

**“Amateurs as Experts: Harnessing New  
Networks for Biodiversity”**

**End of Award Report**

**RESEARCH REPORT**

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## **Background**

The research consisted of a sociological study of the networks set in motion by a specific participatory initiative within biodiversity policy.

It arose from a collaboration between the Institute for Environment, Philosophy and Public Policy (IEPPP) at Lancaster University and the Natural History Museum, in London, around a time when there existed broad policy-level recognition of the need to make UK Biodiversity Action Planning (BAP) more participatory (DETR 2001).

Since 2001, the NHM had been working with English Nature (the statutory body for nature conservation in England) on a participatory scheme to bring British naturalists into greater contact with the official networks of UK Biodiversity Action Planning. This participatory scheme would therefore bring into the policy networks *social groups* (mainly amateur naturalists but some other nature-involved groups – more details below) who had hitherto not been a part of official BAP recording/planning but who often had strong ties with the Natural History Museum. It also aimed to include previously excluded *natural groups*, with a specific focus on bringing in more data on the lesser known and lesser loved organisms such as lower plants and invertebrates.

For the Natural History Museum the forging of new policy networks and of new priorities for nature conservation (through increased attention to lesser known species for BAP) constituted a departure from business-as-usual, warranting observation, description and analysis by social scientists. The ESRC study, beginning in 2002, aimed to track the NHM/EN participatory initiative, using methods of participant observation and interviewing. In particular it aimed to look at the 'knowledge politics' inherent in the 'harnessing' of the enthusiasm of up to 100,000 amateur naturalists active in the UK, but hitherto disengaged from the official biodiversity policy process.

Throughout the study the ESRC research team worked closely with: a) the two 'facilitators' at the NHM who had been employed to carry out this 'harnessing'; b) relevant individuals within English Nature and; c) with the communities of naturalists whose knowledge of nature was being 'harnessed'. There was an important 'reflexive' element to this study in that social scientific observations aimed to feedback into scientific, policy and lay communities within the framework of the on-going participatory scheme underway.

## **Objectives**

The 5 initial aims of the project were:

1. To advance understanding of the social dimensions of effective biodiversity protection policies, in the UK and beyond.
2. To use ethnographic research methods to understand the social practices surrounding scientific knowledge generation, and to understand scientist-public interactions.
3. To enrich the self-reflective capacities of the biodiversity community by observing and reporting back on participatory processes underway.
4. To stimulate and contribute to UK debates regarding biodiversity policy and the relationships within it between science and society.

5. To provide an improved basis for understanding the conditions required for an improved public engagement with science and expert-led policymaking.

These remained unchanged throughout the project. The research team feel that these objectives were met during the course of the research.

## **Methods:**

The ‘Amateurs as Experts’ research project used a ‘multi-sited’ ethnographic approach, across a range of quite different fieldwork sites, to build understanding of the different user communities engaged in the participatory initiative outline above (naturalist, scientific, policy). A combination of participant observation and semi-structured interviews were used. This allowed the researchers into the different worlds of naturalists, record centres, museum curators and statutory agency offices and provided the team with an appreciation of the multifarious ways in which all communities were engaged in a local/national/global biodiversity project. It simultaneously revealed to us the connections and/or disconnections between the communities, their practices, motivations and expectations.

Most importantly, the use of multi-sited ethnographic methods ensured that the research process was iterative. Further possibility for iterative feedback and dissemination came about through three Advisory Committee Meetings held at regular intervals during the 3 years of the project<sup>1</sup>. The iterative process culminated in a Final Project Workshop which gathered key project users from all three of the aforementioned communities.

The project’s research methodology was ambitious due to its natural science – social science collaborative nature. Access to the naturalist communities required careful negotiation between the Lancaster researchers and the UK Biodiversity Group at the NHM in the first few months of the study. However, the relationship between Lancaster University and the NHM developed into one of rich and fertile exchange.

## **Results**

The ‘Amateurs as Experts’ project was established against a backdrop of a policy held vision for participation in biodiversity action planning. The predominant assumption within this vision was that gaps in biodiversity knowledge would be filled from a rich repository of data held within the UK biological recording community. Most importantly, the assumption was that the relationship between the new data providers and existing data managers (for BAP) would be relatively straightforward.

The research found that some of the internal dynamics and priorities of the recording community were well adapted towards the requirements of policy led surveying and recording activities, whereas others were not. It became clear however, as soon as observations from field work commenced (November 2002), that relationships between the statutory agencies and some components of the recording community were not always smooth. The research documented a number of tensions arising around the procurement, management and use of data which was being produced (mainly for free) by the recorder population.

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<sup>1</sup> The interdisciplinary composition of the Advisory Committee is provided in Annexe 3.

