

Catchment Management for Water Quality Forum - Workshop 3

28th January 2016 – London

Meeting Notes

The key aim of the day was to update the Forum on progress to date in developing the Case Studies and to present the initial design of the Catchment Management Platform. This will provide access to these case studies, data and models and other resources.

56 people attended the workshop from 38 different organisations; a full delegate list is supplied at the end of this document.



Bridget Emmett, as the consortium lead from CEH, gave an introductory presentation. The content of this presentation, and the other presentations mentioned herein, is not repeated in this document but the presentations have been made available to the forum via a fileshare facility.

Following this we also welcomed four guest speakers to present information on some related projects and initiatives. Faith Culshaw presented on the UK Water Partnership (<http://www.theukwaterpartnership.org/>) Alison Cavey presented on the WaterInnEU programme (<http://www.waterinneu.org/>) Prof. Richard Tiffin presented on the Agrimetrics project (<http://www.agrimetrics.co.uk/>) and Matt Fry (CEH) presented on the Environment Information Platform (<https://eip.ceh.ac.uk/>)

Following on from this, each Case Study lead gave a brief update on the development of the Case Studies:

No.	Case Study Title	Case Study Lead
1	Multiple pollutant and ecosystem services responses to land management policies and agri-environment interventions at the farm to catchment scale	Jack Cosby (CEH)
2	Effectiveness of land management policies and agri-environment interventions for reducing pollutant loads and maintaining environmental quality at the national scale	Richard Gooday (ADAS)
3	Costs and benefits of mitigation measures to reduce pollutant concentrations for the protection of drinking water in river systems upstream of intakes	P Daldorph (Atkins)
4	Effectiveness of pollution control measures under scenarios of future climate and land cover change at the catchment scale	Andrew Wade (University of Reading)
5	Uncertainty in ecological responses to water quality control measures at the river basin scale	Andrew Wade (University of Reading)
6	Effects of input data quality and quantity on evaluation of land management policies and agri-environment interventions at catchment to national scales	Jack Cosby (CEH)
7	Interpolation of data from catchment to national and monitored to non-monitored catchments.	Jack Cosby (CEH)

The afternoon session primarily took the form of breakout groups, followed by a feedback discussion and Q&A.

There were four breakout groups (below) with each having the opportunity to contribute to four different discussion topics

1. Feedback on **'look and Feel' of the platform**, it's **usability**, and priorities to change or add now or in the future (dependent on project resources) (discussion leads Mike Brown (CEH) and Paul Whitehead (Oxford University))
2. Feedback on **data catalogue, its usability and what is missing** (discussion leads Matt Fry (CEH) and Richard Gooday (ADAS))
3. Feedback on **how case study resources are hosted on the platform**. Have we got it right? (Discussion leads Bridget Emmett (CEH) and Peter Daldorph (Atkins))
4. Feedback on the **model database, selection tool and evaluation tool**. Would you find it useful? What is missing? (Discussion leads Jack Cosby (CEH) and Andy Wade (University of Reading))

The delegate breakout groups were as follows:

Group A	Group B	Group C	Group D
Anne Humble (Welsh Government)	Kevin Hiscox (UEA)	David Rafaelli (York Uni)	Robert Bailie (NIEA)
Kat Broadhead (Natural England)	Graham Welland (Thames Water)	Tom Nisbet (Forestry Commission)	Ian Skinner (Essex & Suffolk Water)
Helen Wake (Natural England)	Simon Wightman (RSPB)	Michelle Walker (Rivers Trust)	Paul Linwood (Southern Water)
Paul Bryson (Environment Agency)	Sarah Hutcheon (SNH)	Claire Bell (Environment Agency)	Victor Aguilera (Defra)
Rachel Webster (Natural England)	Matt Pitts (Bristol Water)	John Bagnall (Wessex Water)	Richard Reynolds (Anglian Water)
Jessica Bellarby (Lancaster Uni)	Katharine Filby (Severn Trent Water)	Jennifer Thomas (Cambridge Water)	Rob Howells (NFU)
Vic Morgan (NERC)	Rachel Cassidy (Agri-Food and Biosciences Institute)	Nina Yiannoukos (South Staffordshire Water)	Juliet Kauffman (Orion Innovations)
Rob Davies (Defra)	Kirsten Foot (Environment Agency)	Jim Harris (Cranfield)	Steve Howe (South East Water)
		Andy Vinten (Hutton Institute)	Jeremy Graham (Wessex Water)
		Mark Hallard (SEPA)	Alwyn Hart (Environment Agency)
			Laura Nieuwenhoven (Atkins)



Feedback from each of the discussion groups is summarised below:

1. Feedback on ‘look and Feel’ of the platform, it’s usability, and priorities to change or add now or in the future (dependent on project resources) (discussion leads Mike Brown (CEH) and Paul Whitehead (Oxford University))

There were many Ideas/suggestions from the groups for setup etc.—what people would like to see, with suggestions including:

