



VALUING NATURE PROGRAMME

VNP28



VALUING NATURE THROUGH MULTIPLE LENSES

**Highlights from the Valuing Nature PCT Programme
(2014–2021)**

Sunita Sarkar • Rosie Hails • Anita Weatherby • Bill Bealey
Ece Ozdemiroglu • Guy Duke • Michael Winter • Charles Godfray
Rob Fish • Jonathan Porter • Heather Trevis • Val Woods



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GD NATCAP LTD



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Foreword

The concept of ‘Valuing Nature’ has evolved rapidly over the last decade, building on the foundations of the UK National Ecosystem Assessment in 2011. The subsequent publication of the first ‘White Paper for the Environment’ in 30 years, also took these concepts into the heart of government and led to several initiatives including, the Natural Capital Committee and the launch of the 25 Year Environmental Plan. Further impetus has been provided by the exit of the UK from the EU, and the formation of the new agricultural policy in England of ‘Public money for public goods’ and parallel initiatives across the devolved nations. More recently, the government commissioned review of ‘The Economics of Biodiversity: The Dasgupta Review (2021)’ has been published.

The Research Councils have responded with agility to the rapidly developing agenda, initially in 2011 with the first ‘Valuing Nature Network’ led by Prof. Ian Bateman. This aimed to create a new network in which environmental economists and ecologists, academics and practitioners, could co-create a new research agenda. There was (and remains) an urgency around developing economic valuations that incorporated ecological dynamics, to bring the environment more effectively into decision making. Without estimates of the economic contribution of many ecosystem services, the default would be an assumption of zero worth, and invisibility of nature’s contributions to many decisions.

The second phase of the Valuing Nature programme drew in four research councils to the field: NERC, ESRC, BBSRC and AHRC, (as well as Defra) in recognition that valuation of nature, landscapes and ecosystem services is a multidisciplinary endeavour. The multiplicity of funders provided the flexibility and drive for the programme to promote interdisciplinary and cross-sectoral thinking and dialogue. The co-ordination team that came together to run the Valuing Nature Programme included ecologists, economists, social scientists, arts and humanities expertise, and business and communications experts. Through our networks, many others also contributed their time and expertise *gratis*, for which we are particularly grateful to our Programme Advisory Group and our Business Interest Group.

Over the six and a half years that the Valuing Nature Programme ran, events included: Interdisciplinary Placement Schemes; Business Schools; Demystifying series; Round Tables; Conferences & the Annual VN conferences; Natural Capital Syntheses and many other activities. This report is not however, a listing of what the programme did and achieved, but rather an assessment of how the programme did, using some examples of what worked well, what could have been done better, and includes recommendations for future programmes of this type. The aim, after all is to ensure that the research we do benefits the planet as a whole.

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Chairperson
VNPCT Programme Advisor
Group (2018–2021)

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VN Programme Coordination
Team (VNPCT)

Director of Science and Nature
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Executive summary

The £7M, interdisciplinary Valuing Nature Programme Coordination Team (PCT) Programme was initiated in October 2014 and ended in March 2021. Its aim was to better understand and represent the complexities of the natural environment in valuation analyses and decision making. It built upon the outputs from the 2011–2013 Valuing Nature Network, which developed a multi-disciplinary community and identified key research challenges around meaningful methods of valuation of natural capital that needed addressing. The VNPCT programme was funded by the Natural Environment Research Council (NERC) in partnership with the Arts & Humanities Research Council (AHRC), the Economic & Social Research Council (ESRC), the Biotechnology and Biological Sciences Research Council (BBSRC), and the Department of Environment, Food & Rural Affairs (Defra).

This report highlights some of the key successes and learnings from the VNPCT programme, in terms of governance and activities, in order to provide recommendations to similar, recently initiated and future programmes, to enhance their impact and legacy, as well as to inform funding structures.

The programme was built around a strongly **interdisciplinary and cross-sectoral governance** structure to entrench this thinking in the way in which the programme was run. Such thinking is required, and hence recommended, to coordinate research and engagement programmes focussed on complex social, economic, and environmental challenges. Thankfully, many of the challenges we face may not require much more evidence, but rather a different way of thinking about how the evidence is used, considered, and/or embedded. Interdisciplinary working, therefore, needs to become the norm – and by this it means working across academia, as well as business, industry, NGO, government, public, etc. We need to move beyond valuing something economically or non-economically, but rather holistically, and this has been made clear in the recently published and well received Dasgupta Review.

A particularly important introduction to the **governance structure** of the VNPCT programme, which emphasises this broader interdisciplinary way of working, was the Business Interest Group (BIG), which comprised of representatives from circa 20 of some of the UK's largest businesses. The BIG provided strategic advice on business impact actions and lent weight to the programme's business-focussed activities. BIG members also provided in-kind support in the form of venues for events and presentations, such as at the Business Impact Schools and the Business Impact Conference. It is recommended that strong, focussed stakeholder advisory groups, which in the case of the VNPCT was business, that speak to the aims of a programme, be encouraged in future. In the case of the VNPCT, the Business Champion who was the direct liaison between the PCT and the BIG, had worked with business before and knew the nuances around engaging effectively with business. This helped in achieving outcomes from business-related activities for the VNPCT programme. In the absence of such specifically skilled individuals within a programme team however, clear terms of reference and modes of engagement need to be co-developed with the stakeholders in question, to help guide interactions and extract the most benefit from the group.

In the case of the Programme Advisory Group (PAG), a common entity required across many programmes, balancing the expertise the PAG brings to the programme and the benefits that the PAG receives, is recommended. It is often the case that the PAG comprises of the best in the field, and without question the VNPCT programme had a strong PAG. However, due to busy schedules of both PAG and PCT members, it was not always possible to engage regularly to enhance and entrench impact and legacy as the programme progressed. It is recommended for consideration that, going forward, future programmes may consider broadening membership to mid-career scientists and sectoral representatives who are at the height of building a career and legacy, and using this drive towards enhancing programme outputs to outcomes and impacts.

The programme achieved several outcomes from the activities it delivered. **Four activity types** were adopted, including broad engagement, skills development, building interdisciplinary understanding and linking users and researchers, with supporting the seven VN projects to disseminate outputs and achieve outcomes as a fifth activity.

The **key outcomes from these activities** included:

- 1.** Enabling wider discussions across disciplines and sectors.
This included promoting involvement of businesses in natural capital, developing and disseminating research and community resources on the links between nature, health, and wellbeing, and exploring and promoting the importance of arts on the valuing nature conversation. In addition, the programme provided the space for different groups of people to meet – e.g. researchers with government policy people; artists and social scientists with natural scientists and economists, as well as enabling those who have engaged before to have time to re-engage or strengthen their engagement. This was accomplished through workshops (either VN-led or co-hosted with strategic partners) and the VN Annual Conferences, which were free to attend (**Section 3.1**), as well as attending and having presence at public events. The VN Annual Conferences audience had, on average, at least 40% representation from practitioners and business.
- 2.** Developing a suite of accessible, user-focussed, but comprehensive and evidence-based resources for the wider community.
These include the Demystifying Series comprising of nine accessible documents written by experts in the areas (from researchers and academics to practitioners). The series authors were tasked with lowering the barriers between disciplines and sectors, by using simple explanations of concepts and ideas, and how they influence, impact, and integrate into Valuing Nature. These reports are available online and were distributed at all events that the VNPCT organised and attended. Having a strong visual brand for the programme helped people to identify programme outputs quickly and provided confidence in their value as a resource. See **Section 3.1** for further about this series.
- 3.** Contributing to the growth of the VN Network via an active Twitter following (5.8k followers) and strong 1800+ membership, to enable both the programme and VN community to share relevant information, opportunities, and resources with one another.

4. Professionalising the VN community and building interdisciplinary capability through schemes such as the VN Placements (**Section 3.2**) and Business Impact Schools (**Section 3.4**). These schemes provided over 60 participants, primarily early career researchers, with the opportunity to learn from other fields, be this a different discipline or sector. These opportunities resulted in some participants changing career paths, whilst others strengthened their careers by incorporating learnings, or finding new opportunities within their careers. These are exemplified in the report through case studies, see **Section 3.2** and **3.4**.
5. Promoting the view of valuing nature through multiple disciplinary perspectives, in particular the role of arts and humanities research and practice. This was accomplished by supporting workshops that enabled discussion on this role, and aiding in the development of a Demystifying report to evidence and share the myriad ways in which arts and arts research contribute to the wider VN discussion. All of this contributed to a follow-on project being funded under the Landscape Decisions Programme (See **Section 3.3** for more).
6. Promoting the linkage between research and users, in particular business, by bringing business closer to the research and allowing researchers to understand the needs of businesses and inform their research outputs. This was achieved by developing resources that are aimed towards this sector, working closely with them through the BIG, but also through sector-focussed workshops, a dedicated Business Impact Conference, and sessions within the VN Annual Conference. For more on this see **Section 3.4** and **3.5**.

In addition to delivering planned outcomes, the PCT learnt a lot during the length of the programme, which is outlined in **Section 4**. The following are a few **recommendations** for future programmes and programme funding that have arisen from the experiences of the VNPCT:

- 1.** The VNPCT has provided good evidence of the benefits of having an interdisciplinary and cross-sectoral group to coordinate what is a complex topic, with numerous aspects, challenges, and on-going discussions within diverse disciplines and sectors, that are also interrelated and in many cases impact on one another. It also provided a good basis to support a case for the existence of long-term coordination teams that enables the achievement of outcomes and establishment of a legacy. It is recommended that interdisciplinary, cross-sectoral, long-term coordination teams be considered for programmes dealing with complex problems, especially where there is multidisciplinary and multi-sectoral stakeholder involvement, including researchers, who can bring their own approaches to problem definition and solution design.
- 2.** The VNPCT gained a lot from having opportunities to bid into *ad hoc* funding from the funders via the Programme Executive Board (PEB), above and beyond the infrastructural funding that was provided to maintain the coordination activities of the programme. These *ad hoc* funds, in conjunction with the interdisciplinary and cross-sectoral nature of the PCT resulted in several novel activities, including the business impact schools and VN placements, as well as a range of activities that would not have otherwise been possible. It is, therefore, recommended that funding in future provides access to such additional funds for coordination teams to bid into, to encourage and enable innovation.

3. Whilst the COVID 19 pandemic showed everyone that we need to be ready to evolve how we do things, the VNPCT had already realised the need to be agile. It is important that PCTs remain agile throughout, using the feedback and learnings from each activity to improve the delivery of the next one.
4. It is critical to have strong links between the PCT and the projects to provide support to build impact. Hence, it is recommended that announcements of opportunities for programme projects be specific on the need for proposals to include time and resources towards engagement with the PCT, and where possible, for a project team member to have the specified responsibility as Liaison to the PCT.
5. The VNPCT had strong engagement with business, because it was already factored in at the proposal stage. Research needs to move from supply driven to demand driven, where research to impact on the ground is being sought. For this to happen, stakeholders need to be involved in the early stages, not only as advisors but ideally in the co-creation of the projects themselves (See the GHIA project outlined in **Section 3.5** as an example). This takes time, but needs to be fully resourced at the project bid stage, and not as an afterthought.

The VNPCT has helped build community skills and foster dialogue with decision-makers, but more needs to be done, again with an interdisciplinary lens, to move to the next step – from words to large-scale action. It will be important, therefore, that dialogue continues between those working in interdisciplinary environments, and upcoming programmes need to foster this existing dialogue. Hence, the future lies in more dialogue across and within sectors, mutual respect and improved communication, and an openness to learning from one another.

1. An introduction to the Programme

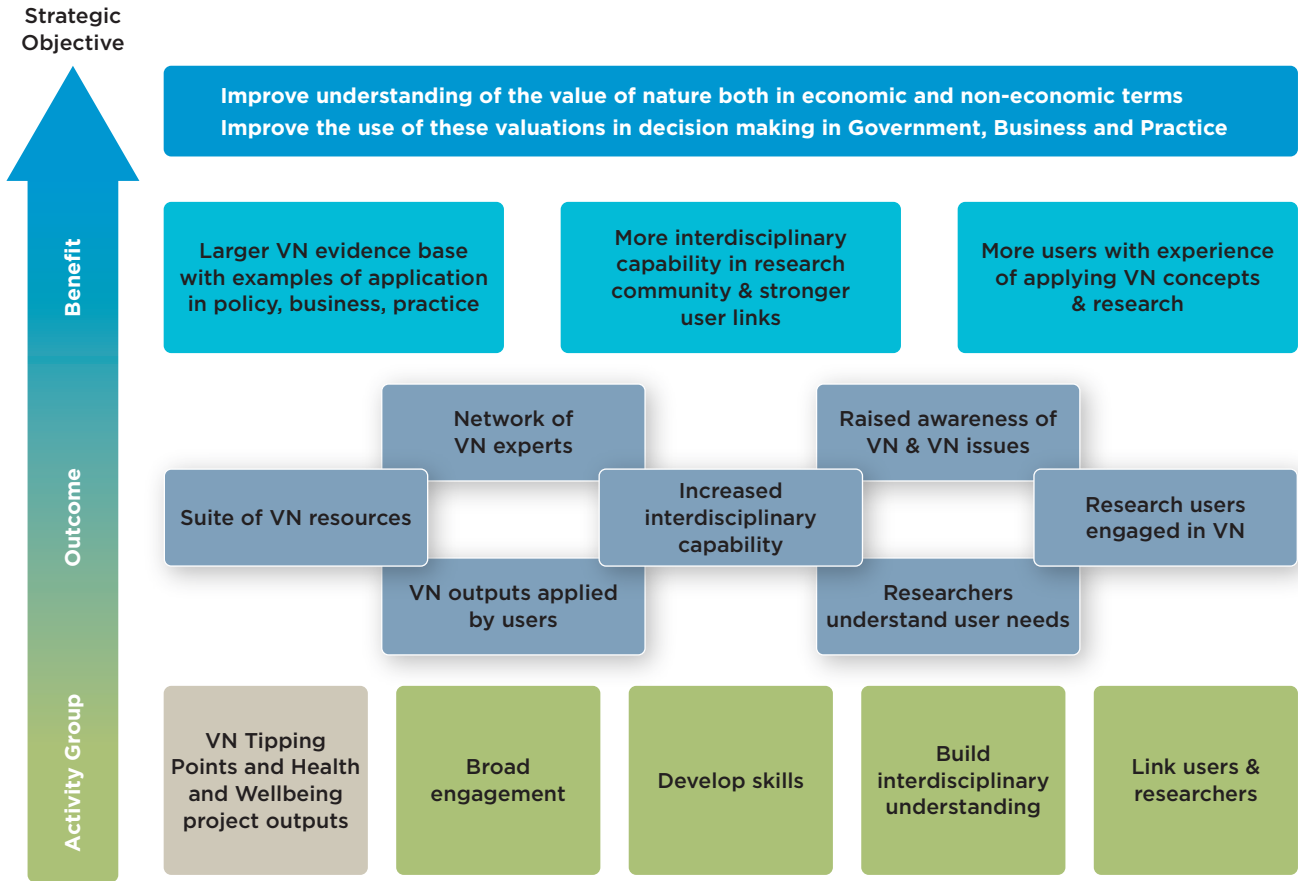
People's wellbeing is dependent on the natural environment through access to a range of ecosystem services, from utilising basic resources for living, such as clean water, food, fertile soil, to interactions with nature that affirm and enrich our place in the world, for example places to recreate, play and take wonder in life. This means that the natural environment must be taken into consideration when it comes to making decisions. Nature cannot be treated as a free resource, for which we have plenty of lessons through history, and neither can its valuation stand or fall on an economic viewpoint alone. Instead, we need to develop ways in which the plurality of values people hold for the natural environment are presented and advocated for in terms that capture their many and diverse expressions.

In short, ‘Valuing Nature’ can mean many things to many people. This makes discussions, decisions, and research around valuing nature inherently multi-disciplinary, if not interdisciplinary in nature. Recognising the importance of interdisciplinary working, networking, and research, the Natural Environment Research Council (NERC) established the Valuing Nature (VN) Programme, which funded the 3-year Valuing Nature Network in 2011 (**Box 1**) to develop an interdisciplinary community and identify key research challenges that needed addressing. This then led to the Valuing Nature Programme Coordination Team (PCT) Programme, which was funded in partnership with the Arts & Humanities Research Council (AHRC), the Economic & Social Research Council (ESRC), the Biotechnology and Biological Sciences Research Council (BBSRC), and the Department of Environment, Food & Rural Affairs (Defra), to enhance the interdisciplinary nature of the wider VN programme. The £7M VNPCT programme was initiated in October 2014 and ended in March 2021 with the aim to better understand and represent the complexities of the natural environment in valuation analyses and decision making.

The VNPCT started from the premise that the values we hold for nature are, too often, obscured in the way priorities within decision-making are assigned, be that in the policies we form, through the business we grow, and in the decisions we make as economic agents and members of communities. The VNPCT has sought to make the step-change towards a wider set of valuation techniques, and more entrenched valuing nature thinking in decision-making at the level of government, business and practice (**Figure 1**), through a programme of activities focussed on:

- Expanding and professionalising the valuing nature community,
- Promoting, emphasising and entrenching skills in interdisciplinary working, and
- Linking valuing nature research and those who use this research.

Figure 1: Simplified Theory of Change



In addition to these activities, the wider VN programme facilitated research funding to assess:

- I. The role biodiversity and ecosystem processes play in human health and wellbeing
- II. The links between ecosystem services and tipping points

These together are referred to herein, as the VN Projects.

The Valuing Nature Network provided a surer footing by which to expand our understanding of the analytical, conceptual and empirical basis of valuation instruments to guide decision making. It also made the case for paying due regard to the wider social, cultural and historical context in which values cohere around the natural environment and the decisions we make about it. Recognising and developing ways in which different approaches to valuation can be harnessed as a mutually reinforcing basis for informed decision making, has driven this network and the programme forward in its work.

What the Valuing Nature Programme Coordination Team (PCT) Programme has delivered, therefore, is a deeper understanding of the importance of nature to more social groups, and has contributed to a step change in valuation techniques beyond economic to societal and cultural. This was enabled by growing the existing Valuing Nature Network and thus assembling a larger community with a shared ‘Valuing Nature’ culture, giving them varied, interdisciplinary, and repeated spaces for dialogue, and providing opportunities to enhance skills and capacity. Consequently, providing information, knowledge and an expert base to influence and guide decision making where the values of nature are at the forefront.

This report has been developed to share the experiences and lessons learned from the VNPCT programme, as well as to share the outcomes it has delivered. It is not a roll call of all the events that were held, but all the main programme outputs and activities can be found in the final two sections. The aim of the report is to help inform future programmes and funding structures, as well as provide some guidance on the future of Valuing Nature.

2. Delivering the Programme

2.1 Governance structure

The VNPCT programme had a core Team who planned and delivered the agenda of activities – the PCT, and reported to the Programme Executive Board (PEB). The PEB comprised of the programme’s funders, which in this case were UKRI NERC, AHRC, BBSRC, and ESRC, and Defra, plus co-opted members from Public Health England, and the Scottish Government (Figure 2). A Programme Advisory Group (PAG) and, somewhat unusually, a Business Interest Group (BIG), supported the PCT. The secretariat services were provided through the UK Centre for Ecology & Hydrology where the Programme Office was based.

