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The Construction of Legitimacy in Nature Conservation: Knowledge, power and participation in the regulation of Irish raised bogs under the European Habitats Directive.

Thesis submitted in fulfilment of the requirements for the Degree of Doctor of Philosophy

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Abstract

A network of 53 Irish raised bogs were designated as Special Areas of Conservation (SAC) under the European Union (EU) Habitats Directive in the 1990s. Whilst the purpose of the designation is to protect unique habitats, another effect has been to prohibit the traditional right to cut turf. Protected area regulation has been highly contested by the Turf Cutters and Contractors Association (TCCA). Under threat of sanction for non-compliance, the Irish State established a collaborative process for implementation in 2011. This research has adopted a political ecological approach to examine power-knowledge relations between stakeholders in the construction of legitimacy through the collaborative process.

Foucauldian governmentality underpinned the methodological approach. In the first article, critical discourse analysis was adopted to deconstruct the tensions between participatory and scientific legitimacy in policies and governance structures, and in their contestation by the TCCA. In the second and third articles, Q Methodology was adopted to analyse turf cutters and expert legitimacy discourses respectively. The quantitative results revealed the convergence and divergence of legitimacy discourses on regulation which were interpreted with the support of the interview data.

The exclusion of local knowledge fuelled contestation and resistance. The articulation of counterclaims reflects previous research and were based not simply in rhetoric, but also on place-based knowledge (e.g. Robbins et al., 2006). The empirical analysis revealed how the TCCA disrupted the regulatory authority of the State and how the technocratic approach undermined scientific legitimacy for implementation. The findings indicate the power of the State in determining power-knowledge and structural relations. This was evident in the discursive alliance reflecting the technocratic approach, cost-effectiveness and agricultural priorities, over a more equitable site-specific approach to conservation and compensation. Overall the findings indicate the need to transition to a more adaptive site-specific approach.

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Author's Declaration

Apart from due acknowledgements, this thesis is entirely my own work. I have acknowledged the writings, ideas and work of others where necessary within. This thesis contains no material that has been submitted previously, in whole or in part, for the award of another academic degree at this or any other university. I have not knowingly allowed another to copy my work. I have copyright permission to embed the published articles within this thesis. Permission has been granted for the use of maps and photographs and their source is acknowledged.

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Statement of Contribution

The PhD candidate was responsible for the design, data collection, analysis and write-up of each of the three articles conducted in this research. The research supervisors assisted in editing the abstract and/or introduction for the original submission for peer review to the relevant journals. They also advised and provided support during the process of the research.

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I extend very special thanks to my research supervisors, Dr. John McDonagh and Dr. Marie Mahon for your expert guidance throughout the process of this research. Many thanks for imparting your wisdom and for your kindness over the years.

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I would like to gratefully acknowledge the support of the GMIT Staff Development Fund for financial support for this research.

Dedication

To Ríona and Cora my beautiful daughters who inspired me throughout this journey.

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List of Abbreviations

CIEEM	Chartered Institute of Ecology & Environmental Management
CTCCS	Cessation of Turf Cutting Compensation Scheme
DAHG	Department of Arts, Heritage and the Gaeltacht
DCHG	Department of Culture, Heritage and the Gaeltacht
ENGO	Environmental Non-government Organisation
EU	European Union
IFA	Irish Farmers' Association
IPCC	Irish Peatland Conservation Council
MEP	Member of the European Parliament
NGO	Non-Government Organisation
NHA	Natural Heritage Area
NPWS	National Parks and Wildlife Service
SAC	Special Area of Conservation
SPA	Special Protection Area
TD	Teachta Dála
TCCA	Turf Cutters' and Contractors' Association

Chapter 1: **Introduction**

1.1 Introduction

This thesis consists of three interrelated articles; two have been published in peer reviewed journals and the third is currently under review (see Table 1-1). In this chapter, the overall research background and rationale of the thesis is presented in the synthesis of key literature. This is followed by an outline of the research aims and objectives and an outline of the structure of this article-based thesis.

Article 1	O'Riordan, M., Mahon, M., & McDonagh, J. (2015). Power, discourse and participation in nature conflicts: The case of turf cutters in the governance of Ireland's raised bog designations. *Journal of Environmental Policy and Planning*, *17*(1), 127-145. [Copyright Taylor and Francis] doi.org/10.1080/1523908X.2014.914895
Article 2	O'Riordan, M., McDonagh, J., & Mahon, M. (2016). Local knowledge and environmentality in legitimacy discourses on Irish peatlands regulation. *Land Use Policy*, *59*, 423-433. [Copyright: Elsevier] doi.org/10.1016/j.landusepol.2016.07.036
Article 3	O'Riordan, M., McDonagh, J., & Mahon, M. (2018). Unlikely alliances? Knowledge, power and the collaborative governance of Irish peatlands. Under review in *Geoforum*

Table 1-1 Overview of peer reviewed articles

1.2 Background to the research and synthesis of key literatures

1.2.1 **Conflict underlying Irish peatlands regulation under the EU Habitats Directive**