- a) Ways to search the platform, for example:
 - By key words
 - By question/issue (e.g. how do you model climate change?)
 - By water type (river, lake, first order stream , whole catchment)
 - By model type (e.g. long term models (annual) , short term (weeks , monthly) or fast dynamics (daily), steady state or export coefficient or process based)
 - By scales (local, catchment, regional, national)
 - Use a Map of the UK (as per BESS) to click on applications around the country—giving person/contact who did the application- so users could contact them directly.
- b) There was also the suggestion of a User Forum - so that people could exchange information, ask questions, talk to other users etc.
- c) A way of providing feedback to web managers/data managers/model suppliers was suggested – including the ability to make suggestions back to developers
- d) Users expressed the desire for papers, reports and user manuals
- e) A downloadable document facility was suggested so people can read up about the models
- f) The group identified the need for long term support and the question arose as to who will support the system in the longer term – NERC, DEFRA, EA?
- g) A video was suggested - make video clips available to show people how to use the models, provide training, show mitigation measures
- h) A breadcrumb trail was suggested so users can see what they have looked at
- i) It was also suggested that the platform be found using a Google search – ensuring it is high up in the search returns so it is easy to find

2. Feedback on data catalogue, its usability and what is missing (discussion leads Matt Fry (CEH) and Richard Gooday (ADAS))

Suggestions from the groups with respect to this discussion topic included:

- a) Adding a section describing common misconceptions about data availability, e.g. people thinking you cannot get detailed agricultural survey data.
- b) Access to water company data (both monitoring data but also other data they hold on farm practices such as mitigation implementation – e.g. number of bio-beds installed). It was noted that Water Companies would be nervous about the inclusion of monitoring data in case it was used inappropriately.

- c) Provide links to all key data sources, such as IACS (field boundary data) & agri-environment scheme uptake data. This is particularly important so that people know what is currently happening in terms of mitigation implementation (e.g. CSF, Glastir).
- d) When searching the data and selecting e.g. nitrate, what is the logic behind the ordering of the list of items returned? Should this be clear in the search results (e.g. newest, greatest spatial coverage) as this may become more relevant if further data and models are added.
- e) Provide additional guidance on the map search option. There are filters for data such as national coverage or catchment scale, but if you want to look for a specific area, the search feature for this is somewhere else.
- f) Link to other data portals – although the metadata for some of the data items links to the other data sources, it might be nice to have an explicit link to them on the front page. Other portals include:
 - EA Catchment Data Explorer
 - EA Geostore
 - EIP
 - MAGIC
 - LLE (Welsh Government Geo-Portal)
 - SE Web
 - Catchment Sensitive Farming
- g) What are the 3 datasets that have significant IPR issues? Could these be stated explicitly and the (best) alternatives to them listed, e.g. European Soils data rather than Cranfield soils data.
- h) Where did the list of data on the platform come from and could this be made clearer? (the answer being that the data was identified through reviewing datasets used by the models in the project, other datasets held by the consortium members, , datasets identified at first stakeholder forum, and data identified as part of progressing Case Study development)
- i) How will the data be updated? Because the meta-data is often a link to the original data owners, it is generally their responsibility to update.
- j) How will the data be maintained – will people be able to edit and update the existing metadata? Will people be able to add new datasets?
- k) Could there be a list of ‘controlled vocabulary’, such that if someone searches for “flow” they also get the results for “discharge”. Such as approach has been used in the DTC.
- l) Can we provide links to the UKEOF catalogue of monitoring activities and sites?
- m) Will there be a testing period before the platform goes live.
- n) The models state what data they have used, would it be possible to invert this, so that the data items say what models they can be used for?
- o) Will there be the potential to flag up new data, or datasets in the pipeline that will be useful, e.g. new free satellite data from Sentinel 2, Landcover+
- p) Could the metadata say the approximate size and format of the data to be downloaded? (There is already a place within the metadata for the format to be specified.)

3. Feedback on how case study resources are hosted on the platform. Have we got it right?
(Discussion leads Bridget Emmett (CEH) and Peter Daldorph (Atkins))

Key points raised across all groups were as follows:

- a) The relevance of the case studies beyond their local context (i.e. to other catchments) needs to be explained. Contextual information is required (also in relation to previous studies – e.g. what is new)
- b) The case studies should reference where the input data comes from and its availability to the user community. This includes information on how the measures were designed/quantified. **
- c) Outputs should be accessible and clear
- d) As well as sharing powerpoint presentations, it would be useful if a spoken commentary/video could be provided and distributed
- e) The process of developing the case study should be documented including ‘lessons learnt’ and ‘what to avoid’.
- f) Any intellectual property rights issues need to be highlighted to make clear if similar studies can readily be carried out by others
- g) Trialling the tools in a small group on a ‘case study’ would be a useful way to test the tools
- h) Project management standards for catchment studies would be useful to frame the case studies
- i) Consideration needs to be given to how robust the data and models are in different contexts (planning, legal, regulatory etc.). A health warning/disclaimer would be useful to prevent the outputs being used inappropriately **
- j) A set of simple questions should be present – ‘How Can I? Also key words.
- k) Non expert language summaries should be presented with each case study (e.g. science journalism style). Visualisation should also be simple and transparent and tested with users to make sure this is the case **
- l) The user might describe their level of knowledge at the start and be directed to the appropriate content.
- m) Reporting of uncertainty should be consistent and clear
- n) Make clear why the catchment in the Case Studies were chosen?
- o) Make clear what outputs are designed to be used for.

