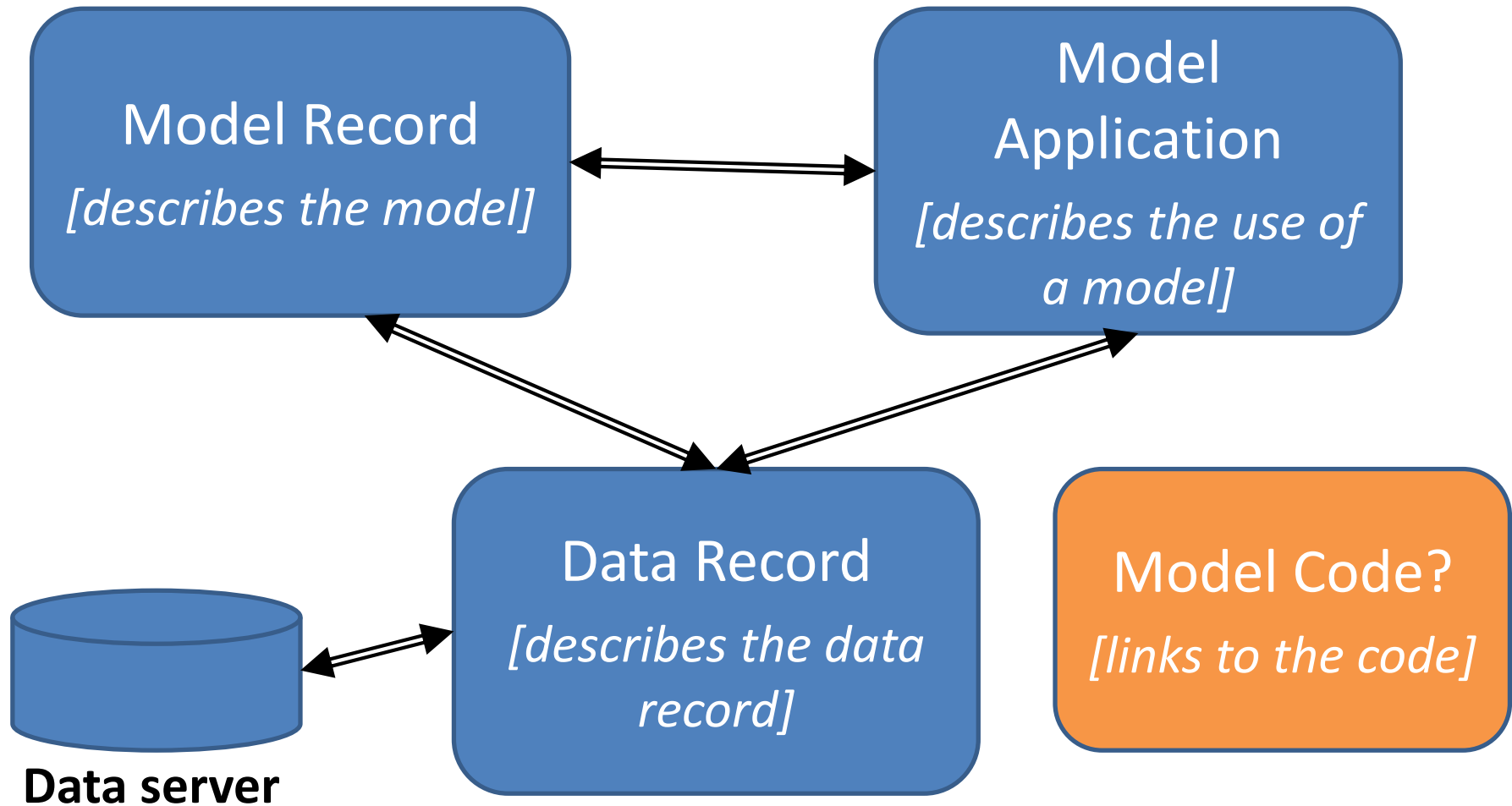# INMS Database Platform for Models and Data