Peatlands make up 21% of the landscape and are a characteristic Irish landscape feature (Department of Arts, Heritage and the Gaeltacht, DAHG, 2015). Most of these peatlands have been exploited as natural resources both at commercial level and at domestic level for use as fuel. Despite this exploitation, Ireland has more than 50% of Oceanic raised bog habitat which represents the largest area of raised bog worthy of conservation in Western Europe (Bullock et al., 2012; Fernandez-Valverde et al., 2014). Ireland's remaining raised bog habitats are considered particularly important due to the presence of active raised bog, where conditions are suitable for peat to form. Between 1997 and 2002, Ireland nominated 53 raised bogs for designation as SACs under the European Union (EU) Habitats Directive. It is estimated that only 50,000 ha of the original raised bog coverage (310,000 ha) remains uncut, of which less than 4% is thought to be peat forming (Bullock et al., 2012; DAHG, 2015, p. 110). Many of the best examples for inclusion in the SAC network included those bogs that had not been considered large enough for commercial harvesting and were in private ownership (DAHG, 2014a; DAHG, 2015).

The right to cut peat, or turf as it is known in Ireland, for household use through traditional turbary rights dates back several centuries and is currently an activity associated with low income rural families (Bullock et al., 2012). While the traditional form of turf cutting by hand, has now been almost totally mechanised, it continues to be saved and harvested manually by turf cutters. The National Peatland Strategy (DAHG, 2015, p. 24) argues that turf cutting is principally an economic activity 'but because it had a major community aspect it was and is important socially and culturally'. The cultural and socio-economic dimensions to turf cutting have presented great challenges for regulation of domestic turf cutting on raised bog (Bullock & Collier, 2011; Renou-Wilson et al., 2011; Wilson et al., 2013).

Scientific evidence underpinning conservation policy has established that domestic turf cutting undermines the ecological character of peatlands, in addition to reversing the positive role of peatlands in carbon regulation (Bullock & Collier, 2011; Bullock et al., 2012; Renou-Wilson et al., 2011). Therefore, although the focus of the designation is to protect and restore these peatland habitats, another effect has been to prohibit the traditional right to cut turf on these sites.

Although the EU Habitats Directive is founded on the supremacy of expert scientific knowledge, it is argued that local peoples' understandings and interpretations of biophysical processes hold the greatest import for the implementation of environmental change (Bryan, 2012; Harris, 2009). Despite its negative environmental impacts, neither the turf cutters nor the public necessarily see any contradiction between conservation and what is perceived as small-scale low impact cutting of turf for domestic use (Renou-Wilson et al., 2011). Furthermore, with the enactment of designations without prior consultation with landowners, it is easy to understand how controversy was generated on the ground (Visser et al., 2007). The likelihood of failure or resistance to environmental regulation was greatly increased through the adoption of a top-down, science-first and exclusionary approach in the initial survey and selection process for these sites by the National Parks and Wildlife Service (NPWS) in Ireland (Bryan, 2012; Moran & Rau, 2014; O'Rourke, 2005; Tovey, 2009a). These circumstances have presented significant challenges for regulation in the face of contestation and resistance by the TCCA, which formed in 1998 to defend the rights of domestic turf cutters. Turf cutters and the TCCA have engaged in performative protest through continued turf cutting in defiance of the prohibition on turf cutting at SAC sites. This, in combination with delayed enforcement of regulations, is considered to have contributed to the loss of 37% (730 hectares) of active raised bog since the Habitats Directive came into law (Mackin et al., 2017b).

Article 6 of the Directive governs the management of Natura 2000 and would apparently allow for some flexibility around consideration of social and economic issues in designated areas. According to Article 6, these designated areas must

be protected from all developments that can have negative ecological impacts ‘except on public interest grounds including, in some instances, economic and social considerations’ (cited in Bryan, 2012, p. 83). Interpretation of the socio-economic scope of Article 6 has, however, been highly problematic in practice (Opdam et al., 2009). It is also recognised that professionals continue to view technocratic and scientific norms as imperative to proper implementation (Engelen et al., 2008; Ferranti et al., 2014). It has been argued that the dominance of scientific rationality and the associated approach to implementation of the Directive constitute barriers to ecological resilience (Bryan, 2012; O’Rourke, 2005; Rauschmayer, 2009; Tovey, 2009a). For others, however, its scientific basis is essential to safeguard against ongoing and intense pressures on decision makers to promote economic objectives over ecological considerations (Engelen et al., 2008; McGillivray, 2012).

In 2011, following the threat of EU sanctions for non-compliance with the Habitats Directive, the Peatlands Council was established as a mechanism for the inclusion of the various stakeholders affected by the designations (DAHG, 2014b; DAHG, 2015). This move by the Irish government reflected the international transition towards collaborative environmental governance, and the promotion of participatory approaches to environmental regulation. This collaborative process for the implementation of regulation provides the primary focus for the empirical research in this PhD.

