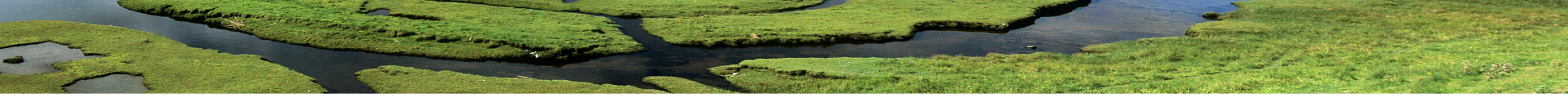

Testing a conceptual framework for modelling cultural services across four ecosystem service projects

Laurence Jones, Anna Jorgensen, Ruth Waters, Piran White, James McGinlay, Mike Christie, Isabelle Durance, Dave Paterson, Dario Masante, Chris Short, Reto Schmucki, Hannah Curzon, Natalie Small, Karl Evans, Marco Boeri, Tim Stojanovic

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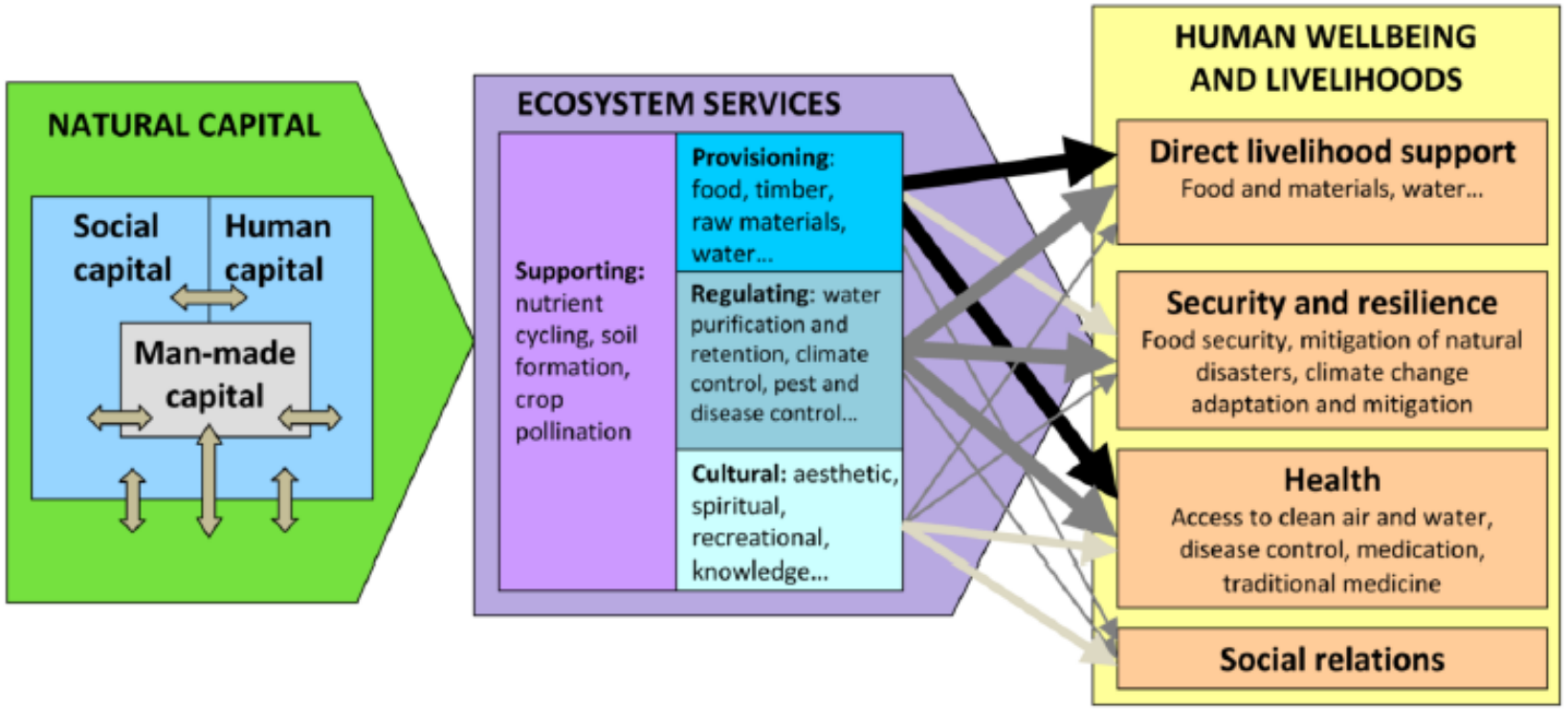
bess biodiversity & ecosystem service sustainability

