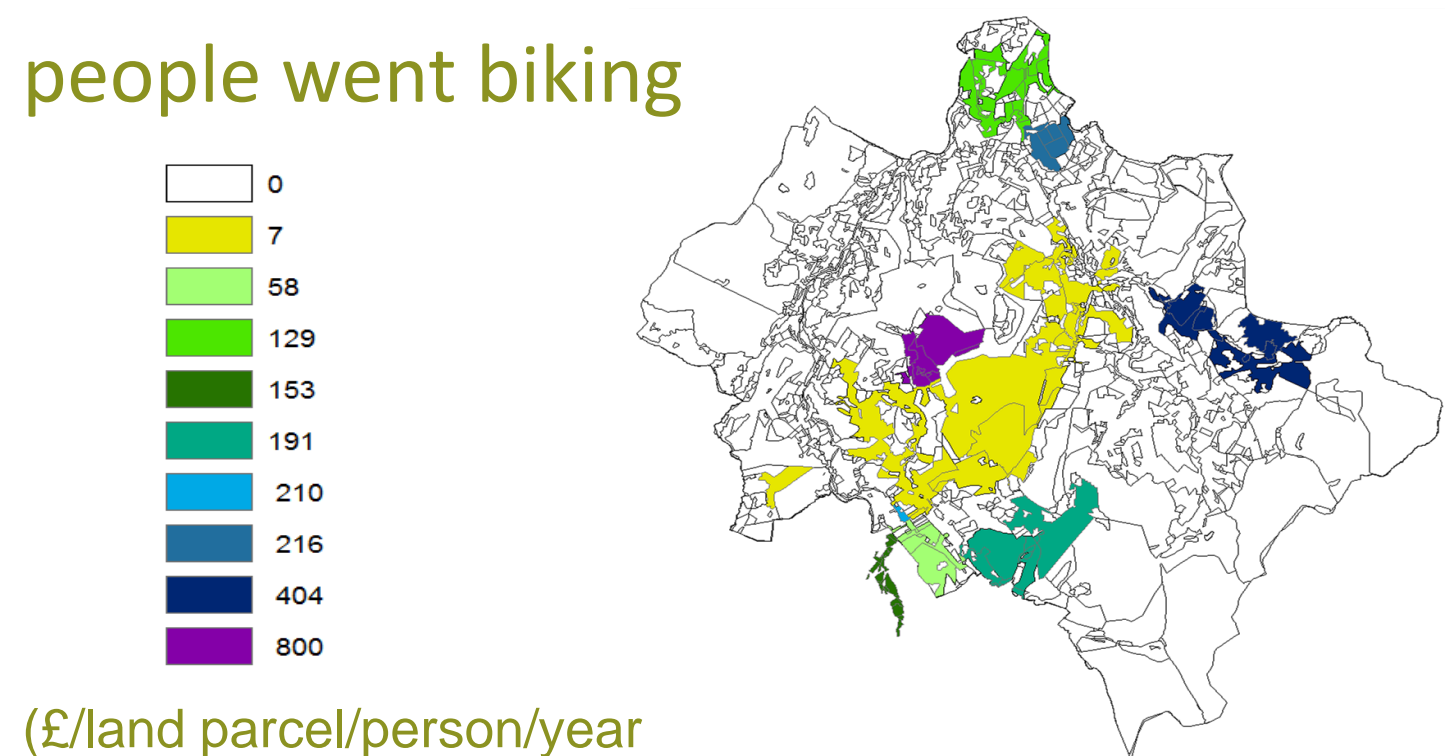
Location and valuation of where people went walking