1.2.2 Competing rationalities underlying regulation: Knowledge and participation

Different types of rationality are present in nature conservation debates and the ineffectiveness of pursuing a purely scientific approach to protected area management is increasingly accepted (Wurzel, 2008). Scientific or instrumental rationalism, the traditionally dominant paradigm since the 1960s, has come under extensive criticism (Fischer, 2000; Healey, 2006) although it often remains highly influential in practice. In this model ‘citizens were assumed to share broadly common interests. The planner or policy analyst was thus merely a technician of means committed to the values of ‘scientifically-based and rationally-deduced

policy choices, but neutral as regards ends' (Healey, 2006, p. 25). Recent research emphasises how local knowledge on working the land can help to find solutions between conflicting interests in environmental decision making (Roach et al., 2006; Robbins, 2011). However, not all community members have strong knowledge on local ecology, or necessarily have any environmental commitment (Roach et al., 2006). Therefore, it is also understood that addressing only the social dimension to landscape management without an understanding of ecosystems will not lead to sustainable outcomes (Folke et al., 2005; Tovey, 2009a). Consequently, examining the role of diverse stakeholder knowledge in the implementation of the ideals of collaboration and participation in protected areas is a complex endeavour.

1.2.3 Collaborative environmental governance: Knowledge and power relations

Collaborative governance in the environmental arena has become widespread, although its application more specifically to EU nature protection is still not common (Wurzel, 2008). The ideas of philosopher Jürgen Habermas and his Model of Communicative Action provide a theoretical basis for collaborative governance. Habermas argues that scientific reasoning or instrumental rationalism has been given a privileged position in the economic and political worlds and has crowded out other forms of reasoning. Partnerships are believed to provide a 'dialogic' benefit in conflict situations in the environmental arena where deliberation between actors occurs at the interface of a range of perspectives and rationalities around environmental issues (Lockwood, 2010; Plummer & Fennell, 2009; Taylor, 2010). Recent research on collaborative processes have however highlighted tensions between competing rationalities such as between a highly technical and scientific rationale as against one which is more 'communicative' and incorporates a broader range of knowledge, including local ecological knowledge (Taylor, 2010). Therefore, the framing of environmental problems through technocratic discourse can form significant barriers to equality between stakeholders in environmental partnerships (Healey, 2006; Taylor, 2010). Taylor (2010, p. 384), for instance, has highlighted the contradiction between broadening participation on the one hand, while on the

other ‘restricting meaningful inclusion’ through ‘increasing institutional and scientific complexity’. Atkinson (1999, p. 59) also observed that the discursive context of partnership working ‘privileges official discourse(s) over others’ (cited in Edwards et al., 2001).

The relationship between local knowledge and professional science and its role in leading to legitimate ways of managing environmental resources have therefore become important subjects of enquiry (Fischer, 2000; Folke et al., 2005). This has led to an emerging area of study on the role of power relations between stakeholders involved in collaborative efforts to effect environmental change. In the environmental governance literature, Foucauldian conceptualisations of power have been used to reveal how participatory discourse can be used as a means of government control (Bickerstaff & Walker, 2005; Edwards et al., 2001). This is a theme which is also strong in critiques of Habermasian deliberation in processes for resolution of environmental problems (Collier & Scott, 2009; Taylor, 2010).

1.2.4 Foucauldian discourse analysis and governmentality

A burgeoning literature has adopted Foucauldian approaches to deconstructing power relations in environmental partnerships. Foucauldian theory is associated with post-structuralism and is concerned with the instability of many concepts and categories that are taken for granted. Foucauldian analysis has strengths in the analysis of relations of power and as a lens on policy processes (Flyvbjerg, 2001). For Foucault, power is multiple and decentralised and is exercised rather than possessed (ibid.). Foucault focuses on how law and institutions are interpreted and how inequities and injustices are normalised through everyday discourse and discursive practices. Rutherford (2007) advocates Foucauldian frameworks for the interrogation of the self-evident virtuousness behind the production and circulation of discourses of nature and environmental governance. It is argued that Foucauldian ideas on power-knowledge are underutilised in the deconstruction of nature’s governance (Robbins, 2011; Rutherford, 2007; Van Assche et al., 2017)

Foucault's governmentality approach allows analysis of the mechanisms of government that serve to link locally based practices with the large-scale organisation of power at national, and international level (Herbert-Cheshire, 2006). Recent studies adopting Foucauldian governmentality, and its adaptation in the environmental context as 'environmentality', have provided insights into the role of State institutions and policies in the cultivation of moral responsibility in environmental regulation (Agrawal, 2005; Haggerty, 2007; Jepson et al., 2012). Agrawal (2005) used the environmentality optic to demonstrate how a transition from top-down to bottom-up governance incentivised communities to self-regulate their use of forest resources towards ends desired by the State. Jepson et al. (2012) adopted environmentality and Q methodology to examine the engagement of stakeholders with incentives for wind energy development. Unlike Agrawal (2005), Jepson et al. (2012) argued that rather than leading to a full alignment with State initiatives as environmentality is often framed, the creation of environmental subjects through regulation is a more complex process. There is considerable room to extend the use of Foucauldian governmentality theory to analyse the relations between rule and resistance and how people, through local agency, can reshape the practices of State power (Herbert-Cheshire, 2006; Rutherford, 2007). Jepson et al. (2012) in particular, identified a role for Q methodology in deconstructing stakeholder subjectivity in the face of new institutional, regulatory and enforcement practices. Furthermore, new translations of Foucault's work are opening up avenues of research based on his theories of resistance (Ettlinger, 2011; Fletcher, 2010). According to Foucault 'if there were no possibility of resistance ... there would be no relations of power' (cited in Flyvbjerg 2001, p. 121). Consequently, there is a need to examine how resistance is linked to the mentalities of power imposed by the State and its institutions indirectly through governmentality, and to examine how practices of government themselves are shaped by resistance (Cadman, 2010; Death, 2010; Ettlinger, 2011).