NERC SCIENCE OF THE ENVIRONMENT

The context

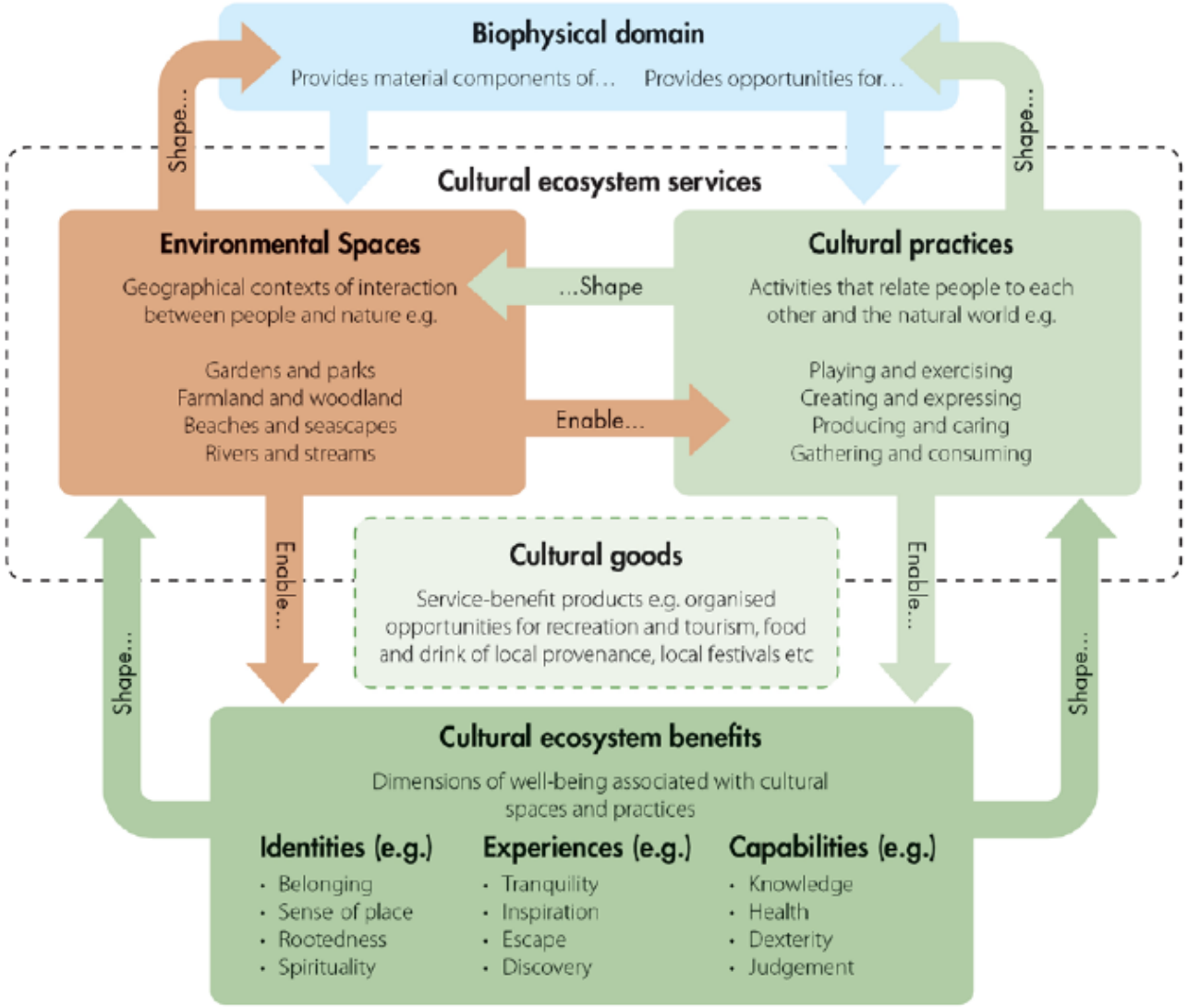


Where are *Cultural* and *Social* in Ecosystem Services? A Framework for Constructive Engagement

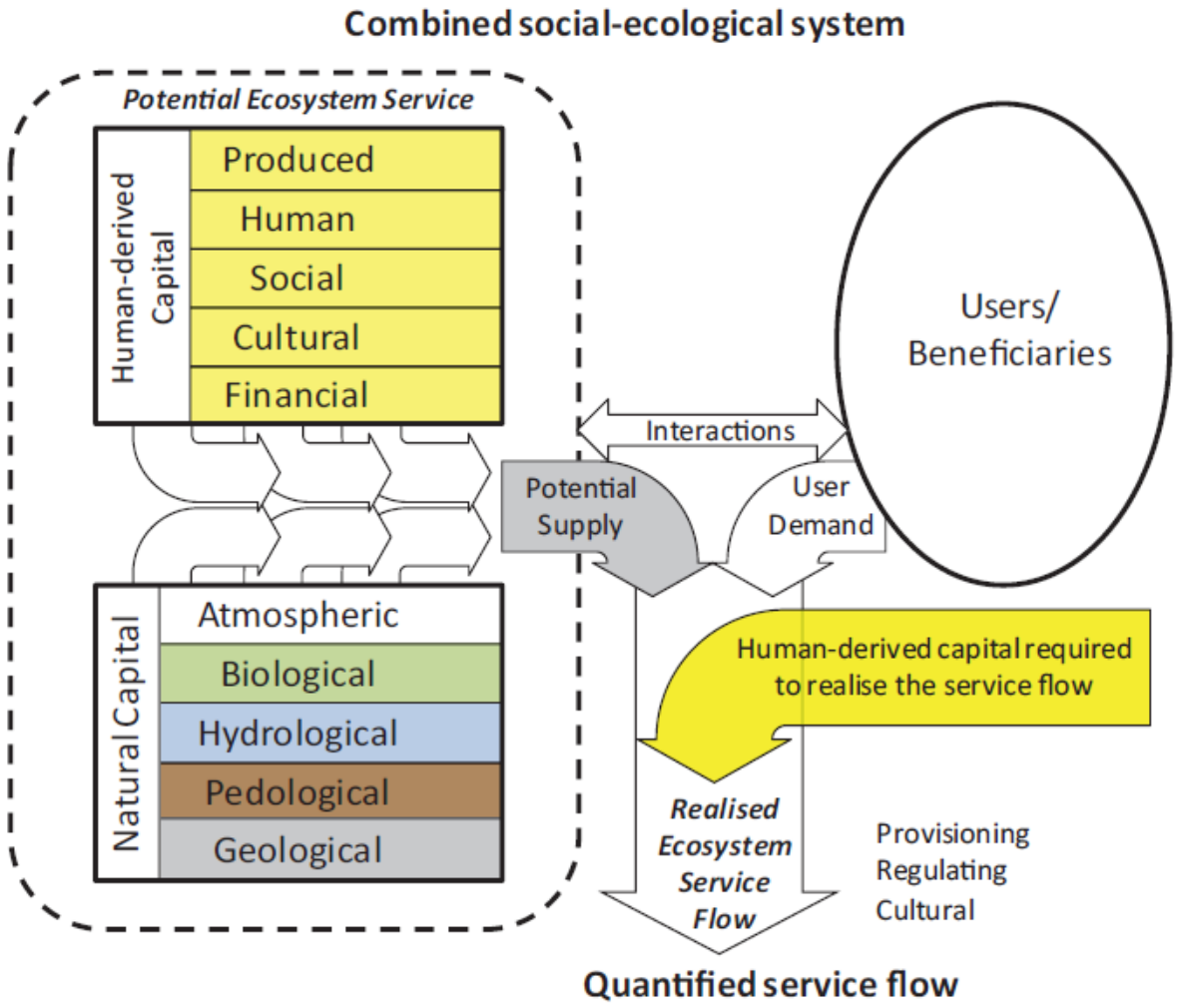
KAI M. A. CHAN, ANNE D. GUERRY, PATRICIA BALVANERA, SARAH KLAIN, TERRE SATTERFIELD, XAVIER BASURTO, ANN BOSTROM, RATANA CHUENPAGDEE, RACHELLE GOULD, BENJAMIN S. HALPERN, NEIL HANNAHS, JORDAN LEVINE, BRYAN NORTON, MARY RUCKELSHAUS, ROLY RUSSELL, JORDAN TAM, AND ULALIA WOODSIDE