Two strong messages predominate and organise the research findings:

- First, the participatory initiative under observation is meant to be inclusionary in both social and natural terms. However, it also produces a number of exclusions. The research focussed upon which parts of naturalist knowledge production were easily included by policy, and which remained on the periphery or were excluded completely.
- Second, although the participatory vision was predominantly one of data procurement, both the researchers and the biodiversity communities involved understand that data is meaningless once disassociated from the context of its production. This ambiguity was exploited by the researchers to explore more fully the implications of keeping strong bonds between data and data-producers/production for conceptualising biodiversity.

The results presented below are organised in four sections:

Section 1: Assumptions of the participatory initiative and ethnographic findings

Section 2: Data in context

Section 3: Participation in practice

Section 4: Contribution of findings to academic and user communities

## **Section 1: Assumptions of the participatory initiative and ethnographic findings**

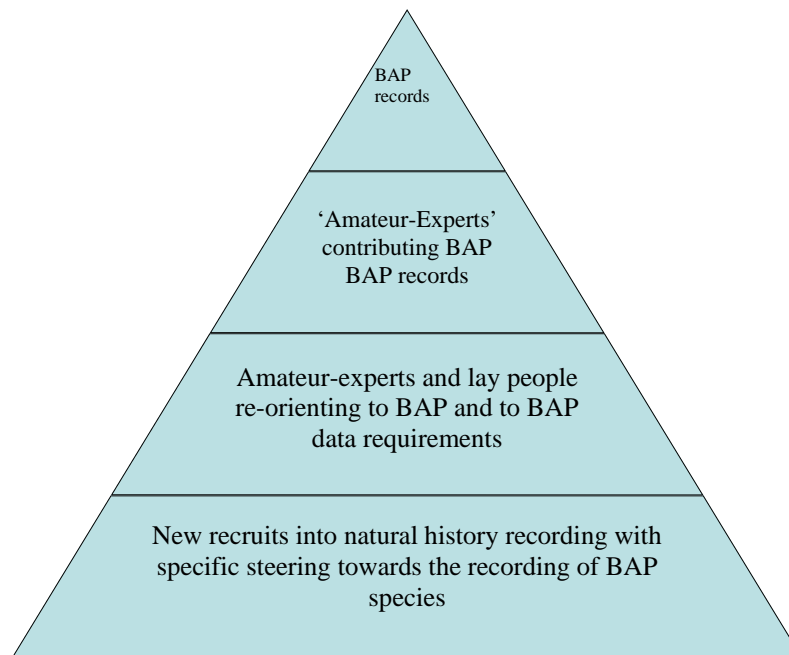
### The Politics of Inclusion/Exclusion

The project began by examining the policy-held vision of the participatory model. This model envisaged the participation of UK naturalists to take place through two different sets of activities set in train by the NHM:

1. Re-orienting the naturalists (or ‘amateur-experts’) that belong to natural history societies and recording schemes to the recording of BAP species through surveys, capacity building and the establishment of conservation committees within existing societies and schemes.
2. Introducing non-naturalist lay-persons (e.g. Ramblers and Anglers) to BAP related identification and recording through short courses and specially tailored projects.

Those orchestrating the participatory exercise considered these two sets of practices to intertwine in a model that is referred to as the ‘Pyramid Model’ (Figure 1).

Figure 1. Pyramid Model of BAP Participation



At the top of the model are the amateur-experts contributing to BAP. At the bottom of the pyramid are inexperienced recorders and their first attempts to create records. The aim of the participatory initiative was to increase the number of recorders at the bottom of the pyramid, as well as to increase the expertise and orientation of those in the middle of the pyramid towards producing more BAP records.

Taken as a model guiding the participatory initiative, the pyramid encompasses a number of untested social assumptions. For example, initial interviews with members of the conservation agencies revealed an imagined 'public' of recorders that was highly *homogeneous*. This imagined public was also assumed to be *well motivated* to aspire to the top of the pyramid.

Interviews and participant observation of the lay and amateur naturalist communities, on the other hand, revealed a wide variation both within and between the different components of this community in terms of practices and motivations. Not all 'participants' had the same goals as those orchestrating the participatory exercise and those orchestrating tended to bracket the complexities of the human communities that they were attempting to enrol. This turned out to be a real challenge faced by the statutory agencies and DEFRA. However, there were also successes as indicated by Section 3 below.

#### The Diversity of actual and potential biological recording communities

The communities of naturalists and lay groups covered in depth by the research worked specifically with the lower plant and invertebrate families<sup>2</sup>. However, they belong to a broader biological recording community<sup>3</sup> which comprises a wide spectrum of individuals/organisations. 92 specialist natural history recording schemes and societies exist

<sup>2</sup> See Appendix 1 for a list of fieldwork sites.

<sup>3</sup> The active biological recording community in the UK is estimated to number over 100,000 members (Lawrence and Gillett 2003).

in the UK. The NHM was working with a small sub-set of these as well as non-specialist or lay groups of Ramblers and Anglers who have recently been introduced to biological recording as a complement to their more familiar pursuits.

Of interest to the research was the heterogeneity encountered within these groups around: biological recording practices; notions of expertise; end-products; the social organisation of the groups involved; and individual and group motivations and expectations. We summarise some of the main variations in Table 1 below.