1.2.5 Q Methodology and discourse analysis

Q methodology is a mixed methods approach to discourse analysis. It is an established approach to research in the social sciences and in psychology. After its relatively late adoption in geography (Robbins & Kreuger, 2000), it has gained attention for its value in the study of environmental conflicts and regulatory processes (Brannstrom, 2011; Ellis, 2007). Q methodology provides both a philosophical basis and a method appropriate to discourse analysis and is associated with the post-positivist turn in social science (Durning, 1999; Ellis, 2007).

An expanding body of research has utilised Q methodology to examine the links between identity, knowledge and power amongst diverse actors involved in environmental regulation, albeit that significant gaps remain in this area of research (Brannstrom, 2011; Jepson et al., 2012; Robbins, 2006; Van Assche et al., 2017). In this article-based thesis a novel approach to environmental subjectivity is presented through the adoption of Q methodology, governmentality and environmentality to examine the conflict and policy processes for regulation. This approach provides insights into the gap in knowledge on the worldviews of compliers and resistors in the context of the legitimacy crisis on implementation of EU nature regulation. It is among the first studies to apply governmentality and Q methodology to deconstruct power-knowledge processes between diverse professional actors relevant to a policy process for resolving environmental conflict.

1.3 Research aims and objectives

The central research aim across the three peer reviewed articles is to critically analyse power-knowledge relations between diverse stakeholders in the construction of legitimacy through the collaborative process for peatlands regulation. A related research aim is to examine the role of resistance in shaping the policy process for Irish raised bog SAC regulation.

The key research objectives are:

- To address a gap in the analysis of power relations in collaborative and participatory discourses on nature's regulation through the lens of Foucauldian governmentality.

- To unpack the role of power relations between the State as agent of regulation and the TCCA as the interest group representing the subjects of regulation, in the evolution of policies and governance structures established to address the conflict.

- To provide a Foucauldian critique of the State's construction of legitimacy as reflected in the alteration of official discourses and governance structures underpinning the regulatory process.

- To adopt environmental governmentality and Q methodology to analyse turf cutters' multi-subjectivities on local environmental knowledge, thereby providing insights into alignments and gaps between local cultural and ecological knowledge and the scientific rationality and governance structures underpinning regulation.

- To advance a Foucauldian analysis of turf cutters' legitimacy discourses on regulation through empirical analysis of ground level discourses on contestation, resistance and compliance through relocation.

- To extend analytical insights into the cultivation of moral responsibility at ground level through adaptive governance and a site-specific approach to conservation and compensation.

- To adopt governmentality and Q methodology to analyse environmental-ecological and socio-economic professionals' multi-subjectivities on the implementation of regulation and thereby examine how stakeholders'

structural position and power-knowledge relations influence legitimacy discourses underlying collaborative governance.

- To reveal how power-knowledge relations influence convergence and divergence of expert discourses in collaborative governance and their implications for the formation of a discourse coalition influencing policy.

- To deliver a Foucauldian analysis of outcomes and insights into alternative possibilities for local environmental transformation through governance and policy reforms.

1.4 Overview of the thesis

This introductory chapter has provided the context and rationale for this study through the synthesis of key literatures and presented the research aims and objectives relevant to this research.

The literature review is divided into two parts. Chapter two, presents the first part of the literature review on the relationship between participatory governance processes and legitimacy of nature conservation. This includes a review of the role and operation of Article 6 of the EU Habitats Directive in the context of the dominant technocratic approach to nature conservation and conflicts at local level. The theoretical context and rationale for the adoption of Foucauldian governmentality and environmentality theory is discussed through a critique of previous work in this field. This body of literature is brought into productive relation with another strand of literature adopting Q methodology to examine gaps in power relations between stakeholders in environmental governance.

In Chapter three, the second part of the literature review, an overview of the environmental, socio-economic and cultural context for raised bog regulation in Ireland is critiqued. This includes a review of literature on the relationship between people and peatlands, and the policy context on the shift away from productive values towards the ecosystem services approach to peatlands. The

gaps in previous literature researching attitudes to conservation of peatlands are identified. The current policy context addressing the threats to raised bog conservation arising from the conflict on regulation of domestic turf cutting is also discussed.

Chapter four presents the methodology. Here, the rationale for the post-structural basis to this research and the adoption of a political-ecological approach to researching environmental conflict is discussed. The chapter provides a philosophical rationale for the adoption of Foucauldian discourse analysis and the Q Methodological approach for the empirical research. This is followed by discussion of the methods of evidence collection and measures addressing ethical considerations.

