



UK Centre for
Ecology & Hydrology

Strategic Support to Expedite Embedding Public Engagement with Research (SEE PER)

Phase II: Final Report

Nick Wells, Anthea Milnes, Clare Usher, Michael Pocock,
Alice Hope

Client Ref: NEC06499

Date 16/12/2019

The SEE-PER programme

The UKRI Strategic Support to Expedite Embedding Public Engagement with Research (SEE-PER) call sought to help enrich and embed cultures within HEIs where excellent public engagement with research (PER) is supported, valued, rewarded and integrated within institutional policies and practices. The first year of this programme ran from October 2017 to October 2018. Two types of approach were funded:

‘Embedding change’ proposals that sought to enhance and embed an institution’s approach to supporting PER, building on the learning from the Beacons for Public Engagement, RCUK PER Catalyst and Catalyst Seed Fund programmes:

- Birkbeck College, University of London, led by Professor Miriam Zukas
- Heriot-Watt University, led by Professor Gareth Pender
- Keele University, led by Professor David Amigoni
- London School of Hygiene and Tropical Medicine, led by Professor Dame Anne Mills
- NERC Centre for Ecology and Hydrology, led by Dr Nick Wells
- University of Lincoln, led by Professor Carenza Lewis
- University of St Andrews, led by Professor John Woollins

‘Challenge’ proposals which addressed a specific challenge in supporting PER effectively, and which expanded the existing knowledge base about ‘what works’ in effectively supporting PER:

- University of Brighton: developing and incubator model for finding and fostering new community-university partnerships, led by Professor Tara Dean
- University College London: exploring how to make PER fundamental to the university's efforts to address global societal issues through cross-disciplinary research, led by Professor David Price
- University of Bath: examining the challenges associated with training and professional development for public engagement, led by Professor Jonathan Knight
- University of Southampton: tackling barriers to professional development in PER and developing a robust educational framework for such activity, led by Professor Simon Spearing
- STFC – Laboratories: investigating the take up and provision of PER training, led by Dr Neil Geddes

In May 2018, the SEE-PER projects were given the opportunity to apply for a second year of funding to embed and expand upon work done in the first phase. Ten of the twelve projects received funding to extend for a further 12 months, and the programme concluded at the end of 2019.

UKRI appointed the NCCPE to co-ordinate this work, ensuring learning was shared across the projects, and that evaluation was used strategically to inform and assess the value of the SEE-PER initiative.

Further learning from the SEE-PER initiative can be found in the 'Support Engagement' section of the NCCPE website.

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1 Context

The UK Centre for Ecology & Hydrology (UKCEH) has over 600 staff and students located across four UK sites. UKCEH was a Natural Environment Research Council Institute for the duration of the project, although it has since become an independent not-for-profit research institute. Research Council Institutes (RCIs) face many similar challenges to universities in supporting PER, but tend to be more specialised and less geographically-embedded than many universities, creating different challenges. Traditionally, RCIs have not received explicit funding support for PER, so with this project we saw an opportunity to set an example for other RCIs of how to embed PER and to share our learning with them.

Another distinctive aspect of the context in which we sought funding to expedite embedding excellence in public engagement with research was precisely that we were in transition towards becoming an independent research institute with charitable status – a process we have now completed. We recently renamed from the Centre for Ecology & Hydrology to the UK Centre for Ecology & Hydrology as part of this transition. As we developed our organisational strategy for the future and considered our charitable objects, we wanted to extend our existing focus on the public good, and to take account of the role public engagement would play in the organisation in future.

We would like to thank UK Research and Innovation (UKRI) for funding the project which has made a material difference to our organisation in general and our public engagement with research specifically. We would also like to thank the National Coordinating Centre for Public Engagement (NCCPE) and SEE-PER funded university public engagement experts for their support throughout the project.

2 Short overall approach

Our principal objectives for Phase II of the Embedding Public Engagement with Research (EmbER) project were to clarify the strategic purpose of public engagement with research at UKCEH and to continue to embed PER in our culture across all four of our sites in a way that was mutually beneficial to our organisation, our researchers and our publics. We wanted to extend the excellence, scale, scope and impact of our PER activities, to ensure that PER is integral to our research projects, and to establish formal governance of, planning for and reporting on PER within the organisation. We set out to become an exemplar for other RCIs of how to embed PER, and intended to share our experience with other NERC institutes.

3 Synopsis of Year 1

Through the EmBER phase 1 project, we set out to integrate PER into the institute in a meaningful way that was in keeping with our mission and culture, taking both a top-down and a bottom-up approach. We completed a self-assessment of our excellence in public engagement using the EDGE tool and identified opportunities for improvement. We intended to generate greater grassroots understanding of, and participation in, PER across the organisation, and greater ongoing support for, and prioritisation of, PER among senior managers. We also increased the internal resources attached to PER.

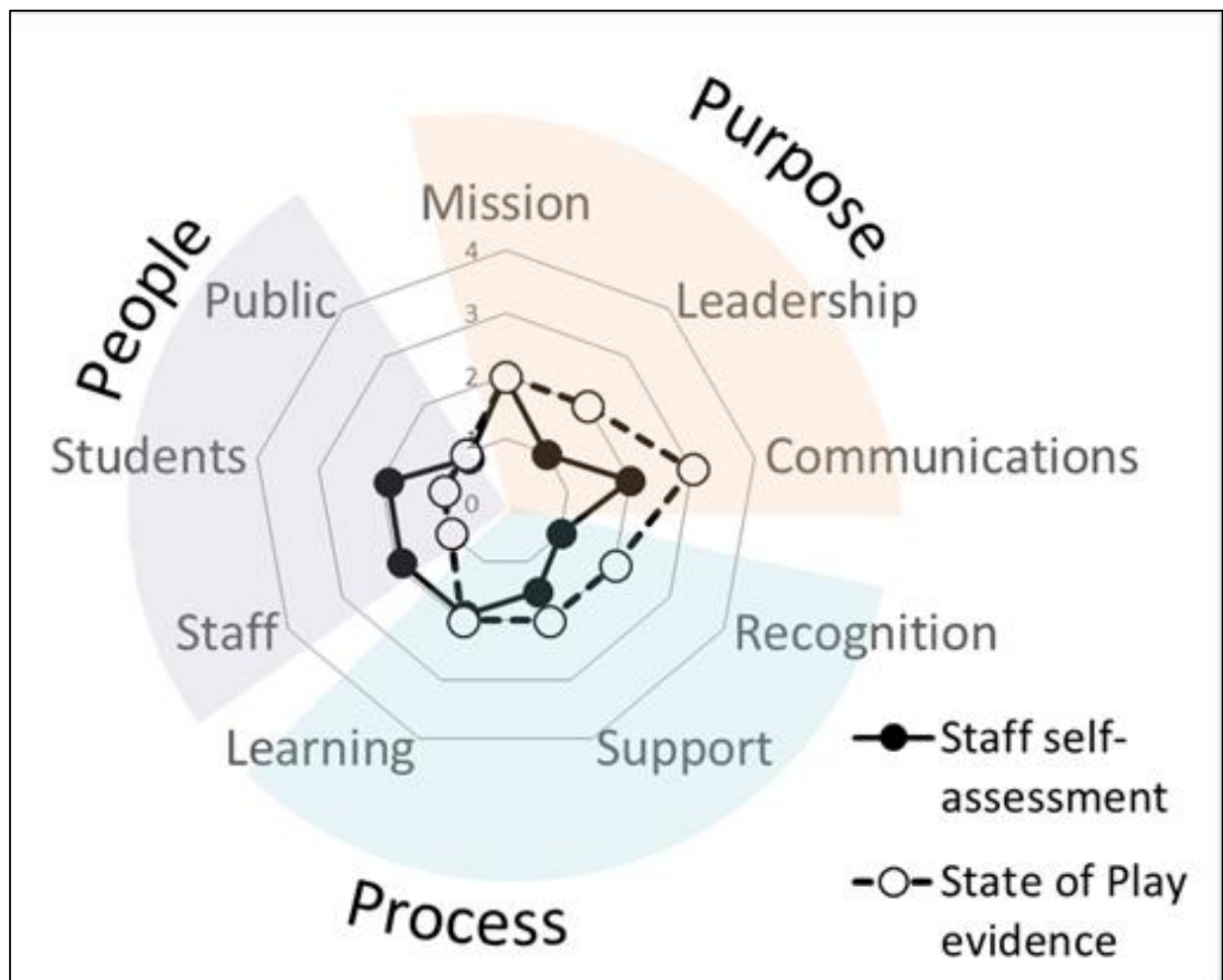
a) Initial review of PER at UKCEH

Initially, we took stock of PER within UKCEH. We gathered information via a survey from staff taking part in public engagement or with an interest in public engagement, and we reviewed a range of documents, procedures and guidelines relevant to PER at UKCEH.

As part of our review, we used the self-assessment EDGE tool from the NCCPE to identify specific areas where we could usefully focus in order to better embed PER in the organisation. The table and diagram below show the outcomes of this initial self-assessment exercise, representing UKCEH staff perceptions and providing an evidence-based perspective.

