

# Mapping Natural Capital



Wild species diversity

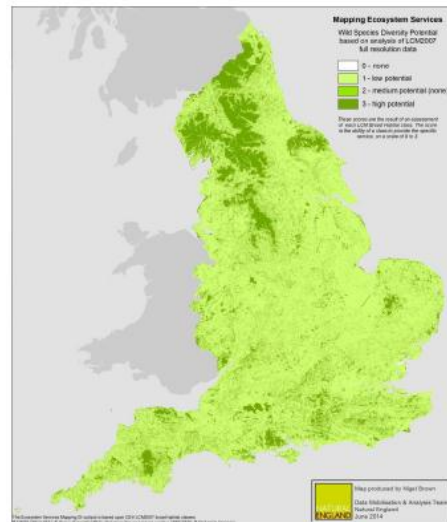
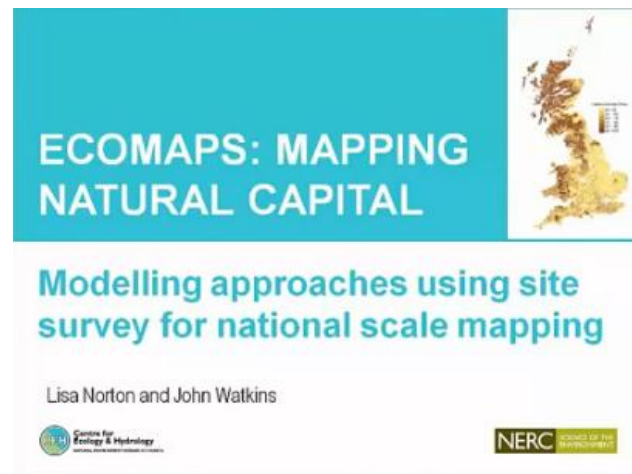
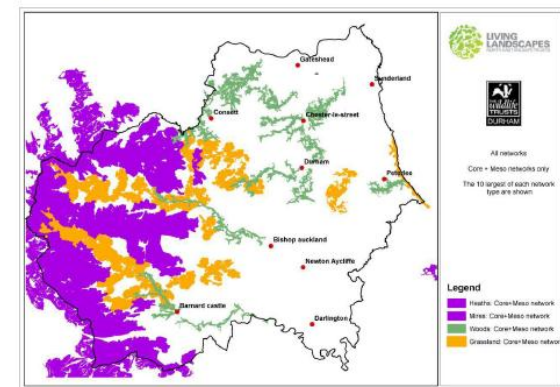


Figure 10 Wild species diversity potential



ESn1 Ecological Networks Toolkit



Nick Dales

Valuing our Life Support systems 2014

# Format of this Working Session



- **Introductory remarks** – Nick Dales, Natural England
  - Why map Natural Capital; Some Mapping initiatives and an introduction to the challenges
- **EcoServ** – Mapping multiple ecosystem services – Jonathan Winn, Scottish Wildlife Trust
  - The EcoServ product, what it is, who it is for and the challenges faced in its development
- **EcoMaps** – Mapping Natural Capital – John Watkins, CEH
  - What EcoMaps is about, why it was created, who can use it and the challenges faced in its development
- **Panel Discussion**
  - Questions; Your thoughts on why we need to map Natural Capital and *your* solutions to the challenges!

# Aims of this Working Session



- To address the question, “why do we need to map Natural Capital”?
- To describe some of the approaches that practitioners have taken to map natural capital.
- To explore the challenges faced by those wishing to map Natural Capital



# Why Map Natural Capital?



The 3 Key Messages from the Natural Capital Committee's 2<sup>nd</sup> report:

1. Some assets are currently not being used sustainably. The benefits we derive from them are at risk, which has significant economic implications.
2. There are substantial economic benefits to be gained from maintaining and improving natural assets. The benefits will be maximised if their full value is incorporated into decision making
3. A long term plan is necessary to maintain and improve natural capital, thereby delivering wellbeing and economic growth.