Bill Bealey, David Leaver, Cristina Martin Hernandez, Rod Scott, Phil Trembath

Centre for Ecology & Hydrology

Data & Model Meta-data – Tasks 1.5.2 & 2.1.1

Metadata should describe key features of the model or data to enable users to discover relevant information, find contact details and publications and gain information and use model input and output data
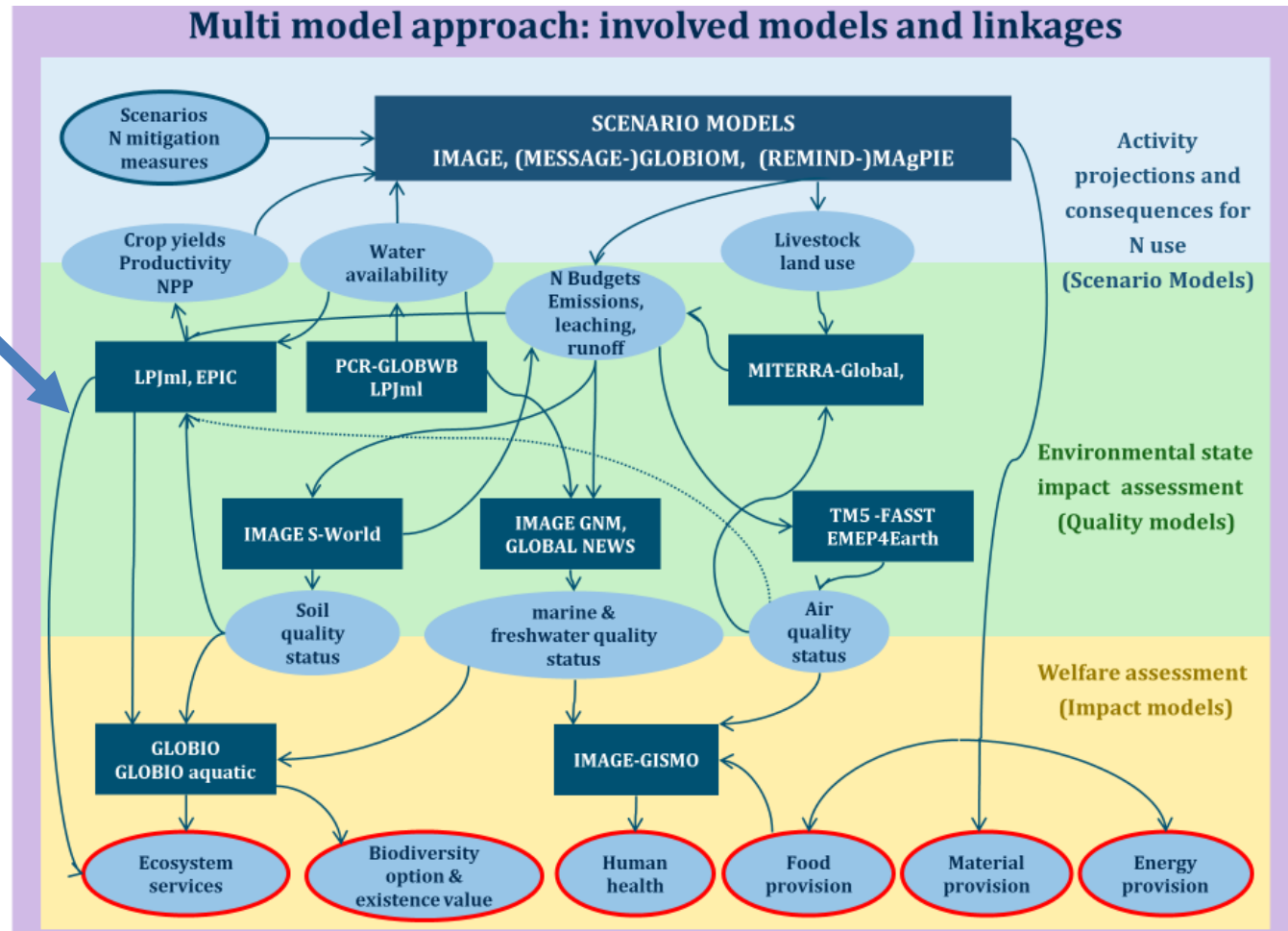
Database System – Data Types

Model Record

[describes the model]

Model Application

[describes the use of a model]

Data Record

[describes the data record]

Model Code?

[links to the code]

Data server

Multi-model comparison and their linkage

Datasets
x50

x5 scenarios

~250
datasets

Multi model approach: involved models and linkages

Scenarios N mitigation measures

SCENARIO MODELS
IMAGE, (MESSAGE-)GLOBIOM, (REMIND-)MAgPIE

Activity projections and consequences for N use (Scenario Models)

Crop yields Productivity NPP

Water availability

N Budgets Emissions, leaching, runoff

Livestock land use

LPJml, EPIC

PCR-GLOBWB LPJml

MITERRA-Global,

Environmental state impact assessment (Quality models)