Consistent with other research on the voluntary sector (Billis and Harris 1996, Finnegan 2005), the research found that a careful consideration of the variations represented below proved indispensable for understanding some of successes of some and the shortcomings of others of the participatory initiatives underway. The following sections provide examples.

**Table 1. The Diversity of UK Communities being enrolled into BAP recording**

	<b>Specialist Schemes and Societies (92)</b>	<b>NGOs</b>	<b>Natural History Societies and Wildlife Trusts</b>	<b>New Biodiversity Publics</b>
<b>e.g.</b>	British Bryological (moss) Society	Plantlife	North Lancashire Natural History Society; Cumbria Wildlife Trust	Flyfishers; Ramblers
<b>Expertise</b>	Species Identification, recording and mapping	Rallying enthusiasm amongst the public; campaigning	Local surveys, knowledge of local natural history	Observing life on rivers/wildlife in the countryside.
<b>Practices</b>	Teaching others to identify species (apprenticeship); field meetings; publication of journal articles, newsletter, etc.	Involving others in politics of the environment;	Local surveys, local meetings and talks, apprenticeship of others	Angling/ walking whilst observing the river and wildlife in the river/countryside.
<b>Motivations</b>	Pleasure of finding/observing/ identifying organisms and recording/inventorising	Protection; creating campaigns with political purchase.	Pleasure of finding/observing/ identifying organisms and recording/inventorising. Protection of local species/habitats.	Sense of freedom and agency. Pleasure of being with nature/others in nature.
<b>Typical Data Ends</b>	Atlas of species distribution	Less emphasis on data. Activities are more about enrolment of others for campaigns.	Data to be used in planning / development/EIA decisions. Providing local inventories of species and habitats.	No data normally produced. Some notebooks used by flyfishers, noting fly trends, water quality issues, etc.



## Section 2: Data in Context

### Data ends

Each of the communities mentioned have their own distinctive ways of recording nature and of processing the records towards quite different ends (ranging from individually managed collections of cardboard record cards to digitised records contributed to national biodiversity databases for policy use (e.g. National Biodiversity Network)). Most individuals process and contribute their data to a number of quite different ends.

The research found that not all data collecting methods and envisaged end-products can easily be funnelled into a national-level data-harnessing drive as imagined by the Statutory Agency English Nature and other BAP partners. The research uncovered a spectrum of reactions to the idea of data being harnessed to BAP policy use:

- Whilst some recorders knew about biodiversity action planning and BAP networks and were happy to contribute their data to such ends;
- Some recorders adamantly expressed that they had no intention of collecting data with policy imperatives in mind; they are motivated by a different set of principles;
- Other recorders, whose main motivation is to contribute to UK biodiversity protection, reported a deep sense of alienation and frustration provoked by the realisation that their data was not being used towards the ends hoped for;
- Others reported feeling alienated due to their not being able to trace either their data or themselves through the networks of data flow and management (Appadurai 1986, Kopytoff 1986). A lack of continuity between the motivations behind data production and visible data use contributed to this sense of disenfranchisement.

### The Pyramid Model and Data Quality

One of the implications of the pyramid model described above is a concern on the part of the conservation agencies to police *data quality*. A tacit understanding of the designers of the participatory scheme was that records coming in through the participatory embrace must be validated and standardised and particularly so when the contributors are unknown to the BAP community.

The research found that intricate data validation and standardisation processes have long existed within amateur societies and recording networks. The majority of data received for policy comes from experienced and well known naturalists within the societies. Within the participatory initiative, the explicit policing of data sometimes provided a big disincentive to handing data in, especially for naturalists not fully confident of their recording skills.

It was observed more widely that records procured from the 'wider publics' (e.g. Plantlife's 'Common Plant Survey'), or through the NHM enrolment of flyfishers into the recording of riverflies (see below Section 3), were seen to require more stringent validation procedures. A commonly voiced lament from the NGOs is that most records generated from such schemes are 'barely worth the paper they are written on'. In the NHM/EN scheme, such data would be excluded.

The above observations demonstrate the ambiguities of the participatory initiative. Was the goal to produce more accurate data, or was it to engender a wider constituency of BAP recorders amongst the public? The pyramid model, mediated by a grid of standards and validation procedures, clearly demonstrates a 'siphoning off' of naturalist expertise and associated pieces of nature/biodiversity.

### Data Ownership and Exchange

The model of participation envisaged by the government and statutory agencies was one of data procurement. Naturalists, of course, produce and exchange their data free of charge. Historically, issues of data ownership and control have been handled within natural history societies through established norms of exchange, reciprocation and recognition (Secord 2002, Allen 1976, Lowe 1976). However such issues become more complex in circumstances where data is mobilised and depersonalised. This may occur through processes of digitisation (e.g. transferring notes from notebooks to computer files) and in the use of data beyond the initial purpose for which the data was generated. Significantly, in some cases naturalist concerns about data ownership and the potential loss of control over data use has become a disincentive to collect data for wider national or policy aims. Attending imaginatively to such concerns and attending to basic principles of recognition of authorship and of data production, is thus vital if the statutory agencies and DEFRA hope to work with ever broader constituencies of data contributors.