# Why Map Natural Capital?



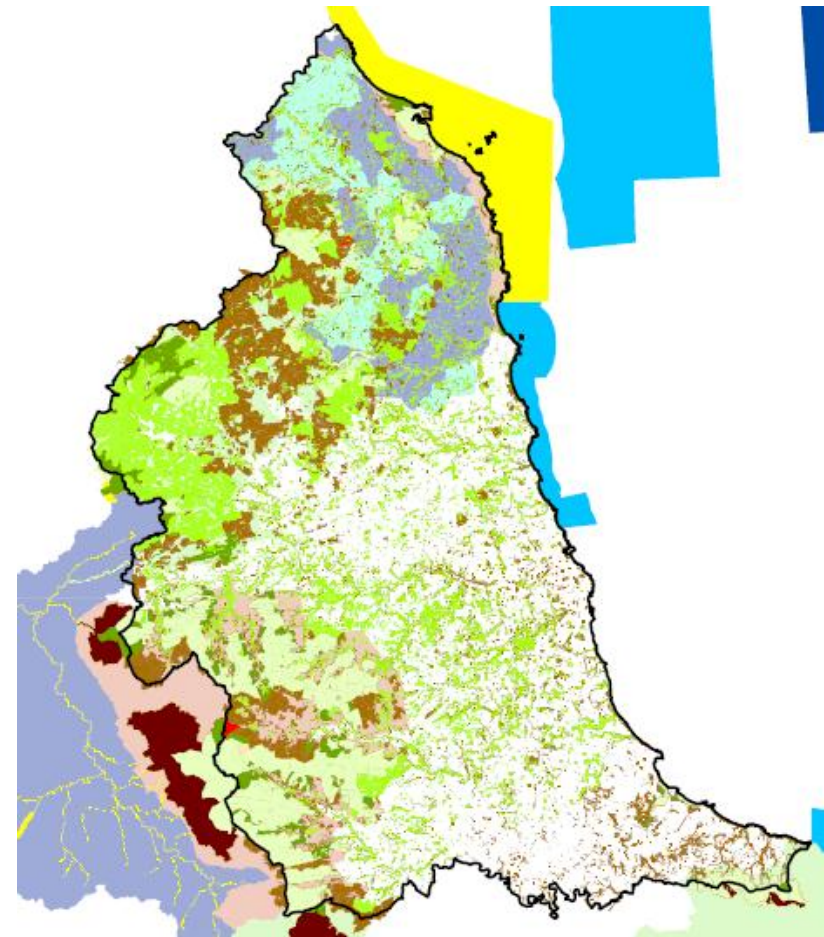
*“Targeting effort in the right places requires a good understanding of where natural capital and those who benefit from it are located and needs some form of spatial framework. Such a framework would help ensure maximum benefit from investments such as agri-environment schemes, water company catchment restoration projects and proposed biodiversity offsetting”.*



# Why Map Natural Capital?



- Effective communication and visualisation tools.
- To support Land Managers and Environmental Practitioners take decisions 'on the ground'
- To assist Local Authorities take account of Natural Capital in local decision making
- Similarly, to support other local bodies take informed decisions (eg Local Nature and Enterprise Partnerships)
- To support national policy
- Because we have to! All member states have to report on the state of ecosystem services this year as part of EU Biodiversity Strategy Targets.



# Natural Capital Mapping Initiatives

NATURAL  
ENGLAND

Natural England Research Report NERR056

## Assessing the potential for mapping ecosystem services in England based on existing habitats

[www.naturalengland.org.uk](http://www.naturalengland.org.uk)

NATURAL  
ENGLAND

BBSRC  
bioscience for the future

Living With Environmental Change

NERC  
SCIENCE OF THE  
ENVIRONMENT



...ural capital can enhance

October 2013

... models suited to terrestrial, freshwater,

... marine ecosystems.