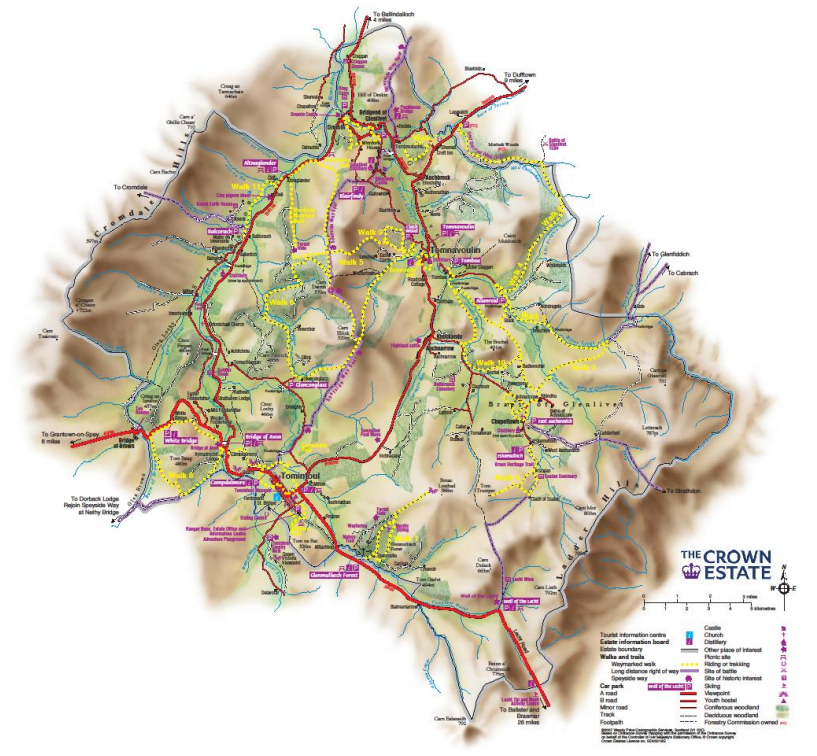


Estimated economic value of recreational activities



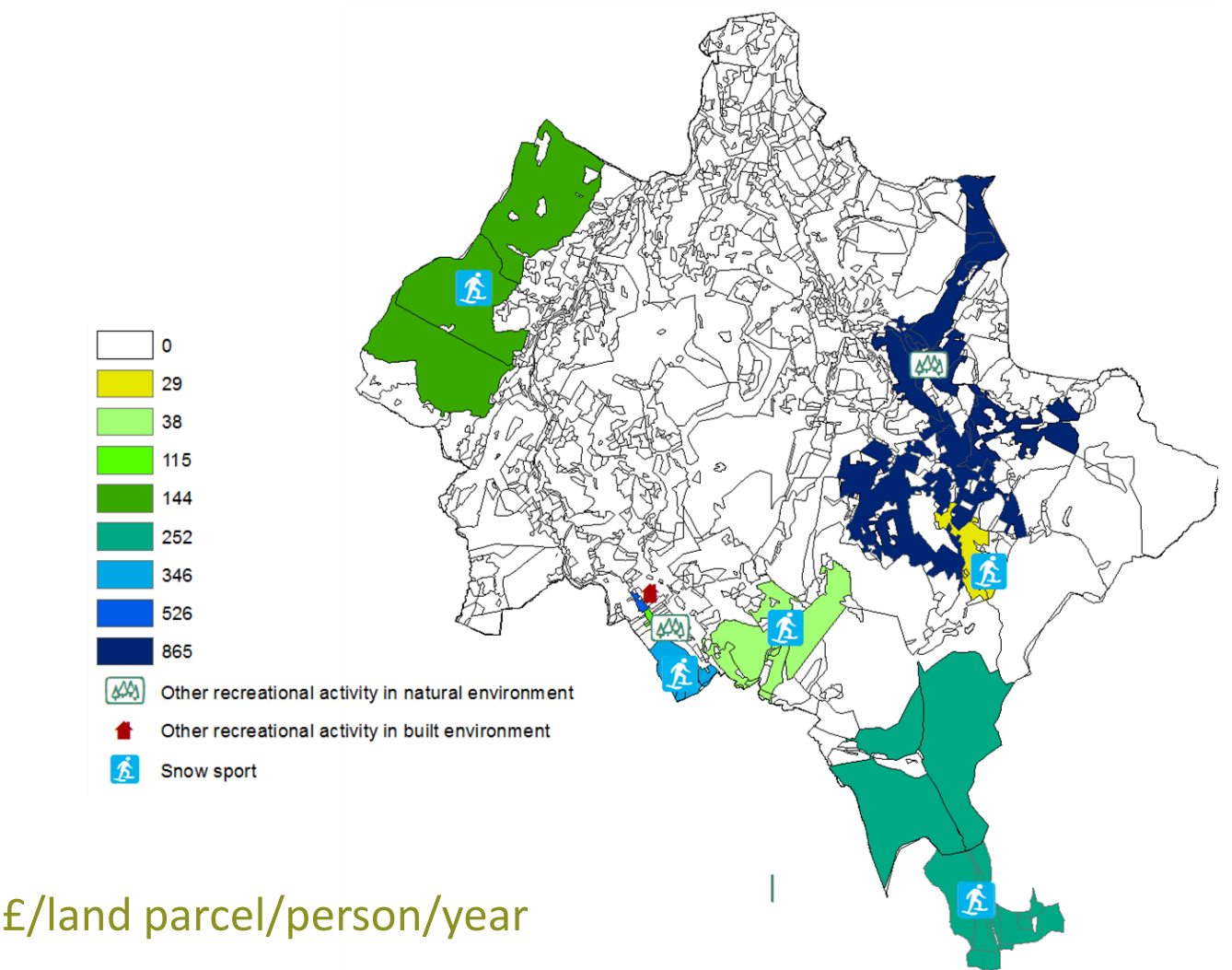
Location and valuation of where people went biking