The sections above have focussed on the implications of the heterogeneity of participation in the NHM/EN initiative underway. The research also looked in depth at some of the communities involved. The section below explores what this focus revealed in the case of selected naturalist communities.

### Social and epistemic organisation of the *naturalist* communities

The structural organisation of each of the naturalist recorder communities observed was found to function according to an elaborate set of social and epistemic conventions. For many of the longer established naturalist groups, for example, knowledge is acquired gradually through apprentice-type relationships established between individuals of differing levels of expertise. The research found that the sense of mutual respect between naturalists of differing abilities was central to understanding the internal social and epistemic organisation of naturalist communities. In order to rise up the so-called 'ladders-of-esteem' in the naturalist world, an individual should select those organisms which are most difficult to identify and demonstrate rapid improvement in ability.

A vital dimension of naturalist knowledge making is the close working relationship between a profound sense of wonder at the complexity and beauty of the natural world and systematic rigour and diligence in tasks of identification and recording (Takacs 1995). The research emphasised that wonder and aesthetic appreciation, instead of being peripheral issues, could actually work as a bond between naturalists and conservation agencies. Researchers suggested that these elements might contribute to an expansion of the understanding of what scientific knowledge might comprise, which may in turn lead to an expansion of the way in which biodiversity action planning is conceived to include the aesthetic, and ideas of pleasure, wonder and human connection to the natural world (Posey 1999). The researchers found that there is scope for re-articulation of how BAP itself might be conceived within parts of English Nature – for example within the People and Nature programme which will be developed further within Natural England.

Of particular interest to the research was acknowledging the finely meshed relationship between these internal dynamics and the knowledge produced of the natural world. Representations of biodiversity therefore reflect and perform human diversity itself. The main lesson learnt from this and other examples is that the institutions responsible for 'harnessing' natural knowledge need to be fully in tune with and work together with such social and epistemic subtleties rather than overlook them in a search for pure data. (Ellis and Waterton 2004 and 2005, Ellis, Grove-White, Vogel and Waterton 2005).

### Section 3: Participation in Practice

In the sections above we have highlighted the complexities and some of the challenges of the task of public engagement in biodiversity recording and some of the potentials arising from a close observation of the social/epistemic orderings within specific societies. In this section we attend to some of the more straightforward successes of the participatory initiative.

#### Participation: the success stories

The large-scale success stories come from NGOs such as Plant Life and Butterfly Conservation. Below are examples of three smaller scale initiatives that the NHM has helped set in train.

1. The UK's fly fishing community, with support from the Natural History Museum and renowned river fly experts, have been trained up in river fly identification and monitoring techniques. Their enthusiasm for and commitment to riverine biodiversity has been tapped but towards new ends. A proportion of UK anglers have now become biological recorders and monitors; they are producing high quality data, useful both to BAP planning and to environmental management.
2. The Elm Map project, also spearheaded by the Natural History Museum, has rallied hundreds of Ramblers, already out and about observing nature, to map the UK's Elm population. Elms are the host of other interesting organisms for investigation by the UK's lichen, moss and fungi and invertebrate experts. The Ramblers are contributing to science and policy by producing and contributing data that can be used by others to study elms, other plants and insect life.
3. A number of the specialist societies including the British Bryological Society, the British Lichen Society and the British Entomological and Natural History Society have formed Conservation Committees, through which society activities come closer into line with policy needs. Members continue to practice what they know and love but simultaneously record species of particular interest to policy (specifically BAP).

These are examples of a convergence of interests; policy agencies and naturalists have found ways to work together and work to mutual benefit. Whilst policy receives sorely needed data, the anglers are tooled up in collecting *bonafide* data on riverine biodiversity which also acts as an indicator for water quality, the ramblers gain extra interest from their walks and contribute to conservation efforts and the entomologists, traditionally an isolated and fragmented community, achieve greater cohesion and recognition for their effort and expertise.

### Section 4: Contribution of findings to academic and user communities

#### Academic contributions of the research:

The study was informed by extensive literatures concerning environmental and epistemic citizenship, the politics of participation, and the exchange between local and scientific knowledge systems (Bell and Dobson 2006, Jasanoff 2004, Leach, Scoones and Wynne 2005, Verran 2002; Cooke and Kothari 2001; Goodwin 1998). Much of this literature has come from political science and anthropology in a development context. Our research continues to question the (im)balances of power and asymmetries that have been observed in previous studies of participatory initiatives. However, it has provided more ethnographic detail of knowledge making than has been the norm in such studies and provides a unique case study of the interplay between forms of lay and scientific knowledge in a UK context.