VN Programme Coordination Team

The success of the VNPCT arises from a number of key aspects. To begin with, the PCT was interdisciplinary and cross-sectoral (academic – business – policy) in nature, which was essential to maintaining the ethos of the programme, and ultimately developed the diverse Valuing Nature community that rallied around the programme. This mix of disciplines and skills prompted the development of diverse and innovative activities to enhance the skills and training opportunities for the VN community, as well as to broaden engagement on the value of nature. In the words of the Head of the PCT, **Rosie Hails**, on having an interdisciplinary PCT,

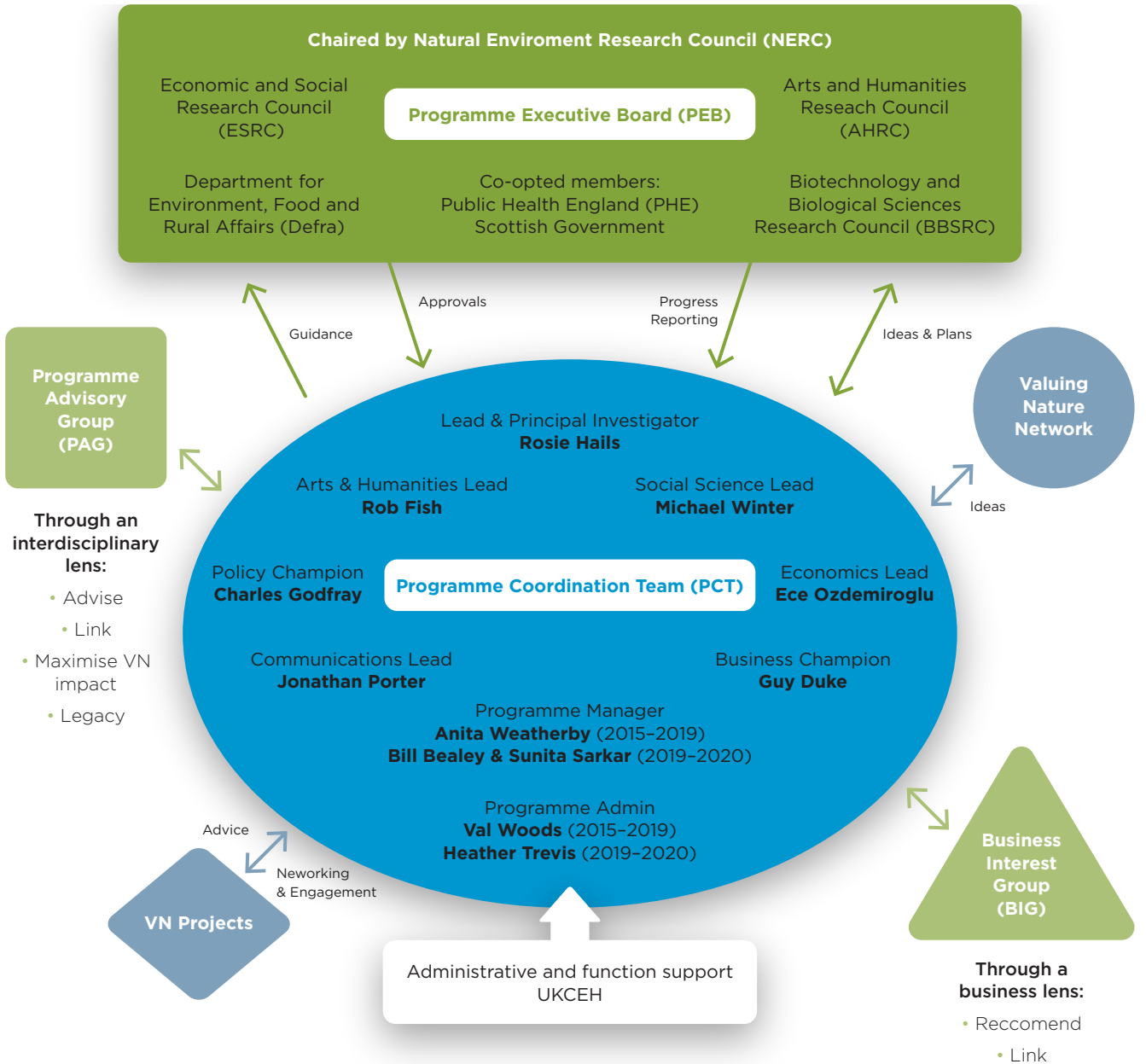
‘*Makes it much more interesting*’.

Having sector champions and subject leads (Figure 2) to make up the PCT also had its benefits; allowing the PCT to effectively exert influence in a number of areas. In this way, the PCT were able to introduce valuing nature to agendas of higher level meetings on policy, business, and practice. A particular case in point that worked very well for the programme, was the inclusion of the Business Champion, who was able to bring experience, connections and competence to the role and thereby, ensure that business impact had the position it did in the planning and delivery of the wider programme (see Section 3.4).

Something that cannot always be guaranteed, but which significantly improves the quality of deliverables from a group of people, is the presence of positive interpersonal relationships, as well as intellect, dynamism and enthusiasm for interdisciplinary and cross-sector work. The PCT met online every two months for about two hours to discuss progress, devise the next activities, and respond to any requests from the PEB. Day-long, face-to-face meetings were regularly arranged for more in-depth planning and team building. These meetings were planned to coincide with PEB (held bi-annually) and PAG (held annually) meetings whenever possible. This method of interaction worked well for a group of people with demanding schedules, whilst further strengthening the cohesiveness of the group. The overarching conclusion from the PCT is that it was an excellent experience, echoed by the words of the Economics Lead, **Ece Ozdemiroglu**

‘*I loved it. I never came to a meeting dreading it. We benefited from each other’s different lenses and didn’t clash because of them*’.

Figure 2: Governance structure of the VNPCT Programme



Programme Advisory Board

The Programme Advisory Board¹ (PAG) was installed to provide the PCT with expert advice and linkage to maximise VN impact and legacy through an interdisciplinary lens (see **Annex 1** for the members of the PAG). More specifically, the PAG supported the VNPCT by advising on the PCT's planned activities, as well as contributing their expertise where possible. The group helped to promote development of interdisciplinary research capability through engaging diverse communities via their networks, which in turn helped to further develop the Valuing Nature Network. They advised on how to maximise the impact of VN research, as well as providing guidance of what the future of valuing nature should be (See **Section 5**).

Reflecting the PCT, the PAG was both interdisciplinary and cross-sectoral in nature, with some important differences. The PAG not only covered various facets of environmental science, arts and humanities, and economics, it provided human and environmental health expertise to the PCT, which proved invaluable during the development of the research topic on the role of UK's natural environment for human health and wellbeing. The inclusion of representatives within the PAG from across the United Kingdom further helped to guide the applicability of the programme across the country.

Business Interest Group

The inclusion of the Business Interest Group² (BIG) was critical to the success of the programme in terms of business impact, but also meant that these organisations were engaged with and supportive of the Valuing Nature agenda and programme at large. Chaired by a member of the PAG with strong experience in working with business (and thereby enabling linkage with the PAG), the BIG was comprised of representatives from some of the UK's largest businesses (see **Annex 2**). The BIG provided a vital sounding board for the Business Champion, offering valuable advice and steer on enhancing business impact through the VN programme of research, providing linkage with relevant business impact initiatives in the UK and internationally, as well as lending substantial credibility to the wide range of business impact activities undertaken, not least on the development of a Natural Assets Research and Innovation Agenda in Support of Business (see **Section 3.4** for further details). Where possible, members of the BIG lent their time or suggested relevant contacts for VNPCT events, a good example being the Business Impact Schools (covered in **Section 3.4**).

¹ <https://valuing-nature.net/programme-advisory-group>

² <https://valuing-nature.net/business-interest-group>

2.2 Planning Activities for the VN Community

Over the seven years of the VN Programme, the VNPCT developed a series of engagement activities aiming to develop the knowledge base and interdisciplinary working capability across Valuing Nature researchers and research users in business and practice. A number of factors were helpful in enabling the PCT to produce a programme that was responsive to the needs of the VN community.

Firstly, early on in the programme, the PCT developed a Theory of Change, which provided the broad activity types that would ensure delivery of agreed strategic outcomes (**Figure 1**). This was then used to guide the selection of specific activities that both reflected the core programme themes (health & wellbeing, and tipping points), and responded to evolving community needs and external opportunities.

Secondly, ideas for community and research activities and events came from a number of sources. To begin with the Valuing Nature Network, which was already in existence (**Box 1**), provided an understanding of what the community needed at any point in time. Next, the interdisciplinary and cross-sectoral nature of the PCT, and their enthusiasm to co-design and co-create activities, meant innovative ideas would come up during discussions, which when applicable were further developed with advice from the PAG and BIG. Finally, the PEB, from time to time also requested the PCT to undertake new activities or mini-projects in key emerging topics or areas of interest to the funders.

Thirdly, and very crucially, there was provision to access additional funds from the PEB, beyond core structural funding for the PCT, to run key, *ad hoc* activities in addition to those that were planned annually.

Taken together this organic and consultative process meant that the VNPCT was able to respond to the needs of the community, whilst still adhering to the overall aim of the programme.

Box 1: Valuing Nature Network

The Valuing Nature Network was established between 2011 and 2014 through the support of NERC, Defra and the Cambridge Programme for Sustainability Leadership. It sought to bring together natural scientists and economists, alongside decision-makers in business and policy, with an interest in valuing nature. In this initial phase of VN, which is referred to as VNN1, the network membership communication platform was established, and ten interdisciplinary projects³ were supported (for more details on VNN1, please see the VN website⁴).

The Valuing Nature Network communication platform was maintained by Dr Ruth Welters beyond VNN1. The Network was further developed under the VNPCT Programme to encompass broader research areas and further engage business, policymakers and practitioners as research users, thereby expanding the discussion on valuing nature to a wider audience. The network was managed through the VN website, where people could join⁵ for updates on VN activities that were sent via an email newsletter, as well as provide opportunities⁶ for research partnerships, case studies, datasets, secondments, and other ways of working with potential Valuing Nature projects.

³ <https://valuing-nature.net/valuing-nature-projects-2011-2013>

⁴ <https://valuing-nature.net/background>

⁵ <https://valuing-nature.net/network>

⁶ <https://valuing-nature.net/offers-0>

The membership to the network grew steadily under the VNPCT to just over 2000 in 2018. However, this number reduced by 16% when the then newly established General Data Protection Regulation 2016/679 came into place and required that all data managers and processors hold only data from people who had opted into the network (**Figure 3**). All members were asked to respond to an email in order to remain on the network, but just over 300 did not respond. The importance of the network was shown, however, by the fact that as the programme wound down in March 2021, the number of members had reached 93% of the peak membership seen in September 2018.

Figure 3: Growth of the Valuing Nature Network



3. Achieving outcomes

The VNPCT focussed its efforts on four broad activity types: broad engagement, skills development, building interdisciplinary skills and linking users and researchers (**Figure 1**). These four broad activity types helped accomplish the fifth activity, to promote use of VN project outputs. All the outputs from the programme are listed in **Section 7** and on the website⁷. In this section, the focus is on those particularly important activities within each activity type that resulted in tangible outcomes. It includes interviews and anecdotes from those involved and who benefited from the structure used, in the hope that these can be replicated in, or be of use to inform, future programmes.

3.1 Broad Engagement

Providing time and space to share and/or discuss new ideas or re-evaluate old ones, across disciplines and sectors was an important aspect of the VNPCT's activities.

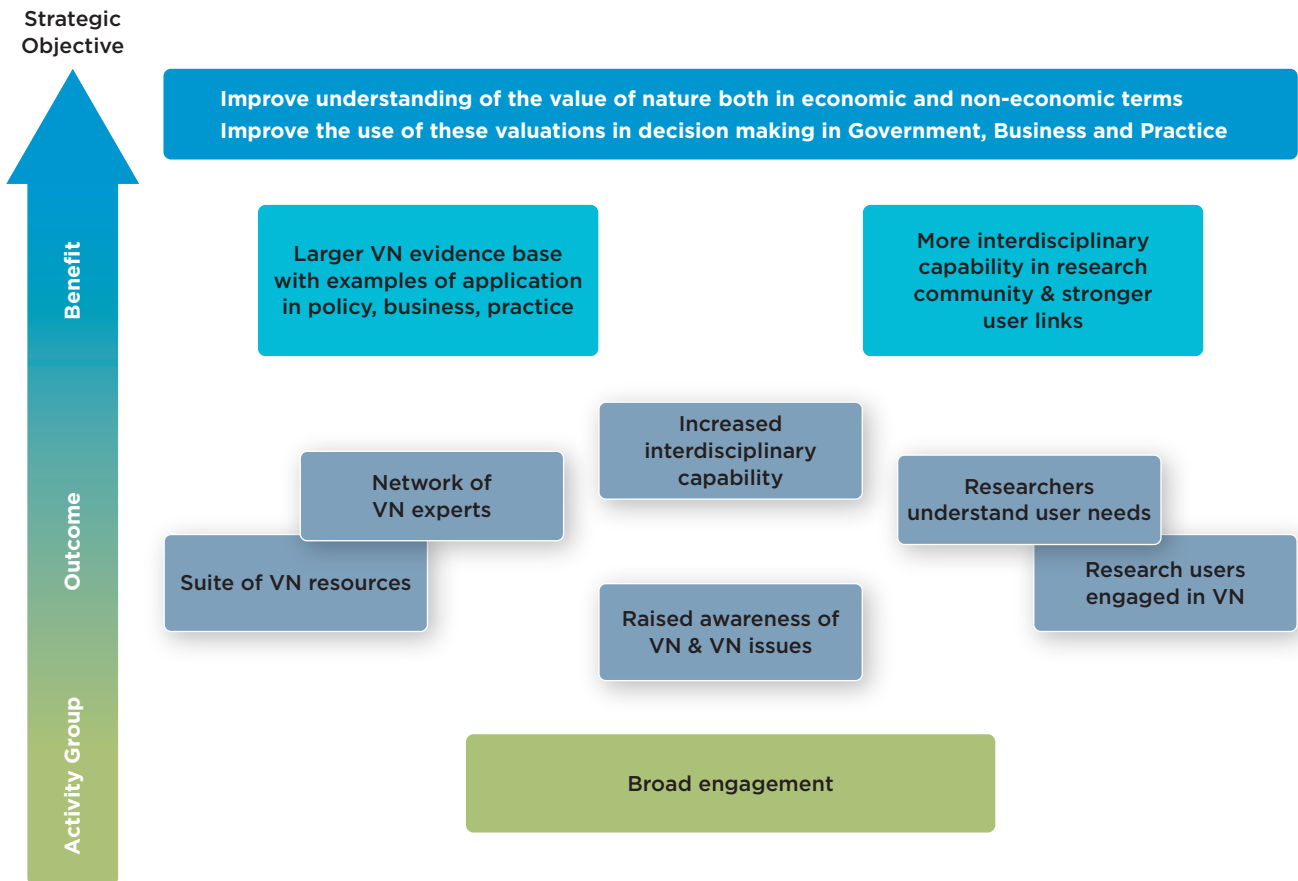
“Valuing Nature gave me time and freedom to think, meet new people who had more time and skills in thinking up new concepts and approaches.”

Ece Ozdemiroglu, VNPCT Economics Lead

The variety of opportunities created through the programme ranged from predominantly academic-focussed to business sector-specific to cross-sectoral, including the general public.

⁷ <https://valuing-nature.net>

Figure 4: Contribution of 'Broad Engagement' to VN Programme goals

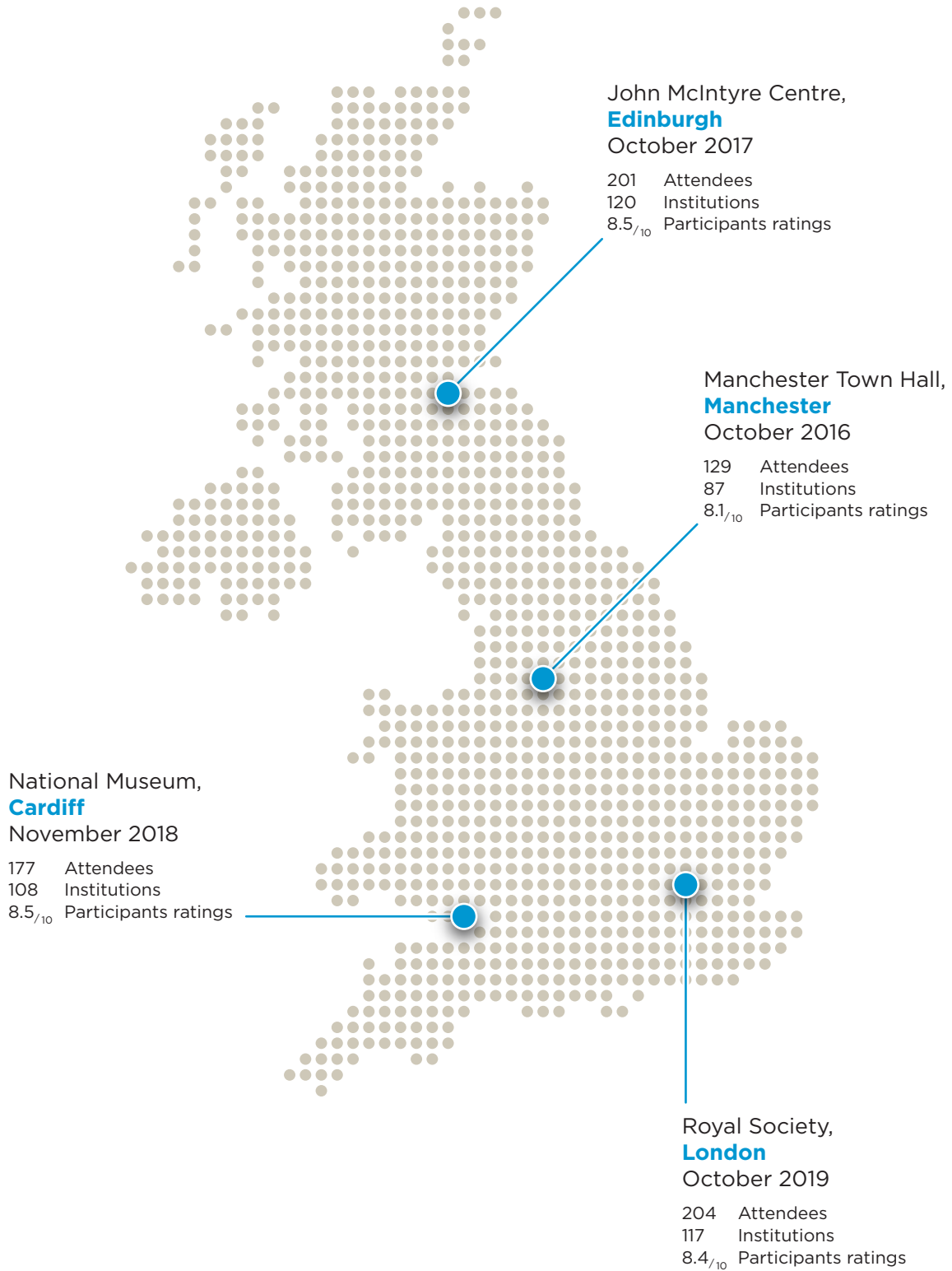


The activity that had the most direct benefit to the VN network membership was the **annual conference** because it contributed to almost all the planned outcomes in one way or another, and was used to promote and provide access to the *suite of VN resources* (Figure 4). In total four conferences were held between 2016 and 2019, across the UK (except NI), and these were highly anticipated and rated events (Figure 5). Each conference built on the previous one, in terms of learning about what worked best and what needed to be improved. For example, the first conference in 2016 was only one-day, which was not logistically feasible for most participants, in particular the VN project members, resulting in subsequent conferences running over two days.

Additionally, each conference had a slightly different focus and structure, with a programme of activities that included plenary sessions, a keynote, breakout sessions for presentations and interactive facilitated discussions, poster sessions, and plenty of time and space for networking, including interactive and playful activities to learn about diverse approaches to valuing nature. The Valuing Nature projects were a core feature of every conference, providing a platform for them to share their initial plans, test ideas and, as the projects came to an end, to reach a broader audience with their findings.

Figure 5: The Valuing Nature Annual Conferences

Total number of delegates over time = 711
Total institutions interacting with VN = 275



The events were free to attend and were always over-subscribed, with more applications to share presentations and posters than available spots. A standard, transparent application and selection process was in place to ensure inclusive and fair allocation of places. Based on feedback received from conference attendees, these events were an avenue for the Valuing Nature community to meet one another, to share, and to strengthen networks, but it went a step further.

The conferences also brought together some groups of people who would not normally meet as much – e.g. researchers and government policy people; artists and social scientists with natural scientists and economists, and allowed those who have engaged to have time to re-engage or strengthen their engagement (**Figure 6**). Practitioner and business representatives attended every conference, and though a smaller group than academic researchers, still comprised 40% of the audience. However, in the final 2019 conference, a push was made to bring in businesses and focus on application of research outputs, in particular from the VN projects. The session dedicated to business helped lay a more solid foundation for the Business Impact Conference (see **Section 3.4**) the following year. However, some who gave feedback still thought practitioner involvement was lacking. Though efforts were made to link to other groups and networks, the applications to present and/or attend remained imbalanced and more towards the research and academic side. In future, it might be useful to have smaller meetings with a practitioner-focus (as done for business) and invite academics and researchers in the specific areas.

Another common point raised in the feedback over the years was the issue of balancing breadth of content, in the way of sessions, and the ability of people to attend the sessions of interest to them. Valuing nature by definition is a very wide subject, and so this is bound to happen. One option would be to use a more plenary style format, such as that used in the 2020 British Ecological Society conference on the Multiple Values of Nature⁸. This format reduces the number of talks possible, but ensures everyone can be at all sessions. The objective of the VN conferences was to give a platform for a variety of speakers at different levels and from different sectors, so having this format would not have been possible. One respondent, however, provided an option, which was to record and share all the sessions. This is not a simple undertaking, and would need significant resources and advanced planning with the venue.