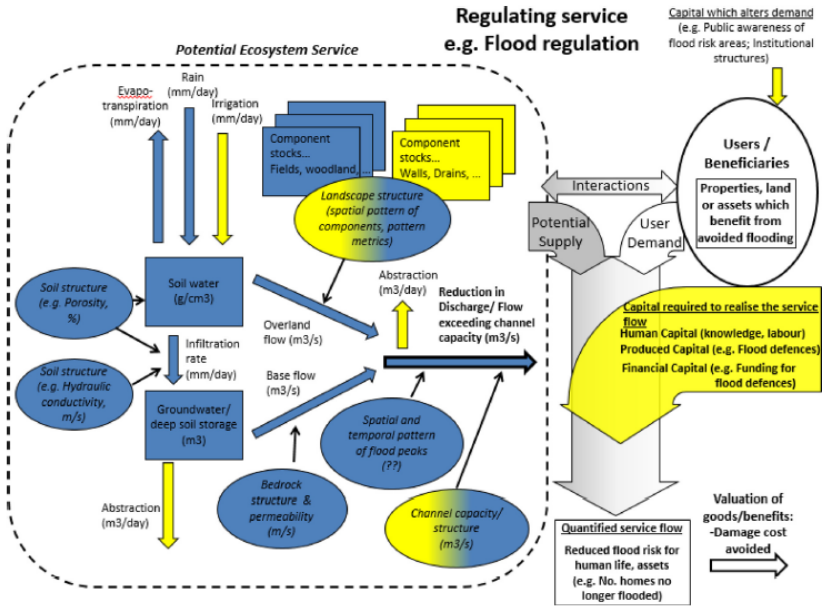
A focus on ecosystem services (ES) is seen as a means for improving decisionmaking. In the research to date, the valuation of the material contributions of ecosystems to human well-being has been emphasized, with less attention to important cultural ES and nonmaterial values. This gap