The boundaries of expertise as imagined by the policy and scientific communities, and specifically the positioning of naturalist communities within and beyond science, were interrogated by the research. In so doing, the constitution of (legitimate) scientific knowledge

was explored in the UK biodiversity context. These explorations feed into ongoing debates within the sociology of scientific knowledge around questions of expertise (Collins and Evans 2002, Jasanoff 2003, Wynne 2003). In a related vein, naturalist communities proved a rewarding context in which to draw upon and contribute to literatures approaching knowledge as practice (Lave and Wenger 1991, Ingold 2001). An appreciation of naturalist knowledge making was further inspired by philosophical and anthropological work which scrutinises the ordering of relationships between affect, aesthetic judgement and systematic cognitive thought as ways of knowing the natural world (Brady 2003, Grasseni 2004, Lave 1988, Nussbaum 2003, Gell 1994, 1998). It was our concern in particular to understand the perceived relevance for appropriate biodiversity knowledge of these interrelated knowledge components. The research observed the playing out of a 'politics of knowledge' as well as a 'politics of vision' in the naturalist communities; namely the power of legitimacy granted to knowing the natural world appropriately and correctly (Goodwin 1994, Grasseni 2004). Such analysis and insight led the research team to question in more detail the constituents (possible and actual) of the human and non-human communities making up UK biodiversity.

A recent concern within science studies has been about the potential of 'new collectives' for realigning the relationship between science and politics (Latour 2004, Stengers 1998 Hinchcliffe et al 2005). The research has provided the opportunity to question what it might mean to include rather than to exclude a wider constituency of recorders (their practices and motivations), records (and other artefacts), and the natural organisms themselves than is currently considered relevant. Furthermore such reflections again call to question the wider meanings or implication for the concept and practice of biodiversity. Should it endeavour to disconnect or connect nature from the natural-human networks which both embody and perform biodiversity (Ingold 2000; Turnbull 2003).

Within the detail of the empirical material, the researchers were also able to think through issues of representation, translation and exchange relating to biodiversity information. Fruitful links were made with other researchers looking at issues of biodiversity and cultural diversity and some of the paradoxes and problems of 'inventorising diversity' (Turnbull 2003, Bowker 2000, Ingold 2000). The role of artefacts in i) enabling knowledge of (e.g. microscopes, lenses, maps, notebooks) and ii) representing biodiversity (species atlases and electronic databases) was also analysed in this context. The tension presented by taking seriously Bowker's (2000) assertion that the divide between representation and reality is 'ontologically hopeless' provided highly relevant when unravelling the possible ontologies and contingencies of biological recording embedded in and performed by the representational tools (Taussig 1993).

It became evident during the research that ethnographic sensibilities developed through the research process could lie in tension with a more 'cartographic gaze' of the agencies responsible for harnessing naturalist knowledge for biodiversity policy use (Ellis and Waterton 2005). However, we realised that cartographic and ethnographic ways of seeing/being inform one another and are fluid, rather than static. By the end of the research the researchers saw the potential for ethnographic and cartographic perspectives to be explicitly recognised by policy makers and perhaps to be used as tools with which to rethink 'biodiversity'.

#### Implications for biodiversity policy: feeding back to the policy domain

One of the strengths of this research project was establishing mechanisms for iterative feedback between the researchers and project participants from the very beginning. This enabled open dialogue and the provocation of greater reflection (on all sides) than might have been possible otherwise.

A central message delivered to the government and statutory agencies, both during the end of ethnographic fieldwork and through publications and conference presentations (see below), was **the need to develop a richer understanding of the motivations, preoccupations,**

**gratifications (personal and/or professional) of the different actors involved in the participatory scheme underway.** Further results were conveyed to the conservation agencies, NHM and naturalist communities through the following ‘ways forward’ (adapted from Ellis, Grove-White, Vogel and Waterton 2005):

- Conservation agencies need to rethink some of their own seldom-recognised assumptions and stereotypes. Amateur expert naturalists are not simply 'nerds' or 'anoraks' available to be harnessed, but skilled individuals with their own drives and motivations.
- Conservation agencies must recognise explicitly that many of their own staff are also naturalists. This points to a need to re-internalise the natural history tradition within bodies like English Nature, for example by rewarding staff who keep up their natural history skills.
- Conservation agencies and NGOs need to think more systematically about participatory design. How do certain designs encourage the inclusion of some people and data, and the exclusion of others, equally valuable?
- If different publics are going to rise to the call to contribute data for future biodiversity policy use, the conservation agencies need to generate a greater sense of purpose and excitement.
- Amateur expert naturalists are a unique and valuable cultural element in British society. There needs to be more explicit recognition - by government, conservation agencies and leading NGOs - that, frequently invisible though they may be, they are the bedrock of much of the most important biodiversity protection work. Forms of recognition of their contribution are needed which reflect the values of the naturalist communities themselves.
- If the insights of this research are to be translated into practical ways of working on the ground, the new official agency, 'Natural England', will need to have adequate human and financial resources for a period of creative experiment and action, aimed at advancing new patterns of collaboration.
- There is a need to engender a sense of knowledge ownership and control amongst the contributing naturalists. This may mean: making explicit the way in which data is processed and used; creating a more explicit form of recognition for the data contributors; and possibly creating a role for data producers at the level of decision making involving the data they have produced.