Category	Sub-category	EDGE status as determined from evidence in this State of Play
Purpose	Mission	DEVELOPING
	Leadership	DEVELOPING
	Communication	GRIPPING
Processes	Support	DEVELOPING

	Learning	DEVELOPING
	Recognition	DEVELOPING
People	Staff	EMBRYONIC
	Students	DEVELOPING
	Public	EMBRYONIC



Workshops with 32 UKCEH staff built on our assessment of our performance using the EDGE tool, and further informed our decisions about where and how to support culture change across the organisation (see section 3c below).

b) Areas for improvement identified through self-assessment

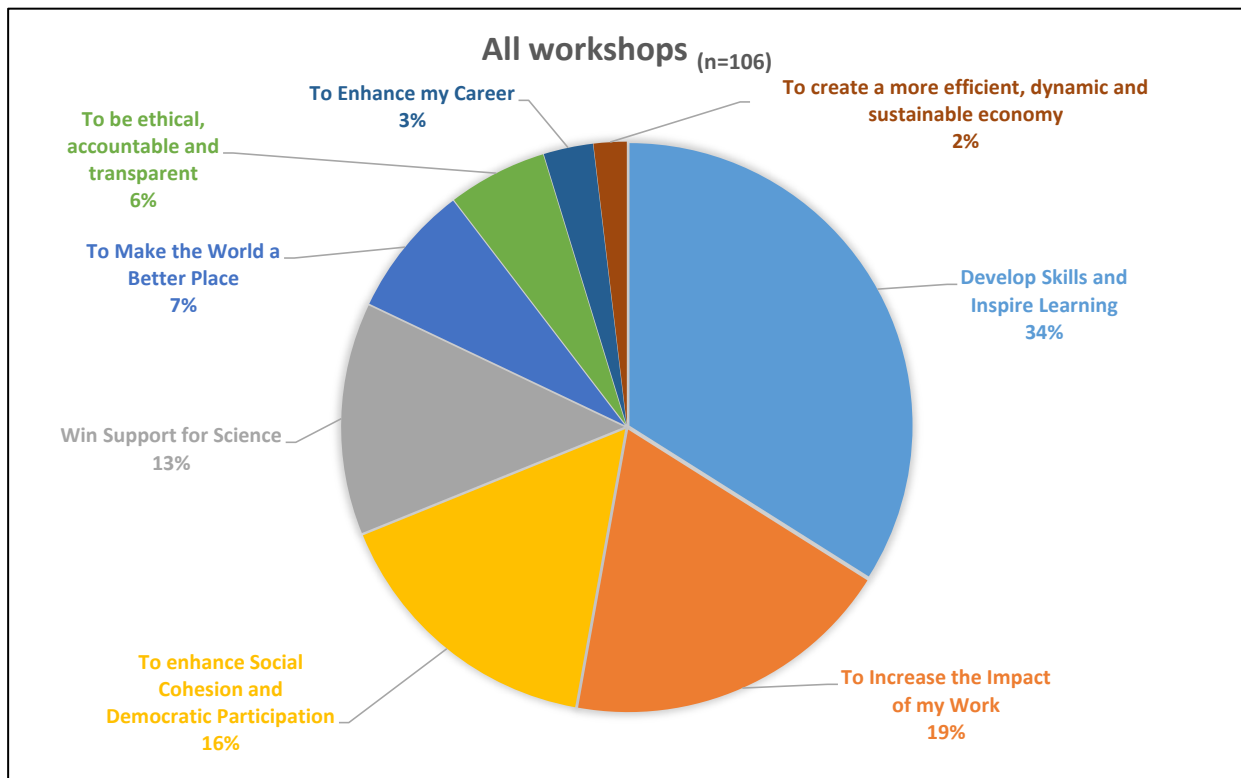
Through our self-assessment, we found that there was positive sentiment towards PER but that we had some way to go to embed PER in the organisation. Specifically:

- There were no clear organisational objectives for PER.
- There was no clear understanding of the benefits of PER.
- PER was carried out on a project basis, not coordinated across UKCEH.
- PER was often not included in relevant project planning and not resourced.
- Central support for PER was on an ad hoc basis.
- Audiences and objectives were sometimes mismatched.
- There was no clear framework for reporting on PER.

Our self-assessment provided a baseline for future assessment (see end of Phase II assessment on pages 27-8) and we used the information gathered to set out which dimensions should be prioritised and how we thought UKCEH could practically progress towards the next grade in those EDGE dimensions.

c) Staff engagement and participation

Professor Mark Bailey, the Director of UKCEH, inspired staff to participate in PER at an opening symposium in October 2017, supported by the UKRI PER champion Jenni Chambers. This was followed by exploratory workshops attended by staff at different levels and from different science areas. Reasons for undertaking PER given at the workshops are represented here:



Approximately 20 academics from across all levels and science areas applied for seed funding and £1,250 was awarded to each of seven projects. Each project provided an evaluation of the success of its seed funding and these evaluations have been shared and provided learning for the organisation. For example, Melanie Gibbs' report on how to integrate UKCEH science into school curricula informed a subsequent project in this area.

d) Resources

UKCEH made a significant ongoing investment in PER. The role of Marketing Communications Coordinator was altered so that 50 per cent of the role would be dedicated to supporting PER. This permanent post is now held by Alice Hope. Subsequently, a restructure of the communications team led to the Head of

Communications role being replaced by a Head of Communications and Engagement role, to which Anthea Milnes was appointed in June 2018.

Another change during the EmbER Phase 1 project was that PER was formally budgeted for in annual business planning, providing increased financial support for public engagement with research. With this financial support in place, UKCEH was able to centrally support public engagement with our research at events including BBC Countryfile Live, Bees Needs Week and Bristol Festival of Nature. Previously, these events would have either not been attended or given minimal communications support.

4 Introduction

We were delighted that UKCEH received continued funding from UKRI for year two under the SEE-PER programme, allowing us to progress our work to embed best practice in PER. The goals of this second project were:

- a) To create a set of principles for PER, integrated with our organisational strategy.
- b) To implement these principles into our day-to-day PER activities so they have a clear strategic purpose.
- c) To provide funded opportunities, for example via seed funding, to help reinforce our Principles and embed them in our culture.
- d) To establish clear governance for and planning and reporting structure for PER within the organisation.
- e) To scope an awards process aligned with our Principles to recognise and celebrate excellence in PER.
- f) To enhance our support for PER via 'Pathways to Impact' in grant applications and projects in progress.

The plan we set up to achieve these goals was divided into work packages:

Work Package 1: PER Principles. This covered creating a set of principles for PER; appointing PER Champions on each of our sites; increasing senior management support for PER; integrating PER into our organisational strategy; creating an implementation plan for PER; and identifying KPIs for measuring progress.

Work Package 2: Staff & Stakeholder Engagement. This included attending external PER events, planning and delivering PER external and internal communications, seed funding, reward and recognition for PER, and PER training.

Work Package 3: Impact & Evaluation. Activities in this package included setting up a framework and tool for PER reporting, participating in NCCPE and SEE-PER

reporting and workshops, carrying out EDGE tool re-assessment, and a project review.

These work packages evolved as we worked to deliver them, but the content remained the same in essence.

Addressing the aims of the SEE-PER call

The project objectives coincided with the principle of 'strategic support to expedite embedding public engagement with research' set out in the original SEE-PER call. In particular, they demonstrated "enriched support for PER, continued support from the host HEI for the effective mechanisms developed during the funding period, robust plans to rollout piloted activities and strong forward planning with relation to PER".

5 Project inputs

a) Internal resources.

The institution increased its resource commitment to PER over the course of the project such that activities are now driven by a core permanent PER team and a broader PER committee, comprising the core team plus our site-based PER champions:

- **The Core PER team:** Nick Wells, Director of Impact and Innovation; Anthea Milnes, Head of Communications and Engagement; Clare Usher, External Communications Manager; initially Hannah Lacey, later Alice Hope, Events and Public Engagement Coordinator; and Michael Pocock, Senior Scientist and Academic Lead for PER, held monthly project meetings throughout the duration of the project, driving forward the embedding of PER in the organisation.
- **PER Champions:** PER Champions were appointed across each of UKCEH's four sites. Each of these scientists are allocated time annually (20 days p.a. in total) to attend PER workshops and meetings, provide feedback on reports, and input into the development of PER principles and plans. Champions are key to embedding PER across sites and providing support to junior colleagues on PER.
- **Training and networking:** Time and funding was provided for staff to attend PER events to increase their expertise and help them build networks to design and deliver PER effectively. For example, we attended Engage, actively participated in the PEP Network, and attended SEE-PER quarterly meetings. We set up and hosted meetings to share our learning with other PER professionals – for example we had several opportunities to share our progress with PE professionals from UK Research & Innovation (UKRI), the Natural Environment Research Council (NERC), and its other institutes.

b) External resources

While we anticipated drawing on the project funds to provide seed funding to scientists, and we anticipated using NCCPE's EDGE tool to re-assess our progress, we did not anticipate the full range of external support that we drew on over the course of the project.

- **Seed funding:** Seed funding provided through the project funds was key to us engaging scientists across all four UKCEH sites with public engagement with research and to us embedding our principles in PER across the organisation. This resulted in us extending the number of staff engaging with PER (see page 20) and motivating them to consider effective PER as an essential part of their science projects.
- **External support:** We invited Dr Lesley Paterson, Head of Public Engagement with Research at the University of Oxford, to attend our PER Principles workshop as a critical observer, and to comment on a draft version of our Principles. We invited Paul Manners, Director of the NCCPE, to virtually attend our workshop to discuss and help us think about the effective evaluation of PER. Paul also presented to UKCEH's Senior Management Team at the outset of the project. We discussed our draft KPIs with Suzanne Spicer, an external adviser from the University of Manchester.
- **Training resources.** We are currently drawing on training materials presented by colleagues at a previous SEE-PER quarterly meeting to develop an initial training offer for our scientists. The University of Southampton and University of Lincoln jointly developed e-learning materials, which we are now adapting for our scientists. This training focuses on identifying audience, activity planning and delivery and finally effective evaluation of PER activities. We will be adapting the training to be more specific to UKCEH and environmental science.
- **External tools.** The NCCPE PEP Network Slack Channel has been valuable. We have posted questions about developing impact awards and about training, and received helpful responses, which have informed our thinking.

We have continued to use NCCPE's EDGE tool (see pages 27-30) to assess our progress in embedding PER, revisiting those areas we originally identified for improvement using the same tool.