Chapters five, six and seven present the three articles at the core of this thesis. In each of these papers Foucauldian discourse analysis and governmentality theory is central to interpreting the power struggles between those stakeholders relevant to the collaborative efforts to resolve the conflict on regulation. The empirical analysis in each paper focuses on different levels of governance, providing insights into the relationship between power-knowledge and the multilevel legitimacy issues relevant to the conflict.

Chapter eight provides a synthesis of the findings from the three papers in terms of their overall contribution to governmentality approaches to natural resource conservation, particularly the ways in which legitimacy claims are constructed and asserted. It asserts a contribution to political ecological research on the relationships between knowledge, power and participation and their implications for the construction of legitimacy under the EU Habitats Directive. This concluding chapter also provides a methodological critique.

Chapter 2: **Participation and Legitimacy in European Nature Conservation**

2.1 Introduction

This chapter explores the relationship between participatory governance and legitimacy of EU nature conservation. Initially the discussion focuses on defining legitimacy in the context of collaborative governance and the legitimacy challenges relating to implementation of the European Habitats Directive. This is followed by a review of the theoretical foundations of community-based and partnership approaches to conservation, including a discussion of Habermasian and Foucauldian perspectives on collaborative environmental governance. Previous research adopting governmentality perspectives on environmental governance and regulation is also reviewed and the gap on Foucauldian analyses of resistance to regulation is identified. The final section appraises the literature adopting Q methodology to research stakeholder conflict in the environmental context. This points to the potential for the governmentality perspective to provide new insights into Q methodological analyses of nature's conflict and the construction of legitimacy in nature's regulation.

2.2 Defining legitimacy in the context of collaborative approaches to European nature regulation.

In collaborative governance legitimacy relates to the extent to which the process and product of governance is accepted by those whose interests are affected (Engelen et al., 2008). Bernstein (2011, p. 20) defines legitimacy as 'the acceptance and justification of a shared rule by a community'. Acceptance relates to the process of giving consent to an authority that asserts a right to be obeyed, and legitimacy converts power into authority (Connolly et al., 2006). Justification relates to the norms that provide the basis for authority (Turnhout et al., 2015). Natura 2000 contains multiple norms of legitimacy to justify decisions including

participation, de-centralisation, science, technocracy, legality, effectiveness and cost-effectiveness (*ibid*.). It is recognised that norms of participation and decentralisation can present challenges relating to the implementation of scientific-technocratic and legal principles underlying EU nature conservation (Turnhout et al., 2015; Van Holten & Van Rigswick, 2014). Nevertheless, participatory norms are increasingly drawn upon to address norms of effectiveness and cost-effectiveness in EU nature conservation (Turnhout et al., 2015; European Commission, 2012).

According to Engelen et al. (2008) although seemingly an intrinsic element of collective governance, legitimacy arises only under particular circumstances. The first, relates to modern political systems in which individual interests are recognised as legitimate concerns that cannot be harmed without justifiable reasons. The second relates to the circumstance of interdependence in terms of whether there is a collective concern over and above individual interests. The third relates to the degree of contentiousness between different interests in relation to the issue that is at stake. The availability of opportunistic courses of action will limit the binding force of collective action (*ibid*.). The fourth relates to the source of legitimacy. In modern democratic political systems substantive sources of legitimacy such as scientific expertise (along with religion and tradition) are increasingly losing their legitimating force (Engelen et al., 2008). For example, the purely scientific legitimation underlying selection of sites under the Habitats Directive is associated with the top-down approach and with contestation and resistance to implementation (Alphandery & Fortier, 2001; Engelen et al., 2008; Kamphorst et al., 2017; Rauschmayer et al., 2009; Wurzel, 2008).

When there is controversy over the truth-value of scientific expertise informing environmental planning and regulation, there is an increasing likelihood that procedural means of legitimacy production will be resorted to (Engelen et al., 2008; Fischer, 2000). Engelen et al. (2008) distinguish between three forms of procedural legitimacy which governments can choose from. These are first, input legitimacy in terms of the extent to which subjects of collective decision making can co-determine the agenda and decide for themselves. Second is throughput

legitimacy which emphasises the design of decision making procedures through fair and inclusive fora. Third is output legitimacy where the emphasis is on whether the outcomes of policy address the interests of the subjects in question. Wurzel (2008) argues that the legitimacy crisis on implementation of EU nature regulation attests to the over-reliance on output legitimacy and a failure to sufficiently address input and throughput legitimacy in nature conservation processes. Nevertheless, implicit associations between legitimacy and participation are challenged and it is questioned whether it is appropriate that legitimacy should be derived from participatory criteria in the context of nature's governance (Dubbink, 2008; Halpin, 2006; van den Belt, 2008). For example, Dubbink (2008) argues that participatory approaches carry the risk of making politicians and policy makers hostage to local interests at the expense of broader constituencies, in particular, the interests of future generations. On the other hand, the dominance of scientific rationality and marginalisation of local knowledge have been criticised as significant barriers to more democratic approaches to environmental policy making (Fischer, 2000; Healy et al., 2012; Rutherford, 2007; Tovey, 2009a). In practice, EU nature policies are contested and dynamic due to their multi-interpretability, therefore governance shapes policy but does not determine it (Beunen & Duineveld, 2010; Beunen, Van Assche & Duineveld, 2013).