### **Activities**

Please see user conferences attended in Annexe 1, conference papers delivered in Annexe 2. An interdisciplinary advisory group met 3 times during the course of the project and its composition is specified in Annexe 3.

### **Outputs**

For academic and specialist/policy publications produced and conferences attended, see Annexe 2.

### **Impacts**

The research has communicated the points above to the statutory agencies, NHM and other relevant parties (e.g. DEFRA). There is clearly a tension between our recommendations and the globally driven imperatives to standardise nationally collated data and represent it according to CBD requirements. Nevertheless the researchers have been pleased that the following ‘impacts’ seem to suggest that some of the findings are being absorbed at various institutional levels.

- The research has provided the material for several radio broadcasts including at least two that are specifically dedicated to exploring the project (Radio 4, 'Nature' produced by Paul Evans, 1.1/4 million listeners, on 15.11.04; Radio 4 Material World, March 2004). Gill Stevens and Johannes Vogel have represented the project on several occasions on national radio, including the Radio 4 'Today Programme' (see Annex 2).
- English Nature and DEFRA have invited researchers to present and discuss finding with them (English Nature, Peterborough, 2003; DEFRA, Cardiff, July 2004).
- The Botany department within the NHM (which Johannes Vogel heads and where the NHM facilitator, Gill Stevens, also works) is now seen to be leading within the Museum on issues of public engagement. Vogel and Stevens attribute this to what they have learnt during this project.
- NHM have made 'Science and Society' and 'Public Engagement' a priority for the Museum's next five year strategic plan.
- Within the NHM there has been a move away from the purely data-extractive understanding of what participation in BAP might mean to looking more towards orienting more to participant needs and expectations. This has been seen in particular in the work with the flyfishing community (Waterton 2003; Ellis and Waterton 2004).
- The final project workshop was attended by naturalists, voluntary and amateur groups, museum facilitators, academics and statutory agency staff (some of whom will become part of Natural England). This event also saw the launch of the booklet, 'Nature: Who Knows?' (Ellis et al 2005), more than 500 copies of which have been disseminated. Many of the copies have been requested since the workshop. We have good evidence that the booklet is being read and debated throughout these communities. See Annex 3 for a list of those to whom the booklet has been disseminated.

### Future Research Priorities

The study has spawned two new ESRC research projects:

- a) 'Databases, naturalists and the Global Biodiversity Convention' (2005-6)
- b) 'Taxonomy at a crossroads: science, publics and policy in biodiversity' (2006-9)

Other research could include the following

- It would be interesting to use a similar methodological/theoretical approach to understand how popular natural history *interactive media* programmes (e.g. BBC Springwatch; Great Garden Bird Survey) might engender new relationships between publics and biodiversity.
- It has been satisfying to the researchers to note that the multi-sited ethnographic method can, if feedback mechanisms are in place, offer a useful perspective to the statutory and other official bodies (English Nature, DEFRA). Given that Natural England is a new institution with responsibilities for the protection and governance of nature, further ethnographic study examining how this institution begins to construct the relationship between publics and nature could be very interesting and of relevance to policy 'users'.

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- Mauss, M. 1990 (1950) *The Gift: the Form and Reason of Exchange in Archaic Societies*, London: Routledge.
- Merrill, L. 1989 *The Romance of Victorian Natural History*, Oxford: Oxford University Press.
- Miller, D. 2003 "Could the Internet Defetishize the Commodity?" *Environment and Planning D: Society and Space*, 21 359-372
- Nussbaum, M. 2001 *Upheavals of Thought: The Intelligence of the Emotions*, Cambridge University Press
- Posey, D. 1999 *Cultural and Spiritual Values of Biodiversity*, Nairobi: UNEP Intermediate Technology Publications
- Secord, A. 2002 "Botany on a Plate: Pleasure and the Power of Pictures in Promoting Early Nineteenth-Century Scientific Knowledge", *Isis*, 93: 28-57
- Sharpe, Barrie 1998 "First the forest': conservation, 'community' and 'participation' in South-West Cameroon' *Africa* 68, 1, 25-45.
- Stengers, I. 1998 *Power and Invention: Situating Science*. University of Minnesota Press
- Strathern, M. 1999 "What is intellectual property after?" in Law, L. and Hassard, J. (eds) *Actor Network Theory and After* Blackwell, Oxford



- Strathern, M. 2004 *Commons and Borderlands: Working papers on Interdisciplinarity, Accountability and Flow of Knowledge*, Sean Kingston Publishing
- Turnbull, D. 2003 “Assemblages and Diversity: working with Incommensurability: Emergent Knowledge, Narrativity, Performativity, Mobility and Synergy”. Paper presented at AAHPSSS, Melbourne, June 2003.
- Takacs, D. 1996 *The Idea of Biodiversity: Philosophies of Paradise*, Baltimore: John Hopkins University Press.