6 Assumptions and context

Leadership

We assumed that having engaged leadership is key to success. We now see better buy in from the UKCEH senior leadership team. For example, the Executive Director celebrates excellent PER activities in his quarterly updates to all staff. We are still working to embed PER at the highest level of the organisation and to encourage all Executive Directors to champion excellence in PER, aligned with our strategy. We continue to encourage them to champion planned, intentional and impactful engagement of defined publics with our research, with engagement appropriately planned, integrated and evaluated throughout the project lifecycle (design, implementation and dissemination). We are also working with the heads of our major National Capability programmes to ensure public engagement is defined for these programmes. For example, we are working to engage the public with flood monitoring and forecasting through engagement with the Hydro-JULES project.

Approach

We now have a more sophisticated understanding of the kinds of PER activities we want to support proactively as an organisation and have outlined these clearly in our principles (see appendix 1). We are clear that we want to focus on engaging publics with specific UKCEH research, rather than with science issues more broadly. We have also clarified that we want to work at scale where possible and appropriate, particularly by building key partnerships, in order to increase our impact. This has helped to align our PER activities with our emerging Strategy 2025, setting clear direction for the future.

Extending participation in PER

With the launch of the second round of seed funding for Phase 2, the EmBER team assumed that with an increase in communication about PER and the backing of

senior managers for PER, that more staff would be interested in participating in round 2. This proved to be accurate. Applications for PER seed funding were 55% higher than in the first round of seed funding, indicating progress in embedding PER (Phase 1: 11 applications, Phase 2: 17 applications).

Tender support

Through Phase 1 of EmbER there was an increase in support from the tender support team at UKCEH for bids for PER funding. Members of the tender support team attended Pathways to Impact training and the process of accessing support from the PER team for grant applications formalised and articulated as a graphic. We assume this support was valuable in increasing participation, but through the project have more clearly and fully articulated the roles and processes involved in tender support for PER. Due to systems changes we have not been able to gather metrics on the increase of support for PER in grant applications. We are currently putting in place appropriate measures of the impact of tender support on widening participation in PER and improving excellence in PER.

Timeframe

While we believe we set a realistic timeframe and allocated resources to deliver the project, including 20 days p.a of time for the PER champions, managing the additional work involved in UKCEH becoming independent from UKRI presented challenges, with the time of the communications and engagement team being much in demand. We managed to make progress against every element in our implementation plan, but a few still need further work to complete and are explicitly planned within our PER 2019/20 annual implementation plan, for example delivering the PER training and impact awards. We see the project as a part of a long-term investment in culture change, so have avoided a box-ticking approach.

7 Activities and outputs

Principles of PER

The UKCEH core public engagement with research team and PER champions from all four of our sites drafted “principles of public engagement with research” for the organisation as a whole. These principles set out our commitment to PER and our distinctive approach to PER, building on our strengths in citizen science, public dialogue around controversial science and community engagement. They also set out our expectations of scientists and the support we would offer.

The draft principles were discussed at a workshop of the Public Engagement Committee, held at our Lancaster site, with Dr Lesley Paterson, Head of Public Engagement with Research at the University of Oxford, in attendance and Paul Manners, Director of the NCCPE, attending remotely. The topics addressed at the workshop included: who our publics are; when PER happens in the project lifecycle; our strengths in PER; support, reward and recognition; the boundaries of our PER; evaluation; communication; the role of champions and the sub-committee; and our vision for success.

Following the workshop, our principles were revised, reviewed further by Dr Paterson, and then a final version presented to the UKCEH Science and Executive Boards for formal endorsement. The principles were then disseminated to scientists throughout the organisation via science area meetings and other internal communications channels such as the intranet and internal e-newsletter. These principles have been critically important in clarifying the purpose and focus of PER at UKCEH, in integrating PER with our strategy and core research activities, and in embedding PER within our culture. We shared and discussed our principles with UKRI and NERC as part of the development of their public engagement strategies, and communicated them more broadly externally (see page 18).

Governance

Governance structures for PER have been formalised and approved by UKCEH's Executive Board. The roles and responsibilities of site-based Champions and the Terms of Reference for a PER Sub-Committee have been agreed and documented (see appendix 2). The PER sub-committee reports to the UKCEH Science Board. This Governance structure recognises PER as a core activity with clear objectives and criteria for judging performance.

The core responsibilities of PER champions are:

- To act as a site-based advocate for PER, aligned with UKCEH's principles.
- To provide expertise to facilitate planned, funded PER activities, achieving excellent PER with impact.
- To identify and lead local PER opportunities and promote UKCEH-wide and national scale opportunities.
- To signpost PER resources at sites and flag excellent PER activities with impact to the Communications and Engagement Team.
- To serve as a member of the PER Sub-Committee, reporting to the Science Board.

The Terms of Reference for the PER Sub-Committee state that its responsibilities are:

- To periodically review and develop UKCEH's strategic approach to PER.
- To define central resource requirement and champion budgetary requests to the Science Board.
- To oversee the development, implementation and evaluation of annual PER delivery plans.
- To support large-scale UKCEH-wide PER funding proposal development and delivery.

- To inform contributions to UKCEH's Annual Review and other communications where we will promote and celebrate PER.

External communications

We signalled our commitment to excellence in public engagement by publishing a summary version of our principles of public engagement with research on our [website](#).

We created a series of six short '[Engaged Research' videos](#) showcasing UKCEH's expertise in public engagement with research. We identified priority PER activities and invited relevant researchers to participate. Some of the videos featured senior UKCEH scientists (Science Area Heads and Group Leaders), demonstrating the commitment to PER that is growing at all levels of the organisation. We shared these videos externally and internally, inspiring other UKCEH scientists to carry out excellent PER.

We have published and are continuing to publish blogs from our scientists on public engagement activities that align with our PER principles, and to share them via social media. For example:

- Professor Helen Roy talks about the [Environmental Audit Committee's report calling on citizen scientists](#) to help tackle the growing threat from invasive species.
- Dr France Gerard talks about [engaging the community in Boyaca, Colombia](#) in preparation for carrying out field science.
- Dr Jack Hatfield talks about [the essential role played by volunteer recorders](#) in producing the third State of Nature report, the clearest picture to date of the status of UK plant and animal species.

These blogs both engage our publics and inspire our scientists to see PER as an integral part of their research and an essential pathway to impact.

We drafted copy explaining our public engagement strategy for our forthcoming public Strategy 2025 document, due for publication early in 2020; and we recently set up and hosted a meeting with key public engagement stakeholders from UKRI and NERC to share our principles and discuss best practice with them, discussions which informed their strategy development.

Implementation plan

We created a Public Engagement with Research Implementation Plan for the financial year 2019/20, which sets out our objectives, the actions we will take in this financial year, and how we will measure our success. We are on track to deliver the activities set out in plan by the end of March 2020.

The objectives of the plan are:

- a) To widen participation in public engagement with research across UKCEH, with a particular focus on citizen science, public dialogue and community engagement.
- b) To increase excellence and impact such that PER activities have measurable objectives, clearly defined publics, and a rigorous evaluation plan.
- c) To build strategic partnerships that help us to increase the impact of our public engagement with research and extend our reach.
- d) To provide focused support for public engagement with research, spanning guidance, training, funding, recording and reporting.
- e) To resource, reward and recognise public engagement with research, with support from the CEH senior leadership team.
- f) To continuously improve by reflecting critically on our public engagement activities and the value for money and impact they are providing.

Activities included in the plan include: the development of KPIs; the delivery of Pathways to Impact training; the dissemination of our principles of PER to all UKCEH

scientists; the development of a reporting tool and reporting schedule; the development of a proposal for impact awards; engagement with UKRI and NERC public engagement staff; evaluation of seed funding; the creation and delivery of a PER training programme; the improvement of PER intranet resources; representation of PER on the UKCEH website; the development of PER partnerships with external organisations; the inclusion of PER in UKCEH's Strategy 2025; attendance at Engage; improving tender support processes around PER; and re-running the EDGE tool to assess progress.

Key Performance Indicators (KPIs)

We developed KPIs for PER, which will be used to report to the PER Committee, Science Board, Trustee Directors and other audiences on public engagement with research. KPIs have been identified under the following headings:

- Widening Participation;
- Partnerships;
- Excellence and Continuous Improvement;
- Income;
- Impact;
- Focused Support, Reward and Recognition.

We will use both our KPIs and our reporting tool (see below) to critically reflect on what we are doing, monitor progress and improve over time. They should help us to see if we are successfully embedding excellent, focused public engagement with research in the organisation and to know if we are getting the impact and value for money we want from our public engagement with research. We will also report against on PER in future via our Annual Report & Accounts (from Jan-2020).

Seed funding

We completed a round of seed funding for scientists to carry out PER activities. We received a significantly higher number of applications than in Phase I (Phase 1: 11 applications; Phase II: 17 applications). We awarded grants of £2,000 each to five of these projects that were aligned with our Principles of Public Engagement with Research.

The criteria we used to evaluate the applications were:

- The activity aligns with our strategic priorities
- The activity further develops previous PER activities
- The activity focuses on partnership creation and/or development
- The activity meets PER best practice
- The activity focuses on overseas work where we want to build capability
- The activity delivers PER at scale where appropriate.

Where relevant, we encouraged seed funding applicants to extend the reach of the activities they proposed to increase their impact. We evaluated the success of the completed projects, and the evaluation shows that we were effective in embedding our Principles of Public Engagement into these PER activities.