IMAGE S-World

IMAGE GNM, GLOBAL NEWS

TM5 -FASST EMEP4Earth

Soil quality status

marine & freshwater quality status

Air quality status

Welfare assessment (Impact models)

GLOBIO GLOBIO aquatic

IMAGE-GISMO

Ecosystem services

Biodiversity option & existence value

Human health

Food provision

Material provision

Energy provision

Activity 1.5/2.1: INMS-3, Edinburgh, 16th-19th April

INMS Database Platform
https://catalogue.ceh.ac.uk/inms/documents

Vocabularies

Model Type
- impact
- quality
- scenario

Pollutant
- Aerosols
- Ammonia
- Carbon
- Nitrogen
- Phosphorus

Scale
- Catchment
- Farm
- Field
- Global

Demonstration Region
- East Africa
- East Asia
- East Europe
- Latin America
- South Asia

Keywords
- Nutrients
- Fertilizer
- Manure
- Biological N fixation,
- Atmospheric deposition
- Runoff
- Leaching

Models
- IMAGE
- PCR-GLOBWB
- MAGPIE
- LPJml
- GAINS
- GLOBIOM
- EPIC
- CAPRI
- EDGAR
- TM5
- EMEP4Earth
- MITERRA Global
- GLOBAL NEWS
- WBM/VIC
- ERSEM/NEMO

Developed INMS vocabulary using the keywords using a URI:
http://vocabs.ceh.ac.uk/inms/scale/catchment

Filtering Records

Click to narrow the results down to show only records tagged with that topic

Collecting Data & Model Descriptions
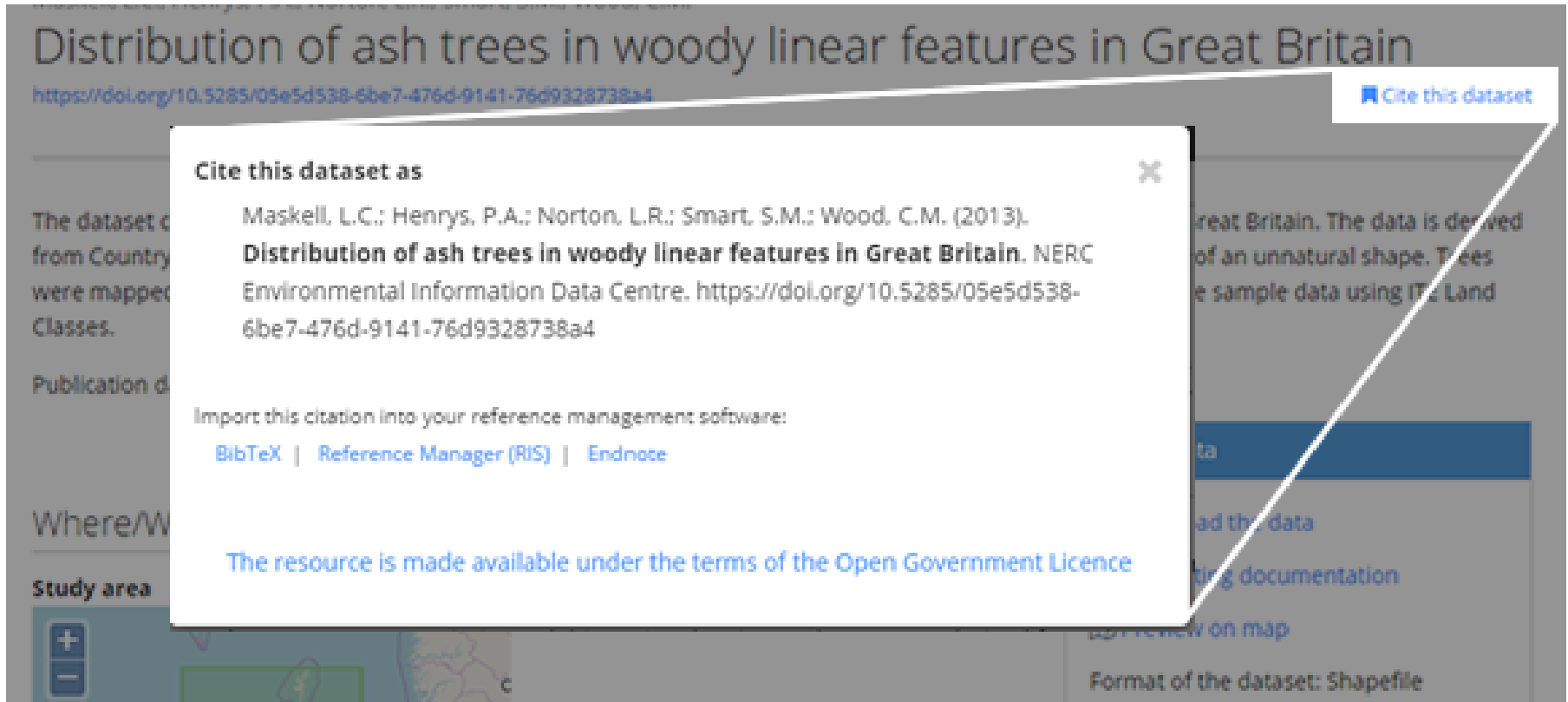
1. BASIC INFO+A6:D15	Field description	Response type	Mandatory/optional
Model Name	Name of the model	Text (up to 255 characters)	Mandatory
Primary purpose	Short phrase to describe primary aim of model	Text (up to 255 characters)	Mandatory
URL/website	Link to outward facing model website if one exists e.g. https://jules.jchmr.org/	Text (up to 255 characters)	Optional
Contact name	Senior responsible officer for the model (this should be the person who is the primary contact for the model)	Text (up to 255 characters)	Mandatory
Contact email	Email address of the Senior Responsible Officer e.g. someone@ceh.ac.uk	Text (up to 30 characters)	Mandatory
Organisations involved	Organisations involved in model development	Text (up to 255 characters)	Optional
Keywords	5-10 keywords for model discovery e.g. rainfall; species distribution; nitrogen deposition; global circulation model	Text (up to 255 characters)	Mandatory
License	License type (open or non-open) under which the model is distributed.	Lookup from (1) Open (2) Non-open	Mandatory
Link to version control repository	Location of code repository e.g. https://github.com/NERC-CEH/Spatial-Upscaling-model.	Text (up to 255 characters)	Mandatory