The crisis of legitimacy around relying purely on experts and State expertise to inform governance, is not limited to the Habitats Directive, and has contributed to an international transition to collaborative environmental governance (Fischer, 2000; Healey, 2006; Taylor, 2010). Collaborative governance ostensibly provides opportunities for knowledge exchange between diverse stakeholders and reflects a move from science-first towards post-normal scientific rationality in the resolution of environmental conflict (Bouwma et al., 2010; Rauschmayer et al., 2009; Reed, 2008). In the collaborative governance of nature, tensions exist between legitimacy claims based on representation or participation and those based on scientific knowledge. Recent studies reveal the dominating influence of democratic norms in the construction of legitimacy in European environmental

policy relative to the legal principles underlying these policies (Turnhout et al., 2015).

Legitimacy is not just about acceptability of policy outcomes, but it also depends on how decision making processes are constructed and justified through discourse. Nor can outcomes be considered permanent, as legitimacy is susceptible to challenge and in need of continuous negotiation (Beetham, 1991; Connolly et al., 2006). Thus, legitimacy in collaborative governance is not a given, but is a dynamic social construct that is maintained through power and discourse (Connolly et al., 2006; Flyvbjerg, 1998). The entanglement or resonance of policies and their justifications with prevailing discourses is an important dimension of legitimacy construction in nature's governance (Van Assche et al., 2017a; 2017b; Turnhout et al., 2015). Van Assche et al. (2017b, p. 245) draw attention to the need to examine how discourse and power 'enable the quest for control' in natural resource governance.

2.3 Legitimacy and the scientific rationality for European nature conservation

Natura 2000 covers approximately 18% of EU territory and is considered one of the most ambitious supranational initiatives for nature conservation (Blondet et al., 2017). It is a network of protected areas established in 1992 under the Habitats Directive to ensure survival of the range of habitats and species representing European biodiversity. This Directive provided for the creation of SACs and aims to maintain or restore listed species and habitats to favourable conservation status. Along with Special Protection Areas (SPAs) which were already established under the Birds Directive in the 1970s, they form the *Natura 2000* designations. The scientific basis to the selection of these sites and habitats is regularly cited in its legal and informative publications and is considered essential for the credibility and proper application of *Natura 2000*. This top-down, command and control approach to regulation characterised the text of the Birds Directive which was unambiguous regarding restrictions on human interference

in designated SPAs. The *Leybucht Dykes Case* challenged this at the European Court of Justice in 1989 and proposed modifying a water dyke within a SPA due to possible flooding to the point of endangerment of humans (McGillivray, 2012). In the subsequent legislation for the Habitats Directive less stringent controls were introduced through Article 6 to permit human interference and consideration of socio-economic concerns within *Natura 2000* sites on exceptional public interest grounds (Bryan, 2012). Nevertheless, in the situation of a dispute around site selection for designation, early European case law has interpreted the articles of the Directives in a manner that gives precedence to scientific factors (Bryan, 2012; Leibenath, 2008; Opdam 2009 et al.).

It is recognised that this scientific legitimation has invited a technocratic, top-down mode of policy making that is being increasingly rejected at local level (Engelen et al., 2008; Wurzel, 2008). One such demonstration of this rejection is the growing claims by landholders that science-led designation processes are at odds with a more holistic approach wherein socio-economic or cultural factors are also considered. Therefore, once selected, these designations can only be objected to on 'scientific grounds'. Farmers in particular feel that this puts them at a disadvantage in terms of appealing such designations (Bryan 2012; O'Rourke, 2005). Consequently, extreme frustration with 'the science-first, top-down, non-communicative manner' in which designations are made and implemented abounds (Bryan, 2012, p. 86). Tovey (2009a; 2009b), for example, questions the undemocratic nature of these processes that have disengaged the public from conservation policy. In a nod to such concerns, the process for selection of sites for inclusion in the network, has been acknowledged by the EU as lacking sufficient consultation with landowners (European Commission, 2016).

Although the Habitats Directive does not mention participation, it is emphasised in guidance on implementation, and participation has gained legal standing through the Directive providing for public participation in environmental policy (European Union, 2003; European Commission, 2016; Turnhout et al., 2015). The Habitats Directive also provides member states with considerable freedom on meeting the goals of the Directive (Engelen et al., 2008). Participation is encouraged particularly in the phase after site selection when management