For example:

- A project to engage publics with the [Countryside Survey](#), led by Lisa Norton, explored the potential for making data from the Survey available for use in ecological education. The seed funding provided time and impetus to start new relationships with Lancaster University to scope ways to use the data in the school curriculum.
- The [CEHCraft](#) project, led by Tom August, used the seed funding of £2,000 to develop relationships with partners – for example, to meet with the Science Hunters team to discuss opportunities for collaboration in engaging children with environmental topics using Minecraft.
- A project to engage families with freshwater ecology, led by Liz Davidson, used the seed funding to develop a partnership with the

National Trust that would enable us to engage families with children at National Trust sites and events with freshwater wildlife and freshwater food webs. This engagement included a banner and a food web game. The National Trust provided extra funding extra funding to produce additional sets of resources.

These projects all met the goal set out in our principles of developing partnerships to deliver PER at scale where appropriate.

Reporting tool

We developed a reporting tool to enable us to track progress in embedding public engagement with research, and to support reporting on PER to the Public Engagement Committee and Science Board against our agreed KPIs.

The tool is designed to help us measure the increase in targeted PER activity over time and to assess the excellence of this activity. It asks scientists to report what their objectives were, who their defined public were, and what the impact of their activity was.

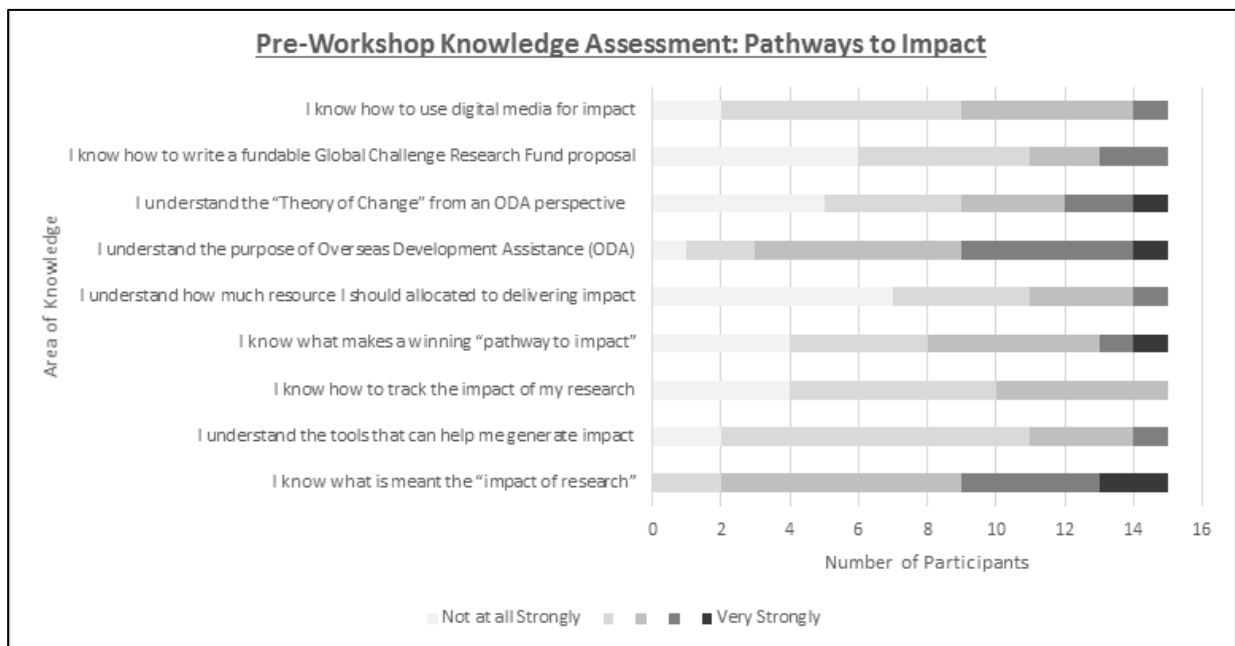
The tool is currently in the form of a short online survey, although we are exploring options to integrate PER reporting with other forms of impact reporting for the future. It will be piloted with UKCEH PER Champions in 2020 and rolled out across the organisation later in the year. Subsequently, there will be a quarterly call for evidence and review of this evidence.

Intranet resources for scientists

To support embedding public engagement with research, we overhauled the internal UKCEH intranet content that our scientists refer to when they are seeking guidance about PER. The public engagement content now includes funding calls, case studies, a champions' page and links to useful external resources.

Training

15 participants completed training on Pathways to Impact, which included PER as a pathway to impact. The training was delivered by an independent expert, Professor Mark Reed of Fast Track Impact. The training assessment (summary below) demonstrates a self-reported improvement in knowledge and understanding.



We are planning to deliver further training on the basics of public engagement with research to our scientists, drawing on e-learning materials developed by SEE-PER grant awardees the University of Southampton and University of Lincoln. The training is framed around the public engagement with research lifecycle and covers purpose, audiences and publics, planning, delivery, evaluation and reporting. We are currently adapting the e-learning materials provided by SEE-PER partners for use at UKCEH and intend to roll these out in early 2020.

Reward and recognition

We have created a proposal for a series of impact awards, including an award for excellence in public engagement with research, thereby positioning PER on a par with other pathways to impact such as commercialisation of research and science to policy. We are currently working with our People and Skills team on a plan to implement these awards.

We have recognised PER activities in internal communications, including in all our Director's verbal quarterly updates to all staff, our monthly Grapevine e-newsletter for all staff, and specific intranet announcements.



Biodiversity in Bracknell

[Jodey Peyton's blog post](#) describes a new project to help housing association residents manage where they live for wildlife, combining biodiversity with better quality of life.

[4 November: Mark Bailey](#) on the pathway to independence

[14 November: Nick Wells](#) on UKCEH's trading subsidiary

And finally ...

Engaging UKRI and NERC

Annually, all the communications teams from the Natural Environment Research Council (NERC) and its institutes meet up to share best practice. At the end of 2018, Hannah Lacey, then our Events and Public Engagement Coordinator, presented to staff from all NERC Institutes on UKCEH's involvement in the EmbER Project and what lessons have been learnt. This was an opportunity to share with other NERC centres how we were embedding PER in our culture, and to learn from them about their PER priorities. This provided a valuable benchmarking opportunity.

In 2019, we invited UKRI and NERC public engagement staff to a meeting at UKCEH where we shared our public engagement priorities and strategies, and showcased our expertise in citizen science. We received great feedback on what we have to offer to other research institutes in this area, and see this as a first step in sharing

and pooling expertise in citizen science across NERC institutes and UKRI more broadly.

Michael Pocock, our Academic Lead for PER, presented our principles at a NERC PER consultation event; and Anthea Milnes, Head of Communications and Engagement, has discussed our principles at a meeting of the heads of communications from all the NERC institutes.

Networking

Thanks to funding from the project, members of the team were able to attend both the Engage conference and Communicate conference. Hannah Lacey, Clare Usher and Alice Hope attended the NCCPE's Engage conference, enabling them to stay up to date with the latest approaches to PER within the sector. The information learnt from this conference has been fed back to the team and lessons learnt embedded.

Tom August, who received seed funding in Phases I and II, was invited to talk at the Communicate conference about CEHCraft, which uses the popular video game Minecraft to communicate land use change impact to wide audiences, using the medium of virtual reality. His learning from this event is feeding into future development. Michael Pocock, also attended the Communicate conference as a delegate.

Events

The communications and engagement team has supported scientists to take advantage of opportunities presented by partners to increase the scale and impact of their public engagement with research.

For example, the COSMOS soil moisture monitoring team participated in a Science Museum Lates event on 27 March 2019 at the London Science Museum showcasing the Science of UNESCO. With support from core engagement staff, the team created

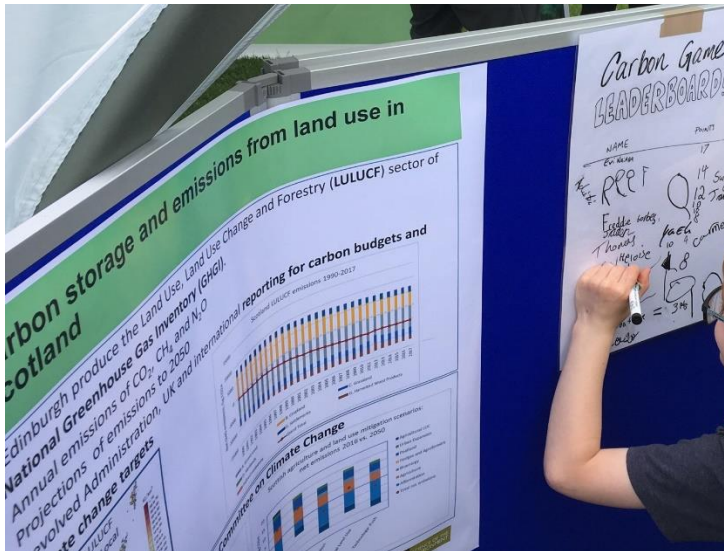
[animations](#) and display materials to engage attendees, and received the following qualitative feedback:

“It was great to be able to demonstrate to the wider public the far-reaching impact that UNESCO designations in the UK are having in the field of science.” Professor Colin McInnes, Chair; James Bridge - Secretary-General and Chief Executive UK National Commission for UNESCO



Scientists from UKCEH’s Edinburgh site took part in this year’s Edinburgh Climate Festival, a community-led initiative organised by Edinburgh & Lothian’s Regional Equality Council (ELREC). The festival was designed to promote and inspire climate action.

Our poster display featured work on carbon storage and emissions from Scottish peatlands; and we encouraged families to join in our Carbon Game, played with giant dice. This activity, in which players act as carbon atoms in the carbon cycle, is designed to introduce visitors of all ages to the carbon cycle.



Citizen science

A partnership of 70 wildlife organisations, research institutes and government agencies produced the third State of Nature report, the clearest picture to date of the status of UK plant and animal species. UKCEH was responsible for analysing over 60 million biological records, most provided by volunteer recorders, showing how the geographic distribution of species are changing over time. The communications and engagement team supported citizen science engagement around the publication of the report.