UK NEA Follow On – cultural services



Fish et al. (2016) Ecosystem services

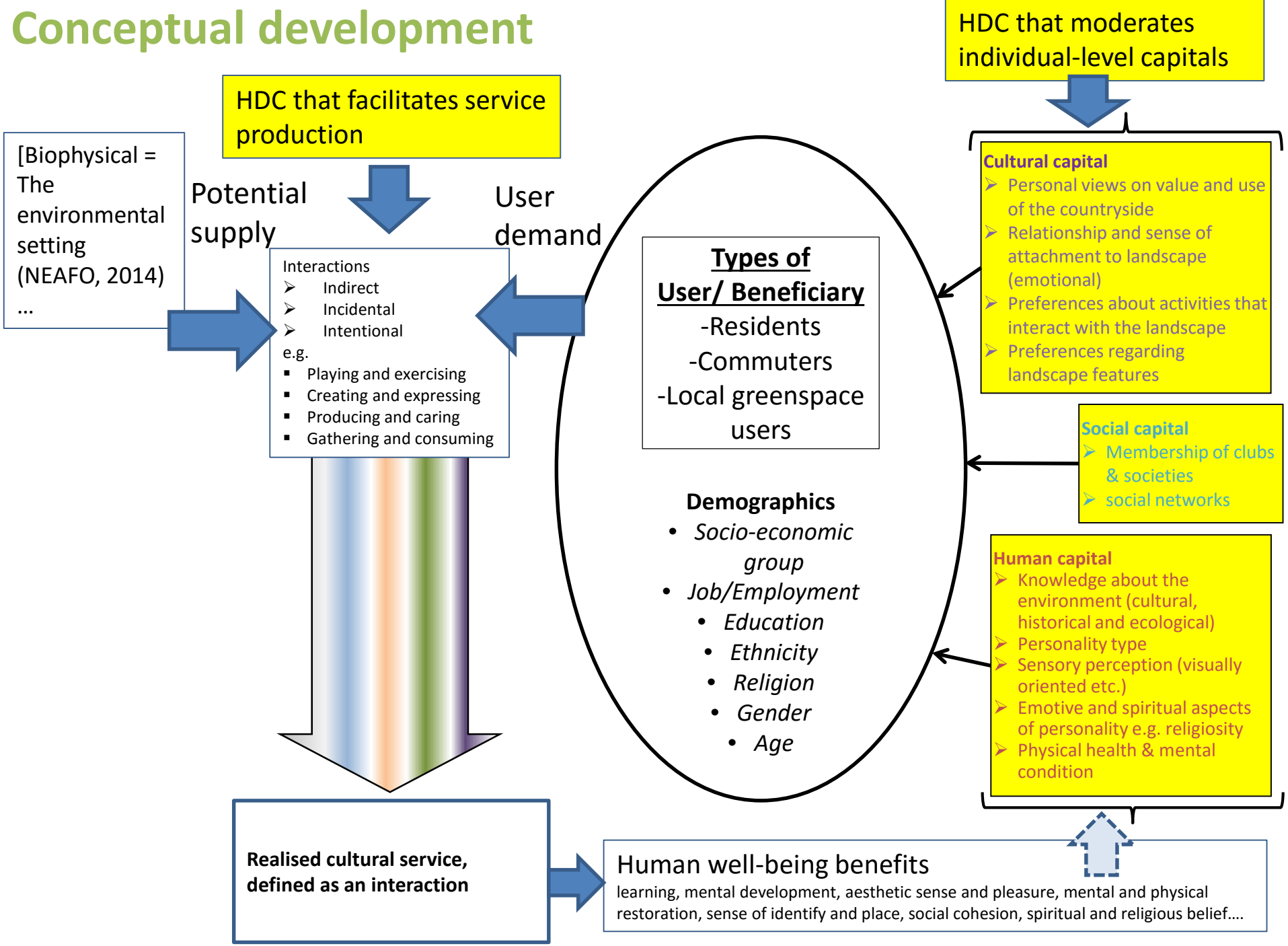




Jones et al. (2016) Land Use Policy 52, 151–162

Why do we interact with the environment ?

