



UK- Environmental Observation Framework

UK-EOF & NERC working together – past achievements and future plans

Thursday 23rd February 2012, 10.30-15.30
80 Austin Court, Birmingham, B1 2NP

1. Executive summary

This meeting was an informative and positive workshop for the NERC community to discuss with UK-EOF the previous outcomes and future plans. Delegates were involved in fruitful discussions about the new direction of the UK-EOF and provided support for the new thematic scoping studies. Many opportunities for NERC involvements were apparent and there was strong support for UK-EOF to continue to provide a neutral space for discussions and opportunities for NERC to collaborate with other organisations.

Strengthening the links between UK-EOF and the marine community was highlighted as a key action.

Maintaining strong communication links between all communities was a key message and all are responsible for conveying the message that UK-EOF still exists, the catalogue can be used and interrogated and that NERC are involved with and benefiting from many of the UK-EOF projects.

2. Background

UK-EOF has made a significant difference to understanding the observation landscape since it was established in 2008 and attention has now turned towards helping organisations work together to improve efficiencies and effectiveness of their monitoring programmes. NERC is one of the major funders of the UK-EOF programme and continues to support the delivery of its aims by providing input into each of the work areas. In return, NERC benefit from the neutral space UK-EOF provides, to collaborate with other organisations, and utilise the tools UK-EOF have developed.

The UK-EOF is now moving forward into a new stage of work and requires the NERC centres to continue to engage with the programme in order to respond to the needs of NERC. Ensuring strong communication links and providing opportunities to feedback will ensure NERC is gaining the maximum value from the UK-EOF programme. The workshop aimed to provide an opportunity for the NERC centre representatives to review the progress made by UK-EOF, comment on the pros and cons of the programme, and suggest future areas of work which NERC could input to and benefit from.

3. UK-EOF update – Beth Greenaway

Beth gave an overview of the UK-EOF and the new programme areas as agreed by Bob Watson and the partners in November 2011.

The questions and actions were;

- Dialogue with the marine sector needs to be maintained and enhanced to ensure there is no duplication of effort or compartmentalising of the sectors. There is no strong voice for marine on the UKEOF MG.
- The links between what can be found on the UK-EOF catalogue and that on the NERC data discovery service could be articulated more clearly.
- Having a one sentence strapline for what UKEOF is trying to do may help other colleagues understand what it can offer.
- The UK-EOF decision criteria have been used in relation to the NERC Council. They recognised that NERC needed to make informed decisions on monitoring investments, in relation to what was being funded by other public sector bodies. By using UK-EOF tools NERC increases its ability to make informed decisions on observational investments. The framework also informs bi or multi-lateral decisions.
- The neutral space provided by the UK-EOF has been valuable to NERC and others.
- NOAA has requested an up-date on 'ocean acidification'. The catalogue could be used to see what current monitoring exists and if the catalogue is holding all observations.
- There is a real need to keep the information in the catalogue up to date as it is being used to make decisions. The user can be confident by looking at the field that says when it was last updated. There is also a need to raise the visibility of the catalogue at the meetings NERC attends. There have been 2500 unique users from across the world to date.
- The next phase of the catalogue needs to explore the technical solutions to making updates easier for the suppliers. However, this will not mitigate for organisations having to generate the information in the first place.

NERC National Capability Integration – Pat Nuttall

Pat gave an outline of NERCs response to the BIS innovation and science strategy. Innovation, partnership and engagement with industry were the key messages. There was a lively discussion about the concepts proposed and how they fit with existing activities. It was suggested there were examples of good practise already in NERC that could be used as case studies. It was also discussed how LWEC could provide much of the partnership contacts.

There was some resistance to having a new directorate that potentially duplicate what the research centres already do. Pat emphasised the first philosophy was identifying the needs and making sure mechanisms are in place to deliver these.

There was discussion about the need for data centres to adapt, and the additional monies which would be required to do this. Although industry wants useful information, there is a negative attitude in industry towards NERC as industry generally wants to go directly to the science and therefore directly to the data centres. The NERC process is not designed for providing this quick response to 'processed' data requests which needs to be resolved. At present data centres are not up to providing innovation, their roles should be to provide the data packaged for others to do the 'innovation'.