 **BSBI** @BSBIbotany · Oct 4

#StateofNature report underpinned by plant distribution records collected by #BSBI members collated by @BSBIscience analysed by @CEHScienceNews. That's partnership! Huge thanks to each & every volunteer recorder. More here bit.ly/2LM15ul about #BSBIdata & British wildlife



#STATEOFNATURE
OF 8,431 UK SPECIES ASSESSED,
ONE IN SEVEN IS AT RISK
OF EXTINCTION.



DBHayhow and 9 others










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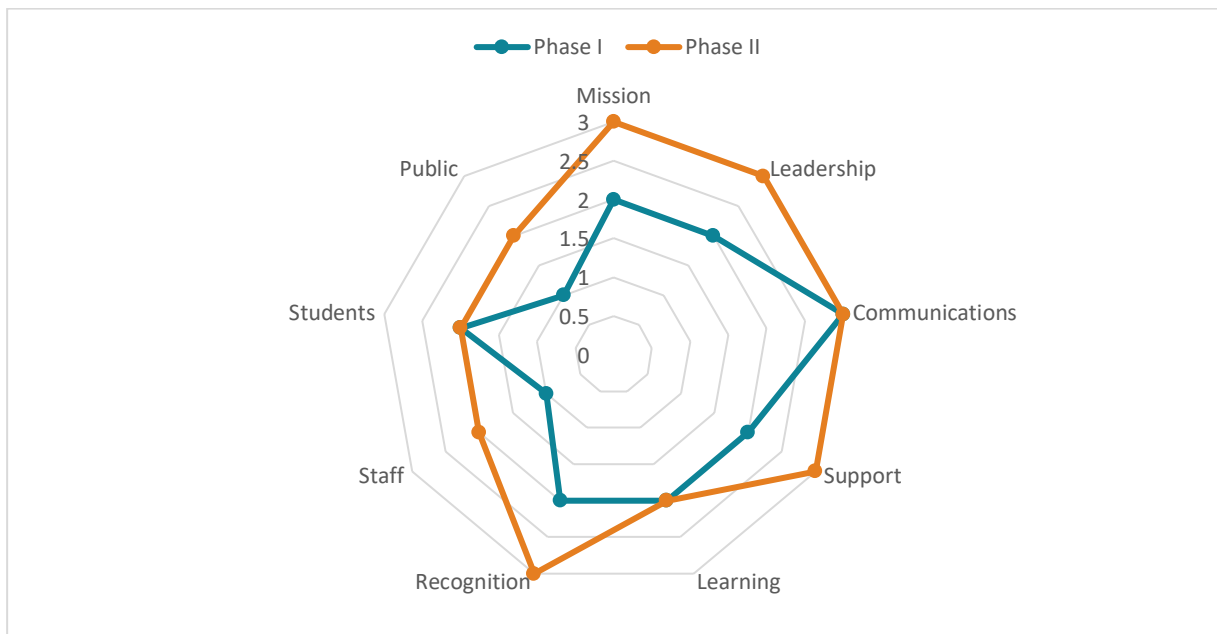
8 Outcomes and impact

Evaluation

As we were nearing the completion of the EmbER Phase II project, we self-assessed our progress, using the EDGE tool, comparing the findings to the outcome of the EDGE tool assessment we completed at the beginning of Phase I. It was helpful to us to have the initial assessment as a benchmark.

Going forward, we will pay greater attention to the detailed breakdown of each dimension within the EDGE tool. This more refined assessment will help us more accurately measure our progress and evaluate our success as we continue to embed PER across UKCEH.

		Phase I	Phase II	Grade	Progress
Purpose	Mission	2	3	GRIPPING	
	Leadership	2	3	GRIPPING	
	Communications	3	3	GRIPPING	
Processes	Support	2	3	GRIPPING	
	Learning	2	2	DEVELOPING	
	Recognition	2	3	GRIPPING	
People	Staff	1	2	DEVELOPING	
	Students	2	2	DEVELOPING	
	Public	1	2	DEVELOPING	



Specifically, we identified the following progress against each category:

- **Mission.**
 - Public engagement is clearly referenced within our forthcoming Strategy 2025.
 - We created Principles of Public Engagement setting out our distinctive approach and disseminated these throughout the organisation.
- **Leadership.**
 - A PER Committee has been established, reporting to the Science Board.
 - A new head of Communications and Engagement has been appointed.
 - An Academic Lead for PER has been identified.
 - PER is included in the objectives of the Director of Impact and Innovation and the Head of Communications and Engagement.
 - A PER champion has been appointed on each UKCEH site.
 - PER is included in our Executive Director's quarterly updates.
- **Communication.**
 - We published a short version of our principles on our website.

- We created a series of Engaged Research PER videos.
- We are continuing to publish blog posts featuring our PER activities.
- PER is included in our monthly e-newsletters to internal and external audiences.
- Applications for PER seed funding were 55 per cent higher in Phase II than in Phase I indicating success in embedding PER.
- Support.
 - PER champions provide site-based support to junior scientists.
 - A clear process for tender support for PER funding has been established, covering both PER funding calls and opportunities to integrate PER into other bids.
 - We improved our PER intranet resources for scientists, including lessons learned.
- Learning.
 - We provided Pathways to Impact training to 15 scientists, covering PER.
 - We have sourced PER e-learning materials.
- Recognition.
 - We have developed a proposal for impact awards, including excellence in PER.
 - We recognise excellent PER via our Executive Director's quarterly updates.
 - We feature PER videos and blogs on our website and social media.
 - We include PER stories in our internal and external e-newsletters.
- Staff.
 - Seed funding provided opportunities for participation.
 - Site-based champions are fostering broader participation.
- Students.
 - Students and early career researchers will be engaged via e-learning (still to happen hence grade not improved).

- Site-based champions are providing mentoring.
- Public.
 - We agreed what kinds of publics are core to our PER activities.
 - We articulated our approach to defining publics in our principles.
 - We engaged partners who would help us reach target publics e.g. National Trust, UKRI and NERC, and facilitated discussions with potential partners to deliver PER at scale e.g. Winchester Science Centre, Freeborne Media.

The results of this self-assessment were reviewed by the PER Committee and will inform the development of our next annual implementation plan.

Outcomes and impacts

As we delivered the EmbER Phase II project, we captured evidence of our progress and key learnings. Defining KPIs helped us to identify the kind of evidence that will help us to know if we are successfully embedding excellent PER across the organisation and influenced the design of our reporting tool.

The table below summarises the evidence we collected:

Outcomes / impacts for each work package	Evidence captured	Key learning
WP 1: PER Strategy PER Principles set out UKCEH's organisational commitment to PER and give researchers clarity of purpose.	PER principles created and agreed with Science Board (see Appendix). Principles made available on the intranet, on the UKCEH website, and	Having PER embedded in UKCEH's strategy and having a clear approach to PER is helping directors and scientists to see this as a priority activity, and to

<p>Principles inform UKCEH's longer-term strategy and integrate fully with science delivery.</p>	<p>presented at Science Area Meetings.</p> <p>Copy on our distinctive approach to PER drafted for inclusion in UKCEH's Strategy 2025.</p>	<p>understand UKCEH's distinctive approach to PER. It will take time to embed this approach.</p>
<p>WP 1: PER Strategy We established more effective governance structures for PER. UKCEH's PER sub-committee provides oversight, reporting to the Science Board.</p>	<p>The roles and responsibilities of UKCEH PER site-based champions and the terms of reference for a PER sub-committee have been documented and approved (see Appendix). Once reporting on KPIs is complete and we are able to report to science board we are confident this will increase buy in from senior staff</p>	<p>The new governance structure ensures visibility for PER with Science Board and oversight of progress embedding PER.</p>
<p>WP 1: PER Strategy PER Implementation Plan 19/20 and PER KPIs provide a formal plan to ensure strategic intent is translated into meaningful /</p>	<p>Public Engagement with Research Implementation Plan for the year 2019/20 is being delivered to time. Measured at monthly project meetings. The sub-committee helped to develop a set of Key</p>	<p>The annual implementation plan is the key vehicle for us to translate strategic intent into actual measurable activities. We will continue to renew this plan annually to help</p>

<p>measurable activities.</p>	<p>Performance Indicators (KPIs), which will be used to measure progress (see Appendix).</p>	<p>us drive the embedding of PER across UKCEH.</p> <p>KPIs will enable us to monitor progress better and continuously improve as a result.</p>
<p>WP 1: PER Strategy Engaged leadership</p>	<p>Principles signed off by Science Board.</p> <p>UKCEH Executive Director presented Principles at Quarterly Update to all staff.</p> <p>PER activities are regularly celebrated in Executive Director’s quarterly updates.</p> <p>PER videos feature senior scientists and the Science Area Head for Pollution attended PER workshop at our Lancaster site.</p> <p>Appointment of a new Head of Communications and Engagement, and identification of an Academic Lead reflects increased importance attached to leadership.</p>	<p>While we have made progress, we recognise that we need to continue to engage UKCEH Executive Directors with our approach to PER, our PER KPIs and get the support of Science Board for further implementation on a project basis.</p>

<p>WP 2: Staff & Stakeholder Engagement</p> <p>Seed funded projects aligned with UKCEH PER Principles.</p>	<p>55% increase in seed funding interest / applications.</p> <p>Evaluation demonstrated alignment with Principles (see page 20).</p> <p>We held a seminar co-hosted by seed funding awardees celebrating success and sharing lessons learned.</p>	<p>Seed funding was effective in widening participation.</p> <p>Our Principles are being applied in practice.</p>
<p>WP 2: Staff & Stakeholder Engagement</p> <p>PER recognised in reward and recognition, leading to staff promotions which recognise their PER work</p>	<p>Proposal for impact awards created, including award for excellent PER.</p> <p>Inclusion of PER activities in Grapevine e-newsletter for all staff.</p> <p>Inclusion of PER news and blogs in external e-newsletter for stakeholders.</p> <p>Inclusion of excellent and strategic PER in the Director’s quarterly updates to staff</p>	<p>We need to focus on forms of reward and recognition, which are affordable and practicable within our operating environment.</p> <p>Working with people and skills to ensure PER is included in merit promotion criteria</p>
<p>WP2: Staff & Stakeholder Engagement</p>	<p>Champions were appointed on each site. They are allocated time (20 days per</p>	<p>It is important for PER to be represented on each UKCEH site rather than</p>