8 <https://www.britishecologicalsociety.org/events/multiple-values-nature>

“ I thought the content was pitched at the right level for the mixed audience; the subjects were quite diverse but fitted together well. ”

Manchester Town Hall, ValNat 2016

“ Mix of different approaches made for a useful and interesting and interactive conference. ”

John McIntyre Centre, ValNat 2017

“ The breadth of the content was excellent. I particularly enjoyed the sessions on research with real world impact and the final summary with the panel speakers. I liked that the presentations were a mixture of academics and business/policy people. ”

National Museum Cardiff, ValNat 2018

“ Networking opportunities. Brilliant as always for that! ”

Royal Society of London,, ValNat 2019

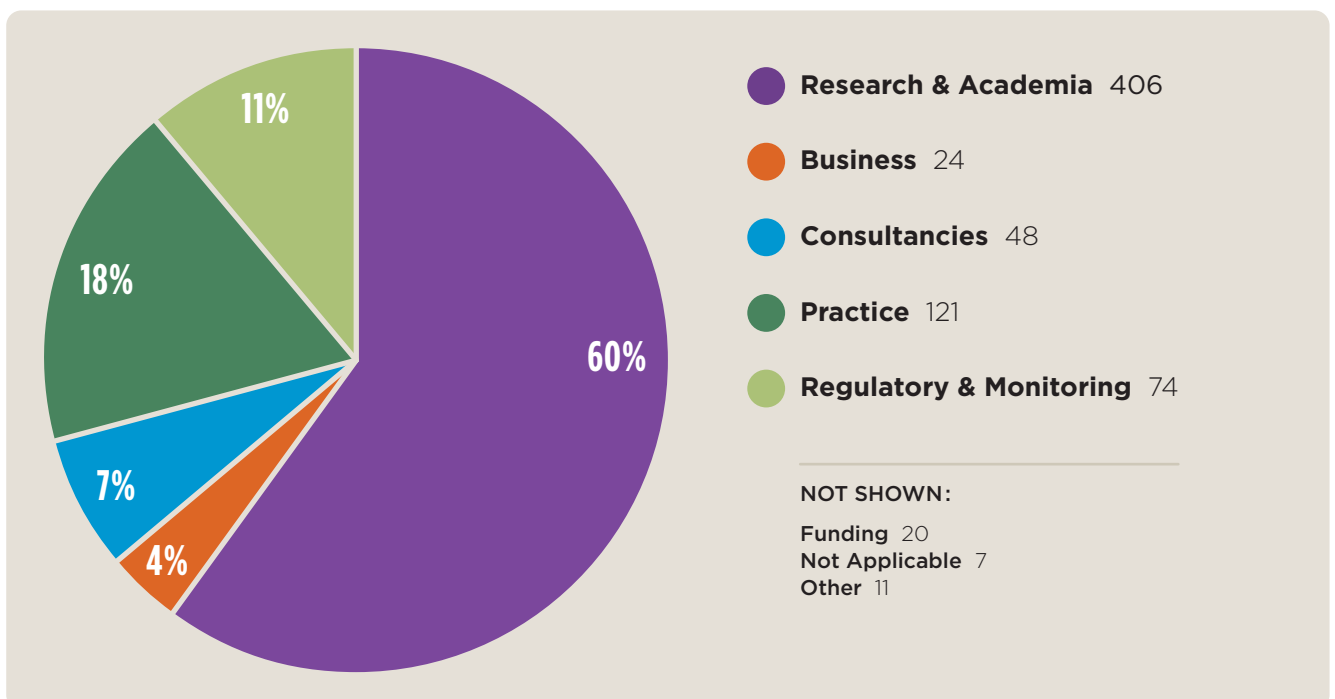
“ It is not unusual, but I wish I could have gone to more of the break-out sessions (they clashed). It would be great if it was possible to film or record the sessions to give more people a chance to learn from them. ”

National Museum Cardiff, ValNat 2018

“ Although interdisciplinary, I think it is really academia heavy. As a practitioner, a lot was out of my depth and would have liked more from public sector/ community groups. ”

Royal Society, ValNat 2019

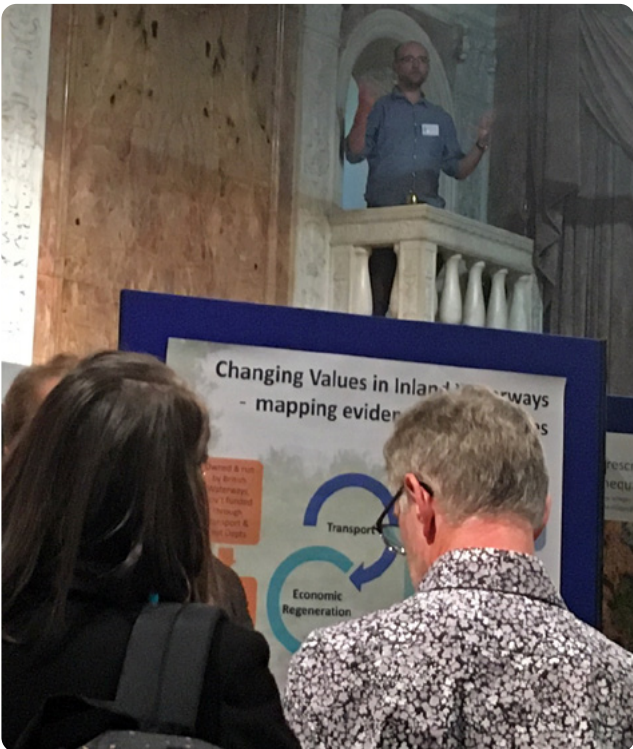
Figure 6: VN Annual Conference attendees split across sectors.
Data derived from attendance lists from 2016, 2017, 2018 and 2019





◀ Mosquito Jenga developed by Peter Coates, University of Bristol under the WETLANDLife Project of the VN Programme (ValNat2017; © Val Woods)

▼ Helping the VN Tree grown by adding challenges and insights for VN topics (ValNat2017; © Val Woods)



▲ ‘What’s new in research?’ short pitches from the Juliette balcony of the Royal Society London (ValNat2019; © Heather Trevis)



▲ Communicating Nature’s values (ValNat2016; © Anita Weatherby)



▲ Project overviews at the Royal Society (ValNat2019; © Heather Trevis)

The second most successful engagement activity, pioneered by the Economics Lead, was the development of the **Demystifying Series**⁹, which are a set of nine documents varying in topics from health to the value of arts, to tipping points. These short, accessible documents were produced by experts in the areas (from researchers and academics to practitioners), who introduced a particularly complex idea in a simple yet comprehensive way. The authors were tasked with explaining what these ideas really meant, and how they either, influence, impact, or integrate into Valuing Nature. As a suite, these documents contribute to the outcome *'suite of VN resources'*, as well as contributing to *'raised awareness of VN and VN issues'*, *'increased interdisciplinary capability'*, and *'research users engaged in VN'*.

Demystifying Economic Valuation was the first of the series, and took a highly collaborative, community approach. It was led by the Economics lead and the head of the VNPCT, who edited input from 120 experts in the economic valuation community to create the 12-page document. The second report on Health also used the method of calling on volunteers from the VN community to contribute to the report in terms of structure, content, or critique. Other reports were commissioned from individual experts or a combination of an expert lead and community input. The aim of the series was ultimately to give research users a 'go to' document that explained the key concepts that cause confusion in the wider community, and agree on principles of good practice.

As the oldest of the series, Demystifying Economic Valuation has been downloaded over 800 times, and at least 1000 hard copies have been shared with delegates at various conferences and events,

including the public through the 'Reclaiming Wetland Values: Mud, Marsh and Wonder' Exhibition held jointly by two VN Projects, WetlandLIFE and COASTWEB with support from the VNPCT¹⁰. All the other reports from the 2018 Demystifying Health to the 2019 set of reports including, Demystifying Cost Benefit Analysis, Green Finance, Health Metrics, Shared and Social Values, and the Value of Arts and Arts Research, have seen over 500 hardcopies shared, both at academic and public events. The final two reports, on interdisciplinary working and tipping points, were solely shared online, having been published during the COVID-19 Pandemic-enforced lockdowns. Even so, over 200 copies have been downloaded from the VN website (**Figure 7**) in the year since they were published. Other reports on emerging topics such as Arts and Arts Research and Green Finance, had over 400 downloads within one and half years of publication.

Overall, these reports have contributed to broad engagement and some of the stated outcomes; however, it is not possible to assess the impact these reports have had on decision-making or otherwise. Resources such as these, prepared by experts but targeted at the lay reader, can be useful tools to either introduce, enlighten or empower a person on a particular important topic. The manner in which these reports were prepared, using a community of authors to both lend credibility to the output, but also ensure that more than one person's point of view is captured, is recommended for replication in other programmes. Furthermore, the very existence of this series is a credit to the cross-sectoral and interdisciplinary nature of the PCT and the flexible nature of the funding that allowed for innovation. **Section 7** of this report contains a list of VN resources available free to download from the VN website.

⁹ <https://valuing-nature.net/demystifying-series>

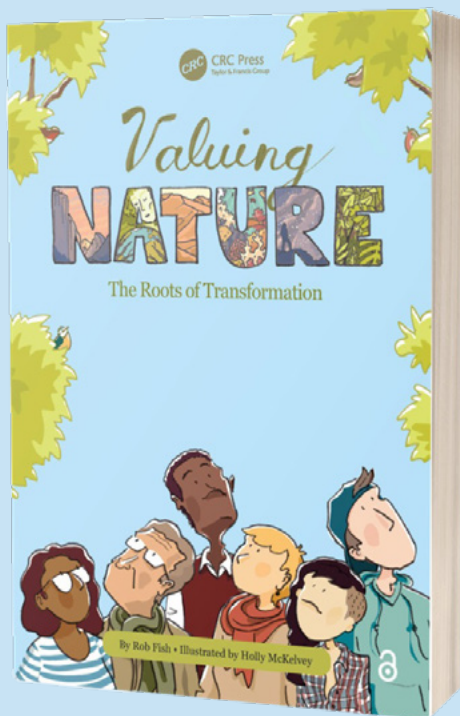
¹⁰ <https://valuing-nature.net/wetlandvalues>

Figure 7: The Demystifying Series and the number of copies downloaded between October 2018 and April 2021. A one-page Principles of Interdisciplinary Working, shown here with the number of downloads accompanied the Demystifying Interdisciplinary Working.



Box 2: Valuing Nature: The roots of transformation

The brainchild and labour of love of PCT member and Arts and Humanities lead, Dr Rob Fish, this illustrated book takes you along a journey with arts students as they embark on a university assignment about the natural environment. It takes the reader across the fields of ecology, human and physical geography, conservation science, environment, social science and spatial



planning amongst others, effectively illustrating the inherent transdisciplinary nature of Valuing Nature. The book aimed at undergraduate students, and those interested in learning more about valuing nature and natural resource management, is another example of what can come out having the freedom to innovate. The programme funded the illustration of the book, which went on to attract the attention of a publisher due to its interesting character and timely subject matter. This has meant that the book could be professionally published and be marketed widely. However, a free electronic version would only become available a year later, and hence, NERC

provided additional funds to ensure the resource was freely available to the VN community as soon as it was published.

This book not only adds to the ***‘VN suite of resources’***, but also contributes to ***‘increasing interdisciplinary capability’***, ***‘raising awareness of VN and VN issues’***, and supporting the development of a new generation of ***‘VN experts’***.

For more information on the book see the VN website¹¹

¹¹ <https://valuing-nature.net/valuing-nature-book>

Another broad engagement activity the VNPCT put time towards, was attending and co-funding **external and public events**. Having a cross-sectoral PCT to help identify such opportunities was crucial. From inception of the VNPCT, engaging with other parties, and in public events, on issues around valuing nature was considered important, bringing synergy to the discussion, whilst engaging a wider audience. Beyond simply advertising the programme, such engagements allowed for involvement of people outside the VN network into VNPCT activities and opportunities, as well as enabling the VNPCT to influence the agenda through sessions and contributions. For instance, the involvement of the Economics Lead in the UK Network of Environmental Economists (UKNEE) enabled the participation of the VNPCT and sharing of VN resources at their annual conference, *envecon* – thereby engaging another sector within the wide VN community. The VNPCT also convened a session on ‘Valuing nature – what works? What have we learned from the Valuing Nature Programme about working across disciplines and with decision-makers?’ at the *Valuing our Life Support Systems 2019 – Natural Capital Initiative summit*. The summit involved people in science, policy, NGOs, businesses and local communities. The topic of the VN session was so popular amongst the delegates that it was oversubscribed and resulted in useful discussions that informed the development of the *Demystifying Interdisciplinary Working* publication.

▼► What does valuing nature mean to you?



After taking a Valuing Nature stand to successive British Ecological Society (BES) conferences, VNPCT partnered BES to host the 2020 Multiple Values of Nature Symposium in Bristol. This meeting was unique in that it promoted cross-disciplinary interactions buoyed by a plenary structure throughout the two days, with a third focused on a horizon-scanning workshop. The meeting was also the launch for the first properly inter-, multi- and trans-disciplinary journal *People and Nature*¹². The head of the VNPCT and the Arts and Humanities lead were invited as editors to the journal at its inception, thus ensconcing the contribution of VNPCT programme to the progression of interdisciplinary research in valuing nature.

It must be restated that the flexibility to co-fund events, to extend small grants to develop key resources for the time, and the cross-sectoral nature of the VNPCT, has contributed to the programme’s ability to get involved in various arenas and truly engage broadly.



12 <https://besjournals.onlinelibrary.wiley.com/journal/25758314>

Figure 8: The logo of the Valuing Nature Network and the Valuing Nature brand identity



Branding and Communications

The VNPCT had a very carefully thought out and targeted Valuing Nature brand identity. This was developed by graphic designers at Countryside, together with the PCT. The brand was designed to incorporate the different aspects of the Valuing Nature Programme, and a number of sub-identities were developed for use for the programme, network, research projects, placements and the Business Impact Group.

The Valuing Nature brand was developed from the visual identity used by the Valuing Nature Network during 2011–13, which used a branching network design (Figure 8). Reflecting the interdisciplinary approach of the new programme, the brand identity of the Valuing Nature PCT Programme used a more diverse, artistic presentation of a network by using a multi-coloured leaf motif with a woodblock print effect. The multiple colours were used to represent different disciplines that when brought together create a sum that is greater than the parts.

The Valuing Nature brand was applied across all communication materials and other project outputs. This included the branding of displays and materials at events, the programme website, social media, reports and other outputs. This consistency created a strong identity for the programme and its activities and gave a sense of belonging to members of the teams within the funded research projects, the Valuing Nature Network, and the broader community. On a lighter note, it makes the programme's stand at events highly visible and attractive, which is quite beneficial when you want to engage with more people.





Joining the dots
 Connecting research and practice across Europe

Valuing Nature Programme

3. Joining the dots in Colombia – Key Findings

3.1 Country context

3.2 Overall research results

3.3 Theoretical analysis

Round Table 1
 The role of research in the Valuing Nature Programme

Valuing Nature Programme

ENVIRONMENTAL SCIENCE AND MENTAL HEALTH REVIEW
 Final Report – 18th July 2019

Valuing Nature Programme

2. What is the state of the art?

2.1 Synthesis of literature

2.2 Summary of evidence on environmental science and mental health

83% 9% 8% 1% 64% 35% 8% 92% 65% 34% 1%

Round Table 2
 The role of research in the Valuing Nature Programme

Valuing Nature Programme

Round Table 3
 The role of research in the Valuing Nature Programme

Valuing Nature Programme

7 Principles of Interdisciplinary Working

1. Shared vision

2. Shared goals

3. Shared data

4. Shared methods

5. Shared outputs

6. Shared credit

7. Shared learning

Valuing Nature Programme

Programme research goals

Valuing Nature Programme

valuing-nature.net

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 valuing-nature.net

Valuing Nature International Summit
 19–20 June 2019, Manchester

Valuing Nature Programme

Valuing Nature International Summit
 19–20 June 2019, Manchester

Valuing Nature Programme

Reclaiming Wetland Values: Marsh, Mud and Wonder

Tuesday 28 January – Sunday 2 February 2020
 Royal Geographical Society
 1, Bedford Way, London NW1 2AP

Reclaiming Wetland Values: Marsh, Mud and Wonder

Wetlands are special environments for many reasons, not least they provide a home and refuge to a host of unique plants and animals, offer wonderful places for people to live and visit, deliver effective natural coastal protection, and lock away carbon to mitigate climate change. However, wetlands don't always receive positive recognition, words like swamp, mire, morass bring with them negative connotations.

The Ramsar Convention on Wetlands of International Importance defines wetlands as: "areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres."

Beyond Ramsar, wetlands are defined and understood in different ways depending upon time, location and the individual or group. How society engages with wetlands influences how they are defined and also how they are valued. To manage these remarkable environments into an uncertain future, a holistic understanding of their values is crucial.

For the past three years the Valuing Nature Programme has funded two research projects, WetlandLIFE and CoastWEB, that have explored diverse wetland environments using different approaches to knowledge. This exhibition brings together the work of artists, geographers, post-biologists, economists, historians, and ecologists in an interdisciplinary exploration of how to reveal the values of wetlands.

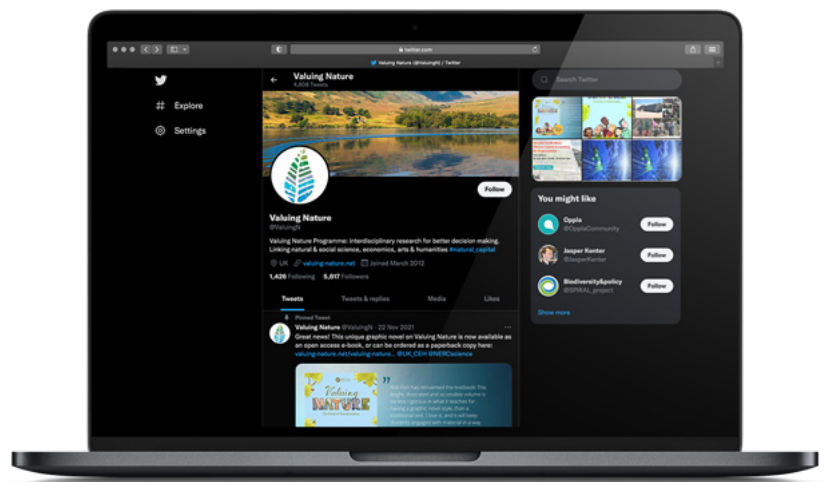
The Valuing Nature Programme is funded by the Natural Environment Research Council, the Economic and Social Research Council, the Biotechnology and Biological Sciences Research Council, the Arts and Humanities Research Council, and the Department for Environment, Food and Rural Affairs.

valuing-nature.net/wetlandvalues
 #wetlandvalues

VALUING NATURE CoastWEB wetland LIFE

VALUING NATURE NETWORK

valuing-nature.net



Having a strong brand was a key step in **communication**, one of the corner stones of the programme. In order to reach its overall aim (**Figure 1**), it was imperative that the programme have a strong communication platform (**Figure 8**). The VNPCT set in place a platform comprising an attractive and informative website, a social media presence through Twitter®, as well as regular VN e-newsletters. The programme team also leveraged partners and funders communication platforms to get the news out on events, research calls, publications, VN projects and VN community news, as was relevant. Time and resources were ring-fenced to maintain the communication platform, as well as mapping out communication plans for each activity the VNPCT undertook in order to gain the highest impact. In today's online world, it is more and more important that programmes and projects maintain an online presence to help engage with people everywhere, and to ensure a legacy for the work.

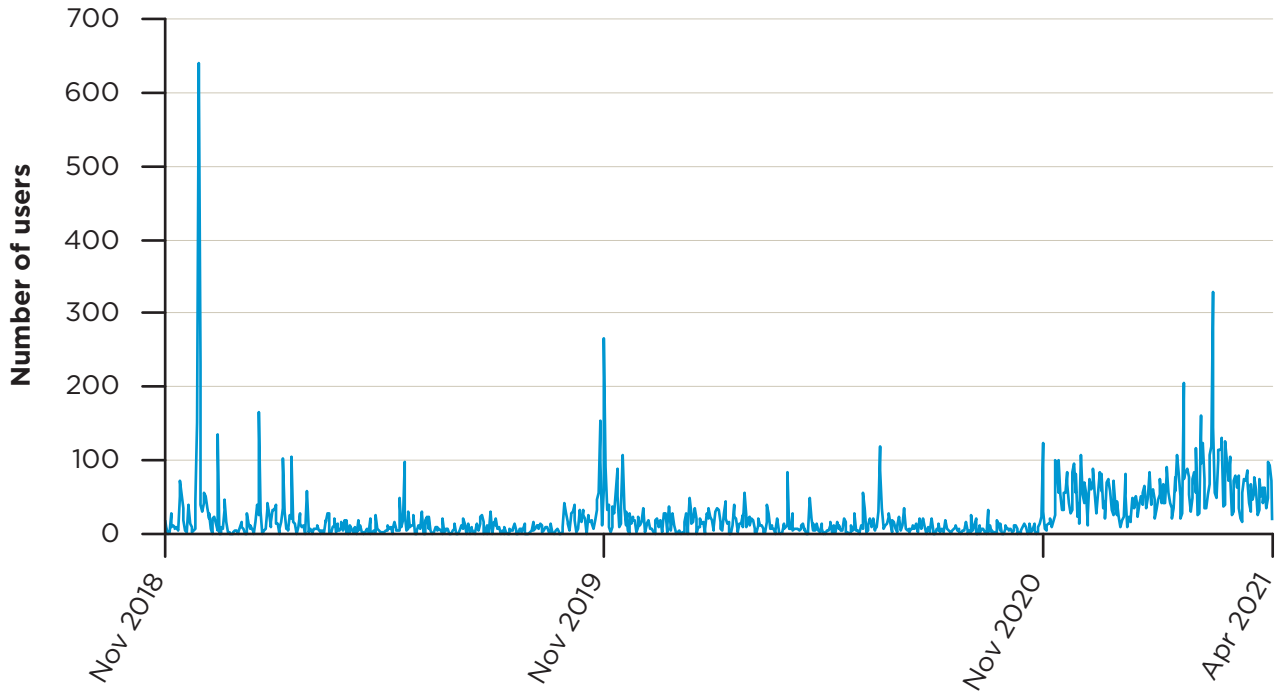
Over the time that the VN website has been in place 22,144 users have accessed the website, which is on average, 763 people per month. The spikes seen in **Figure 9a** coincide with the Annual Conferences; however, with the move to a predominantly online platform in 2020, and the imminent end of the programme, there was an overall increase in use of the website between November 2020 and April 2021. This shows the importance of having an online resource centre available to the community, who respond quite strongly when the resource is going to be withdrawn.