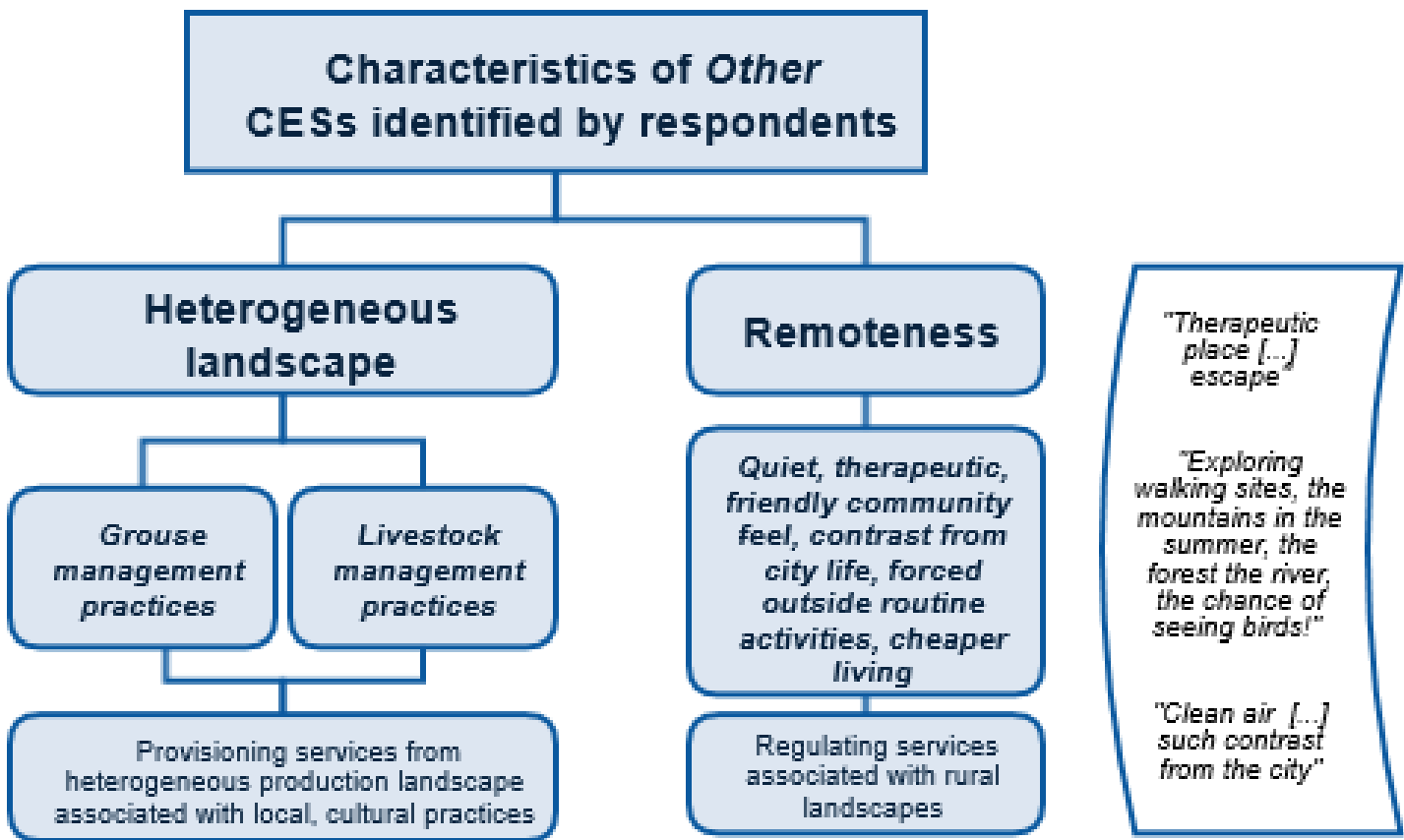


Results of survey conducted January 2015

Location and valuation of where people reported conducting other recreational activities in the built and natural environments and snow sports