<p>PER champions on each site to provide mentoring and support and to oversee development and delivery of annual PER implementation plan.</p>	<p>annum in total) to dedicate to PER support and oversight.</p> <p>Bi-monthly PER committee meetings have been set up to ensure sustainable, consistent and timely delivery of the PER implementation plan</p>	<p>to rely on a central resource.</p>
<p>WP 2: Staff & Stakeholder Engagement Generate case studies to celebrate and promote UKCEH's role in PER.</p>	<p>Series of video case studies and blogs created and shared with all UKCEH scientists and externally (see links above). These have received an average of c.170 views each on our YouTube channel.</p> <p>Good email feedback on the case studies demonstrates that these are being well received. More scientists would like a similar video featuring their work.</p> <p>Scientists report using the videos for impact reporting and to further citizen science participation.</p>	<p>Creating and sharing videos and blogs is motivating for scientists.</p>

<p>WP 2: Staff & Stakeholder Engagement PER training</p>	<p>15 participants completed training on Pathways to Impact, which included PER as a pathway to impact.</p> <p>The training assessment (summary above) demonstrates a self-reported improvement in knowledge and understanding from this kind of training.</p> <p>We have sourced e-learning modules on core aspects of PER (see page 12).</p>	<p>The training we provided was effective in improving knowledge and understanding.</p> <p>Being part of the SEE-PER network benefits us as we are adapting PER e-learning existing materials from SEE-PER awardees.</p>
<p>WP2: Staff & Stakeholder Engagement Internal communications support PER activities</p>	<p>We held a seminar where seed funding awardees from Phase I shared their experiences and learning.</p> <p>The UKCEH intranet pages on PER now include:</p> <ul style="list-style-type: none"> - Principles - Case studies - Champions details - Useful links 	<p>Including case studies and lessons learned on our intranet helps to avoid us ‘reinventing the wheel’ when it comes to new PER activities.</p>
<p>WP2: Staff & Stakeholder Engagement</p>	<p>Members of staff / scientists attended Engage in 2018 and 2019 and Communicate</p>	<p>Continuous development is important for the future.</p>

<p>Staff and / or champions to attend Engage and Communicate conferences to keep up to date with best practice.</p>	<p>in 2018 and 2019, sharing their learning with colleagues.</p>	
<p>WP2: Staff & Stakeholder Engagement PER embedded into grant applications.</p>	<p>Roles, responsibilities and process between scientists, tender support staff and engagement staff have been clearly defined. Articulated clear process to direct staff to PER team and for targeting key bids for support, visually represented in a graphic</p>	<p>We need to develop exemplars for this way of working, and ensure we are seen to offer scientists help to get funding rather than as a hurdle in completing their bid.</p>
<p>WP2: Staff & Stakeholder Engagement More PER partnerships with external organisations, based on a shared</p>	<p>Seed funding encouraged projects which focused on partnerships. Applications focused on engaging with the following partners:</p> <ul style="list-style-type: none"> - National Trust - Scottish Government - Lancaster University - Countryside Survey partners 	<p>Partnerships can help us to engage at scale.</p>

<p>understanding of mutual benefit.</p>	<p>- Veterinary schools</p>	
<p>WP 3: Impact and evaluation Formal reporting structure established and KPIs agreed.</p>	<p>UKCEH's PER Implementation Plan 19/20 includes a set of KPIs (see Appendix) for measuring performance. EB signed off reporting schedule for PER to SB – SB meet quarterly</p>	<p>Work on KPIs has helped us to think rigorously about how to measure progress against our key objectives for embedding PER.</p>
<p>WP 3: Impact and evaluation PER reporting and analytics support measuring quantity and quality of PER.</p>	<p>Reporting tool developed in a way that supports us measuring the quantity and quality of PER over time.</p>	<p>In the longer term, we would like to join this up with other forms of impact reporting.</p>
<p>WP 3: Impact and evaluation EDGE tool re-assessment.</p>	<p>We self-assessed our progress, using the EDGE tool, and comparing the findings to the outcome of the EDGE tool assessment we completed at the beginning of Phase I (see table and graph above summarising evidence).</p>	<p>This 360 view of our PER helps us to keep in mind all the different aspects of embedding PER at UKCEH and to track overarching progress.</p>

<p>WP3: Impact and evaluation</p> <p>SEE-PER reporting / EmbER project review.</p>	<p>Submitted quarterly SEE-PER reports tracking progress and this final report evaluating success and lessons learned.</p>	<p>The reporting structure of the project helped to ensure we kept our implementation plan on track.</p>
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Our learning

Through SEE-PER meetings and discussions, we discovered that many organisations have similar challenges in measuring their success in embedding PER as UKCEH. By discussing the kinds of evidence other organisations were gathering to measure progress, we were able to extend the range of our own evidence. This learning was then discussed further by the PER committee to shape our implementation plan – from this discussion we have agreed to take forward the following: greater engagement with the executive board and our board of trustees, effectively communicating the PER components of the REF impact case studies and reporting PER efficiently.

9 Sustainability

Implementation plan

Our PER Implementation Plan 19/20 extends beyond the timeframe of the EmbER 2 project and includes specific actions to Mar 2020. We have also committed to creating, implementing, delivering and evaluating annual implementation plans in the future, which is helping us to take a long-term approach to embedding PER. The PER sub-committee has discussed the key elements that will go into our implementation plan for 20/21.

Governance

The Principles we have set out, the governance structures we have put in place, and the KPIs we have proposed are part of a high-level commitment to PER and a long-term approach to embedding PER at UKCEH. The public engagement sub-committee provides site-based expertise in PE. Since becoming independent we have shared our principles with our trustee directors who have articulated their support.

Reporting, KPIs and evaluation

The KPIs we have put in place and the reporting tool we have developed to support measurement will enable us to see if we are making progress in embedding PER across the organisation. As time goes on, we will refine these to ensure we are getting the information we need to feed into continuous improvement. We will continue to use the EDGE tool to assess our progress and identify areas for further improvement, measuring against the baseline we established at the beginning of Phase I and the re-assessment we carried out at the end of Phase II.

Resources

The appointment of Anthea Milnes as Head of Communications and Engagement, the appointment of Clare Usher as External Communications Manager, and the appointment of Alice Hope as Public Engagement and Events Coordinator (replacement for Hannah Lacey) are all full-time permanent appointments,

representing a substantial commitment in resource to PER. In addition, we have committed resource (c.20 days' time each year) for PER champions on each UKCEH site in our business planning through to the financial year 2021/22.

10 Final thoughts

When we first set out to critically examine our PER activities, we had a number of questions in mind. What should UKCEH's role be in engaging the public with environmental science issues? Were some of our existing PER activities, such as visiting schools or engaging with the public at festivals and events, really having an impact? How could we ensure PER was aligned with and embedded into our core science delivery, which primarily happens through specific projects?

Through both the Ember 1 and Ember 2 projects, we feel we have been able to answer these questions in a satisfactory way, which means we are now truly committed to delivering the kinds of public engagement that work for us as an organisation and are aligned with our strengths and our strategy. We identified that our core focus for PER as an organisation is to engage the public in the design, delivery and dissemination of our specific research projects, with a focus on three key areas.

1. We were already world leaders in citizen science, which is embedded into much of our ecological and hydrological monitoring, but there was no overview of this activity at a corporate level. We now see citizen science as a core strength of our public engagement, which we can build on in future, and are putting in place training and partnerships that will support excellence in citizen science.
2. We were already involved in public dialogue around controversial science – for example, science around neonicotinoid pesticides. Through the SEE-PER work, we recognised that this kind of public dialogue is important to the effective design and delivery of science projects, and that we need to build our scientists' skills in this area and provide support to handle challenging situations.
3. We were already engaging local communities in the design and delivery of our science projects – for example, consulting health workers and community workers in the forests of South India as part of our work on zoonotic diseases,

or consulting residents of housing associations about increasing biodiversity in their neighbourhoods. We now recognise that we can support our scientists to do this in a way that meets high standards of excellence.

This clarity of thought has provided the basis for us to embed PER effectively across the organisation through the creation and dissemination of our Principles of Public Engagement with Research. These Principles recognise the strategic importance of PER to UKCEH in delivering excellent science with impact.

The SEE-PER projects have also enabled us to approach PER in a more rigorous ways. So we were able to use the EDGE framework to assess progress and improve the excellence of our PER. We improved the governance and coordination and planning of PER across UKCEH, recognising the importance of support from senior leaders. We embedded PER better in our science, including by creating PER champions on each UKCEH site, and we extended participation in PER through providing seed funding.

11 Reflections from senior leadership

Contributed by Nick Wells, Director of Impact and Innovation, UKCEH

The impact on our institution

From my perspective as Director of Impact and Innovation, articulating our distinctive approach to PER via our Principles of Public Engagement with Research has been critically important in embedding excellent PER in the organisation. These Principles now provide the basis for carrying out PER that is truly integrated with UKCEH's science projects, and the PER we do will make a material difference to the success of these projects. The Principles spell out the kinds of activities we want to resource – citizen science, community engagement, and public dialogue – and that we believe will make our science relevant and impactful.