Twitter followers have continued to rise over the entire lifetime of the programme from just over 1,000 early on to nearly 6,000 followers (**Figure 9b**). Apart from being an avenue for the programme to share its upcoming opportunities, events, and outputs, it is more a community asset where people can share their activities, outputs, and events with a wider audience. The Twitter account has remained active throughout, with time dedicated to maintaining its content. As the programme wound down, the funders agreed that the website, Twitter account and e-newsletter to the VNN remain over two additional years to enable the community to continue engaging as a new home or format for the network was sought.

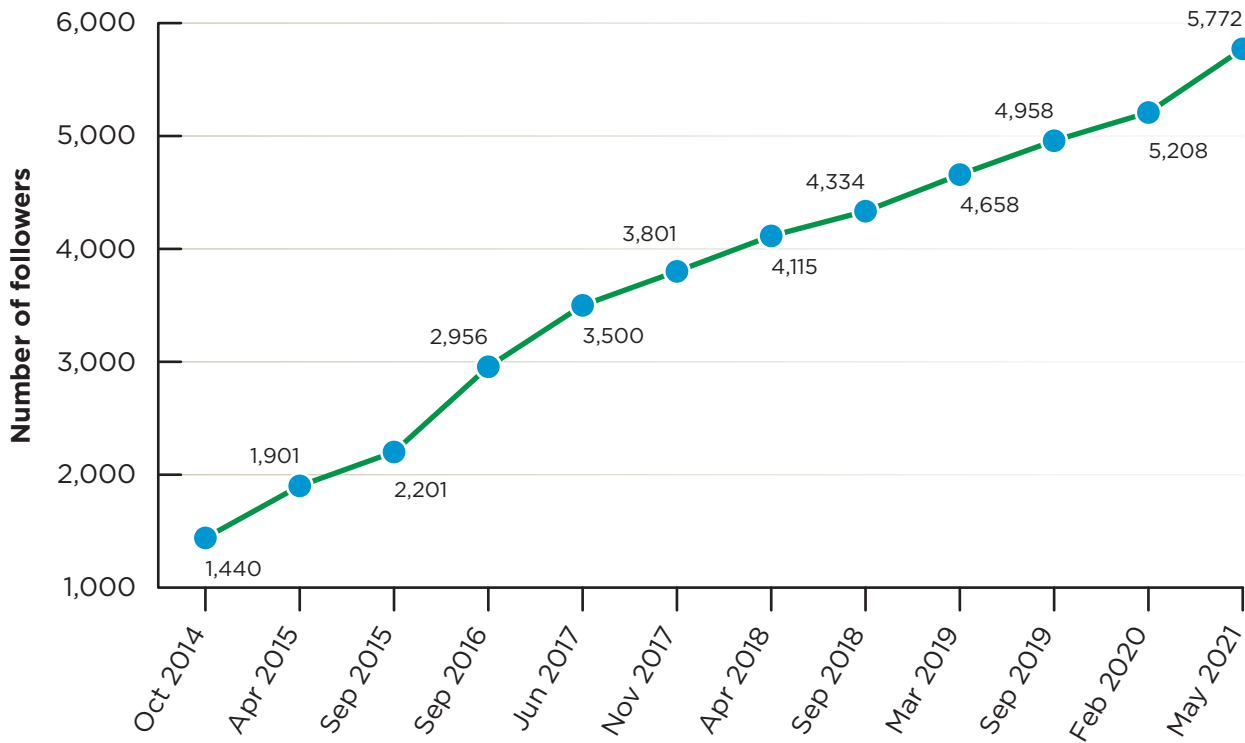
The VNN and e-newsletter has already been covered in **Box 1**; however, it is important to make the point that with the need to protect people's data, communication planning must be responsive to data protection regulations that govern the country. Aside from having privacy statements on the website, as well as including the relevant options in application forms, the VN programme office had to conduct a purge of the VNN mailing list (**Figure 3**) when the GDPR regulation came into force. Such activities, as well as continuing to maintain the quality of communications to a network requires resources. Programmes need to keep this in mind when they are planning their budgets.

Figure 9: VNPCT Communication in numbers...

(a) Number of users on the VN website between November 2018 and April 2021



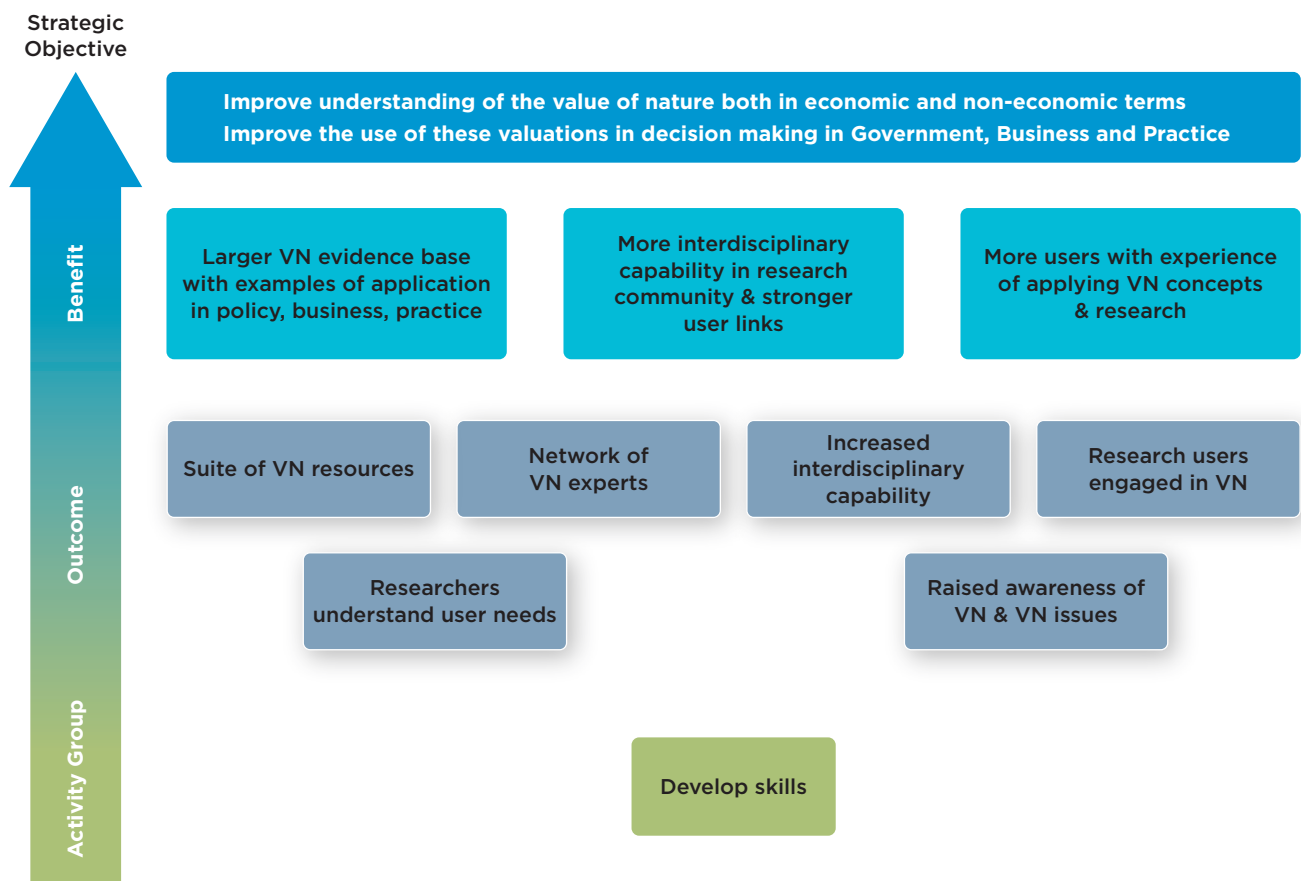
(b) Number of Twitter followers between October 2014 and May 2021



3.2 Skills Development

One key area that the VN programme enhanced beyond other research programmes, was in supporting the professionalisation of the community. Once again, this was enabled by the flexibility in the funding, which supported new ways of delivering activities and drove innovation within the VNPCT. Two key activities highlight the development of skills in the VN community and these are **workshops** and **placements**.

Figure 10: Contribution of ‘Develop Skills’ to VN Programme goals



Workshops are the common means of getting people together to deep dive into a topic to reach a specific objective. For the VNPCT, this offered an avenue to discuss valuing nature in a myriad of ways, beyond just valuation. From business related workshops (covered in **Section 3.4**), to the link between nature and health, the interconnection of the VN projects, and the importance of arts to the valuing nature conversation, hosting, co-hosting, or funding workshops was a significant activity within the programme. Workshops contributed predominantly to ‘increased interdisciplinary capability’, ‘network of VN experts’, and ‘raised awareness of VN issues’ (**Figure 10**).

Most of the key workshops were hosted jointly with other partners – exemplifying the importance of joining forces and promoting key topical areas to gain the most momentum. The first topical workshop co-hosted by the VNPCT and University of Kent, was in 2016, entitled ‘Participatory Decision-Making’. Its aim, which was to explore the critical, creative and practical challenges that arise when interests in valuing nature are extended into the participatory realm, was highly relevant as the debate on the value of nature was growing around the world. The focal audience were researchers from the UK and beyond, however included policy makers and practitioners seeking to contribute to the debate about participation in emerging research from an applied starting point. The workshop was successful in promoting this discussion, however the longer term outcomes were not as clearly captured as outlined further in **Section 4.1.1**. Nevertheless, this workshop was the first of many examples where the VNPCT was at the forefront of using such kinds of events to bring a varied community together to have the critical discussions on the values of nature required at the time.

Two further workshops are important to note as they brought about discussion on topics that were still in the periphery of the valuing nature discussion, but which have wide-reaching impacts. The first was ‘Naturally Healthy’, a workshop co-hosted by VNPCT with the Ecosystems Knowledge Network (EKN) and the Centre for Sustainable Healthcare in March 2017.

This workshop supported the discussion on the cost effectiveness of addressing public health priorities through improved access to the natural outdoors. It provided the opportunity to understand the practical implications of what is already known about the value of the natural outdoors for clinical and public health purposes, as well as develop ideas for future research, including the availability of methods to demonstrate cost-effectiveness. This workshop contributed to the health and wellbeing portfolio of the VN programme, led onto discussions of what exactly ‘health’ is, and was one of the factors that stimulated the development of the Demystifying Health report. The discussion around the importance of nature to health and wellbeing, beyond physical health to mental health, culminated in a strategic review report commissioned by UKRI NERC, through the VNPCT, on the role the environment plays on mental health, which was published in 2021.



The second key workshop fostered debate and dialogue on the contribution of the arts in shaping knowledge and communicating meaning in new interdisciplinary contexts of research around landscapes, the environment and ‘valuing nature’ agendas. The Arts and the Artist in Landscape and Environmental Research Today (AALERT) workshop, co-sponsored with the Landscape Research Group¹³ and the Landscape and Arts Network, was the first of its kind to bridge the disconnect between the arts and humanities and the sciences and social sciences. It was the brainchild of one of the VN Placement holders, and led to a number of other developments that have promoted the discussions and enhanced the inherently, and importantly, interdisciplinary needs for valuing nature. See **Box 3** for more about this.

13 <https://landscaperesearch.org>

Box 3: The Road to AALERT

Eirini Saratsi was working as a researcher at the University of Kent in 2015 when she applied for, and was awarded, a Valuing Nature Placement to work with Historic England, the government's expert advisory service on England's historic environment. The overall aim of this placement was to advance knowledge of how we can better embed heritage values assigned to urban green spaces in policy and practice and valuing nature research agendas. The placement resulted in a policy and practice note giving advice and guidelines on how planners, decision makers, and land managers can take account of the diversity of the values assigned to these places.

Through the placement, Eirini established strong links to a wide range of academics and organisations that have enhanced her career development ever since. Although already working in the field, the placement provided good insight into how stakeholders outside of academia, such as Historic England, operate in the sphere of land planning and decision-making. This helped Eirini to understand the impact of academic work for such organisations. In particular, during this period, she developed collaborations with the Centre for Heritage at the University of Kent, and she is currently a member of the steering committee.

In 2018, Valuing Nature supported another of Eirini's research areas concerned with the role of arts research in environmental research today by co-funding, with the Landscape Research Group & the Landscape and Arts Network,

the AALERT (Arts and Artists in Landscape and Environmental Research Today) workshop. AALERT facilitated a dialogue between artists, scientists, philosophers and policy practitioners. The findings of the workshop are outlined in the Demystifying report, Valuing the Arts and Arts Research, published in October 2019. A direct development from this work is that Eirini was awarded, and is currently leading, the follow-on networking project AALERT for Decision Making (AALERT 4DM) funded by the AHRC under the NERC-led Landscape Decisions Programme¹⁴. The project explores ways in which arts research can inform landscape decision-making mechanisms by communicating knowledge, opening-up different perspectives and creating new understandings of values.

Interview by
Heather Trevis, UKCEH

14 <https://landscapedecisions.org>

The use of different tools and structures to make the most of the time dedicated to a workshop was encouraged where possible. One example is the joint Sustainable Intensification Research Network-VN workshop¹⁵ aimed at enhancing researchers' capability to work across diverse disciplines needed to link sustainable intensification and natural capital frameworks. The workshop was a mix of networking and capacity building. One useful component was the development of working groups who were then mentored through the process of identifying key challenges, prioritising these, and developing relevant projects or outputs such as papers. The VNPCT programme went the step further to provide further funding to interested groups to progress the development of their planned outputs. This holistic take on a workshop, with not only valuable expertise shared during the workshops, but clear incentive and opportunity provided after, is recommended. One of the groups successfully published a paper (See **Section 7.1**), whereas the others were able to develop project proposals, but everyone was able to build their networks beyond their own discipline.

“[The programme] sustained multiple conversations about multiple things related to the importance of nature. More expansive than valuation.”

Rob Fish, Arts & Humanities Lead, VNPCT

The **VN placements**, as already exemplified in **Box 3**, focussed on providing the VN community opportunities to professionalise and build interdisciplinary capability. The brainchild of the Arts & Humanities Lead, these placements were initially rolled out like most placements, requiring an early career researcher or professional to take between six months and a year, at times, to gain experience in another area and potentially lose out on continuity in their own area of interest. This first approach did not garner interest amongst the community, and hence, the VN placements were adjusted and comprised of short-term placements, lasting between three and four months, and designed to be supportive and engaging, not isolating as can happen. The objective was to give a placement holder enough time to build their interdisciplinary capability by working in a new discipline, institution, or applied setting, but not hinder progress in their chosen careers. The placements started with a group workshop to allow holders to contextualise their placements to other placement holders and the VNPCT, outlining their overall aspirations and planned outputs and outcomes that could be shared with, or involve, the wider VNN. Placement holders received guidance on effectively communicating their outputs and outcomes with the VNN, as well as on the role VNPCT members could play to assist with the placement. A wrap-up session at the end of each placement series enabled sharing of experiences, outputs and outcomes, and next steps from each holder, whilst giving them the opportunity to strengthen relations with their hosts. Overall, three sets of placements were held between 2016 and 2018, with 30 placements funded over the course of the programme¹⁶.

The VN Placements have resulted in a few important outcomes for those who held them. Aside from the work Eirini and her colleagues are doing to promote and expand the role of the arts and humanities in VN, we have others who have taken on roles in organisations such as Natural England, to influence policy, for example. Others have helped to enhance the impact their organisations can make in promoting and protecting important natural landscapes, as well as providing the placement holder with a new direction in their career (an example in **Box 4**), whilst others who were earlier in their careers were able to cement their career paths (an example in **Box 6**). By professionalising the next generation of VN scholars, industry thinkers and policy practitioners, the longer-term VN agenda is influenced. Together the placements contributed to the following VN outcomes: ‘*suite of VN resources*’, ‘*increased interdisciplinary capability*’, ‘*researchers understanding user needs*’, ‘*research users engaged in VN*’, and ‘*raising awareness of VN issues*’ (**Figure 10**). The placements have been a great success and they need to be continued in other programmes.

16

<https://valuing-nature.net/valuing-nature-placements>

Box 4: ‘The Application of Wearable Technology to Quantify Health and Wellbeing Co-benefits from Urban Wetlands’

Placement Holder: **Jonathan Reeves**

Home organisation: **The Wildfowl & Wetlands Trust (WWT)**

Host organisation: **Department of Life Sciences,
Imperial College London**

Jonathan Reeves was a 2018 placement holder. His employers, WWT, wanted to expand their social research capacity, develop academic collaborations, and conduct a pilot study at the WWT London Wetland Centre; a unique urban wetland site. Working with Imperial College allowed Jonathan to learn and develop diverse techniques for use in measuring health and wellbeing impacts on people from short-term exposures to urban wetlands.

Jonathan and his team worked with WWT partners HSBC, who kindly volunteered staff as participants for the pilot, as well as some extra funding. Participants were first fitted with psychophysiological measurement equipment (a wristband – to measure heart and skin activity, and an EEG headset – to measure brain activity), and then transitioned between the biodiverse wetland environment and the urban, west London environment outside the centre. By examining both psychophysiological and self-report survey data, the team aimed to measure differences in responses between the two environments. The results were published in the peer-reviewed journal, *Frontiers in Psychology*¹⁷.

The placement gave WWT a boost in capacity and momentum on the research of wetlands and human health, and helped cement the area of work as a strategic priority for the organisation. This resulted in Jonathan's role shifting to focus primarily on health and wellbeing, as well as an expansion of his team to include extra staff to work on the research of wetlands and human health.

In addition to the research, the collaboration also helped WWT develop its corporate partnerships. The placement offered new forms of Corporate Social Responsibility (CSR) volunteering activities for partners to engage with (i.e. as research participants), and the new and exciting technology used proved especially useful in engaging business on the role nature can play in supporting employee health and wellbeing.

More personally, the placement helped Jonathan establish a wider network of colleagues, especially with Imperial College. This has led to broader benefits for him, like teaching opportunities and new collaborations with other departments at the University. For example, a new NERC funded WWT-Imperial College studentship¹⁸ has just begun on human health and urban blue and green infrastructure. As such, the placement has provided a firm footing from which WWT will develop a more expansive programme of work on the role of urban wetlands and human health.