### **User Conferences Attended**

- “Nature: Who Cares?” BANC/English Nature Conference, Derbyshire 2003
- “Why involve volunteers in biodiversity monitoring?” Bio Watch UK Workshop, Oxford, October 2003
- “The Appliance of Science” – the 3<sup>rd</sup> NBN conference for National Societies and Recording Schemes. Zoological Society, London Zoo, November 2003
- “Living Cities: A new agenda for urban natures” – Open University, ESRC End of Project Conference, Birmingham, December 2003
- Earthwatch Institute (Europe) PI Conference, Oxford, February 2004
- “Exchange Fair” – Delivering England’s Biodiversity. DEFRA, Sheffield University, March 2004
- NFBR/NBN Conference 2004: Natural partners – biodiversity observations and collections. National Museum & Gallery of Wales, Cathays Park, Cardiff

## **Project Outputs**

### **Publications:**

#### Academic Publications

Ellis, R. and Waterton, C. 2004 “Environmental citizenship in the making: the participation of volunteer naturalists in UK biological recording and biodiversity policy”, *Science and Public Policy*, April 2004

Ellis, R. and Waterton, C. 2005, “Caught between the cartographic and the ethnographic imagination: the whereabouts of amateurs, professionals and nature in knowing biodiversity”, *Environment and Planning D: Society and Space* vol. 23, pp. 673-693

#### Good-Practice Booklet

Ellis, R., Grove-White, R., Vogel, J., Waterton, C. 2005 *Nature: Who Knows?*

#### Papers published in specialist circulars and journals

Waterton, C. 2003 “Messing about on the river” *Salmo Trutta*, 6: pp. 56-58

The Natural History Museum/English Nature 2003 Amateurs as Experts *English Nature Magazine*, January, pp. 10-11

### **Forthcoming Papers:**

Ellis, R., Waterton, C. and Wynne, B. “Citizen Monitoring and Sound Science: The forming of Alliances in order to Protect River Water Quality”. Book chapter for “Sciences Citoyennes?” (eds. Charvolin, Micoud and Nyhart).

### **Publications in Preparation**

Grove-White, R., Wynne, B., Waterton, C., Ellis R. (eds) Book (proposal in preparation).

Ellis, R., Grove-White, R., Stevens, G., Vogel, J., Waterton, C. “Amateurs as Experts”: Harnessing New Knowledge Networks for Biodiversity”. Article to be submitted to *British Wildlife*

Ellis, R. “The Joy of Pattern Recognition and the *Jizā*”: Embodied appreciation, surveillance and conviviality: an approach to the aesthetics of biological recording in the UK”. *American Ethnologist*

Ellis R., “The Unreal Real of Dot Maps and Biological Recording in the UK: Rethinking the ontologically hopeless gap between representation, reality and performance” *Social Studies of Science*

Waterton C. and Ellis, R. “Amateurs as Experts”: Observing the emergence of a new biodiversity collective”. *Environment and Planning A*

Waterton, C. “Amateurs as Experts: re-thinking expertise with non-expert knowledges”. *Social Studies of Science*

## Conference Papers:

### Academic Conferences:

Claire Waterton and Rebecca Ellis 2002 “Amateurs as Experts in UK Biodiversity”: An Ethnography of Participation?” Lancaster University, IEPPP, Seminar and distributed at Science and Citizenship Conference at Institute for Development Studies, Sussex University.

Rebecca Ellis 2003 “Moving Beyond “It doesn’t fit”: The Politics of Inclusion in Wildlife and Biodiversity Management”. Durham University, Anthropology Department.

Claire Waterton 2003 “Amateurs as Experts: Past and Present Coming Together Through a Questionable Stabilisation”. Science Studies Workshop on Boundaries, Lancaster University.

Claire Waterton 2003 “Amateurs as Experts: an Ethnography of Participation and Co-Production”. ESRU, Geography Department, UCL, London University.

Claire Waterton and Rebecca Ellis 2003 “Anglers, Ramblers and British Naturalists: The Creation of Records and Much, Much, More”. Science and Democracy Workshop, Harvard University.

Rebecca Ellis 2004 “The Joy of Pattern Recognition: Cognition and Affect in Knowing Nature: Anthropological and Philosophical Approaches”. IEPPP Departmental Seminar, Lancaster University.

Claire Waterton 2004 ‘Amateurs as experts: harnessing new networks for biodiversity’. Seminar paper at ESRC ‘Citizenship and the Environment’ Seminar Series, co-ordinated by Andrew Dobson and Derek Bell, Seminar 3, 28th-29th June 2004, University of Newcastle. Seminars contributed to an overall summary report of the seminar series: MacGregor, S, and Pardoe, S. with Dobson, A. and Bell, D. *‘Environmental Citizenship: the Goodenough Primer’ Summary report of an interdisciplinary seminar series.* Public Space Ltd. May 2005.