Questions InVEST can Answer

Further De  
Ecosystem Service  
Mapping Gateway

Browse Search

Scale of project

Local  
National  
Regional  
Other

Main purpose of project

Contribute to local  
decision making  
Develop a framework  
Map economic values of  
ES  
Map ecosystem services  
and/or benefits  
Map health impacts  
Map social/cultural  
values  
Other

Framework used for  
ecosystem services

UK National Ecosystem  
Assessment  
Other

Ecosystem  
services/goods focused  
on

Aesthetic/inspiration  
Climate regulation  
Crops, livestock, fish  
Detoxification and  
purification in air, soils

Dow

D

Online User's Guide

InVEST FAQ

# Aims of Natural England's mapping Research



## Core Aim of the Research

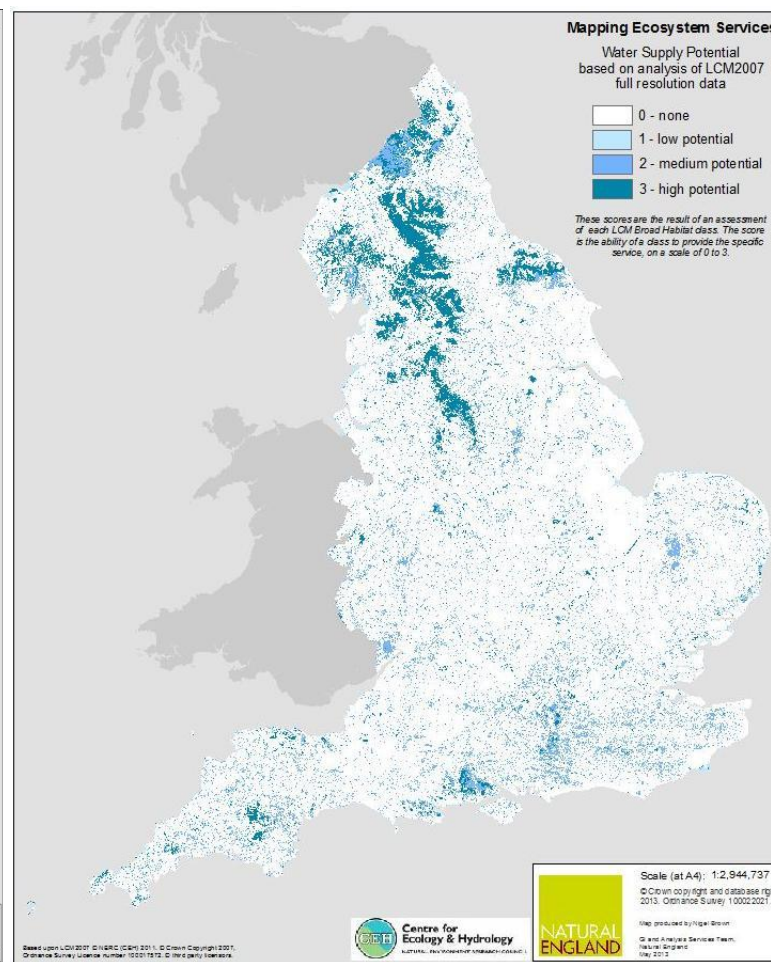
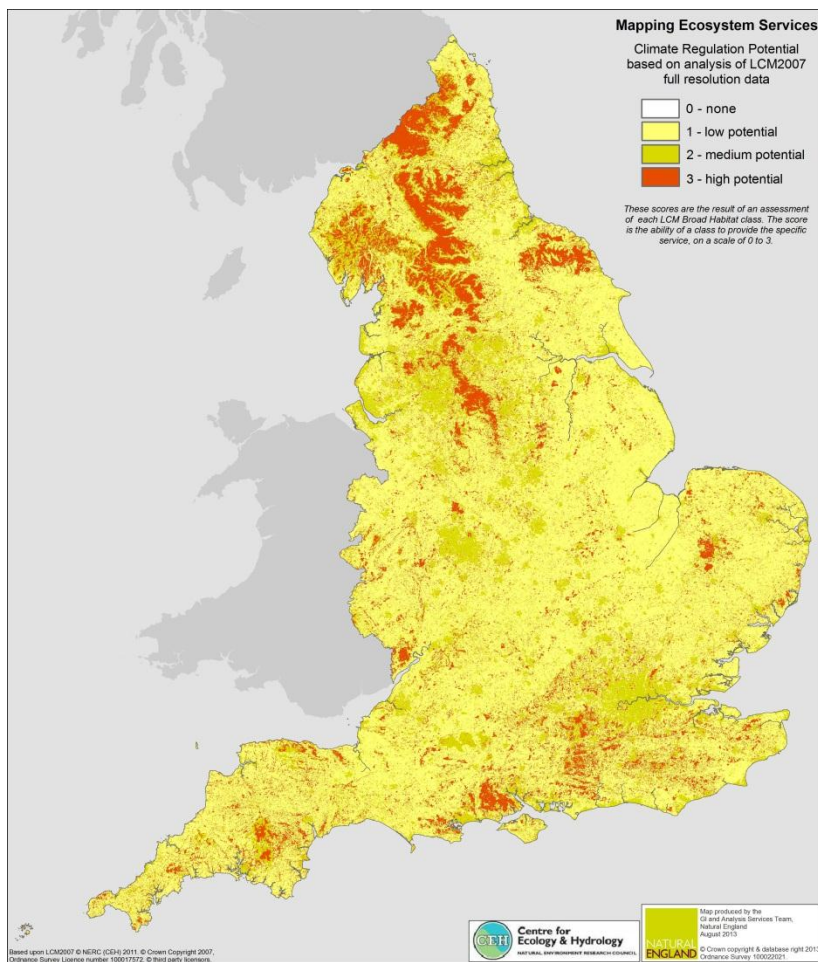
*To assess whether it is possible to produce **simple** ecosystem service maps, based on underlying habitat data, which can be used by practitioners adopting the Ecosystem Approach.*