*Interview by **Heather Trevis, UKCEH***

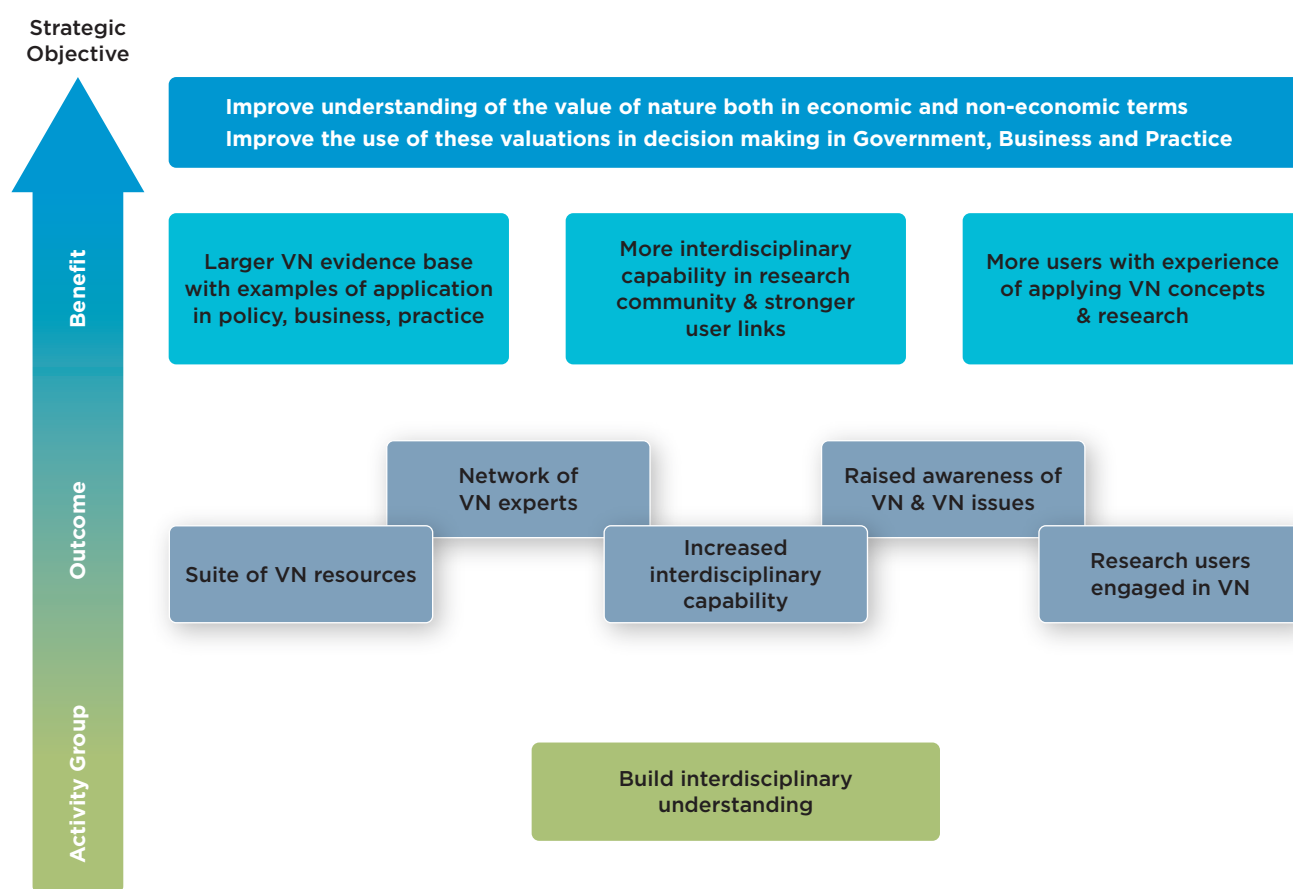
17 Reeves, *et al.* 2019. *Frontiers in Psychology*: doi.org/10.3389/fpsyg.2019.01840

18 <https://www.imperial.ac.uk/people/r.belcher19>

3.3 Building Interdisciplinary Understanding

As is already evident, interdisciplinarity was at the core of the programme, with the first two activity types discussed above contributing to the outcome of *‘increased interdisciplinary capability’*. From the PCT to the workshops and placements, to the interdisciplinary requirement for the VN health and wellbeing projects, to the reports and publications developed, and involvement of the wider VN community to produce them, almost every activity within the wider VN programme inherently included people from various disciplines and contributed to the outcomes shown in **Figure 11**. As such, the VNPCT programme provided a good basis for building interdisciplinary understanding in valuing nature.

Figure 11: Contribution of ‘Build Interdisciplinary Understanding’ to VN Programme goals



“ Interdisciplinary is the best way to solve many complex problems, but need the most precious resource of the 21st century to make it work — time. ”

“ I’ve been working in an interdisciplinary way for over 30 years; we are still facing many of the same issues we were at the start of that time. The process of breaking through to true interdisciplinarity has to be both bottom up and top down, i.e. researcher and funder led. ”

A few key contributions that the VNPCT programme has made are:

- 1) Promoting interdisciplinary working more generally, and enabling the wide sharing of interdisciplinary understanding built across the VN health and wellbeing projects.
- 2) Promoting the importance of nature, as opposed to understanding its value alone, by emphasising the role of arts and humanities in the discussion.

By requiring **interdisciplinary working** in all four VN health and wellbeing projects, the wider NERC-led VN programme contributed pilots to the changing trend in research. Aside from the experience and skills developed within the project teams themselves, their learnings were captured by the VNPCT programme in the Demystifying Interdisciplinary Working, which is now available for posterity as a simple introduction to basic principles (**Figure 12**). The research agenda of the country is changing and the requirement for interdisciplinary projects and project teams continues to grow, as exemplified by the creation of UK Research and Innovation (UKRI) in 2018 and its commitment to supporting an enhanced culture of interdisciplinary research, and the establishment during the VNPCT programme lifespan, of other big programmes such as Future of UK Treescape, The National Circular Economy Programme in the UK, and We Value Nature in the EU, for example. There is also changes in how the UK Government is looking to set targets and policies, as evidenced by the 25 Year Environmental Plan and the Dasgupta review, where the focus is on drawing advice and evidence from ecologists, economists and social scientists.

“ Many years’ experience — general guidance is good preparation, but you can never entirely predict the process or outcomes, much of which also depend on team mind-sets and openness. Important not to give an impression that there is a ‘right’ way of doing it, especially in terms of expected outcomes/ outputs since much is also about individual learning, hopefully to do better research. ”

By piloting interdisciplinary projects and capturing learnings, as well as promoting skills development through the VN placements (**Box 5**) and Business Impact Schools (see **Section 3.4**) through the VNPCT programme, it is safe to say that the wider VN programme has contributed to building interdisciplinary understanding. There is now a stronger community, more able to work with a wide range of other disciplines, including policy, in this arena.

“ Overall, it has been very rewarding from a professional and personal sense to work in an interdisciplinary setting. That said, it has also been very challenging and time consuming due to communication barriers and working with people who are involved in interdisciplinary projects but not actually, in my opinion, committed to interdisciplinary research. I have also been surprised by the number of barriers, during my PhD, to interdisciplinary working (e.g. the push to publish discipline specific papers). ”

Figure 12: Principles for Interdisciplinary Working distilled from the VN Demystifying Interdisciplinary Working Report

1 Respect: Disciplines and activities should not be considered in a hierarchical fashion.

2 Take time: Additional time is required to learn and understand different backgrounds, methods and language.

3 Communicate: Don't assume that the forms of communication within your discipline are universal, different disciplines may use the same words but with very different meanings.

7 Principles of Interdisciplinary Working

4 Embrace personalities: Successful interdisciplinary working is not just about bringing two or more disciplines together; it is about bringing two or more people harmoniously together.

5 Prepare: The development of an interdisciplinary collaboration can require unfamiliar procedures which need additional consideration.

6 Adapt: Interdisciplinary working can be unpredictable requiring adaptability.

7 Share: To support success, the sharing of experiences is critical before, during and after a project is undertaken.

“ Work in interdisciplinary teams on large consortium grants funded by NERC and EPSRC. The findings here mirror my experiences. One of the biggest barriers we’ve found with some work is getting past journal editors, even in journals that claim to be interdisciplinary. ”

“ My own experience echoes much of that raised by the speaker. It is unfortunate that systems such as funding still struggle with interdisciplinary work even though this is, in my opinion, the only way to tackle complex challenges such as those associated with environmental policy. ”

The **promotion of the role of Arts and Humanities** in the wider VN dialogue has been partially covered in previous sections. Here the focus is on using creative expression to examine, explain, and explore nature, its contribution to the quality of our lives, and our role in disrupting and nurturing it. Beyond the contribution that the Demystifying report on Valuing Arts and Arts Research, the role of the arts and creativity in valuing nature was put on exhibition by the CoastWEB and WETLANDLife projects (See **Section 3.5**), with support from the VNPCT. ‘Reclaiming Wetland Values: Mud, Marsh and Wonder’ was a unique event in that it blended artistic expression, with more traditional scientific facts and social interactions to create a new way to express and explore the value of wetlands and coastal marsh habitats in the UK. The weeklong event included a public exhibition that culminated in World Wetlands Day 2020, as well as a one-day stakeholder conference, where key users of research and partners in the projects came together to share the learnings from the projects in more detail. By selecting the right venue, which in this case was the Royal Geographical Society in London, which has a regular flow of visitors from all over the UK and abroad, to timing it with an important international day, over 700 people from all walks of life, including children, attended the event. Although this type of an event takes a lot of time to bring together and needs a keen curator’s eye, which thankfully was available within the project teams, it provides an opportunity for programmes to explore other ways of ‘seeing’ their research area, of expressing ideas – challenges, results, opportunities, importance, as well as engaging the public more inclusively. The inclusion of multiple disciplines that work together through inter- or trans-disciplinary projects in any programme greatly increases the value it can provide, as well as the richness of the experience overall.

Though it is obvious that interdisciplinary working is the future for many research areas, it is not easily achieved. As outlined in the ‘7 principles’ (**Figure 12**), it takes time, and requires a change in attitudes, language, interpersonal skills, and working methods. At present, most research labelled interdisciplinary is actually multidisciplinary due to the challenges of true interdisciplinary working.

Feedback from the webinar to launch the Demystifying Interdisciplinary Working report, and the 2019 Annual Conference, as well as highlighted in the Demystifying report, revealed practical issues that prevent interdisciplinary work from becoming more the norm than the exception. Broadly speaking, these cover issues around the way in which students are educated and trained, to how career progression or successful projects are measured and ranked, to lack of cross disciplinary networking opportunities, time and funding, and barriers in language used between disciplines. The UKRI’s Cross-Council Remit Agreement to encourage interdisciplinary research, and the launch of the ‘People and Nature’ journal, mentioned in the previous section, are contributing to making the path towards interdisciplinary research easier.

Wider promotion of interdisciplinary working in a practical sense, however, is not always easy to achieve – and it is therefore important to determine the activities where you might get the best outcomes in this particular area. The Annual Conferences always aimed to promote interdisciplinary understanding, because they were the big VNPCT event where many people with varying disciplinary and sectoral backgrounds could be engaged. In the final conference, the dedicated interactive panel on interdisciplinary working helped bring the discussion to the fore, with those interested in the topic area. However, more generally in a conference setting, with large numbers of people wanting to share their work, having truly interdisciplinary sessions can be a challenge. For one, very few entries align well with the theme, as research is still catching up to this ideology, and secondly there is never enough time to ensure that these sessions, if possible, would get the attention they deserve; unless every session was interdisciplinary in nature. An alternative would be to use the plenary style adopted for the 2020 British Ecological Society conference on the Multiple Values of Nature mentioned in **Section 3.1**. This method, however, means many can listen but few can present, which poses the challenge of who should be given the stage. In the end, a balance needs to be sought to make the most of the time and resources available to meet the objectives of the event.

Box 5: **Developing Understanding and Strategies for Business to Engage and Inform UK Food and Farming Policy to ensure that Natural Capital is an Integral Part**

Placement Holder: **Colm Bowe**

Home organisation: **Liverpool John Moores University**

Host organisation: **Cambridge Institute for Sustainability Leadership**

Colm Bowe participated in the VN placement scheme in the 2017, with the aim to work with the businesses within the natural capital impact group on how natural capital might look in a post-Brexit agricultural policy. The placement put Colm in the policy sphere, an area he had not previously worked in directly, which significantly influenced his later work.

Inspired by his experience, he successfully applied for a NERC Innovation placement, which involved him establishing the Liverpool City Region Natural Capital Working Group, working alongside the Local Nature Partnership (Nature Connected) and the Combined Authority. He played a lead role in the development of the Liverpool City Region Natural Capital Baseline, and continues to work with partners to explore its use in policy.

His placement informed his application to a DEFRA ELMS test and trial, which he led. Through this project, Colm and his team developed a natural capital mapping approach to inform ELMS (the Environmental Land Management System).

The placement allowed Colm to develop his skills in interdisciplinary research. Trained as an ecologist, he had traditionally focused on quantitative research, even in his brief forays into social science. The placement allowed him to see how qualitative approaches, such as semi-structured interviews, could complement more quantitative analysis in addressing real world questions.

Colm produced a report on 'The inescapable truth: Brexit, business and natural capital', which can be accessed from here

<https://valuing-nature.net/placements-2017-colm-bowe>

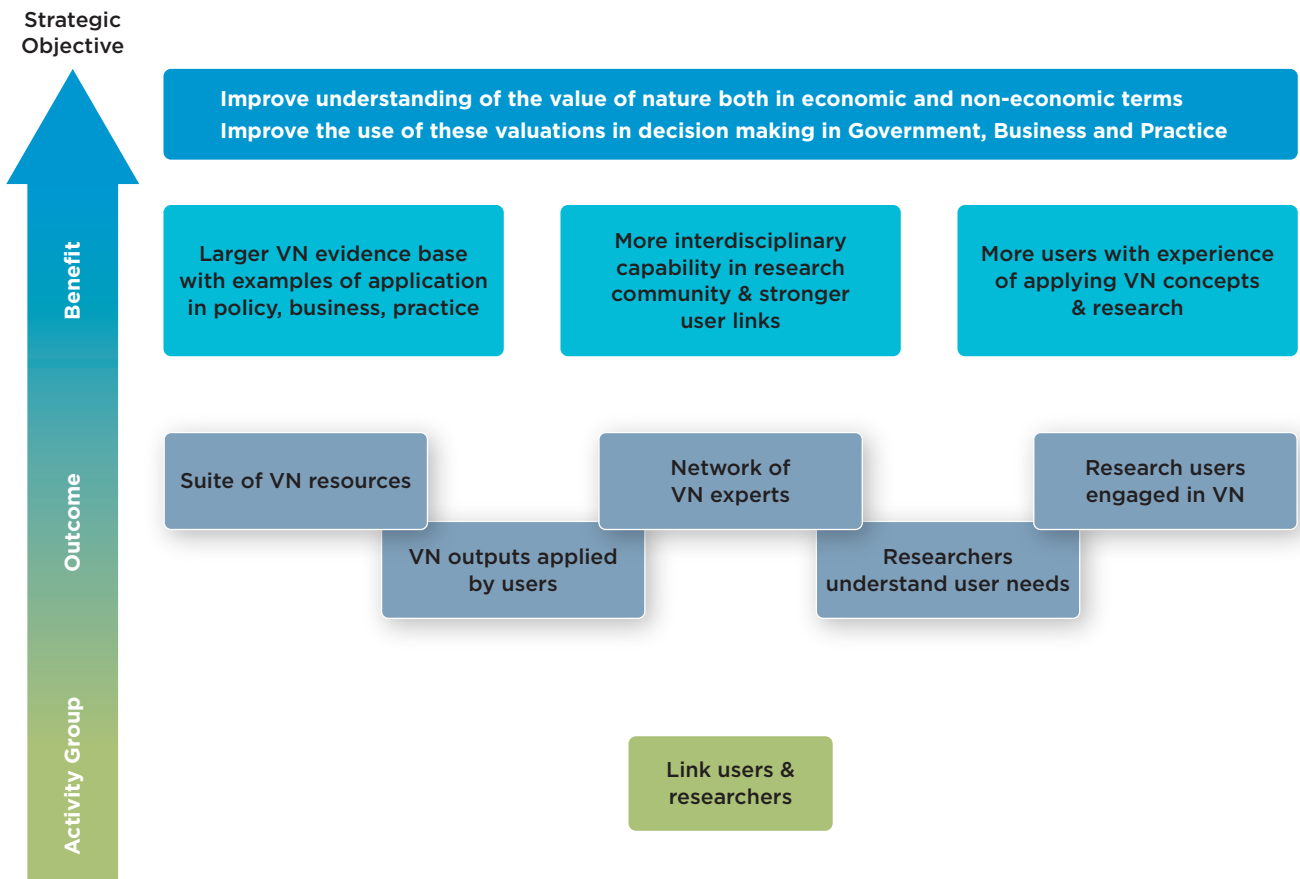
*Interview by **Heather Trevis, UKCEH***

3.4 Linking Users and Researchers

In order to promote the values of nature, developing and sharing targeted outputs, and creating dialogue with users of research is critical because this is where research is applied to our daily lives. We each have an individual role in this dialogue and a change of personal values will be critical to making far-reaching change for the health of our planet and ourselves; large-scale change comes when these individual values influence on a larger scale, through business and government. The evidence base created through this programme, as well as the resources put towards broad engagement and supporting early career researchers (also see **Box 6**) has already been outlined. Here the focus is on some of the more specific activities around linking users and researchers.

The production of **user-focussed documents**, introduced in **Section 3.1**, and in particular the Natural Synthesis Reports, enabled linkage with research users and contributed to the VNPCT’s planned outcomes of ‘*Suite of VN resources*’, ‘*VN outputs applied by users*’, and ‘*Research users engaged in VN*’. However, the key activity was more broadly **engagement with business**. The structure of the VNPCT placed it in a good position to involve and dialogue with businesses, which contributed to all the outcomes outlined in **Figure 13**.

Figure 13: Contribution of ‘Link Users and Researchers’ to VN Programme goals



Box 6: ‘Sharing Stories, Sharing collections: Valuing Biodiversity in Wales’

Placement Holder: **Poppy Nicol**

Home organisation: **Sustainable Places Research Institute/
School of Social Science, Cardiff University**

Host organisation: **Amgueddfa Cymru-National Museum of Wales**

Poppy was a temporary Research Assistant at the Sustainable Places Research Institute when she came to apply for a placement in the 2017–18 cohort. The placement attracted her because it was a good opportunity to work with a non-academic partner within the public sector. She was particularly interested in the botanical collection held at the National Museum of Wales, and felt there was a potential to increase public awareness of the collection, whilst exploring how social science research could be of interest to a public body.

During the placement, Poppy found learning about opportunities for the application of research and the potential of working with a public partner very useful. She especially enjoyed the outreach and public engagement aspect, and learned many of the benefits of working in partnership with different organizations. Poppy’s understanding of how the museum works, how the different departments fit together, and how it links with other stakeholders such as artists and civil society, was greatly improved. She had the real opportunity to work with scientists from different disciplines, something she had never done before. The placement also helped her to expand her network and will hopefully, form the basis of a long-term working partnership with the museum.

During the placement, being part of a cohort of early career researchers was very valuable as it felt like they were sharing a journey, plus it was a good opportunity to network. For Poppy, the placement also offered an opportunity to gain experience working in a non-academic setting and learn more about the potential for interdisciplinary ways of working.

Towards the end of the placement an opportunity arose for a three-year Research Associate post with the Sustainable Places Research Institute and Poppy believes that taking part in the placement contributed towards her successfully securing the position. Moreover, the museum work from her placement still forms part of her research programme.

Poppy shared her experiences through a series of blogs that can be accessed here <https://valuing-nature.net/VNPL/PoppyNicol>

*Interview by **Heather Trevis, UKCEH***

Five **Natural Capital Synthesis reports**, were produced through a research call, to help define the current state of knowledge to address specific policy or practice needs, and the key gaps in knowledge required to be addressed by further research. As for all VN outputs, these documents were designed and written to be accessible to users of research. The topics range from soil carbon to private sector uptake, and were quickly taken up by the community online, with at least 500+ hardcopies shared since their publication (**Figure 14**). Some of these reports formed the basis for further work, such as the ‘Natural Capital Trade-offs in Afforested Peatland’ report contributed to the development of the VN Project on ‘Understanding ecosystem stocks and tipping points in UK blanket peatlands’. Other Natural Capital reports have gone on to enhancing engagement with key stakeholders (see **Box 7** for an example). The Demystifying Series, as well as a recently completed strategic review on the role of the environment on mental health commissioned by NERC via the VNPCT, and the various policy and research outputs from the VN projects (**Section 7.2**) provide important evidence, recommendations and directions, for those engaged in making decisions about and managing our natural ecosystems, spaces, and resources.

Figure 14: Natural Capital Synthesis Series published between June and September 2018, with number of copies downloaded from the VN website between October 2018 and April 2021.



Engaging Businesses was part of the VNPCT programme plan from the onset, with the inclusion of the Business Champion in the VNPCT, and the **Business Interest Group** (BIG; c. 20 businesses represented) in the proposal (see **Section 2.1**). Having a PCT member with strong links to the business community, as well as direct engagement with businesses through the BIG provided a strong footing for these activities.

A number of innovative and impactful activities were carried out to encourage exchange between research and business. These were guided by annual meetings with the BIG who provided advice on all business impact work under the VNPCT Programme. These meetings also provided an avenue for exchanges between the VN projects and business representatives to explore opportunities for business impact.

The process of engaging businesses was much like other VNPCT activities, organic and consultative. Led by the Business Champion, meetings with the BIG were arranged with an understanding of business needs. The meetings were always short and focussed, containing a clear ask, and held in London in venues normally provided by a BIG member, making the meetings easily accessible to all members. BIG meeting agendas were prepared by the Business Champion who proposed, discussed and developed business impact ideas with the PCT, before presenting to the BIG for further advice and shaping. At times where relevant, the PAG was also asked for their advice, before final approval and funding was sought from the PEB where necessary. Having a stamp of approval from the BIG, the key impact audience, gave credibility to requests for funding, but the flexibility within the PEB to fund *ad hoc* activities not only induced creativity, but provided the funds needed to deliver well-planned and thought-out activities that were attractive to businesses.

“Strong support and encouragement throughout for the business impact work from the lead, PCT colleagues and a highly efficient project management team was... critical.”

Guy Duke, VNPCT Business Champion

Box 7: **The road to defining The Natural Capital of Floodplains**

Clare Lawson, Lecturer in Environmental Sciences,
The Open University & **Emma Rothero**, Project Manager for the
Floodplain Meadows Partnership, *The Open University*

Clare and Emma found out about this research call at the British Ecological Society conference in Belgium where Valuing Nature had a stand. The fact that involvement did not require a massive research submission and that it was for a relatively small, self-contained piece of work motivated them to apply, as it represented a nice opportunity to complete this specific piece of work on floodplain meadows.

As researchers, Emma and Clare normally feed in evidence to other government organisations, but this research grant allowed them the opportunity to pool together their ideas and frame them in a way applicable to policy; providing a good springboard for a more multi-disciplinary way of working.