Claire Waterton and Rebecca Ellis 2004 “Amateurs as Experts”: observing the emergence of a new biodiversity collective”. Civic Epistemologies panel organised by Claire Waterton and Rebecca Ellis, 4S/EASST, Paris.

Brian Wynne and Rebecca Ellis 2005 “Citizen Monitoring and Sound Science: The Forming of Alliances in Order to Protect River Water Quality”. Citizen Science Conference, CRESAL, St. Etienne.

Rebecca Ellis 2005 “The Unreal Real of Dot Maps and Biological Recording in the UK: Rethinking the ontologically hopeless gap between representation, reality and performance”. Rhizomatic Creatures, Centre for Science Studies/Institute for Technology, Innovation and Culture (TIK, Oslo, Norway) Workshop, Lancaster University.

Claire Waterton 2005 “The ‘play of the world’ and the ‘philosophies of becoming’: wondering what they mean for research on nature’. Rhizomatic Creatures, Centre for Science Studies/Institute for Technology, Innovation and Culture (TIK, Oslo, Norway) Workshop, Lancaster University, 26<sup>th</sup> and 27<sup>th</sup> April 2005.

Rebecca Ellis 2005 “The Joy of Pattern Recognition and the *Jiz̄z̄*. Embodied appreciation, surveillance and conviviality: an approach to the aesthetics of biological recording in the

UK". International Society for the History, Philosophy and Social studies of Biology bi-annual Conference, Guelph.

Claire Waterton 2005 "Experimenting with the archive: implications of the 'philosophies of becoming' for databases and collections". 4S Conference, Pasadena, California.

Claire Waterton 2006. 'What room for politics in the naming of nature?' Workshop: *Science and Politics/ Science and the Political*, EU funded Workshop, Brussels, 29-30<sup>th</sup> June 2006.

**Policy Conferences:**

Robin Grove-White 2003 "Amateurs as Experts": Harnessing New Networks for Biodiversity" English Nature, Peterborough

Rebecca Ellis and Johannes Vogel "Amateurs as Experts": Harnessing New Networks for Biodiversity". DEFRA's "People and Biodiversity Conference", Cardiff, June 2004

### **‘Amateurs as Experts’ Advisory Committee**

Professor Bill Adams:	Geography Department, Cambridge University
Dr David Allen:	BSBI and (formerly) Natural History Museum
Paul Evans:	Freelance Journalist (e.g. the Guardian and Radio 4 “Nature”)
Professor Sarah Franklin:	Sociology Department, London School of Economics
Susie Harries:	Royal Society of Arts
Professor Tim Ingold:	Anthropology Department, University of Aberdeen
Gary Kass:	Parliamentary Office of Science and Technology
Professor John Law:	Sociology Department, Lancaster University
Professor Philip Lowe:	Centre for Rural Economy, University of Newcastle
Natasha Martineau:	Science Communications, Environment Agency
Dr Mark Toogood:	Geography Department, University of Central Lancashire
Dr Anne Secord:	Department of History and Philosophy of Science, University of Cambridge
Dave Stone:	Development Manager – People and Nature Unit, English Nature
Professor Brian Wynne:	CESAGEN, Lancaster University

### **“Amateurs as Experts” Advisory Committee Meetings**

1. February 2003 – Natural History Museum, London
2. November 2003 – Riverside Hotel, Kendal, Cumbria
3. January 2005 – Riverside Hotel, Kendal, Cumbria
4. December 2005 – Final Project Workshop, Darwin Centre, Natural History Museum

**“Amateurs as Experts”  
Harnessing New Knowledge Networks for Biodiversity**

**Final Project Workshop**

**Wednesday 16<sup>th</sup> November, Darwin Centre, Natural History Museum, London**

**AGENDA**

- 13.00**                      **Registration**
- 13.30 – 13.45**            **Welcome and Introduction to the “Amateurs as Experts” Study**  
Johannes Vogel, Keeper of Botany, Natural History Museum
- 13.45 – 13.50**            *Questions from the floor*
- 13.50 – 14.00**            **“The Wonder of British Naturalists”**  
Paul Waring, British Entomological and Natural History Society
- 14.00 – 14.05**            *Questions from the floor*
- 14.05 – 14.20**            **Locating the study in current academic debates and policy debates**  
Claire Waterton, Lancaster University
- 14.20 – 14.25**            *Questions from the floor*
- 14.25 – 14.40**            **Relevance of the study for English Nature: challenges and ways forward**  
Dave Stone, People and Nature Development Manager, English Nature
- 14.40 – 15.00**            *Questions from the floor*
- 15.00 – 15.30**            **Coffee**
- 15.30 – 16.45**            **Discussion**
- 16.45 – 17.00**            **Final Remarks**  
Robin Grove-White, Lancaster University

***We invite you to share some refreshments provided by the NHM and to celebrate the end of the project***

