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Beekeepers' knowledges and participation in pollinator conservation policy

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ABSTRACT

This paper considers the potential for beekeepers' knowledges to be incorporated into participatory policy processes addressing current challenges to pollinator health. Pollinator decline is a serious issue for future food security and wider environmental resilience, with important implications for rural land use governance. The precipitous decline in global pollinator populations over recent years has resulted in a range of government initiatives to tackle the causes identified. In the UK this includes a National Pollinator Strategy in England and Pollinator Action Plan in Wales. These plans are notable for their introduction of a more participatory approach, incorporating 'lay-knowledge' and citizen science from beekeeping practitioners alongside scientific data. This paper presents evidence from interviews and participant observation with key stakeholders within the beekeeping community in the UK, alongside archival material from the Bee Farmers' Association, to assess the knowledge controversies arising from this strategy. Specifically, the paper considers the distinction of beekeepers' knowledges from typically acknowledged expert sources, whilst also reflecting upon aspects of plurality and tension within the beekeeping community. The paper concludes by outlining some areas of contestation between beekeepers and the wider policy and scientific community, which could impact on the future success of more participatory forums. This includes, firstly, evidence of hierarchies and exclusions in the forms of knowledge considered, when insights from professional scientists are privileged above those from beekeepers and when some beekeepers knowledges are given more credit than others. Secondly, we consider limitations resulting from policy makers' evidence requirements for peer-reviewed science, which can further exacerbate the exclusion of beekeepers' insights and lead to scenarios whereby policy only engages with a narrow set of criteria that may not be beneficial when advanced in isolation from the broader system changes. Finally, aspects of policy clash are outlined between pollinator conservation and wider agricultural strategies that seek to maintain a productivist agenda.

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1. Introduction

This paper considers the potential for beekeepers' knowledges to be incorporated into participatory policy processes addressing current challenges to pollinator health. Pollinator decline is now recognised as an urgent global issue, given the critical role of pollinators in ensuring food security and wider environmental and social well-being (UNEP, 2010; DEFRA, 2014). Whilst a number of species act as pollinators, honey bees have been the subject of sustained scientific attention as a key indicator species for wider

pollinator and ecosystem health (Kevan, 1999). In the UK *Apis mellifera*, the western honey bee, provides pollination for approximately 34% of commercial crops (Breeze et al., 2012) and plays a fundamental supporting role for biodiversity. Financially, the value of pollination as a contribution to the UK crop market was £430 million in 2007 (UKNEA, 2010). In Wales the wholesale value of honey was estimated at over £2 million in 2011 (WG, 2013). Yet honey bees and other pollinators face serious challenges here, as they do internationally (Potts et al., 2010a).

Many of the challenges to pollinator well-being are directly linked to the prevailing food system, which is geared towards the production of inexpensive food through deleterious practices (Erickson et al., 2008). Problems include intensive pesticide usage, which is directly harmful to bees (LWEC, 2015), and a decrease in

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the quality and quantity of forage for bees to feed on, due to widespread habitat loss and the cultivation of monocultures (Naug 2009). The prevalence of diseases such as varroasis¹ is also a major threat (Dietmann et al., 2014). Moreover, some researchers are concerned that bees are becoming less resilient to disease due to the importation of poorly adapted genetic strains and more interventionist beekeeping practices (Le Conte et al., 2007; Locke and Fries, 2011). Finally, changing climates and more extremes in weather add a further stress factor, particularly through the impact on forage availability and disruption to the climatic niches different species require (DEFRA, 2014; Potts et al., 2010a). However, causes of decline are acknowledged to be complex and in some instances hotly contested (Philips, 2014; WG, 2013).

In the UK, government is attempting to respond to these issues through policy programmes such as the Wales Pollinator Action Plan (WG, 2013) and subsequent UK National Pollinator Strategy (DEFRA, 2014). A hallmark of these programmes, and our reason for focussing upon the UK case, is their aspiration to advance a more participatory forum for policy development and deployment, which is currently unprecedented in international pollinator policy fora. This involves including a wider range of stakeholders in the policy process, with differing forms and degrees of expertise, including those who do not have formal scientific or policy training. It also assumes a greater degree of transparency in decision-making processes and greater collective responsibility in the deployment of governance (Reed, 2008). However there is no standardised approach and a range of participatory measures have been witnessed across the fields of rural and environmental governance in recent years (see e.g. Blackstock et al., 2014; Cook et al., 2013).