The availability of funds allowed Clare to devote time to the literature review required and to study the natural capital aspect of floodplains. Partnership with the Valuing Nature programme also enabled access its wider support.

The literature review enabled the authors to identify gaps in the evidence base, which contributed to a framework for future research. The report has also fed into a successful grant application by the Floodplain Meadows Partnership to fund a Policy Officer, so now a dedicated person can work on the advocacy side, helping determine the direction of the Partnership. The report has also been the basis of a policy workshop involving Defra and other stakeholders to look at strategically assessing floodplains prior to the national ELMS (Environmental Land Management Scheme) consultation. Hence, some of the work that resulted from the natural capital report is contributing to policy development.

Funding provided by the VNPCT programme towards this report gave Clare and Emma the opportunity to investigate evidence that underpinned the benefits of floodplain meadows to make the case for their importance in sustainable land management.

Interview by **Heather Trevis, UKCEH**

Engagement with business was fostered across the community, from early-career researchers (ECRs), to established natural science researchers and practitioners. **Business Impact Schools (BIS)** were developed to support ECRs to understand better how businesses value nature, to share their work with businesses, learn more about how business might apply this knowledge, and how they might tailor their work to enhance business uptake, as well as how to communicate with business leaders. The idea for BIS was first proposed by the Business Champion, with various members from the PCT, BIG, PEB, and PAG supporting the schools through presentations, interactive learning sessions and discussions. Business support for this activity was further shown through provision of venues to hold the schools, for example Willis Towers Watson providing their boardroom in their London offices. The aim of the BIS was to develop a Valuing Nature research community with a broader understanding of how research on valuing nature can be translated into private sector decision-making and innovation. Following the success of the first BIS in March 2016, another two were held in March 2017 and November 2017, having secured additional funding from the PEB.

The structure of the BIS was similar across the years. It consisted of a three-day workshop where, on the first day, representatives from business and business initiatives at the forefront of innovation related to valuing nature gave presentations. Over the three schools, 69 ECRs were exposed to over 20 businesses from a range of sectors (finance, agriculture, land management, energy, construction, transport, etc.) as well as business associations and local government working with business. A session on communicating results effectively, led by the Economics Lead, was a component of each BIS, with the aim to share expertise on making research results understandable to the target audience, in this case businesses, who use the information to make decisions. The ECRs, who were selected through an open call to PhD students and post-doc researchers, presented their work and there was time after each session for questions and networking. The third day consisted of a field visit. See **Section 7** for links to the reports on each BIS.

The Schools were very successful, with high demand for places across all three years. Positive feedback was received on all the events and testimony from participants indicates the influence these schools have had on subsequent career choices (**Box 8**) and progression (**Box 9**).

“ I really liked hearing about the practicalities/ implementation of things from both sides: how businesses were including sustainability/biodiversity offsetting etc. into their plans and how researchers are doing this e.g. the GIS/space talk. The Nature Capital Coalition was also very interesting and the field trip. I enjoyed networking with the other attendees and having the opportunity to talk to the speakers. ”

BIS 2016 Participant

“ It was my first introduction to the world of networking in my PhD experience, so I was glad I had the opportunity to hear about others research work and approach the ones with similar interests. In addition I realised how many other options beyond academia exist, and how we nature-lovers can penetrate the business world and influence it. ”

BIS 2017 Participant

Box 8: **The influence Business Impact School's had on career choices**

Prue Addison, Conservation Strategy Director,
Berkshire, Buckinghamshire & Oxfordshire Wildlife Trust
and Research Associate, *University of Oxford*

Gemma Jerome, Director, *Building With Nature*

As **Prue** puts it, “Back then I was an optimistic conservation scientist who assumed businesses were doing good things for the environment because they were intrinsically motivated to do so. The school helped me realise very quickly the many and varied motivations for business to factor in the environment into decisions. Understanding why businesses are motivated and what they want to do in regards to their business operations and the environment is critical for scientists to understand. This was my biggest learning from the Business Impact School and since then I have made it my business to learn the language of business, helping me identify opportunities to achieve research impact”.

In 2016, Prue started a NERC KE Fellowship at the University of Oxford, planning at the time to work with a couple of businesses to develop biodiversity metrics with them. In the end she worked with an ecosystem of collaborators (accountants, NGOs in business and biodiversity programmes, government agencies and the businesses themselves) with the intention of undertaking applied and relevant research that would influence business and help them account for biodiversity in their business decisions. Since attending the BIS, Prue moved from research to working with the Berks, Bucks & Oxon Wildlife Trust, where she leads a large team in developing and implementing conservation programmes on the ground. She works on innovative practice around sustainable finance and how to scale up public and private finance to actually invest in Natural Capital in the UK. Consequently, Prue's experience on these programmes has helped her transition to applied research and she is now keen to create a bridge from outside of academia to support research innovation and impact, ultimately helping environmental accountability for businesses.

Gemma has had a similar trajectory. In 2015 she was employed as a Knowledge Transfer Associate by the University of the West of England, as part of a Knowledge Transfer Partnerships (an Innovate-UK initiative) with the Gloucestershire Wildlife Trust. The intention was to bring her knowledge of green infrastructure and research experience to help innovate a new product to meet an identified gap in the market. Fast-forward 5 years and she is now the Director of a new national organisation that deals with the delivery of this new product and ensures that they continue to develop the product in conjunction with the rapidly changing market need, in light of the twin challenges of the climate emergency and ecological emergency. The insights she gained from the BIS helped shape the next two years of Gemma's role with the Wildlife Trust. She realised the importance of stakeholder engagement in the product innovation process and stressed the importance of 'active listening' in product design, so that it is a two-way process and actually meet the needs of the end-user. In terms of career choice, had she not attended the school she may have stayed in research and academia. However, she now understands the impact of bringing someone with a research background to a business setting, and how this can allow people with a research skill-set, like herself, to change and influence the world more effectively. Another important learning Gemma picked from the BIS was that having knowledge is not enough if you can't effectively communicate it. Communication skills and training targeted at the 'customer' is critical to changing and influencing the market, which can bring multiple benefits to a much base. Gemma has since delivered training to over 100 people using these concepts and learnings.

Overall, both Gemma and Prue learned that to achieve research impact you must be willing to engage with the business community and work on challenges that businesses are focussed on, not just on what scientists find intellectually interesting. The BIS helped to highlight the importance of continued engagement with the end-user to ensure research really meets the needs of the customer/beneficiary of any products and services that arise from new research findings and insight.

Interview by Heather Trevis, UKCEH

Gemma Jerome's Lessons for Integrating Natural Assets Into Business Models

Language and communication is key:

- Shape message to fit the needs of your delivery partners
- Make sure opportunities are framed in a way that businesses can understand.

Recognise that there are different benefits and different agents who need to act/participate/benefit at different times:

- Who pays for the wider benefits to society?
- You are asking the various delivery agents to be interested at different stages in the journey (long-term vs. short term)

Build confidence:

- It is our job to make businesses learn how to integrate consideration of natural assets into their practice more effectively
- Importance of avoiding 'them and us' mentality

Win-win situation with partnership and collaboration:

- Spirit of goodwill is important

Another set of activities, known collectively as the **Business Round Tables**, was developed around the infrastructure, land management and finance sectors, and explored current activity and trends related to measuring and valuing natural assets, drivers for this activity, barriers/ challenges to measuring and valuing natural assets in the sectors, and key research and innovation (R&I) needs. The Round Tables engaged with over 60 businesses from the three sectors (see **Section 7** for related reports). This initiative was proposed by the BIG, and supported by VNPCT and PAG, with funding from the PEB.

The success of the Round Tables led to follow-on NERC-funding for a cross-sector analysis, policy consultations, and fourth cross-sector Round Table that involved all the aforementioned sectors. The aim of this was to develop a Natural Assets Research & Innovation (R&I) Agenda. The fourth Round Table helped identify commonalities and differences between sectors, identified key cross-sector R&I needs, and options to meeting these needs. The policy consultations, which involved about 20 government departments and arms-length bodies across the United Kingdom, helped identify key policies and direction of travel with which a Natural Assets R&I Agenda should align, assess the extent to which the expressed R&I needs of business resonate for the policy community, and gauge the appetite in the policy community to collaborate on the emerging Agenda. The findings from the workshops and the policy consultations were brought together into the Natural Assets R&I Agenda In Support of Business and Policy report (See **Section 7**), which was discussed at the 2020 **Business Impact Conference** with over 150 representatives from business, academic, policy and other stakeholders.

All this culminated in the submission of a case to NERC, under the Strategic Priorities Fund, for £100m+ investment in **A Natural Assets Research & Innovation Platform and Agenda in Support of UK Business & Policy**, laying the groundwork for substantial future R&I investment in this space. The steer provided by BIG, the effective partnership between the Business Champion and Chair of the BIG, the proactive engagement of NERC, the strong interest of the business community, and the timeliness in relation to UK and devolved policy developments, contributed to the success of this activity.

Other business-related activities included ensuring there was a **business-oriented session** at each VN Annual Conference, and **business impact brokering** for the VN projects. The latter arose in 2016, where the projects highlighted a need for support in this regard. The Business Champion of the VNPCT provided support to projects, where feasible, to identify potential for business impact within their projects. However, as outlined further in **Section 4.1**, as well as the testimonials from BIS participants (**Box 8**), business engagement needs to be continuous throughout a project and requires consideration at the onset to have practical application, it cannot be an afterthought.

Taken together, the VNPCT was able to progress businesses understanding of the value of nature, as well as improving the use of this knowledge in business decision-making. It helped build cross-sector understanding (between the academic, business and policy sectors), which is equally as important as interdisciplinary understanding in solving the challenges we face.

Box 9: **Increasing Research Impact**

Eleanor Tew, Forest Resilience Programme Manager,
Forestry England

Eleanor attended the first Business Impact School in 2016, during the first year of her PhD. She remembers the BIS as an exciting and thought-provoking two days, which included hearing from organisations like Nestlé and the National Grid, and gave her ideas on how to make her own research more impactful and applicable to the business community.

Eleanor learned a number of lessons that influenced her research and career choices. Firstly, the school made the business world seem much more accessible, by demonstrating that many of the perceived barriers and differences to research are simply rooted in language. Since attending the school she has grown hugely in confidence in interacting with diverse businesses and understands how to argue the case for nature much more effectively.

Over the two-day period, Eleanor heard from a variety of organisations about how they were attempting to integrate the valuing nature concept into business. The varied approaches and relative success of different organisations showed that, despite good intentions, organisations often struggled to effectively implement valuing nature concepts. This helped Eleanor to focus her PhD, by using science to generate practical business and land-use recommendations. It also encouraged her to look outside academia for a career that allows her to use her scientific expertise to help integrate the value of nature into everyday business decisions. Finally, the school also helped Eleanor build a network of like-minded early career researchers.

The school was a key stepping-stone in Eleanor's career, encouraging and supporting her to maximise the business impact of her research and pursue a career in the practical application of science.

*Interview by **Heather Trevis**, UKCEH*

3.5 VN Projects

Seven VN projects were supported through the broader VN Programme. The VN Programme issued two funding calls, one on each of its core topics: the role of the natural environment in human health and wellbeing, and tipping points.

Four of the seven projects covered three broad areas related to understanding the value of the UK's natural environment for human health (physical and mental) and wellbeing. One project covered natural hazards and extreme weather events (CoastWEB), one covered the area of human exposure to pathogens and aquatic toxins (WetlandLIFE), and two comprised of studies in urban ecosystems (GHIA and IWUN). These projects were funded by NERC, ESRC, and AHRC.

The funding call for the 'Health and Wellbeing' projects was shaped through activities conducted by the VNPCT that engaged a wide community of scientists, as well as policy, practice and business. Over 223 people were respondents in a web survey, helping to identify 595 research ideas and 161 offers for engagement opportunities that could be made available to applicants to the call. These submissions were used towards a Scoping Meeting, where 45 people, representatives from key sectors, were invited to distil the topics into key research priorities under the three broad areas presented above. Consultations with the BIG and PAG were also conducted and the findings from all these consultations went towards shaping the call for the projects.

The 'Tipping Points' call funded three projects to:

- (i) Understand the links between ecosystem stocks, ecosystem service flows and benefits that are delivered as a result, in the context of defining critical levels of ecosystem stocks that avoid abrupt and damaging change in the delivery of benefits (tipping points).

- (ii) Understand how the values of ecosystem services and benefits change as tipping points are reached and exceeded.

Being more natural science focussed, the 'Tipping Points' call was funded by UKRI NERC, though it also required interdisciplinary research such as the socio-economics needed to characterise the values of benefits from ecosystem services.

The VNPCT's responsibility was to provide support as 'friends of the project', with a spot on the project advisory teams, as well as to promote the science and findings emerging from these projects (as already described in previous sections). Where feasible, as mentioned in the previous section, advice was provided on enhancing business impact. The PCT 'Friend' was the key source of information coming to the VNPCT on the projects, as all reporting from each project went directly to the funder. The engagement between the PCT and project teams worked well in some instances, such as using the Annual Conferences as a platform for VN projects, and developing events around project topics often with members of the projects taking an active role. However, as described in **Section 4**, in more detail, in some cases interaction between the projects and the VNPCT was not as robust.

In this section, a summary of the projects' aims and objectives, and some of the key outputs and where to find further information is provided.



◀ Discussing options for policy impact,
Project Meeting 2016 © Anita Weatherby

▼ 'Mud, Marsh and Wonder' Public Exhibition
at Royal Geographical Society © Heather Trevis



Health and Wellbeing Projects

CoastWEB

Valuing the contribution which COASTal habitats make to human health and WELLBeing, with a focus on the alleviation of natural hazards

Website: <https://www.pml.ac.uk/CoastWeb/Home>

Project Lead: Prof Nicola Beaumont (Plymouth Marine Laboratory)

Aim and Objectives

To holistically value the contribution of coastal habitats (including saltmarshes) to human health and wellbeing, with a focus on alleviation of coastal natural hazards and extreme events by:

- 1) Understanding the historical context of health and wellbeing value of salt marshes.
- 2) Linking coastal habitats to coastal defence.
- 3) Valuing changes in human health and wellbeing as a result of saltmarsh interventions.
- 4) Improving understanding and integrated management of coastal wellbeing.

Scope

Coastal Habitats of the UK, using Welsh case study sites.

Interdisciplinary — Including art, social and environmental psychology, environmental economics, governance, policy, a suite of natural sciences, and non-academic stakeholders.

Key Outputs and Outcomes

- Developed a novel 'circular process' that linked the four objectives (or work packages) through a mixed method approach to provide a greater understanding by examining health and wellbeing in different ways, enhancing the ability to handle different understandings and interpretations of value.
- Provided managers with a diverse array of information for making decisions by embracing the differences in the approaches and outputs of the various disciplines interacting within the project, to explore how they can complement each other.
- Developed key policy documents on the analysis and evaluation of Flood & Coastal Erosion Risk Management (FCERM) in relation to the national wellbeing goals of Wales.
- Held numerous outreach events with the local community in Wales, England and beyond.
- Held public exhibitions to share the results of the research with the public in London (in partnership with the WetlandLIFE project, and the VNPCT; see [Read S & Fremantle C. 2020](#)), as well as in Cardiff.
- Published over fourteen peer-reviewed papers (see <https://gtr.ukri.org/projects?ref=NE%2fN013573%2f1&pn=1&fetchSize=50&selectedSortableField=firstAuthorName&selectedSortOrder=ASC> for details)
- Lead on the development of the Demystifying Interdisciplinary Working report.

WetlandLIFE

Taking a Bite out of Wetlands: managing mosquitos and the socio-ecological value of wetlands for wellbeing

Website: <http://www.wetlandlife.org>

Project Lead: Dr Tim Acott (Greenwich University)

Aim and Objectives

To show how positive socio-cultural and ecological values of wetlands can be maximised for wellbeing, and negative attitudes can be reduced, by:

- 1) Exploring and creating narratives around people's relationships with wetlands and mosquitoes;
- 2) Developing our understanding of diverse wetland values and how mosquitoes may or may not affect these values;
- 3) Contributing knowledge for the management of wetlands to enhance social and ecological wellbeing.

Scope

Wetlands across England.

Interdisciplinary — including biological and social sciences, and arts and humanities.

Key Outputs and Outcomes

- Developed a conceptual framework of Nested Ecosystem Services to replace the linear logic of the cascade model and emphasised the importance of cultural ecosystem services in relation to other services, as well as the cultural aspects of these other services.
- Re-established the creative and literary importance of wetlands in various sites through activities and data collection methods that emphasised narratives and story-telling.
- Explored new ways to involve public to share their experiences and narratives. For example: converting two bird hides in the Somerset Levels into 'creativity' and 'memory' hides containing folk stories, book recommendations, poetry and creative writing prompts; the Wetlands on Wheels Caravan, an actual caravan converted into a learning and sharing centre, that attracted over 500 people across England to share values around the importance of wetlands; and Mosquito Jenga, developed with British Ecological Society to demonstrate the important role of mosquitoes in the food chain.
- Published two books discussing the importance and value of mosquitoes and wetlands, including the [Wetland Mosquito Survey Handbook](#), produced in association with Public Health England, and *English Wetlands: Spaces of nature, culture, imagination*, as well as three peer-reviewed journal articles, with others in preparation (<https://gtr.ukri.org/projects?ref=NE%2FN013379%2F1>).
- Engaged with various stakeholders, from communities living around wetlands, those further afield who have never seen a wetland, as well as with those engaged with wetland protection and policy, through a side event at the RAMSAR convention on wetlands COP 13, where the role of arts, humanities and social sciences in supporting Sustainable Development Goal 3 — Good Health and Wellbeing, was discussed.
- Held a public exhibition to share the results of the research with the public in London (in partnership with the CoastWEB project, and the VNPCT).

GHIA

Green infrastructure to promote health and wellbeing in an ageing population

Website: <https://ghia.org.uk>

Project Lead: Dr Sarah Lindley, University of Manchester

Aim and Objectives

To understand the benefits and values of urban green infrastructure to older people and how green infrastructure attributes and interventions can best support healthy ageing in urban areas, by studying:

- 1) The extent to which 'greening' urban environments result in improvements in the wellbeing of older people.
- 2) How well the current provision of benefits match older peoples' needs, and what inequalities emerge.
- 3) How different types of provision and need could be represented spatially.
- 4) How urban parks, grasslands, allotments and riversides could help people living with early stage dementia
- 5) How digital technologies could support those who may be excluded.

Scope

Case study area was Greater Manchester, but findings have application in other urban areas.

Interdisciplinary — including social, environmental, health and psychological sciences, arts and humanities, and a suite of local organisations, local government and older members of the public who participated as co-investigators.

Key Outputs and Outcomes

- Published a comprehensive [project report](#) that outlines:
 - Six key recommendations based on project findings that would help support health ageing in urban areas.
 - Specific recommendations for urban residents, and for practitioners working in the green infrastructure, age-friendly cities, health and wellbeing, and arts and heritage sectors.
 - The Project's 'Principles of Working' that enabled improved working across disciplines and sectors within the project.
- Produced a set of interactive [online tools](#) for the Greater Manchester area, to enable users of green spaces to find information on green and blue spaces in the area, contribute views on the influence of these spaces on their health and wellbeing, and explore the associations between health and green space.
- Published ten peer reviewed journal articles (<https://gtr.ukri.org/projects?ref=NE%2FN013530%2F1>)
- Used the approach of involving the community in the co-creation, critique, and discussion of the project from the onset.

IWUN

Integrating green/blue infrastructure and health service valuation and delivery

Website: <http://iwun.uk>

Project Lead: Dr Anna Jorgensen, University of Sheffield

Aim and Objectives

To find out more about how Sheffield's natural environment can improve the health & wellbeing of city residents, and especially those with disproportionately high levels of poor health by:

- 1) Studying the relationships between Natural Environment characteristics, health inequalities, deprivation and Natural Environment usage in Sheffield.
- 2) Examining the values and beliefs relating to Natural Environments and Health and Wellbeing, focusing on low users as defined by the Monitor of Engagement with the Natural Environment (MENE) (Natural England, 2015).
- 3) Understanding the characteristics of the Natural Environment and Natural Environment experience associated with Health and Wellbeing based on data collection via a smartphone App.
- 4) Synthesising the project findings into a new 'Green Blue Infrastructure-Green Health Guide', developing a Green Blue Infrastructure valuation framework analysing the costs and benefits of different prototypical interventions for the delivery of a range of ecosystems services, exploring the barriers to implementation and developing new governance and policy structures and frameworks for delivery of a new green paradigm for wellbeing across the public, private and third sectors.

Scope

Study area was Sheffield, and the study focussed primarily on mental health benefits. These findings are applicable to other urban settings.

Interdisciplinary – including geography, social sciences, environmental sciences, data and digital sciences, psychology and health sciences, in partnership with nature and health practitioners from the third sector.

Key Outputs and Outcomes

- Numerous publications including – 21 peer-reviewed journal articles and one book, 'Naturally challenged: contested perceptions and practices in urban green spaces' (see <http://iwun.uk/publications>).
- Developed the [IWUN Digital Atlas](#), a downloadable pdf which illustrates the geographic variation in health and greenspace in Sheffield, as well as showing key findings from the research.
- Rolled out the [Shmapped App](#), which allows the user to map their city and measures their experience of city living.
- Engaged with policy makers at local and national level, as well as publishing 9 policy and practice briefs.