Improving the effectiveness and efficiency of UK observation site network – Amber Vater & Don Monteith

Amber gave an overview of how UK-EOF, working with Natural England GI teams have used the site locations of monitoring networks across England to begin to highlight opportunities for collaborative work.

There was much excitement over the maps and a call to make them available to others to stimulate thinking. It would be helpful to distinguish monitoring sites that are feeding into regulation, and to separate 'compliance' from long term environmental change sites. Mapping is a powerful tool which will stimulate much interest and with the neutral space UK-EOF provides, could be a great benefit to NERC.

The tension over maintaining long term records from the same site and changing sites to accommodate multiple user needs was raised. There are also issues of sustainable funding for sites used by others

The next step could be a focused case study. Delegates discussed whether this should be a place based e.g. catchment type study or a topic e.g. groundwater type study. There was support for the analysis to be used by the marine community and for the place based study to show real applications.

Sustainable financing mechanisms – Beth Greenaway & Michael Schultz

Beth gave an overview of the debate held by the CSA regarding sustainable funding for observation programmes. There will be a follow on meeting in April and UK-EOF has been tasked with identifying which programmes are critical for the UK and which ones would have significant consequences to the UK national interest if not continued in the long term. This action will be complemented by GoScience action on possible funding mechanism.

Discussions focused on how NERC could help provide a curtailed list.

- GEO requirements could be a starting point.
- The list could include statutory programmes.
- On one level all of NERC monitoring could be included as NERC have just done a review of observations.
- The national risk register would be another starting point.
- The UK-EOF assessment tool could be used to ascertain which ones are critical - but the community would need to be consulted and given really clear definitions of critical.
- Marine monitoring was reviewed last year, adjustments were documented and justified on a scientific basis but business critical case may not have been emphasised (i.e. policy needs).
- The dependencies of UK on other European or international funds are also key. What are national and/or international need to be flagged.

All the complexities in producing a list in the next 6 weeks were acknowledged and it must be caveated as a preliminary list with which to make a case to treasury to reserve a pot of money. It doesn't mean the list is exclusively what will be funded.

UK-EOF has been asked to create this list on behalf of all its partners and NERC must make sure it participates in this opportunity. The economic benefits of NERC science report approximately 3 years ago might provide some information.

Citizen Science and Environmental Monitoring – Andrea Sharpe & David Roy

Andrea Sharpe is now the NERC KE Environmental Monitoring lead. Andrea presented the discussion of the UK-EOF work on citizen science which she was leading on for UK-EOF until the end of January.

Following a really successful workshop last summer a 4 month follow on study has just been advertised for tender. This will cover best practise and motivations of volunteers and look at the role and potential of new technologies.

NERC has history in this area, particularly in biodiversity which is estimated as 50million man hour effort. The datasets collected clearly add to policy. There is an opportunity to expand this in various areas such as new observational needs, hypothesis testing, innovation and IT.

There was much enthusiasm and the delegates thought there is a huge amount to be gained and that this is a critical form of science that can drive innovation. Examples identified were;

- Boris Johnson - nitrous oxide monitor.
- Biodiversity cultural services, report how they are engaging, what they are interacting with, new forms of data, new realms of science could be explored.
- Continuous plankton recorder, concept uses voluntary observations ships, could expand to involve more people such as ship passengers to promote the science.
- Use mobile phones and develop Android, apps, technology, take photos etc.
- Use people - putting monitors on people to see what they are exposed too?
- 'Ocean scope' - engage the entire merchant marine fleet doing marine observations from their vessels. They are sympathetic, but worried about resources and issues with territorial water, there are issues re. the use of volunteers in marine that wouldn't be observed with terrestrial.

Some of the barriers are;

- The issue with terrestrial volunteers such as trespassing.
- Who will pay for it e.g. equipment on RNLI boats, radon home survey? To get mass participation there needs to be cheap or free, straight forward data capture mechanisms.
- There is no infrastructure in place to deal with the additional samples. Should we be training the communities to analyses them themselves...in the marine sector volunteers just can't get everywhere – use vessels instead.
- Data quality issues were discussed and there could be potential for NERC to act as the provider of a quality control scheme with a kite mark so that users can have more confidence in the data.