Conceptual development



The four BESS projects

Wessex BESS, Lowland chalk

DURESS, Upland catchments, Wales

F3UES, Urban meadows

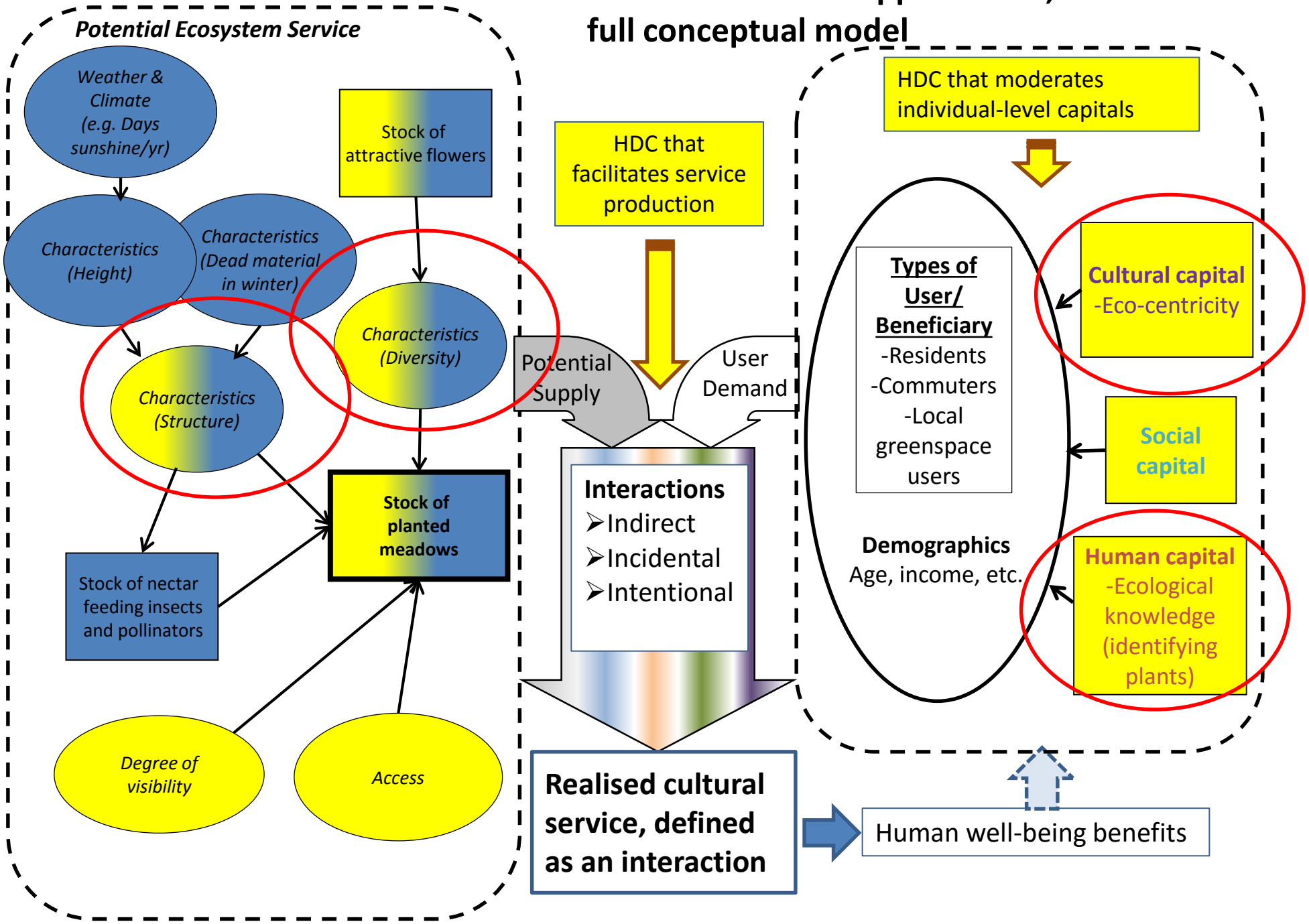
CBESS, Saltmarsh

Urban meadows as a case study

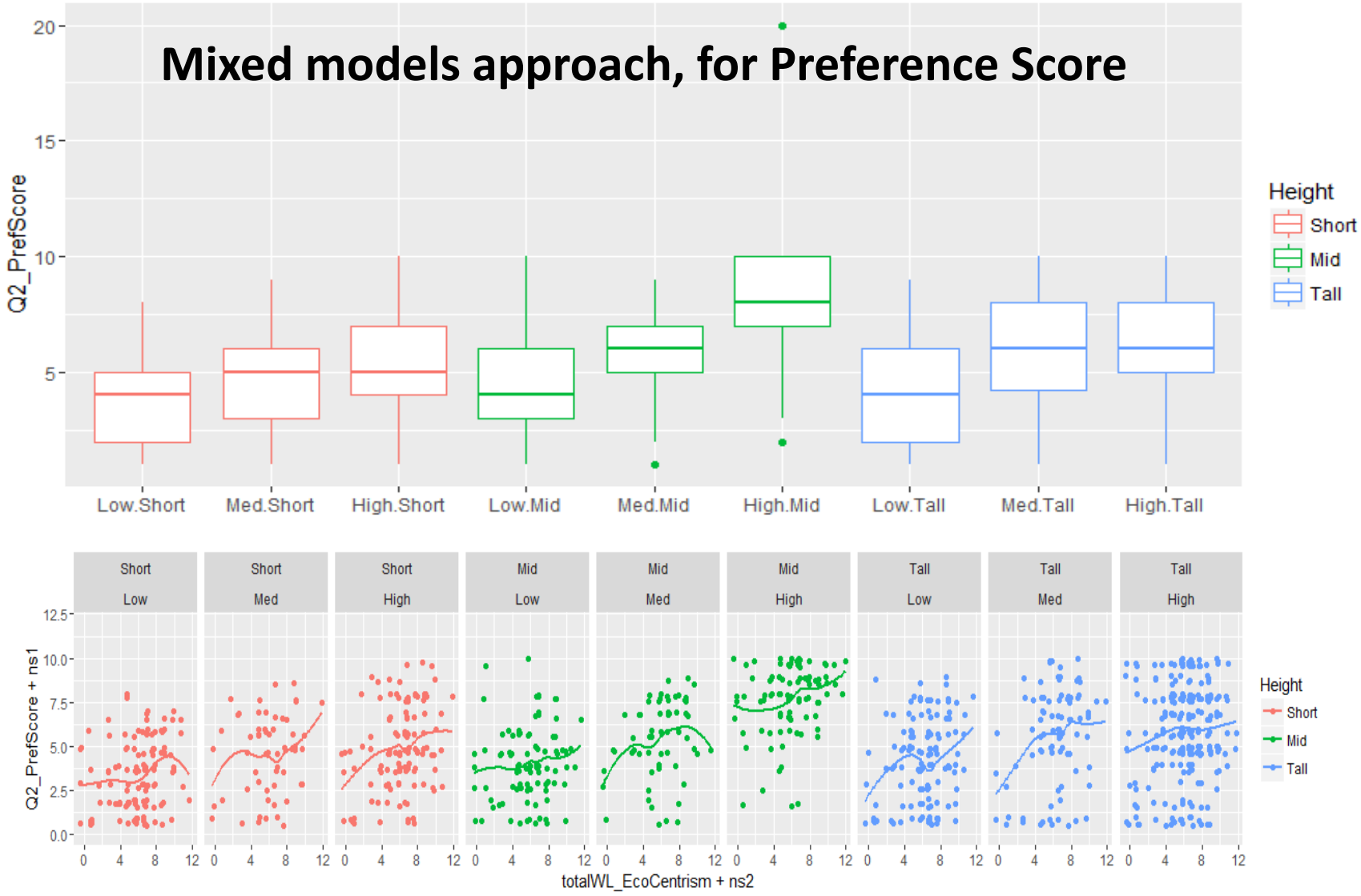
With thanks to the F3UES team for sharing data…

See also: Southon et al (2017) Landscape and Urban Planning 158, 105-118

Urban meadows - Aesthetic appreciation, full conceptual model



Mixed models approach, for Preference Score



- 4 variables (Diversity, Height, EcoCentrism, Ecoknowledge)
- Most parsimonius model excludes EcoKnowledge (i.e. only 3 variables)
- R2 only 23%
- Need to better capture variability in responses