Tipping Points Projects

Identifying potential tipping points in the benefits derived from the UK's land ecosystems

Website: <https://gtr.ukri.org/projects?ref=NE%2FP007880%2F1>

Project Lead: Prof. Tim Lenton (University of Exeter)

Aim and Objectives

To identify whether the benefits flowing to us from the UK's land ecosystems — including the provision of food, recreational value, water quality, natural flood protection, and greenhouse gas storage — could pass 'tipping points' this century as a result of climate change, land-use change, policy change and their interaction by:

- 1) Using a set of three state-of-the-art models combined with mathematical methods of tipping point detection to capture (at unprecedented spatial resolution) the functioning of the UK's land ecosystems, the benefits flowing from them, and how they are affected by climate change, land-use change and policy change.
- 2) Apply the output of the three models to examine where and what type of tipping points occur under different scenarios for the future of the UK climate.

Scope

United Kingdom.

Multi-disciplinary — Climate change and earth system sciences, biogeochemistry, and environmental economic.

Key Outputs and Outcomes

- Developed the first integrated analysis of potential tipping points in the benefits flowing from UK land ecosystem services, together with important improvements to the established framework used for quantifying and evaluating UK ecosystem stocks and benefit flows, and assessing policy options.
- Interest from Defra, land users, owners and managers in the predictions of abrupt changes in UK vegetation cover and land-use in a changing climate, including the impacts of a climate tipping point on UK land-use.
- Developed and launched three Massive Open Online Courses on the FutureLearn Platform: 'Valuing Nature: Should we put a price on ecosystems?'; 'Tipping Points: Climate change and society'; and 'Invisible Worlds: Understanding the natural environment' developed with the Eden Project.
- Published eight peer-reviewed journal articles, with a majority having been accessed over a thousand times.
- Contributed to the Demystifying Tipping Points report.

Peatland Tipping Points

Understanding ecosystem stocks and tipping points in UK blanket peatlands

Website: <https://www.peatlandtippingpoints.com>

Project Lead: Prof. Mark Reed (Newcastle University)

Aim and Objectives

To use UK peatlands as a case system in which to understand how the combined effects of climate change and changes in land use and management (and other drivers, such as atmospheric deposition) may trigger tipping points in the provision ecosystem services by asking the following three inter-connected sets of research questions:

- 1) Tipping point triggers: How might changes in climate, land use and management trigger regime shifts in blanket peatlands to degraded or alternative states? What biophysical and social factors influence whether these shifts then trigger tipping points in the provision of ecosystem services over space and time?
- 2) Tipping point values: What are the likely ecological, economic, social and cultural impacts of reaching tipping points in the provision of different ecosystem services in blanket peatlands?
- 3) Adaptive management: How might restoration move blanket peatlands from current degraded states to desirable new stable states that can prevent tipping points being reached and adaptively sustain the provision of ecosystem services from peatlands under future climate change?

Scope

UK peatlands.

Interdisciplinary — Biology, agriculture, mathematics, physical, chemical, social, marine, and economic sciences, engineering, and the arts, collaborating with the British Trust for Ornithology and the International Union for the Conservation of Nature's UK Peatland Programme.

Key Outputs and Outcomes

- Contribution to the UK Peatland Code and UK Peatland Strategy, as well as to the first ever Global Peatland Assessment with the Global Peatlands Initiative led by UN Environment and the UN Food and Agriculture Organisation (see UKRI [Gateway to Research](#)).
- Developed four policy briefs, and ten peer-reviewed journal articles. One of these articles on [The economics of peatland restoration](#) has been viewed over 6000 times and referenced in policy documents.
- Contributed to the Demystifying Tipping Points report

TPAL

Mechanisms and consequences of tipping points in lowland agricultural landscapes

Website: <https://gtr.ukri.org/projects?ref=NE%2FP007716%2F1>

Project Lead: Prof. Adrian Newton (Bournemouth University)

Aim and Objectives

To examine the mechanism and consequences of tipping points in lowland agricultural landscapes by understanding:

- 1) How the environment of Dorset has changed in the recent past
- 2) How it might change in the near future, and
- 3) What the implications of such a change are on human society, and specifically for economic growth and employment.

Scope

Dorset, with applications to similar landscapes.

Interdisciplinary – Environmental, data and economics researchers in collaborations with Dorset Local Nature Partnership (LNP) and Dorset Local Enterprise Partnership (LEP).

Key Outputs and Outcomes

- Comprehensive project report, [*Trends in Natural Capital, Ecosystem Services and Economic Development in Dorset*](#), policy recommendations from which have been considered in the Dorset Council Planning report.
- Informed the development of the strategic plan by the Local Enterprise Partnership in Dorset.
- Five peer-reviewed journal articles, most of which have been accessed more than 200 times.
- Contributed to the Demystifying Tipping Points report.

In addition to the above outputs, some of the projects produced data of importance, which are shared via the [Environmental Information Data Centre](#) as part of the project contract requirements.

4. Lessons learned for future initiatives

At the time of its inception, the VNPCT programme was one of maybe a handful of programme coordination initiatives that were funded, with a relatively long-term view, comprising of a team rather than an individual. The increase in initiatives requiring coordination teams in the recent years, for example the UKRI Strategic Priorities Fund programme ‘Landscape Decisions’, or the UK Climate Resilience Programme, are evidence of the success of the model to which the VNPCT contributed.

Firstly, dealing with complex issues requires a team that brings in expertise and experience from various sectors and disciplines, as has been evidenced throughout this report. As such, the VNPCT programme clearly shows the benefit of having teams, which are interdisciplinary and/or inter-sectoral in nature, to coordinate research and engagement programmes focussed on complex social, economic and environmental challenges. Secondly, the length of time that the VNPCT programme ran for contributed to its ability to bring about impact. This is evidenced by the quite recent, wider acceptance of the important role nature plays in human health and wellbeing, which was definitely not the case in 2014 when the VNPCT programme was initiated. The VNPCT and wider VN programme have definitely contributed to the valuing nature agenda being so widely accepted. Having long-term programmes, coordinated by a team that comprises sufficient variety to tackle complex, inter-connected challenges, can prove beneficial in the long-run.

Nonetheless, there are always specific areas that can be improved in any programme. Here the learnings derived from VNPCT experiences both in conducting activities and around governance structures are shared, with the hope they can be of use to future initiatives.

4.1 Activities

In general, activities and events were successful in attracting the right people, fostering sharing and discussion, and in achieving the objectives for the activity or event. However, not every activity or event contributed in the end to the intended or a wider outcome for VN, even though it proffered benefits to participants who may have gone forward to apply these through their own spheres of work and influence. Here, a few of examples are shared with some reasons as to why this might have been the case; hopefully providing guidance for future endeavours.

Early in the life of the programme, the critical workshop ‘Participatory Decision-Making’ was held, attracting the optimal diversity and numbers of participants. In terms of the intended contribution of this workshop to the aim of the VN programme and the projected path of valuing nature, there is no question, and therein lies a clue to the issue. Though the programme had a clear research component and an interdisciplinary and cross-sectoral PCT, the focus of the latter was on delivering activities that promoted knowledge exchange and practical applications, resulting in a somewhat weaker **academic thrust**.

‘Why is this aspect important?’ one may ask. Academia still drives the terminology we use and how decisions are influenced. For example, the planned but undelivered Special Edition from the Participatory Decision-Making workshop, may have propelled the discussion into the wider academic setting and allowed for academics to assemble around the issue more quickly. This could have provided firmer grounding, at an early stage of the programme, to the challenges discussed and may have helped to change academic debate and ultimately influence decision making more robustly. This example illustrates the importance of balancing and combining closely, the delivery of activities that meet set objectives, promotion of knowledge exchange across all sectors to gain understanding and practical application, as well as the development of academic knowledge through the output of peer-reviewed and other academic outputs and the backing of the academic community that provide the grounding for discussions and decisions.

The second case is more about the **evolution of delivery methodology** over time. One of the deliverables of the programme was a Keynote Lecture Series aimed at exploring themes and ideas associated with the concepts of valuing nature. The series comprised of nine 45-minute lectures, followed by a panel discussion and interaction with the audience. The first eight lectures were hosted across London, and in Edinburgh and Exeter, with a live audience and the ‘Chatham House’ rule in place to encourage discussion. This mode of delivery worked exceedingly well for the first few lectures in 2016–2017, with between 60 and 75 audience members in attendance. These highs gradually reduced to 35–40, then to a low of less than 20 in the penultimate lecture. This drop off could have been the result of a myriad of reasons, ranging from the possible increase in similar events, to the time of the year, the location, and the topic. Regardless, the decision was taken to switch to an online forum, even before the COVID-19 Pandemic made this a necessity.

The result was an attendance of over 200 from a diverse range of organisations and backgrounds, as befitted the topic – Interdisciplinary Working. With the benefit of hindsight, and with the advent of online events in the past year, it is important to reflect on whether having a varied delivery methodology for the same activity would, in the long-run, maintain its success levels and hence, contribution to the goal of the programme.

Finally, we provide a note about **building in business impact** into the seven VN projects. Although the Announcement of Opportunity for the two project streams stressed the link to end users, including businesses, and a BIS paper outlining how business impact can be factored into proposals had been recently published, none of the VN project proposals gave priority to business impact. Specifically calling for business impact in future announcement of opportunity (AOs), encouraging co-design of research with business, including business experts among the proposal evaluators, and providing specific feedback to proponents on their pathways to impact with business may help strengthen the business impact plans of future proposals. The interests of business stakeholders do not always align with those of researchers, and dialogue is needed at design stage to seek areas of common interest. Co-design requires two-way dialogue that enables business and academia to learn from one another and design research of business relevance, with effective business impact pathways. Retrofitting existing research outputs to usually very specific business needs is challenging, and simply inviting stakeholders to hear about the research outputs is not sufficient. If business impact is to be achieved, funders need to encourage proposals that provide for adequately funded activities to effectively enable dialogue with business over the project lifespan, and for the use of adaptive management to enable delivery of useful outputs. This recommendation can be applied to many other key stakeholder groups.

4.2 Governance

As highlighted at the start, the overall governance structure of the programme was beneficial in raising the profile and promoting a wide range of outputs on Valuing Nature. The programme has also provided a good example of the positive effect an interdisciplinary and cross-sectoral PCT and a stakeholder-led advisory group (in this case the BIG) can have on a programme. In order to make a real difference, it is important to also examine those areas in governance of programmes that can be improved for the sake of future similar programmes.

Integration of the VN projects into the VNPCT programme was not as strong as it could have been. As already described, VNPCT members were each ascribed a ‘Friend’ role on the different projects’ advisory committees, and were given the responsibility to promote the VN project outputs to outcomes, including promoting business impact. The latter was mostly accomplished through events, such as a few meetings with potential users, interactions with the VNPCT Business Champion, and dedicated sessions at the Annual Conferences. This level and type of engagement between the VNPCT and the projects was not always significant enough to result in tangible outcomes, as described in **Section 4.1**, and there are a few key areas from which future initiatives can learn.

Although the AO for the VN projects stated the need for project teams to work with the PCT to enhance impact, a few projects did not include sufficient resources in their budget or work plan to enable this. The VNPCT had proposed annual project meetings but were only able to accomplish one in 2016, the day before the first annual conference. Therefore, it is recommended that when projects are commissioned, their budget include resources to engage with the coordination team. It might be prudent for the funders to involve the coordination team in the preparation of the part on project-coordination team engagement for the AO, so that proposals are clear on how they will meet this requirement.

Furthermore, as mentioned above, VNPCT members were included in project advisory boards. In some cases, this worked very well due to the synergies between the VNPCT member and the project team. This was not always the case and the reasons are varied, from interest and/or expertise to schedules and project structure. For future projects within a programme, it might be prudent to find other ways for engagement between projects and coordination team members. The route of advisor may be useful in some projects, but not in others, depending on the project’s structure and needs. If meeting with the advisory team is only a requirement but not really a critical aspect of a project’s development, then it will not enable the coordination team member to be properly involved, and if the subject matter expertise or the interest is not matched, then engagement will be even less so. Whichever way the wider programme plans to proceed, it would be useful to have some terms of reference on interaction for the coordination and project teams, to enhance impact and legacy.

Finally, as the VN projects were funded by the VN programme, the VNPCT was not part of the reporting chain, and would only receive voluntary updates from projects on outputs or outcomes via the advisory committee link where active, the Annual Conferences or through direct requests. The latter was an added burden on projects. In addition, with the VNPCT not having oversight on projects meant the need to retrofit project outputs to user needs – which has been outlined in **Section 4.1**. With hindsight, having a stronger bond between the VNPCT and VN projects could also have boosted the academic links of the VNPCT programme, as also discussed in **Section 4.1**. It is, therefore, recommended for future PEBs to consider more closely involving the PCTs in project governance, or in fact require project leads to be co-opted into the PCT, to ensure that reporting burden is lightened, and impact pathways and resulting outcomes are strengthened throughout the project lifespan, whilst strengthening the overall programme by grounding it in academic endeavour.

Having both a **PAG** and **BIG**, with prominent researchers and business representatives engaged as members, definitely had its benefits. Continuing on the challenge of busy schedules, however, meant that convening meetings was always a challenge. Efforts were made to have at least one meeting per year and to do so at a central location, which is always more engaging than a video or conference call. Learning from the COVID-19 Pandemic era, this is unlikely to be a hindrance going forward, as technology to support more effective online interaction has become common place. Yet there is also the need to consider whether part of the issue is in the way in which PAGs and, in the case of VNPCT, the BIG, was set up. Could more have been done to develop Terms of Reference that spoke better to the usefulness to the member as to the programme, which would mean more active enthusiasm to take lead of specific agendas? Secondly, should we move towards including mid-career scientists and sectoral representatives who are at the height of building a career and legacy, and use this drive towards enhancing programme outputs to outcomes and impacts? Taken together, these may help enhance the roles and inputs of the advisory group within a programme and make it more meaningful for both the advisor and the programme.

5. Moving forward

Valuing Nature is a complex problem to which many disciplines need to be applied collectively to increase our knowledge, and this spans from science and economics to arts and humanities, social sciences, health sciences and practitioners, engineering and architecture, government, businesses and so on.

Business as usual is no longer sufficient; we have had 40–50 years of sustainable development that has achieved a lot but we still have declining species, extinctions, loss of habitats, declining quality of all our life-sustaining natural resources, and now increasing worries of transmission of viruses between animals and people as the environment is put under ever more pressure from human activity. One can look at the environmental challenges we face as a scientific issue wrapped up in economic questions set within larger social, political and cultural conundrums. Hence, interdisciplinary working needs to be the norm and not the exception. It has to also be truly interdisciplinary – i.e. working across academia, as well as business, industry, NGO, government, public, etc., as relevant. Many of the challenges we face require a different way of thinking about how the existing evidence is used, considered, and/or embedded. We need to move beyond valuing something economically or non-economically, but rather holistically, and this has been made clear in the recently published and well received Dasgupta Review.

The Valuing Nature programme has shown that interdisciplinary and cross-sector programmes can work when UKRI funding is accessed across the component Research Centres; as one Valuing Nature Conference attendee put it:

“I have worked within the interdisciplinary marine research field for 18 years now and also been frustrated by my research falling between RCUK camps (i.e. NERC and ESRC). This programme shows what can be achieved if joint funding is made available and I hope that NERC/ESRC/AHRC learn from this experience and fund similar programmes in the future.”

In addition, the programme funding structure created an innovative environment, by providing *ad hoc* funding for additional activities, alongside the seed funding to establish and maintain the VNPCT and administration, and support the VNN. The programme design appears to be replicated in a recent call from the ESRC (Social Science Interdisciplinary Team), which will hopefully embrace the true meaning of interdisciplinary in the selection of the winning proposal and help significantly progress sustainability, biodiversity, and achievement of net zero.

All this however, needs time. Most programmes are only five years in length. It is understood that stagnation can creep in if a structure is kept in place too long, but there needs to be better joining up of programmes, one learning from the next, as part of establishing a programme. Too often, programmes rebuild the wheel, trying something new to stand out, where in fact building on what exists and expanding on the ideas created in a previous programme could lead to a more robust solution. For example, one area that the VNPCT was less successful was direct policy influencing, as this is not a straightforward process. One needs to be in the right place, at the right time to make this happen. With the progress in various UK Government priorities around the environment linked to COP26, to the Dasgupta Review, and so on, it is now the right time to promote the myriad values of nature. The VNPCT has helped build community skills and foster dialogue with decision-makers, but more needs to be done, again with an interdisciplinary lens, to move to the next step – from words to large-scale action. It will be important, therefore, that dialogue continues between those working in interdisciplinary environments, and upcoming programmes need to foster this existing dialogue.

The substantial investment by UKRI, business, and academia, in the *Natural Assets R&I Agenda in Support of Business and Policy*, should not be wasted. The series of Business Round Tables, policy consultations, Business Impact Conference and the subsequent case to NERC, produced a strong basis for a major (£100m) UKRI investment. The case to NERC was submitted as COVID-19 struck, and was somewhat overtaken by the demands of the pandemic. But the case for a major UKRI investment in such a Natural Assets R&I Agenda remains strong, not least in the wake of the Dasgupta Review, the ongoing decline of natural assets, and given the increasing recognition of the role of natural assets in strengthening resilience to climate change. Such co-creation and co-implementation of research and innovation between academia and business (and, where appropriate, policy) is too frequently replaced by supply-driven R&I. If UKRI is to effectively support a transition to a nature-positive economy, there needs to be better balance between demand-driven and supply-driven. In addition, the principle of the Demystifying Series, which offers further valuable lessons in the production of useful resources in support of valuing nature, in particular the ‘for the community by the community’ principle, should not be lost.

The future is in more dialogue across and within sectors, mutual respect and improved communication, and openness to learning from one another and building on what has gone before.



Word art created from feedback received at Annual Conferences and the PAG on the future of Valuing Nature

6. Programme Outputs

The following is a listing of all publications and other outputs that were delivered either by the VNPCT, facilitated by the Valuing Nature Programme, or funded under the Valuing Nature Programme banner.

Demystifying Series

Beaumont, N. (ed). 2020. *Demystifying Interdisciplinary Working (in Valuing Nature)*, Valuing Nature Paper **VNP25**

Cracknell D, Lovell R, Wheeler B, and White M. 2019. *Demystifying Health Metrics*, Valuing Nature Paper **VNP19**

Hurst M. 2019. *Demystifying Cost Benefit Analysis*, Valuing Nature Paper **VNP18**

Kenter JO. 2019. *Demystifying shared and social values*, Valuing Nature Paper **VNP20**

Lovell, R. (ed.) 2018. *Demystifying Health*, Valuing Nature Paper **VNP13**

Ozdemiroglu, E. & Hails, R. (eds.) 2016. *Demystifying Economic Valuation*, Valuing Nature Paper **VNP04**

Ozdemiroglu E & Duke G. 2019. *Demystifying Green Finance*, Valuing Nature Paper **VNP21**

Saratsi, E, Acott T, Allinson E, Edwards D, Fremantle C, Fish R. 2019. *Valuing Arts & Arts Research*, Valuing Nature Paper **VNP22**

Natural Capital Synthesis Reports

Janes-Bassett, V., Davies, J. (2018) *Soil natural capital valuation in agri-food businesses*. Valuing Nature Natural Capital Synthesis Report **VNPO8**

Lawson, C., Rothero, E., Gowing, D., Nisbet, T., Barsoum N., Broadmeadow, S., Skinner, A., (2018) *The natural capital of floodplains: management, protection and restoration to deliver greater benefits*. Valuing Nature Natural Capital Synthesis Report **VNPO9**

Payne, R., Jessop, W. (2018) *Natural capital trade-offs in afforested peatlands: Evidence synthesis and needs for the future of peatland forestry and forest-to-bog restoration*. Valuing Nature Natural Capital Synthesis Report **VNP10**

Pritchard, R., van der Horst, D. (2018) *Monetary Natural Capital Assessment in the Private Sector. A review of current status and research needs*. Valuing Nature Natural Capital Synthesis Report **VNP11**

Stubbingtion, R., England, J., Acreman, M., Wood, P.J., Westwood, C., Boon, P., Mainstone, C., Macadam, C., Bates, A., House, A, Jorda-Capdevila, D. (2018) *The Natural Capital of Temporary Rivers: Characterising the value of dynamic aquatic-terrestrial habitats*. Valuing Nature Natural Capital Synthesis Report **VNP12**

Technical Reports

Duke, G., Young, P. and Stratford, C. (2019) *Towards a Natural Assets Research and Innovation Agenda in support of UK Business and Policy. Focusing on the infrastructure, land management and insurance/financial services sectors.* UK Research and Innovation and Valuing Nature Programme, CEH, Wallingford. **VNP17**

Fish, R., Carss, D. N., Bride, I., Boron, V. Duke, G. Norton, L, Acreman, M., Whitfield, L., Hails, R.S. (2018). *Joining the dots: Global Challenges and the Valuing Nature Agenda. Summary of technical report to NERC.* University Kent. Valuing Nature Report **VNP07**

Irvine, K.N., Roberts, M., Eastwood, A., Colley, K., Currie, M. and Zhang, Z. (2021) *Environmental Science and Mental Health Review.* Valuing Nature Programme, UKCEH, Wallingford

Nayak DR & Smith P. (2019). *Review and Comparison of Models used for Land Allocation and Nature Valuation. Final Report of Phase 1* (Jointly funded with the Landscape Decisions Programme)

Activity Reports

Duke, G. & Young, P. (2020) *Towards a Natural Assets Research and Innovation Agenda in support of UK Business and Policy. Summary Report on Consultations with the Policy Community.* Valuing Nature Programme, UK Centre for Ecology & Hydrology, Wallingford. **VNP24**

Duke, G. & Young, P. (2020) *Towards a Natural Assets Research and Innovation Agenda in support of UK Business and Policy. Report on the Workshop and Conference of February 2020.* Valuing Nature Programme, UK Centre for Ecology & Hydrology, Wallingford. **VNP23**

Duke, G. and Young, P. (eds) (2019) *Valuing and Measuring Natural Assets for the Insurance/Financial Services Sector. UK Research and Innovation High-level Sector Round Tables – Round Table 3, 17 January 2019.* Valuing Nature Programme, CEH, Wallingford. **VNP16**

Duke, G. and Young, P. (eds) (2019) *Valuing and Measuring Natural Assets for Land Management. UK Research and Innovation High-level Sector Round Tables – Round Table 2, 21 November 2018.* Valuing Nature Programme, CEH, Wallingford. **VNP15**

Duke, G. and Young, P. (eds) (2019) *Valuing and Measuring Natural Assets for Infrastructure*. UK Research and Innovation High-level Sector Round Tables – Round Table 1, 26 June 2018. Valuing Nature Programme, CEH, Wallingford. **VNP14**

Duke, G. (ed.) 2016. *Delivering Business Impact from Valuing Nature Research*. Report of the Valuing Nature Business Impact School, 2–4 March 2016, The Willis Building, London. Valuing Nature Report **VNP05**

Fish, R, Weatherby, A, J. (2017). *Valuing Nature Placements – Final Report – June 2017*.