Our maps should:

- Cover the whole of England
- Be widely accessible
- Be relevant at all spatial scales
- Be visually easy to understand and effective communication tools
- Require little GIS expertise to use effectively
- Require little expenditure of time/financial resource by practitioners



# Example Maps



- We can produce simple maps at the England level
- Using habitats as proxies means some maps may not be represented accurately and their quality is therefore variable
- The maps do have value as visualisation/communication tools, but the limitations need to be communicated clearly
- We can make these maps available widely, but because of the underlying data source, use of our derived data may not be universal due to licensing restrictions (we are investigating)
- Users of the maps do not need to spend their own resources nor do they need significant GIS expertise
- Due to underlying inaccuracies in the source data, the maps appear to have limited use at very local levels, but we have had some positive feedback from local practitioners

# The challenges we found in mapping Ecosystem Services



- No real data! Always using proxies
- Data licensing
- No single 100% accurate baseline dataset so could not achieve aim of local accuracy or usefulness
- Although we did not attempt to, the lack of data on the *quality* of habitats is a real barrier to effective mapping
- Very hard to identify beneficiaries – so we didn't try!
- Cultural Services – how can you map something so subjective?
- Hard to explain elements of the mapping. Eg That water supply is only *surface* water supply; The interesting effect of the urban habitat.
- It is a simple fact that some services (especially the regulating ones) are harder to map than others)

- There are many good reasons why we should attempt to map Natural Capital
- Many have already tried to do so. These range from the local initiatives captured by BESS, simple national tools such as our own and more complex modelled approaches. These range from frameworks to a variety of modelled approaches of varying complexity.
- In mapping Natural Capital there is a trade off between the desire for accuracy and the resources available to those who may use such maps
- We are crying out for 'real' Natural Capital or Ecosystem Service data to lessen the reliance on proxies
- There remain many challenges to producing usable Natural Capital maps



# Thank you