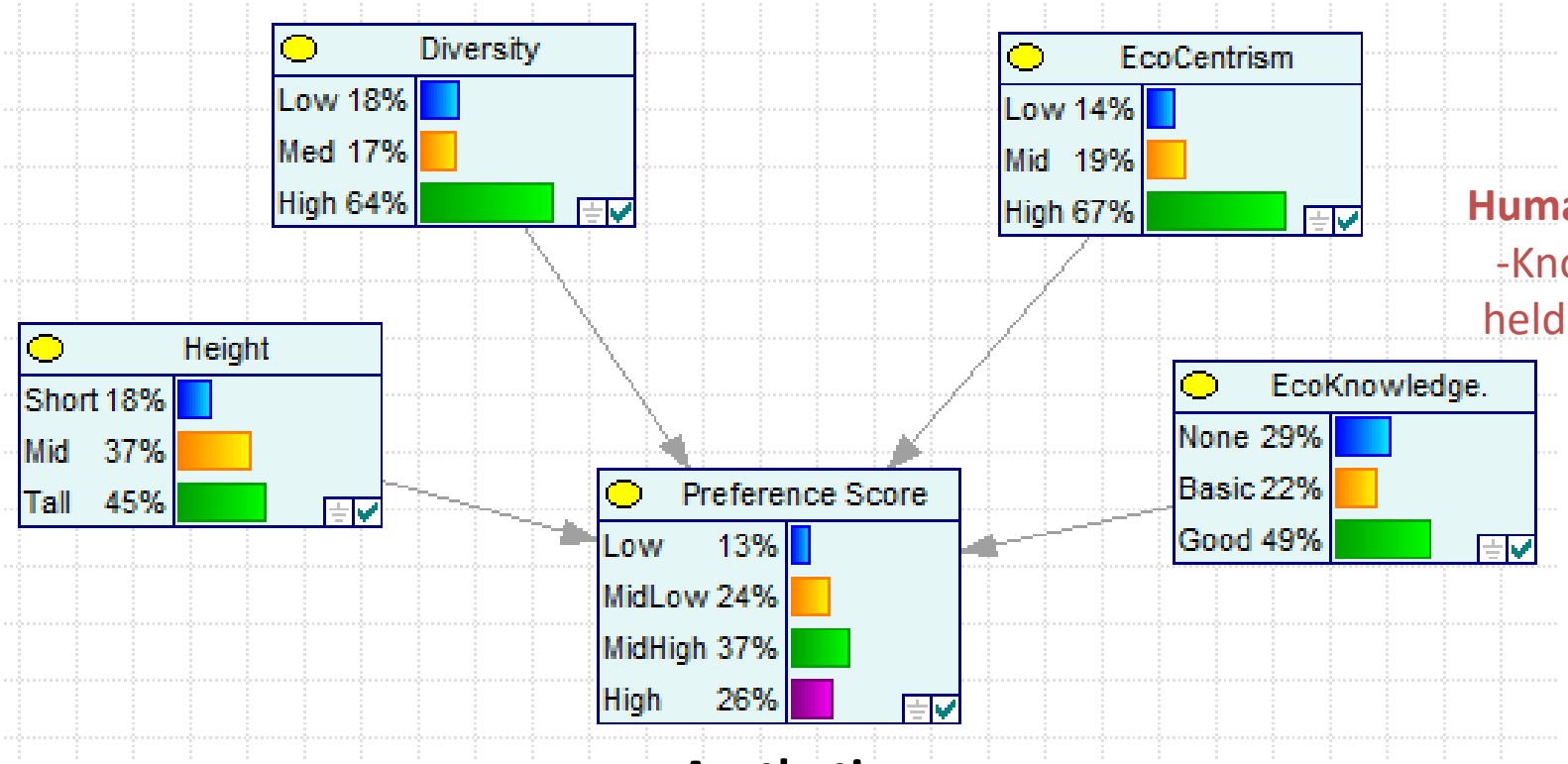
Bayesian model approach, for Preference Score