(** some points were noted by more than one group, as recurring themes)

4. Feedback on the model database, selection tool and evaluation tool. Would you find it useful? What is missing? (Discussion leads Jack Cosby (CEH) and Andy Wade (University of Reading))

A number of general points were made by the groups, including:

- a) The need for moderation of model reviews – who will check accuracy, should this be through Wikipedia style updates or could someone take this role on?
- b) Commercial models should be included in the database;
- c) It would be useful to search the model database with a Boolean string of key words
- d) Include in model metadata – key assumptions, and ecosystem type (e.g. river, lake, wetland)
- e) The users would welcome an opportunity to play with the web-site and provide feedback on the model and evaluation metadata;
- f) Don't forget a link to the UK Environmental Observation Framework data/meta-data;
- g) Useful to have a summary of model advantages and limitations as a table, rather than having to keep note of these for comparison.

Further to the more general points described, a range of specific points were also made:

- h) Guidance on data format for specific models; will data be re-formatted to help ingestion into models?
- i) Useful to have a forum (discussion page) to enable questions and answers, perhaps along the lines of Research Gate. Experts register for topic areas, every so often questions are mailed to those experts in a relevant topic.
- j) Other suggested models to consider for ingestion included:
 - EA N-Tool
 - SCIMAP
 - Natural Capital Appraisal Tool
 - ADAS PSYCHIC, NEAP-N
 - The Integrated Model (Ian Bateman)
- k) Function to help keep an audit trail of model choice
- l) Make sure version of model used is documented in evaluation reports and case studies
- m) Clarity on degree on coupling being achieved (e.g. linked models or truly integrated), perhaps through a schematic diagram.

Other feedback and offers of help and support were noted through an open feedback session following on from the discussion groups; this feedback primarily related to:

- The need to de-jargon and make this accessible for all levels from policy development down to catchment based approach.
- The roll out process for the platform including aspects of system testing and training; this included offers of user acceptance testing
- The future of the platform and the forum after the project has finished
- Suggestions on how to promote and communicate the Platform

This feedback has been passed to the project team to take forward over the forthcoming months.

**ATKINS****Centre for Ecology & Hydrology**
NATURAL ENVIRONMENT RESEARCH COUNCIL**The James Hutton Institute****UEA**
University of East Angles**Attendees**

Affiliation	Name
ADAS	Richard Gooday
Affinity Water	Alister Leggatt
Agri-Food and Biosciences Institute	Rachel Cassidy
Anglian Water	Richard Reynolds
Atkins	Laura Nieuwenhoven
Atkins	Claire Neale
Atkins	Peter Daldorph
Bristol Water	Matt Pitts
Cambridge Water	Jennifer Thomas
CEH	Bridget Emmett
CEH	Jack Cosby
CEH	Matt Fry
CEH	Mike Brown
Cranfield	Jim Harris
Defra	Alastair Rennie
Defra	Rob Davies
Defra	Victor Aguilera
Environment Agency	Alwyn Hart
Environment Agency	Claire Bell
Environment Agency	Helen Green
Environment Agency	Kirsten Foot
Environment Agency	Paul Bryson
Environment Agency	Tom Rolls
Essex and Suffolk Water	Ian Skinner
Forestry Commission	Tom Nisbet
Hutton Institute	Andy Vinten
Hutton Institute	Jannette MacDonald
Lancaster	Jessica Bellarby
Natural England	Helen Wake
Natural England	Kat Broadhead
Natural England	Rachel Webster
NERC	Vicky Morgan
NFU	Rob Howells
Northern Ireland Environment Agency	Robert Bailie
Orion Innovations	Alison Cavey
Orion Innovations	Juliet Kauffman
Oxford University	Paul Whitehead
Portsmouth Water	Chris Manning
Rivers Trust	Michelle Walker
RSPB	Simon Wightman
Scottish National Heritage	Sarah Hutcheon
SEPA	Mark Hallard
Severn Trent Water	Katharine Filby



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NATURAL ENVIRONMENT RESEARCH COUNCIL

crew
centre of expertise for waters



The James Hutton Institute



University of Reading



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Affiliation	Name
South East Water	Steve Howe
South Staffordshire Water	Nina Yiannoukos
Southern Water	Paul Linwood
Thames Water	Graham Welland
UK Water Partnership	Faith Culshaw
University of East Anglia	Kevin Hiscock
University of Reading	Andy Wade
University of Reading	Prof Richard Tiffin
University of York	Dave Raffaelli
Welsh Government	Anne Humble
Wessex Water	Jeremy Graham
Wessex Water	John Bagnall
WWF	Dominic Gogol