Explaining their aspirations for a more participatory approach, the Welsh Government outline that:

“There is currently no central focus point in Wales for work and information on pollinators, although many of our stakeholders work together for common aims. Bringing together all of those with an interest in pollinators and their management and conservation is an important area for action for this plan.” (WG, 2013 p13)

The UK Department for Environment Food and Rural Affairs (DEFRA) echo these sentiments, stating their priority “to improve knowledge sharing on pollinators’ needs between scientists, conservation practitioners and NGOs” (DEFRA, 2014 p23); making explicit reference to the need for citizen science to ensure sustainable monitoring of pollinator health into the future.

Whilst a diverse range of stakeholders are involved in both these policy programmes, beekeeping practitioners are acknowledged as primary stakeholders (DEFRA, 2014; WG, 2013), and their expertise is being sought to supplement, and develop, conventional scientific data. Given beekeepers’ regular contact with bees, they are well placed to collect and relay a range of data, participating as ‘citizen scientists’. The importance of their role is highlighted by Potts et al. (2010b), who state that beekeepers have a distinct knowledge system, acquired through their practice, which is formative in their ability to interpret and ultimately support pollinator health (see also Philips, 2014).

However, the incorporation of such diverse expertise is not without difficulties: conflicts are evident regarding *what* and *whose* knowledge is most valid. This resonates with similar controversies arising in other participatory forums tackling environmental management and rural land use (Eden et al., 2006; Goldman et al.,

2010; Philipson et al., 2012; Proctor et al., 2012; Ruiz-Mallen and Corbera, 2013; Whatmore, 2009). Tensions are particularly notable when the blame for pollinator decline is being laid at the door of agri-business. For example, agrochemical firms such as Syngenta have been very active in calling for the recently instated EU neonicotinoid moratorium² to be repealed (Bates, 2015). UK farming unions have equally been reluctant to accept many pesticide restrictions (Farming Online, 2015). This is echoed by debates in the US on the causes of Colony Collapse Disorder (CCD),³ which have flared-up between beekeepers and Environment Protection Agency regulators (Suryanarayan and Kleinman, 2013).

Notably, many of these arguments have hinged around whether particular forms of knowledge are seen to be accurate and dependable (ibid; Wynne 2003). Beekeepers often find that their perspectives are not granted the same weight as others and fall outside the parameters of conclusive scientific evidence. But it is equally important to note that there are a diverse range of perspectives *amongst* beekeepers themselves (Moore and Kosut, 2013). The construction and contestation of beekeepers’ knowledges is, therefore, a key area for study in the advance of effective pollinator policies.

This issue forms the focus of this paper, which reports on research with the beekeeping community in Wales and England, including interviews and participant observation with key stakeholders, and analysis of the Bee Farmers’ Association archives. It is not the aim of this paper to evaluate the extent to which effective participation is being achieved through the WPAP or DEFRA’s Pollinator Strategy, as both are only in their early stages,⁴ rather our aim is to explore the specificity of beekeepers’ knowledges and the challenges they perceive in securing a more supportive policy environment for pollinator health. Further research is planned to gain a wider reaching perspective on the successes and failures of the respective policy forums as they progress.

The paper is structured as follows: in section 2 we position the paper in relation to relevant literature on bees and social science, knowledge controversies, diverse expertise and participatory governance. In section 3 we outline the research methods. In section 4 we consider the distinction of beekeepers’ knowledges from scientific studies, whilst also acknowledging areas of plurality and tension within the beekeeping community. Section 5 then reflects on areas of contestation between beekeepers and the wider policy and scientific community, assessing the potential impacts of such knowledge controversies. Section 6 provides some concluding statements regarding the issues to be addressed to enable future success in more participatory policy forums.

2. Literature review

2.1. Bees and social science

Whilst there have been continuing advances in the natural science dimensions of pollinator health, there is a pressing need to connect this with more critical social enquiry in order to gain a better understanding of beekeeping practices ‘on the ground’, not only in the lab. As Philips (2014) outlines, social science coverage of bees and beekeeping has been limited. Her work with commercial

¹ Varroasis is caused by parasitic *varroa* mites, and is capable of killing whole bee colonies if left untreated. See <http://www.nationalbeeunit.com/index.cfm?pageid=93> [last accessed 30/12/15].

² Neonicotinoids are a class of insecticides which affects the central nervous system of insects. For information on the EU moratorium see <http://www.eea.europa.eu/highlights/neonicotinoid-pesticides-are-a-huge> [last accessed 24/7/2015].

³ For further information on CCD see <http://www.ars.usda.gov/news/docs.htm?docid=15572> [last accessed 24/7/2015].

⁴ Particularly the DEFRA strategy which was not published until after the research for this paper was completed.

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