Biophysical variables characterising meadows

Social variables characterising users

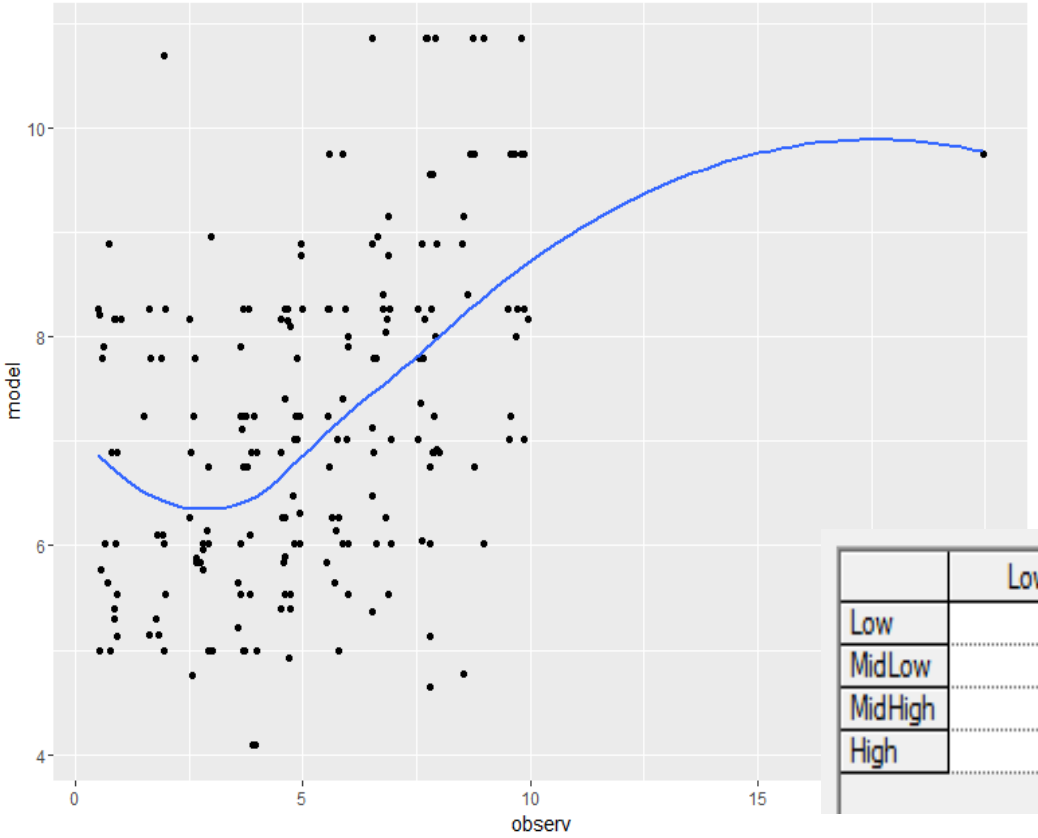
Cultural capital
- Values held by users

Human capital
-Knowledge held by users



Aesthetic appreciation

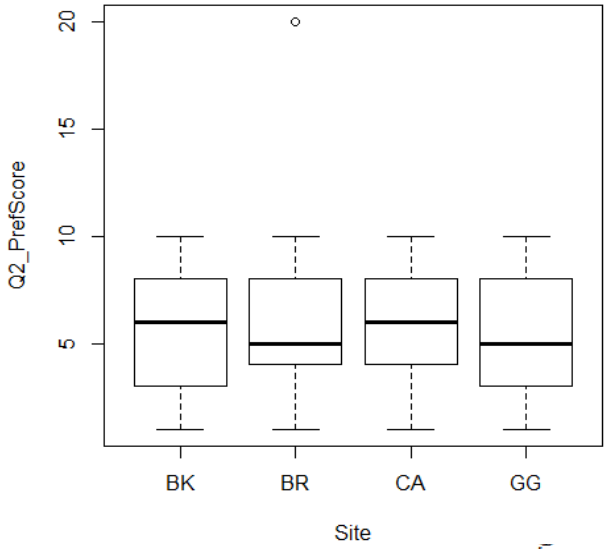
Urban meadows



	Low	MidLow	MidHigh	High
Low	24	14	6	10
MidLow	22	13	8	10
MidHigh	10	8	11	14
High	8	6	9	28

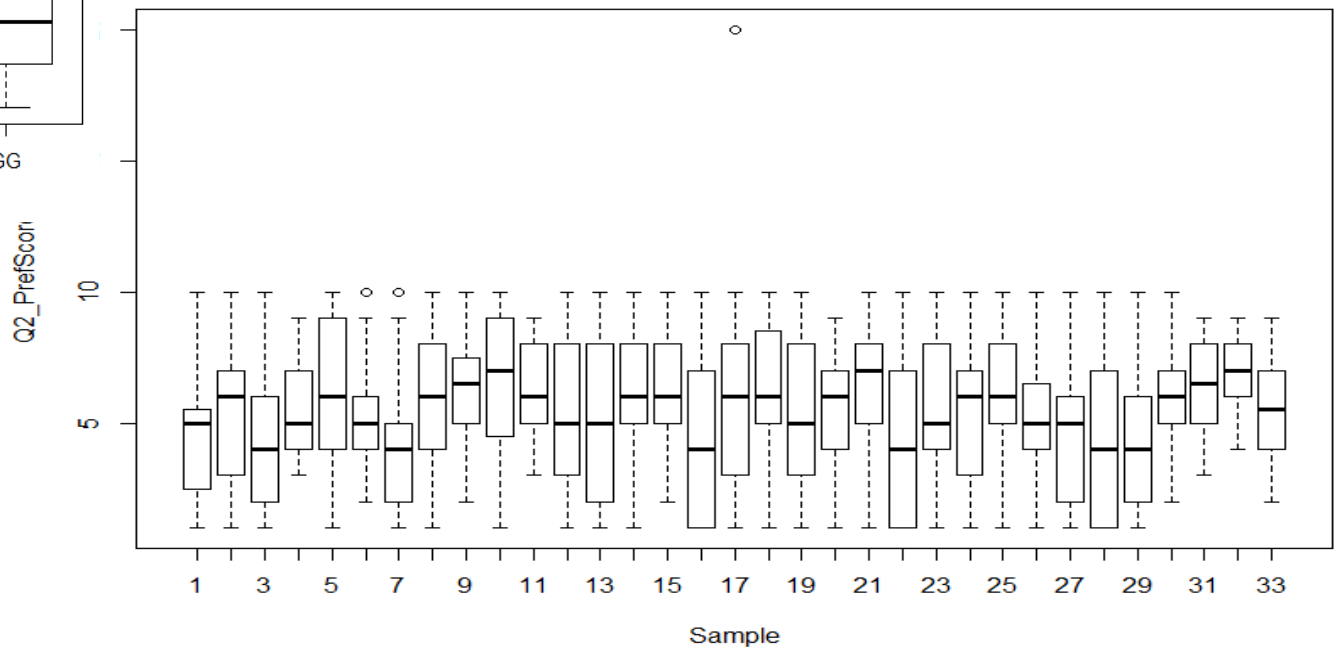
- Match is pretty low on discretised data (38% catch)
- Right trend, but lots of scatter, overprediction at lower values
- Less sensitive to EcoKnowledge, other variables were more or less equal (with Diversity slightly prevailing)