Activity 1.5/2.1: INMS-3, Edinburgh, 16th-19th April

Data Formats

- csv

- ascii

- netcdf

Dataset Citation

Distribution of ash trees in woody linear features in Great Britain

https://doi.org/10.5285/05e5d538-6be7-476d-9141-76d9328738a4

📕 Cite this dataset

The dataset c... reat Britain. The data is derived
from Country... of an unnatural shape. Trees
were mapped... e sample data using ITE Land
Classes.

Publication d...

Cite this dataset as   ✕

Maskell, L.C.; Henrys, P.A.; Norton, L.R.; Smart, S.M.; Wood, C.M. (2013).
Distribution of ash trees in woody linear features in Great Britain. NERC
Environmental Information Data Centre. https://doi.org/10.5285/05e5d538-
6be7-476d-9141-76d9328738a4

Import this citation into your reference management software:

BibTeX | Reference Manager (RIS) | Endnote

The resource is made available under the terms of the Open Government Licence

Where/W...

Study area

[+]
[−]

Format of the dataset: Shapefile

But NOT a DOI !

Data Licence Text

Sample Licence Text

CLICK-THROUGH LICENCE FOR ACCESS TO DOWNLOAD DATA FROM THE INMS DATA PLATFORM

BEFORE PROCEEDING PLEASE READ THE TERMS OF THIS AGREEMENT ('LICENCE AGREEMENT') CAREFULLY. YOU ARE LICENSED TO USE THE DATA ON THE CONDITION THAT YOU ACCEPT ALL THE TERMS CONTAINED IN THIS LICENCE AGREEMENT.

The Data is held by the Centre for Ecology & Hydrology (CEH) on behalf of the International Nitrogen Management System (INMS) project implemented under the UN Environment Programme. Ownership of the Data and all rights subsisting in the Data, including copyright, database rights and rights to apply for patents or any other intellectual property rights, rest with the Data Originator and the INMS project.

1. PERMITTED USE
1.1 Where You are an individual Licensee You may use the Data for your own Personal Use within the INMS project.
1.2 You may disseminate publications and reports based upon the Data only within the INMS project, or until a period of 2 years after the project has ended.
2. RESTRICTIONS ON USE
2.1 You may not use the Data in connection with any tender where such use will provide the tenderer with a competitive advantage resulting in financial profit or gain.
ETC…….

Database Links

Require log in permissions

[INMS Catalogue](#)

[INMS Vocabulary](#)

System Technology

Catalogue metadata are stored in a json filestore on the server.

Catalogue has a Java backend and javascript frontend (probably using various frameworks, not sure which ones).

Any INMS data we host will be stored on a fileserver in CEH, files obtained from the catalogue using an order manager with a click-through data licence that has to be agreed to by a logged-in user.