The role of NERC in this area was discussed and how closely aligned to the strategy this really is. NERC shouldn't go into the area of specialist societies such as RSPB concentrate in areas it can make a difference

GEO, INSPIRE EMF and the Data world – Beth Greenaway & Mark Thorley

Beth gave an overview of how the UK-EOF have a Data Advisory Group (DAG) which looks to coordinate / provide a UK focal point for the numerous data and information initiatives. NERC had recently been asked to input metadata to the GEO Data Core and have been asked to look at how the INSPIRE directive covers data of similar type to the UK-EOF catalogue in the EMF theme.

Mark emphasised that NERC needs to concentrate on good data management and then what will satisfy INSPIRE. To implement INSPIRE it must be communicated as a benefit to the researchers i.e. the way of making data available to the citizen, rather than using the threat of infraction from a legal directive. By the UK leading in many data areas, the UK-EOF has given us this lead and we are in a position to drive the data specifications forward at a European level. INSPIRE will enable easier access to data, seamless access to deliver discovery view and download.

The culture change for sharing academic data will be via citation recognition for use of published data. However this still has a long way to go to become a priority for PIs.

Case study: A UK Environmental Specimen Bank – David Howard

David gave a brief overview of the proposal to establish a virtual network for physicals samples – who stores what, where how and can they be accessed and reused by others?

This short project was looking at what the database could look like and how it could be used. It was an opportunity to get industrialists, science and users together and find out what their needs are.

Wrap-up - Andrew Watkinson & Michael Schultz

Andrew congratulated the UK-EOF of what it has delivered since 2008 and acknowledged the length of time and effort required to establish the evidence base now in place. For example, the evidence provided for the Sir John Beddington debate in February 2012, had made a big impact on the observations community. The UK-EOF is a key partnership to provide knowledge exchange across the community but can only do this with input from the stakeholder such as NERC.

UK-EOF should work to involve the wider community by showcasing the evidence and tools. The efficiency mapping work will create much interest and should be prioritised along with the citizen science work which will give UK-EOF leverage with the NGOs.

Andrew stated that if the UK-EOF is as relevant now as it was in 2008 and if UK-EOF was not already in place, it would need to be established now.

Michael closed the meeting and thanked attendees for their useful input to the discussions.

Summary of actions

- Need for better communications to NERC and within NERC about the UK-EOF activities.
- UK-EOF secretariat to produce one liner describing the UK-EOF programme.
- NERC to ensure input to UK-EOF projects and let secretariat know and thoughts/ issues etc.
- Sally Reid to contact Pat Nuttall for the summary document from the Royal Soc. Meeting.

Annex 1 - Workshop Agenda & Delegate list

UK-EOF & NERC working together – past achievements and future plans

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This meeting aims to:

- provide NERC community with an overview of the UK-EOF and its achievements to date;
- discuss NERC input and role in the UK-EOF's new thematic studies;
- provide an opportunity to feedback issues, successes and ideas for future UK-EOF support to NERC.

AGENDA

10.15-10.30 Tea and Coffee available

1. **10.30-10.45 Welcome, aims of the day** – Michael Schultz
2. **10.45-11.20 UK-EOF update** – Beth Greenaway
 - What do we know now?
 - What will the UK-EOF be doing in the future?
3. **11.20-12.00 NERC National Capability Integration** – Pat Nuttall
 - What is the role of UK-EOF?
4. **12.00-12.30 Improving the effectiveness and efficiency of UK observation site network** – Amber Vater & Don Monteith

12.30-13.15 Lunch

5. **13.15-13.45 Sustainable financing mechanisms** – Beth Greenaway & Michael Schultz
6. **13.45-14.10 Citizen Science and Environmental Monitoring** – Amber Vater & David Roy

14.10-14.20 Tea and coffee break

7. **14.20-14.50 GEO, INSPIRE EMF and the Data world** – Beth Greenaway & Mark Thorley
8. **14.50-15.10 Case study: A UK Environmental Specimen Bank** – David Howard
9. **15.10-15.25 Other issues, ideas and general feedback** – Beth Greenaway
10. **15.25 Wrap-up** – Michael Schultz

END 15.30

Attendees

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