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Ecosystem Science for Policy & Practice

Applying spatially specific forest and water value functions to nature in Scotland

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Value function and value transfer?

Value function: relates a monetary value of an ecosystem service (ES) to various variables, such as:

- ES characteristics (distance to, size, type, …)
- Study area characteristics (region, time period, income, population density, …)

Value transfer: using the value function to predict the value of an ES in a region where no economic valuation study has been done

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Problem and hypothesis

Central problem

- Transfer (prediction) errors from existing value transfer functions are large

Central hypothesis

- Incorporating spatially specific information in the value function substantially reduces value transfer errors

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Research outline

Method: Meta-analysis

- Makes use of available empirical evidence, in this case ES values
- Values and study characteristics are coded in a database
- Statistical analysis used to derive value functions

Databases

- Global database with forest values (recreation, non-use)
- Global database with water values (recreation, non-use)

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Research outline

Spatially specific variables:

- Income in study area
- Population density in study area
- Distance of population to ES (distance decay)
- Quantity/size of ES
- Overall scarcity and supply of ES (changes in marginal values)
- Possibly: Quality of good or service of study

Output

- Forest and water value functions incorporating spatially specific information
- Test performance of the ‘new’ value functions
- Apply value functions to Scotland (national level)

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This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement number 308393.

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