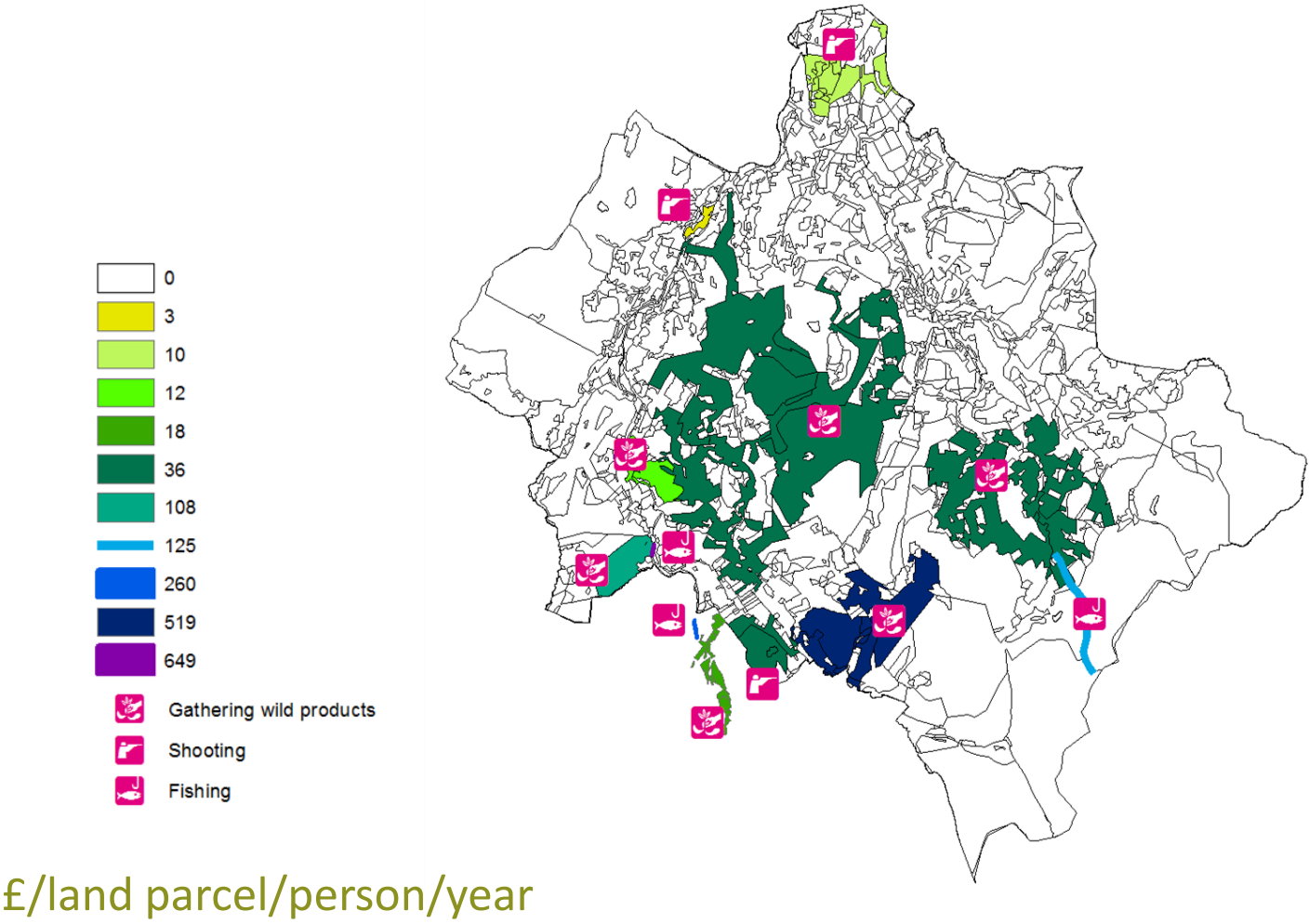


Valued landscape characteristics



Respondents valued the mixed landscape because of the variety of products it was able to provide, and the cultural management practices which characterise this region and support the provision of these products, tying in elements of cultural heritage.

Location and valuation of where people reported shooting, fishing and gathering wild products



Threats or unpleasant aspects

Landscape features mentioned for disservices; comprising both natural and man-made features

Landscape Feature	Unpleasant aspect
Trees	Scary- nature driven; Unpleasant- human driven
Shooting	Scary- human driven
Eye-sores (felled areas and hill tracks)	Unpleasant- human driven
Marked trails	Unpleasant-human
Distilleries	Noisy-human

An analysis of cultural disservices identified by local residents identified three different themes, notably light pollution, socially unpleasant attitudes and the prospect of wind farm development.