Urban meadows – uncharacterised variation (so far)

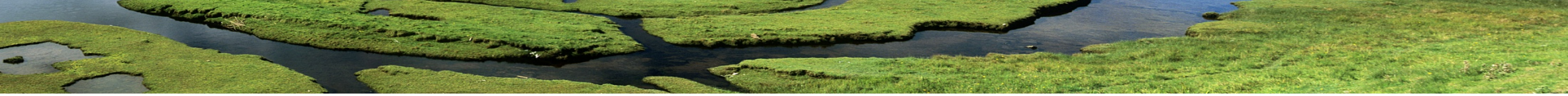


Low differences between sites

Large differences in response among users

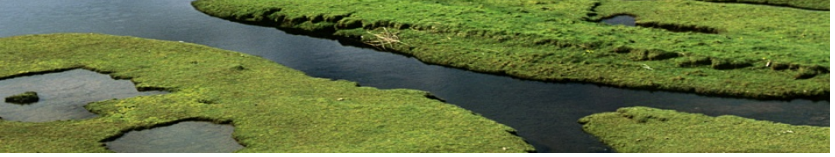


- ‘Typical’ explanatory variables: socioeconomic status, age, gender, ethnicity have little explanatory power for Preference Score



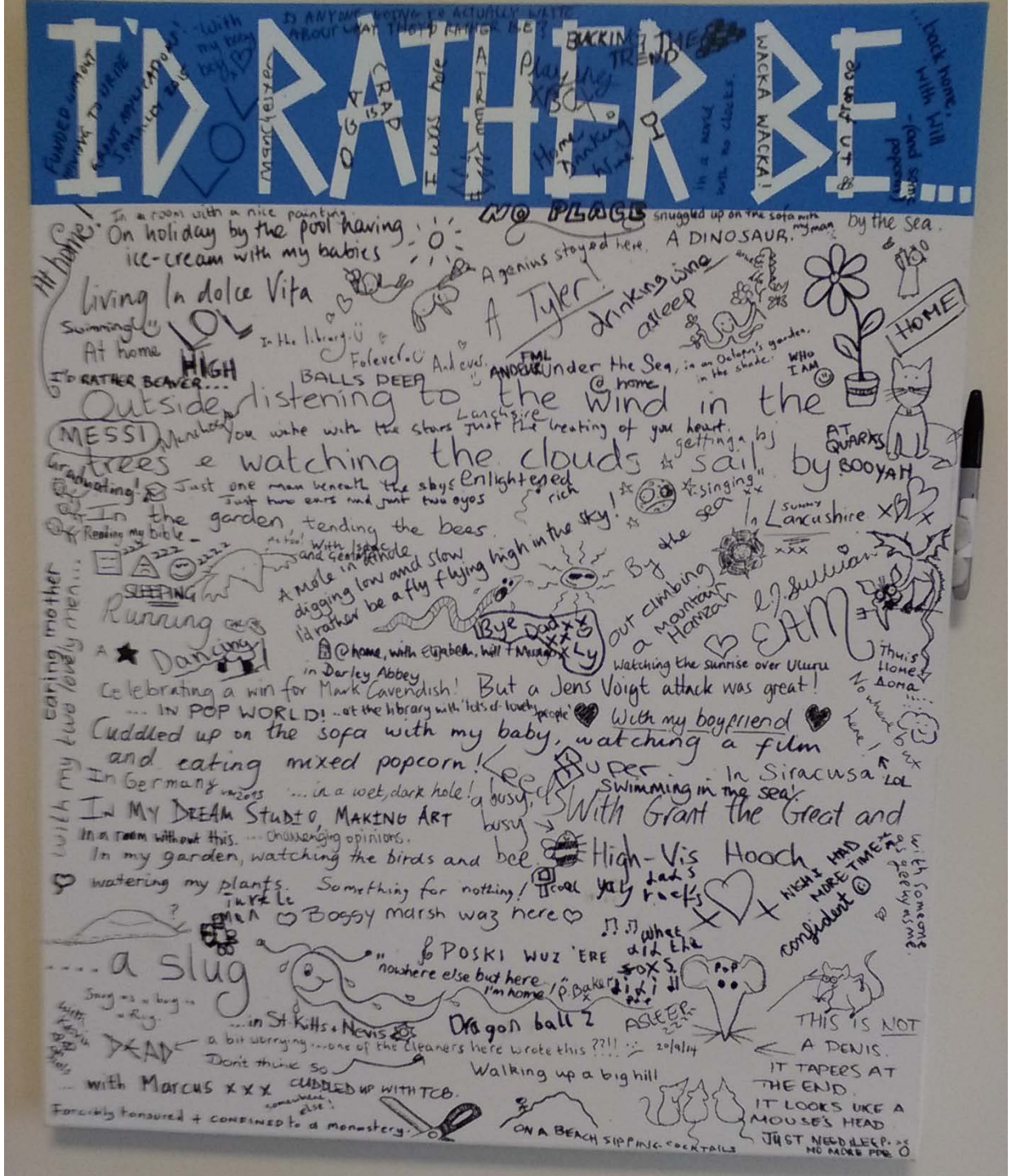
Conclusions

- Progress in developing flexible conceptual framework for CES
- Incorporates stocks and flows
- Multiple modelling approaches possible
- Characterising users is the main challenge



Thank-you !

Laurence Jones
LJ@ceh.ac.uk



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