Building on this foundation, we are finding meaningful ways to embed PER into the design, delivery and dissemination of research. For example, we now have a clear joined up process by which public engagement and tender support staff work with scientists to embed PER into grant applications at the earliest stage of a project. We are working with leaders of some of our largest National Capability awards to integrate PER into science delivery. And at the end of projects, the development of clear KPIs and a reporting tool mean that we now have a shared understanding of how to measure and evaluate our success. This lifecycle approach to integrating PER has been key to its effectiveness.

Initiatives and ways of working that have stood out

We established site-based champions and a formally recognised Academic Lead for PER as part of a PER Sub-committee, stimulating a shared sense of ownership for PER across the organisation, and driving greater engagement and participation among scientists on all four sites.

We have improved external and internal communications around PER. One striking example of this was the production of PER videos, some featuring our most senior scientists talking passionately about specific PER activities. These videos help to

validate PER as an activity and inspire other scientists to see PER as valued by the organisation and its publics.

The project has created increased opportunities for us to engage with UKRI and other NERC institutes to share our learning and to mutually inform each other's public engagement strategies and plans. We believe this augurs well for future cooperation.

The future of PER at UKCEH and its resourcing

For the future, PER is positioned alongside other pathways to impact such as science to policy, and recognised as an integral part of science delivery. The opportunity to carry out more genuinely participatory science is an exciting one for UKCEH, promising to ensure our science is developed and delivered in partnership with our publics, optimising the material difference we make.

Unlike many research institutions, UKCEH has attached permanent resource to PER and ongoing financial commitment to PER has been built into our budgets. While limited, this resource is sufficient to ensure that we can continue to embed excellent PER across the organisation through our ongoing annual implementation plans, informed by thoughtful evaluation.

12 Talking points

12.1 Culture Change

We want to ensure that our 500 environmental scientists across our four UK sites are familiar with, understand and know how to apply our principles of excellent public engagement with research to their core research. The UKRI funding we received has helped us work towards this goal in a number of specific ways:

- The funding enabled us to pay for time for a champion based on each of our four sites to help embed excellent PER across the organisation. The champion's role is to serve as a site-based advocate for PER that is aligned with UKCEH's Principles of PER, to provide expertise to support PER activities, to identify and lead local PER opportunities, to signpost PER resources to scientists on their site, to flag excellent PER activities to the core public engagement team so they can be celebrated and shared, and to serve as members of the PER sub-committee.
- We awarded seed funding to scientists for PER activities. We selected five proposals from 17 applications, based on the alignment of the proposed activities with our Principles of PER. We then worked with awardees to refine their proposals, encouraging them to clearly define their publics, to think about how to deliver increased impact by working with partners, and to consider how they would evaluate the success of their activities from the outset. This activity helped to widen participation in PER and improve the excellence of PER activities.
- The funding supported the development of our Principles of Public Engagement. Specifically, we held a two-day workshop at our Lancaster site at which our PER sub-committee set out our vision for PER, defined our strengths in PER, discussed how we could practically recognise and reward PER, identified the boundaries of our PER, and agreed the role of champions and the sub-committee for the future. The funding also enabled us to get

external advisers from NCCPE and the University of Oxford to provide their expert input into this work.

- We made progress towards delivering training on public engagement with research to our scientists, drawing on e-learning materials developed by other SEE-PER grant awardees. The training is framed around the 'PER life-cycle' and covers: purpose; audiences and publics; planning; delivery; evaluation; and reporting. This flexible training resource should enable scientists to improve the quality of their PER activities and ensure they evaluate them effectively.
- We signalled our commitment to excellence in public engagement externally through a range of communications. In particular, we published our approach to public engagement with research on our website at www.ceh.ac.uk/publicengagement. We created a series of six short videos showcasing our public engagement with research work. And we set up a meeting with key PE stakeholders from UKRI and NERC to share our principles and discuss best practice and future public engagement strategies with them.

These are just some of the specific ways in which the UKRI funding has had an impact on our institution and beyond. Our self-assessment using the EDGE tool confirms that we have made considerable progress towards embedding excellence in PER in our organisation across several dimensions.

12.2 Challenges

One challenge to integrating PER into our science projects has been the restrictions presented by our time recording system. All our scientists allocate their time to the science projects they are working on and have a maximum quota of time they can spend on non-project work. This means it is challenging for scientists to participate in seminars, training or activities where they cannot charge their time directly to specific science projects. We have worked to overcome this obstacle by:

- Working to ensure that PER is built into the design, delivery and evaluation of all relevant science projects so that time spent on it can be coded to a science project;
- Integrating PER training with the core research training programme for early career scientists;
- Integrating PER training with Pathways to Impact training, which covers a broader range of knowledge exchange activities;
- Providing e-learning which can be carried out flexibly when the scientist has time;
- Running internal cross-site seminars at lunch times.

Another particular challenge during the delivery of the Phase II project has been combining the resource demands of our PER Implementation Plan with the resource demands of moving to independence from Government. Our move to independence created an opportunity for us to rethink the role of PER in our strategy and to position it as a core activity. However, it also created considerable additional work for our core communications and public engagement team.

Despite the demands, we were able to keep the EmbER Phase II project largely on track through regular project meetings and effective project management. Our implementation plan had clear timelines and responsibilities, facilitating efficient delivery. Only a couple of items in our implementation plan were slightly delayed as a result. Specifically, we are still implementing e-learning for scientists, and are due to pilot our reporting tool in January 2020, slightly later than we originally planned.

12.3 Success

At the outset of the project, we did not have a clear focus for PER at UKCEH. The types of activities we supported centrally were diffuse, ranging from school visits and festival attendance to citizen science and community engagement, and the value of these activities to the organisation and its publics was not clear.

By articulating UKCEH's approach to public engagement in a set of Principles of Public Engagement with Research, signed off by our Science Board, we laid a firm foundation for our PER activities that set PER at the heart of the research we do and its impact. The Principles deliberately align our PER with our core science work, so that PER is not seen as an 'add on' activity, but as a key part of the design, delivery and evaluation of projects. Citizen science, community engagement and public dialogue are the areas of public engagement that are critical in carrying out science that is highly relevant to the communities in which we work, and to societies more broadly. Having a clear and distinctive approach spelt out in our Principles also means that we can now focus the time of the core public engagement team on supporting core PER activities while scaling back the time spent on non-core activities.

We disseminated our Principles both internally and externally, including to our sister institutes within NERC and to UKRI public engagement staff. Building on this success, we created an annual implementation plan has enabled us to translate our principles into practice. Our implementation plan sets out our objectives, the actions we will take this year towards achieving them, and the KPIs by which we will measure our success. We have also committed to creating, implementing, delivering and evaluating annual implementation plans in the future, which will help us to continually develop for the future.

Appendix: Key documents

1. UKCEH Principles of Public Engagement with Research

A INTRODUCTION

These principles are designed to sit alongside and complement UKCEH's Strategy 2025 and to support effective delivery of that strategy. They set out how UKCEH wants to lead the way in public engagement with research, building on our existing strengths in citizen science, public dialogue and community engagement. They define UKCEH's approach to public engagement with research, outline the support that UKCEH offers scientists to engage with publics, and set out UKCEH's expectations of how scientists carry out excellent public engagement. This document is intended for use by the UKCEH community only, including staff and students.

What is public engagement?

The National Co-ordinating Centre for Public Engagement (NCCPE) defines public engagement as “the myriad of ways in which the activity and benefits of higher education and research can be shared with the public. Engagement is by definition a two-way process, involving interaction and listening, with the goal of generating mutual benefit.”

What are the benefits of public engagement with UKCEH's research?

Benefits to UKCEH researchers include:

- Ensuring our research has impact.
- Ensuring the relevance and public acceptability of research.
- Shaping, defining and delivering research.
- Developing networks to carry out citizen science.
- Enhancing our reputation for societally-relevant research.
- Career development and job satisfaction for researchers.

Benefits to UKCEH publics include:

- Co-producing research that is relevant.
- Having a say in how local landscapes and ecosystem services are shaped.
- Realising increased direct economic, environmental or social benefits from research.
- Engaging in dialogue about controversial technologies and infrastructure developments.
- Participating in protecting, restoring and creating sustainable ecosystems.

Who are our publics?

We want to focus our public engagement with research on those publics who are most relevant to the planning, delivery and impact of our science. Our publics include:

- Targeted segments of the public relevant to research e.g. wildlife enthusiasts, members of relevant clubs and societies, groups relevant to specific projects such as dog walkers or anglers in a particular geographical area, local businesses such as tourism and fisheries etc.
- Local communities e.g. grassroots engagement around science projects in specific communities in developing countries for Overseas Development Assistance (ODA) work e.g. forest workers, community health workers.

When does public engagement happen in the project lifecycle?

We recognise that research is a dynamic and iterative process, rather than a linear one, and that public engagement with UKCEH's research may be appropriate at any stage of the research cycle and will vary from project to project. Relevant stages include:

- As research is being developed: engaging publics in the development of research questions and projects, both in the UK and overseas. Understanding their knowledge and interests from the outset, and what we can learn from

them that will be of value in designing the project. This will include applying the latest techniques of participatory research.

- As research is being conducted: engaging publics as collaborators, developers, and participants, including citizen science for example. Thinking through what outputs we will share as the project progresses, and the two-way benefits of this process.
- Once research is concluded: informing and inspiring publics, including young people, with the outputs of research, and influencing people's knowledge, understanding, decisions and behaviours.

We expect that public engagement with research will be led either by UKCEH researchers and designed as part of their research projects, by the UKCEH public engagement team or defined Partners.

The public engagement context

As an independent, not-for-profit research institute, we want to continue to carry out public engagement in a way that is aligned with UKRI. We will collaborate with UKRI and with specific research councils and research institutes to engage publics, and to shape and share best practice across UKRI and beyond. We are committed to being part of a community which is dedicated to developing best practice in public engagement, including NCCPE and a broad network of public engagement professionals.