planning for sites is being developed (Bouwma et al., 2010). This keeps very much in line with Article 2(3) of the Habitats Directive which states that 'measures taken' pursuant to the Directive take account of economic, social and cultural requirements and regional and local characteristics. The participatory approach is argued to hold potential to lead to a more effective and legitimate policy at local level and the EU increasingly accepts its importance for effective implementation (European Commission, 2016; Rauschmayer et al., 2009). A major review of the Habitats Directive in 2016 concluded that the Directive is fit for purpose, despite the widely acknowledged crisis of implementation and its failure to adequately address the serious decline of European habitats and species (European Commission, 2016). This review implicated inadequate investment and stakeholder participation, alongside inadequate implementation of restoration and management plans as amongst the principal barriers to more effective implementation (ibid.). However, it has been demonstrated that local actors remain suspicious of consultation efforts made during the implementation phase, due to lack of trust arising from the failure to consult during the decision-making phase on site selection (Pinton, 2008; Wurzel, 2008). Therefore, this review of the Directive fails to address concerns that the dominance of scientific rationality at site selection stage is a principal force in the resistance to the Habitats Directive (Bryan, 2012; Leibenath, 2008; O'Rourke, 2005; Pinton, 2008; Tovey, 2009a). Many conservationists, on the other hand, remain quite fervent in their belief that the scientific basis to site selection is an essential safeguard against political interference in nature conservation (Dubbink, 2008; van den Belt, 2008). The EU argues that in the situation of a dispute on site selection, provisions for taking economic, social and cultural considerations into account are adequately addressed through Article 6 (Bryan, 2012; European Commission, 2016).

2.4 Article 6 of the EU Habitats Directive

Article 6 governs the management of Natura 2000 and allows for limited flexibility around socio-economic consideration, but its interpretation has been highly problematic on the ground (Bryan, 2012; Opdam et al., 2009). Under Article 6(3)

consents for alternative use of a SAC (in other words de-designation) can be provided only after it has been scientifically determined, through appropriate assessment, that development will not diminish site integrity. In a sequential approach, after a negative assessment through Article 6(3), consent may be granted for proposed developments under Article 6(4) (European Commission, 2012; European Commission, 2016) [see Appendix A]. This arises for 'imperative reasons of over-riding public interest' and when there are no alternatives (European Commission, 2012, p. 3). Provision of functionally equivalent compensatory habitat is required to ensure the overall extent or coherence of the network is maintained (McGillivray, 2012) or has 'no net loss' (Bryan, 2012). This can include habitat creation and restoration, enlarging existing sites and including new sites in the Natura 2000 network (European Commission, 2016). Whether such compensatory measures can truly mitigate for negative impacts on original habitats is challenging, and the Commission argues that this can often only be established at a much later time (ibid.). Therefore, compensating habitat loss is controversial as it raises 'profound questions about commensurability and fungibility and of regulatory flexibility, discretion, monitoring, enforcement, and follow through' (McGillivray, 2012, p. 419). States are obliged to notify the Commission about compensatory measures under Article 6(4). Between 2007 and 2016, 154 notifications were received from 14 EU member states (European Commission, 2016, p. 34). In relation to priority habitat or species, extra safeguards exist under Article 6 (4) to limit consents to proposals that impact upon public interests relating to human health, public safety concerns or other projects that involve beneficial consequences for the environment. Beyond these circumstances, there is an obligation to seek an opinion from the European Commission for consents relating to 'imperative reasons of overriding public interest' that impact on priority habitat (European Commission, 2012, p. 3).

Between 2007 and 2016, just 9 opinions were issued and secured consent under Article 6(4) (European Commission, 2016), and since the Directive came into force, fewer than 20 cases throughout the EU involving priority habitats have secured consent under Article 6(4) (DCHG, 2017). In practice, consents for alternative use in cases of priority habitat have been granted principally for large

infrastructural projects (DCHG, 2017, European Commission, 2016). This indicates that the Irish State's proposals in the *National Raised Bog SAC Management Plan* (2017) represent an alternative interpretation of Article 6 relative to more established approaches to implementation of EU nature regulation relating to priority habitats. This plan has signalled the Irish State's intention to utilise the provisions in Article 6 to seek consents for turf cutting at 14 SAC sites due to the failure to regulate these sites. In cases where appropriate assessment for continued turf cutting under Article 6(3) proves negative, it seeks to invoke Article 6(4), subject to EU approval. It argues the obligations of the State and habitat compensation requirements can be met through a revised network. New knowledge on restoration has informed inclusion of new sites to meet compensation requirements in a revised network. The State argues that such consents have potential to secure the social acceptability of the network, and therefore represent 'an imperative reason of over-riding public interest':

> Since the 1990s there has been an impasse between the State, in its remit to fulfil its objectives under the Habitats Directive, and certain elements of the turf-cutting community … the State is of the belief that a national solution to the raised bog SACs conservation issue is very close. In this context, if the availability of flexibility in relation to a small number of SAC sites, due to a genuine and demonstrable lack of relocation alternatives for turf cutters, who for social, cultural and economic reasons wish to continue to cut turf, would secure an agreed national network solution to the long-term conservation of Ireland's raised bog SACs, which is clearly in the public interest, then the overriding public interest becomes more apparent (DCHG, 2017, p. 56).