Valuing Nature Programme. (2017). *The cost-effectiveness of addressing public health priorities through improved access to the natural outdoors*. Valuing Nature Programme Report 6.

Valuing Nature Programme. (2015). *Valuing Nature Programme Report No. 3 Identifying Priorities for the Health & Wellbeing Funding Call: Pathways to Impact with Business*. Valuing Nature website: Valuing Nature Programme Report 3.

Valuing Nature Programme. (2015). *Valuing Nature Programme Report No. 2 Identifying Priorities for the Health and Wellbeing Funding Call: Results from Scoping Meeting*. Valuing Nature website: Valuing Nature Programme Report 2.

Valuing Nature Programme. (2015). *Valuing Nature Programme Report No. 1 Identifying Priorities for the Health and Wellbeing Funding Call: Results from Web Survey*. Valuing Nature website: Valuing Nature Programme Report 1.

Journal Papers

These are papers that have arisen from the VNPCT programme activities, not those associated directly with the VN projects.

Irvine KN et al (2022) – *in preparation with participants of the workshops held to develop the Environmental Science and Mental Health Review (March 2021)*

Rust, NA, Ridding, L, Ward, C, Clark, B, Kehoe, L, Dora, M...West, N. (2020). How to transition to reduced-meat diets that benefit people and the planet. *Science of the Total Environment*, (718), [doi: 10.1016/j.scitotenv.2020.137208](https://doi.org/10.1016/j.scitotenv.2020.137208)

Kenter J, Raymond C, van Riper C, Azzopardi E, Brear M, Calcagni F, ... Thankappan S. (2019). Loving the mess: navigating diversity and conflict in social values for sustainability. *Sustainability Science*, (5), [doi: 10.1007/s11625-019-00726-4](https://doi.org/10.1007/s11625-019-00726-4)

Tinch R, Beaumont N, Sunderland T, Ozdemiroglu E, Barton D, Bowe C, ... Ziv G. (2019). Economic valuation of ecosystem goods and services: a review for decision makers. *Journal of Environmental Economics and Policy*, (4), [doi: 10.1080/21606544.2019.1623083](https://doi.org/10.1080/21606544.2019.1623083)

Willis C, Papathanasopoulou E, Russel D, Artioli Y. (2018). Harmful algal blooms: the impacts on cultural ecosystem services and human well-being in a case study setting, Cornwall, UK. *Marine Policy*, [doi: 10.1016/j.marpol.2018.06.002](https://doi.org/10.1016/j.marpol.2018.06.002)

Books

Fish, R & McKelvey H (2022) *Valuing Nature: The roots of transformation*. CRC Press pp 129 [doi: 10.1201/9781003166177](https://doi.org/10.1201/9781003166177)

Media

Valuing Nature Research & Innovation in Support of Business

21 February 2020, Royal Society, London

Welcome – Duncan Wingham, *Executive Chair NERC*

<https://www.youtube.com/watch?v=Agl3mssg0jO>

Introduction – Guy Duke, *Business Champion, VNP Coordination Team*

<https://www.youtube.com/watch?v=9Cy7bH8IPUO>

Keynote: a Government perspective – Alastair Johnson, *Senior Economic Adviser, Defra*

<https://www.youtube.com/watch?v=1f4WigICiBQ>

Valuing Nature Programme Business Impact Conference Panel Discussion

<https://www.youtube.com/watch?v=8UujYbTrm8>

Business Impact under the Valuing Nature Programme

<https://www.youtube.com/watch?v=iCLOAVKGMU>

Valuing Nature Live Stream

https://www.youtube.com/watch?v=_2JAEB_VTr4

Select Interviews with conference participants:

Dr Stephanie Hime, *Little Blue Research*

https://www.youtube.com/watch?v=sDiuHrbNY_c

Matt Smith, *JNCC*

<https://www.youtube.com/watch?v=IUdrIIXHIg>

Andy Griffiths, *Nestle*

<https://www.youtube.com/watch?v=TzbeFk12j4M>

Sarah Jane Chimbwandira, *Surrey Wildlife Trust*

<https://www.youtube.com/watch?v=hfxICaV13ZU>

Bill Biddell, *Hampton Estate*

<https://www.youtube.com/watch?v=LYh08bNZo2M>

Business Impact Schools 2016

Business Impact School – Summary

https://www.youtube.com/watch?v=P8xNARv_N_I

Business Impact School – How can researchers achieve business impact?

<https://www.youtube.com/watch?v=hvVX4OB8PA>

Business Impact School – Twitter cut

<https://www.youtube.com/watch?v=zYOzaoyDpUs>

Peter Young, *Chair VNP Business Interest Group*

<https://www.youtube.com/watch?v=pw76iKI8hPE>

Jonathan Dobson, *Sustainability Strategy Manager, United Utilities*

https://www.youtube.com/watch?v=4xmWT_OOtVk

Mark Gough, *Executive Director, Natural Capital Coalition*

<https://www.youtube.com/watch?v=d2LdQuCFkOU>

Ian Glover, *Environmental Sustainability Manager, National Grid*

<https://www.youtube.com/watch?v=r-oq6v33I8g>

William Bird, *GP and CEO of Intelligent Health*

https://www.youtube.com/watch?v=eA4-L_GsOfg

Anna Turrell, *Senior Public Events Manager for Sustainability, Nestlé UK & Ireland*

<https://www.youtube.com/watch?v=I30hvWxUpIY>

Nick Veck, *Head of CEO office, Satellite Applications Catapult*

<https://www.youtube.com/watch?v=HRz488vqvdo>

Mat Roberts, *Group Director of Sustainability Strategy, Interserve PLC*

<https://www.youtube.com/watch?v=9SkELMNI9VO>

Tim Sunderland, *Principal Specialist in Economics, Natural England*

<https://www.youtube.com/watch?v=hEpKR75C1VA>

Relena Ribbons, *Bangor University*

<https://www.youtube.com/watch?v=YSvl-ywaHJo>

Sian de Bell, *University of York*

<https://www.youtube.com/watch?v=QWEOtPlucj8>

Gemma Jerome, *Gloucestershire Wildlife Trust, University of West England*

https://www.youtube.com/watch?v=eweKoGnqN_I

Rosa Mato Amboage, *University of York*

<https://www.youtube.com/watch?v=fPe08A1nHMg>

Nazli Koseoglu, *University of Edinburgh*

<https://www.youtube.com/watch?v=K0lr1oK8f-c>

Luis Carrasco, *Centre for Ecology & Hydrology, Lancaster*

<https://www.youtube.com/watch?v=TscSBt1obcY>

Laura Crossley, *University of Southampton*

<https://www.youtube.com/watch?v=cDZdouOL98U>

Veronica Love, *University of Sheffield*

https://www.youtube.com/watch?v=j_eC4-43tCY

Rachel Seary, *University of Cambridge, UNEP-WCMC*

<https://www.youtube.com/watch?v=cJHP8P9H9Gw>

Warwick Wainwright, *University of Edinburgh*

https://www.youtube.com/watch?v=fUE_oJwzfbY

Philipp Siegel, *University of Essex*

<https://www.youtube.com/watch?v=VweZNvoGZto>

Eleanor Tew, *University of Cambridge*

<https://www.youtube.com/watch?v=IWEubB9DuXU>

Olivia Rendon, *University of Leeds*

<https://www.youtube.com/watch?v=Lp9iBt6s9JQ>

Valuing Nature Placements

Valuing Nature Placements 2017 Summary Video

<https://www.youtube.com/watch?v=tnD7TlbwUf0>

Valuing Nature Placements 2017/8

<https://www.youtube.com/watch?v=HElqhMniD2Y>

2016 Placements:

Clément Feger

<https://www.youtube.com/watch?v=JzGqYByBI4g>

Dan Bloomfield

https://www.youtube.com/watch?v=1XAO1z7_KUE

Joseph Kenworthy

<https://www.youtube.com/watch?v=Kfiq3iWLVIE>

Cheryl Willis

<https://www.youtube.com/watch?v=O7h2WZTrne8>

Timothy Wilkinson

<https://www.youtube.com/watch?v=asPwHRftMbs>

Amy Binner

<https://www.youtube.com/watch?v=K43kiSq67Fs>

Natasha Bhatia

<https://www.youtube.com/watch?v=o86BU7XQRH4>

Laurence Jones

<https://www.youtube.com/watch?v=s7Ndshn26MU>

2017/8 Placements:

Geoff Whitman

<https://www.youtube.com/watch?v=2T6InX2U22Q>

Jonathan Reeves

https://www.youtube.com/watch?v=vUQ11rL_dAY

Nazli Koseoglu

<https://www.youtube.com/watch?v=hP5CWAoCPAM>

Poppy Nicol

<https://www.youtube.com/watch?v=ZFvfjBLShGQ>

Natural Capital Synthesis Report Webinar

Temporary Rivers, Anita Weatherby & Victoria Barlow

<https://www.youtube.com/watch?v=J5zsYzI8HK0>

Monetary, Anita Weatherby & Victoria Barlow

<https://www.youtube.com/watch?v=3wOL7njmiFI>

Floodplains, Anita Weatherby & Victoria Barlow

<https://www.youtube.com/watch?v=encwdfuBAL4>

Afforested peatland, Anita Weatherby & Victoria Barlow

https://www.youtube.com/watch?v=_bRicbAb5-U

Soil, Anita Weatherby & Victoria Barlow

<https://www.youtube.com/watch?v=LKVzd4ywIM4>

Valuing Nature

An introduction to the Valuing Nature Programme by Rosie Hails

https://www.youtube.com/watch?v=ZhugAD_HjOo

Valuing Nature Conference 2017: Introduction by Rosie Hails

<https://www.youtube.com/watch?v=9xbMqX-urh4>

Natural Capital Account for the National Nature Reserves, Valuing Nature/Natural England

https://www.youtube.com/watch?v=R_wih1VqGMM

Exploring the impacts of environmental change

<https://www.youtube.com/watch?v=kqUpwNZOyrQ>

What does nature do for us?

<https://www.youtube.com/watch?v=F1Y1V63kPGc>

Naturally speaking...

<https://www.youtube.com/watch?v=epos3JsSoSs>

7. Programme Activities

A listing of all the workshops, conferences and events that the VNPCT programme coordinated and ran during its tenure.

Event	Summary	Dates & Venue	Co-Sponsor/ Key participants where applicable
Participatory Decision Making Conference	Explored the challenges that arise when interests in valuing nature are extended into the participatory realm.	19 & 20 July 2016 University of Kent, Canterbury	University of Kent
Valuing Nature Placements	Supported researchers on Valuing Nature topics to experience working in a new disciplinary, institutional or applied setting.	January to May 2016 April to July 2017 November 2017 to March 2018	Numerous Host organisations who provided opportunities for placements
Business Impact Schools	Provided early career researchers with insights into producing research with business impact.	2–4 March 2016 Willis Building, London (Willis Tower Watson) 7–9 March 2017 Willis Building, London (Willis Tower Watson) 29 November – 2 December 2017 Dynamic Earth, Edinburgh	Willis Tower Watson who provided the venue for 2016 and 2017 schools Members of BIG, PAG and PEB who volunteered time to presenting and leading discussions
Sustainable Intensification & Valuing Nature in Dialogue Workshop	Supported researchers to work across the diverse disciplines needed to link Sustainable Intensification and Natural Capital frameworks.	5–7 March 2019 Aston Conference Centre, Birmingham	Sustainable Intensification Research Network (SIRN)

Event	Summary	Dates & Venue	Co-Sponsor/ Key participants where applicable
Multiple Values of Nature	An international, broad-scope, interdisciplinary event that covered many aspects of the multiple values of nature, with the aim of fostering cross-disciplinary research collaborations and informing the agenda in this growing and fast-moving research area.	2–3 March 2020 We the Curious, Bristol	Joint Meeting of the British Ecological Society Journal, People and Nature, and the Valuing Nature Programme.
Keynote Lecture Series	Explored themes and ideas associated with the concepts of valuing nature.	22 September 2016 Defra, Nobel House, London	Paul Jepson, University of Oxford
		3 July 2017 University of Edinburgh	Richard Gunton, Centre for the Evaluation of Complexity Across the Nexus (CECAN)
		6 September 2017 Greenwich University, London	Tom Oliver, Reading University
		11 January 2018 University of Exeter, Exeter	Sian Sullivan, Bath Spa University
		20 February 2018 Friends House, London	Paula Harrison, UK Centre for Ecology & Hydrology
		3 December 2018 Friends House, London	Andrew Lowett, University of East Anglia
		21 January 2019 The Wesley Euston Hotel & Conference Venue, London	James Bullock, UK Centre for Ecology & Hydrology
		4 December 2019 The Wesley Euston Hotel & Conference Venue, London	Sue Hartley, York Environmental Sustainability Institute
		10 June 2020 Online	Nicola Beaumont, Plymouth Marine Lab

Event	Summary	Dates & Venue	Co-Sponsor/ Key participants where applicable
Valuing our Life Support Systems	A session run by the VNPCT on the learning from interdisciplinary work and decision making.	21–22 May 2019 The Crystal, London Natural Capital Initiative Summit	
Joint Webinar	To discuss the publication 'Accounting for National Nature Reserves: A Natural Capital Account of the National Nature Reserves managed by Natural England'.	11 June 2019 Online	Natural England
Valuing Nature Conferences	Brought together people from different disciplines to explore different approaches to valuing nature.	18 October 2016 Manchester Town Hall, Manchester 18–19 October 2017 John McIntyre Centre, Edinburgh 13–14 November 2018 National Museum, Cardiff 28–29 October 2019 Royal Society, London	

Event	Summary	Dates & Venue	Co-Sponsor/ Key participants where applicable
Business Round Tables	High-level sector round tables to review the current activities related to measuring and valuing nature assets; understand barriers and challenges and identify gaps in knowledge and R&I.	26 June 2018, Prince Philip House, London Round Table 1 – for Infrastructure	UK Research and Innovation
		21 November 2018, Prince Philip House, London Round Table 2 – for Land management	
		17 January, 2019, Prince Philip House, London Round Table 3 – for Insurance/Financial service sector	
		12 February 2020, The Royal Society, London Round Table 4 – Towards a Natural Assets Research and Innovation Agenda in Support of UK Business and Policy	
Business Impact Conference 2020	Brought together representatives from business, policy and academia to critically review the business impact of R&I implemented under the Valuing Nature Programme, and look forward to future collaboration between the business, research and policy communities on a major new Natural Assets R&I Agenda in Support of Business and Policy.	21 February 2020 Royal Society, London	
International Summit	Provided experience and expertise to researchers and PhD students who wished to develop their international profile and impact.	23–26 March 2021 Online	

Annex 1

Membership of the Programme Advisory Group
for the period 2014–2021

Prof Louise Heathwaite,

Lancaster University

Prof Dave Raffaelli,

University of York

Prof Mel Austen,

Plymouth Marine Laboratory

Prof Peter Coates,

University of Bristol

Prof Ian Bateman,

University of East Anglia and the ESRC NEXUS Network

Prof Lora Fleming & Prof Mike Depledge (joint members),

European Centre for Environment and Human Health, University of Exeter

Dr Ruth Waters,

Natural England

Dr Sari Kovats,

London School of Hygiene and Tropical Medicine & LWEC Health Fellow

Mr Jim Wharfe,

Independent Environmental Consultant

Mr Peter Young,

Trustee Green Purposes Company, Trustee The Wildlife Trusts, Aldersgate Group and Geosyntec Consultants - Chair of Valuing Nature Business Interest Group

Alistair McVittie,

Scotland's Rural College (SRUC)

Steven Spode,

Welsh Government

Prof Tim Benton,

University of Leeds

Mr Peter Massini,

Greater London Authority

Annex 2

Membership of the Business Impact Group
for the period 2014–2021

Green Purposes Company (Trustee), The Wildlife Trusts (Trustee); and of Aldersgate Group and Geosyntec Consultants	Peter Young	Chairperson, BIG
AXA XL	Chip Cunliffe	Director of Sustainable Development
Balfour Beatty	Julia Baker	Biodiversity Technical Specialist
Capitals Coalition	Mark Gough	CEO
Country Land and Business Association	Christopher Price Susan Twining	Director of Policy & Advice Chief Land Use Policy Adviser
Department of Health	Louise Newport	Scientific Policy Manager, Sustainable Development, Climate Change and Extreme Weather
Ecosystem Assets	Mike Packer	Director
Highways England	Colin Holm Stuart Wilson	Senior Advisor – Sustainable Development and Climate Change Midlands & West Team Leader & Ecological Adviser
Intelligent Health	William Bird	CEO
Interserve	Mat Roberts	Director of Sustainability Strategy
Marks and Spencer	Carmel McQuaid Fiona Wheatley	Sustainable Development Manager Sustainable Development Manager

National Grid	Stuart Bailey	Group Head of Sustainability & Climate Change
	Chris Plester	Senior Sustainability Adviser
	Steve Thompson	Environmental Sustainability Manager
Nestlé	Andrew Griffiths	Head Environmental Sustainability UK&I
Satellite Applications Catapult	Nick Veck	Head of CEO Office
	Dan Wicks	Head of Earth Observation
Suez	Sarah Ottaway	Sustainability and Social Value Lead
Tesco	Kené Umeasiegbu	Head of Environment
Tony Juniper Ltd	Tony Juniper	Sustainability Advisor
United Utilities	Jonathan Dobson	Sustainability Strategy Manager
Viridor	Dan Cooke	Director of Regulatory Affairs
	Ian McAulay	Chief Executive
Walgreens Boots Alliance	Richard Ellis	Vice President CSR
Welsh Water	Phillippa Pearson	Source Protection Manager
Wessex Water	Ruth Barden	Head of Environment and Catchment Strategy
Willis Towers Watson	Dan Fairweather	Director Livestock, Agriculture & Fisheries, Global Asset Protection
	Olivia Gray	Chief Operating Officer, Capital Science and Policy Practice
Willmott Dixon	Martin Ballard	Group Environment Manager

Acknowledgement

This is the final report for the Valuing Nature Programme.

The Valuing Nature Programme was a 5 year £7M research programme aiming to improve understanding of the value of nature both in economic and non-economic terms, and improve the use of these valuations in decision making. It funded interdisciplinary research and built links between researchers and people who make decisions that affect nature in business, policy-making and in practice. See www.valuing-nature.net

The Valuing Nature Programme was funded by the Natural Environment Research Council, the Economic and Social Research Council, the Biotechnology and Biological Sciences Research Council, the Arts and Humanities Research Council, and the Department for Environment, Food and Rural Affairs.

Further information visit:
valuing-nature.net/
[valuing-nature-final-report](#)

valuing-nature.net

Suggested citation: Sarkar S, Hails R, Weatherby A, Bealey B, Ozdemiroglu, E, Duke, G, Winter, M, Godfray C, Fish R, Porter, J, Trevis H, Woods V. 2021. *Valuing Nature through multiple lenses: Highlights from the Valuing Nature PCT Programme (2014–2021)*. Valuing Nature Programme, UKCEH, Wallingford.

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