B UKCEH'S COMMITMENT

At UKCEH we commit to undertaking and supporting excellent, intentional public engagement with our research. We see public engagement as essential in ensuring our research is both relevant and impactful.

This applies to UKCEH's whole research portfolio, including research carried out as part of our National Capability programmes, research funded by UKRI grants, and research funded by other Customer Groups through Competitively Won Income.

Public engagement is therefore integral to, and essential for delivery of, UKCEH's Science Strategy 2025.

UKCEH's core capabilities in public engagement with research

As an organisation, we want to be world leaders in specific areas of public engagement, building on our existing strengths. We want to build our capabilities in these areas and will provide central support and coordination for the following types of activities:

- Gathering data via volunteer recording networks e.g. engaging publics with spotting species via conservation trusts, or engaging landowners to support data gathering on their land, more generally known as "citizen science".
- Community engagement delivering landscape management and restoration e.g. managing water bodies to deliver multiple ecosystem services such as water supply and sustainable fisheries.
- Public dialogue around the environmental impact of high profile developments or controversial technologies e.g. major infrastructure developments or potentially damaging pesticides.
- Engaging a segment(s) of wider publics as experts, accessing local knowledge in support of environmental science and management e.g. tapping into local knowledge of the environment.

Having priorities for public engagement will help us to focus our partnership development, attract funding, and build our capabilities in a way that is aligned with our strategy.

Working with partners

We want to foster public engagement with research both in the UK and around the world, and will work with others as intermediaries to publics, including relevant charities and conservation trusts; policy makers, civil servants, public sector professionals and regulators nationally and internationally, international NGOs and International Financial Institutions (IFIs).

Where appropriate and possible, we will encourage scientists to think about engaging with appropriate partners to achieve public engagement with research at scale and / or in depth (for example projects involving engagement with local communities). The UKCEH core public engagement team will facilitate engagement at scale and / or in depth by building appropriate partnerships and capabilities.

Extending the reach of our public engagement may involve working with media partners e.g. BBC Citizen Science. While we see science communications as distinct from public engagement, we will ensure that public engagement is joined up with communications where appropriate.

The boundaries of our public engagement with research

Public engagement activities should focus on public engagement with UKCEH's active research portfolio. We do not have the resources or remit to carry out public engagement with science more broadly. The time and resources of the core public engagement team will go towards supporting priority activities aligned with these principles. This will mean that, while activities such as individual schools visits, while valuable, will be supported through generic resources rather than bespoke work.

Support for scientists: public engagement with research champions

UKCEH commits to having a core public engagement with research team, including public engagement with research champions on each Site who can advise scientists on best practice in public engagement with research and can serve to mentor, support and inspire early career scientists.

Support for scientists: the role of the core public engagement team

UKCEH's core public engagement team will act as an incubating hub, developing a community of PER active researchers: facilitating excellent public engagement with research, ensuring best practice, supporting skills development, cataloguing and signposting resources, working with L&D to provide training, recording PER activities, evaluating success, and planning for and reporting on public engagement with research at an organisational level, for example by providing regular reports to the Science Board on KPIs, and contributing to UKCEH's Annual Report and Accounts.

The core public engagement team will also consider the best ways to resource public engagement and to enable scientists to have time to focus on public engagement, including building PER systematically into Pathways to Impact for science programmes and projects. Each year, the core public engagement team will put in place an implementation plan setting out plans for continuing to embed PER and for continuous improvement in the practice of PER.

Support for scientists: training in public engagement

Training for public engagement research will include a focus on best practice in general and on specific capabilities that fit UKCEH's strategic priorities e.g. public dialogue around controversial science, building and managing volunteer networks, engaging local communities, and evaluation of public engagement with research.

Support for scientists: funding for public engagement

In addition, UKCEH's tender support team will provide support to researchers when bidding for funding for public engagement with research thereby extending the reach of PER; UKCEH's Public Engagement Coordinator will support researchers with the planning, delivery and evaluation of public engagement activities; and UKCEH's business development team will support researchers to extend and realise income from public engagement where appropriate.

Reporting and evaluation

We expect scientists to report on the impact of public engagement activities, including lessons learned for the future and to share their learnings with colleagues. We will keep a bank of 'lessons learned' which scientists can draw on and provide training and guidance on best practice in evaluation as it evolves.

Reward and recognition

UKCEH will reward and recognise public engagement with research against these principles, coincident with other activities focussing on delivering impact: commercialisation, environmental management practices and informing policy.

Rewards and recognition may include: impact awards, acknowledgement by line managers, successes reported in science area and director's updates, and activities included in the Grapevine internal newsletter. Performance in public engagement may constitute part of the case for merit promotion.

C UKCEH'S EXPECTATIONS

Excellence in public engagement with UKCEH's research

We are committed to excellence in public engagement. This means that, with appropriate support from UKCEH:

- We expect public engagement with research to be planned as part of funding proposals and as part of the "pathways to impact" where relevant and possible, including National Capability (NC) programmes and Competitively Won Income (CWI) projects.
- We expect public engagement with research to have clearly defined publics that scientists are able to describe, quantify and reach.
- We expect plans for public engagement with research to have SMART objectives and include a rigorous evaluation plan – for example, with a focus on reach, impact and value, and covering quantitative and qualitative measures as appropriate.
- We expect public engagement to be forward looking and innovative and to incorporate new approaches and techniques where appropriate, for example digital communications or participatory research techniques.

UKCEH's public engagement team and champions (see above) can advise scientists how to develop suitable plans, objectives and evaluation plans.

2. PER Champion: Terms of Reference

Key Objectives: Provide site-based advocacy for PER, supporting the planning and delivery of PER activities aligned with UKCEH's PER Principles, identifying local opportunities for PER and flagging PER constraints and highlights.

Core Responsibilities

1. Identifiable Site-based advocate for PER aligned with UKCEH PER Principles.
2. Provides expertise to facilitate planned, funded PER activities, achieving excellence with impact.
3. Identify and lead local PER opportunities and promote UKCEH-wide/national-scale opportunities.
4. Signposts PER resources at Sites and flag excellent PER activities with impact to Communications and Engagement Team.
5. Member of PER Sub-committee to Science Board.

Resources

Champions are allocated four days per annum to fulfil the role, including membership of the sub-committee.

3. PER Sub-committee to Science Board: Terms of Reference

Key Objectives: Develops, implements and evaluates UKCEH's strategic approach to PER and associated annual PER Delivery Plan.

Core Responsibilities

1. Review UKCEH's strategic approach to PER, including application of the NCCPE EDGE Tool, thus periodically reviewing and developing UKCEH's PER Principles.

2. Define central resource requirement and champion budgetary requests to Infrastructure Management Team and Science Board as appropriate, and inform allocation and direction thereafter.
3. Oversee the development, implementation and evaluation of annual UKCEH PER Delivery Plans, ensuring strategic implementation of UKCEH PER Principles.
4. Support large-scale UKCEH-wide PER CWI proposal development and delivery.
5. Receive and review annual PER activities informing contributions to UKCEH's Annual Review and other communication channels for the promotion and celebration of PER both internally and externally.

Governance

- The PER Sub-committee's principal reporting body is the Science Board.

Meetings

- A meeting will be organised on a biannual basis.
- Non-members will be invited to attend on an ad hoc basis when additional expertise is required, including Reports from External Communications Manager and Public Engagement and Events Coordinator.
- Agenda and associated papers to be circulated no later than five working days prior to meeting.

4. Key Performance Indicators

KPIs: Widening Participation

1. Record PER activities in a spreadsheet and monitor the increase or decrease in the number of activities over time.
2. Identify which activities are around our core capabilities as outlined above and monitor the increase or decrease over time.

3. Record the journey of scientists with PER from initial activity onwards via same spreadsheet, tracking improvements in excellence and scale where appropriate.
4. Record enquiries and the nature of those enquiries to communications and tender support relating to public engagement and monitor increase or decrease in enquiries over time.

KPIs: Partnerships

1. Report qualitatively on progress with partnerships and outputs from these.

KPIs: Excellence and Continuous Improvement

1. Record alignment of activities with our core focuses i.e. citizen science, public dialogue around restoration or remediation, public dialogue around controversial technologies or infrastructure developments, community engagement in designing science projects.
2. Record objectives, defined publics and metrics for each activity.
3. Review lessons learned and ensure they have been applied to future plans and activities.

KPIs: Income

1. Record number of PER grants applied for and won, and income generated.
2. Record inclusion of public engagement with research in broader bids.

KPIs: Impact

1. What difference have we made through PER? Case studies and stories.
2. Inclusion of PER cases in Centre Evaluation and KEF.

KPIs: Focused Support, Reward and Recognition

1. Record engagement with training materials and training sessions.
2. Record recognition activities e.g. Director's quarterly update, impact awards.



BANGOR

UK Centre for Ecology & Hydrology
Environment Centre Wales
Deiniol Road
Bangor
Gwynedd
LL57 2UW
United Kingdom
T: +44 (0)1248 374500
F: +44 (0)1248 362133

EDINBURGH

UK Centre for Ecology & Hydrology
Bush Estate
Penicuik
Midlothian
EH26 0QB
United Kingdom
T: +44 (0)131 4454343
F: +44 (0)131 4453943

LANCASTER

UK Centre for Ecology & Hydrology
Lancaster Environment Centre
Library Avenue
Bailrigg
Lancaster
LA1 4AP
United Kingdom
T: +44 (0)1524 595800
F: +44 (0)1524 61536

WALLINGFORD (Headquarters)

UK Centre for Ecology & Hydrology
Maclean Building
Benson Lane
Crowmarsh Gifford
Wallingford
Oxfordshire
OX10 8BB
United Kingdom
T: +44 (0)1491 838800
F: +44 (0)1491 692424

enquiries@ceh.ac.uk

www.ceh.ac.uk