This discussion illustrates how the interpretation of Article 6 is very challenging (Bryan, 2012; Opdam et al., 2009). In practice many experts continue to view technocratic and scientific norms as key to implementation in an efficient manner (Ferranti et al., 2014). These norms however are contested within the contemporary international shift towards procedural sources of legitimacy in environmental and conservation governance (Engelen et al., 2008; Fischer, 2000; Healey, 2006; Taylor, 2010; Wurzel, 2008). In practice the Habitats Directive is associated with the conservation model established by the Yellowstone National Park in 1872, whereby people are seen apart from the proper protection of nature. Known also as 'fortress conservation' this model

focuses on protecting and defending its borders from local people and has been implicated in local resistance and environmental injustice (Vaccaro et al., 2013). The limited social acceptability of this model of conservation due to its association with coercive practices including the exclusion or displacement of people and their incomes, has forced the environmental movement to rethink this model (Adams & Hutton, 2007; Igoe & Brockington, 2007; Phillips, 1998; Robbins, 2011; Selman, 2009; Vaccaro et al., 2013; West et al., 2006). New models for 'community-based conservation' and participatory governance emphasise the win-win potential for benefits to conservation and sustainable development that arise from greater local engagement (Agrawal, 2005; Borrini-Feyerabend et al., 2004; European Commission, 2004).

2.5 Participatory discourses and local knowledge

New participatory discourses emphasise the value of different forms of knowledge in conservation and resource management. Researchers have made visible, for example, the constructionism or value-based nature of knowledge underpinning traditional conservation models (Castree, 2005; Robbins et al., 2014). This in turn has contributed to greater understanding of the role of indigenous people, for example, in shaping ecologically valued landscapes and how traditional farming systems have contributed to conservation landscapes (Berkes et al., 2003; Phillips 1998; Robbins et al., 2014). The recent move towards integration of local knowledge into policy therefore relates to the growing belief that local peoples' understandings and interpretations of biophysical processes are integral to environmental change and sustainability (Folke et al., 2005; Harris, 2009; Siebert, 2008; Tovey, 2009b; Wurzel, 2008).

Local knowledge is related to situated phenomena and can be expected to vary across settings. This contrasts with the dominant perception of scientific knowledge as a universal form of codified knowledge (Tovey, 2009b). Despite this perception, research has shown that expert environmental knowledges are plural and conflicting (Castree, 2005; Fischer, 2000). Definitions of local knowledge vary and research in the developing world, for example, has focused

on traditional ecological knowledge or TEK. This has been defined by Berkes et al. (2003, p. 13) as ‘a cumulative body of knowledge, practices and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment’. Tovey (2009b, p. 137) differentiates between tacit knowledge as a prediscursive form of social knowledge within communities and lay knowledge that ‘is bound up in practices which can be described, explained, if necessary justified by practitioners, and which (as a form of expertise, albeit one which is not often socially recognized as such) may be related as much to social differentiation and hierarchy as to social cohesion’. These approaches have a lot in common with political ecological approaches to local environmental knowledge that focus on the ecological understandings of those who use the resources of a place and their entwinement with social power and/or socio-historical processes. For Robbins (2006) local environmental knowledge reflects the practices of everyday life and is embedded in daily political and environmental activity.

The way local knowledge is organised, its relationship to professional science and its role in managing environmental resources have become important areas of enquiry (Fisher, 2000; Folke et al., 2005). It is generally agreed that both scientific and local knowledge are important and are not necessarily mutually exclusive. According to Tovey (2009b) the knowledge applied by local actors in the developed world is mostly a mix of local and scientific knowledge. This is because local actors tend to accrue substantial scientific knowledge, whether through information received directly or indirectly from expert sources or ENGOs or through their educational background (Siebert, 2008). On the other hand, as Roach et al. (2006) highlight, not all community members have an in-depth knowledge about local ecology or have any environmental commitment. The general reticence, however, of natural scientists and bureaucrats to get actively engaged with local knowledge systems, is considered a barrier to developing more robust systems for ecological resilience (Collier & Scott, 2009; Siebert 2008).

Recent research also highlights the need to examine the social relations in which knowledge develops through knowledge exchange, communication and distribution (Reed et al., 2014; Siebert, 2008). This approach helps to reduce the dualism between expert and local or scientific and lay knowledge by focusing instead on knowledge communities. Robbins (2006, p. 191) for example seeks to reveal 'knowledge communities' within 'a nexus of property and labour relations that condition variable and shifting discourses of society and nature'. The extent to which local and expert knowledge systems are complementary or opposed, and whether and how they could be combined in site specific contexts is consequently a growing research area (Berkes et al., 2003; Reed et al., 2014; Robbins, 2006; Siebert, 2008; Tovey, 2009b).

Greater recognition of the complexity and dynamism of ecosystems and of uncertainties in scientific knowledge have also influenced a shift away from the hegemonic top-down approach to conservation. The traditional approach known as equilibrium ecology or compositionalism held assumptions on the stability of species within ecosystems associated with the myth of the balance of nature (Castree, 2005). This approach has been criticised for dismissing the role of humans in the evolution of landscapes and for taking a mechanistic view of nature as 'productive, predictable and controllable' (Berkes, 2004, cited in Bryan 2012, p. 84). Holling et al. (1998) argued that the nonlinear and discontinuous behaviour of ecosystems often clashed with the narrow utilitarian policies emerging from conventional resource management. In contrast, studies that problematise conservation within a complex socio-ecological framework allow for multiple potential futures (Folke et al., 2005; O'Rourke, 2006).

Resilience in socio-ecological systems involves the ability to absorb change without fundamentally altering the system. Further, it depends on the characteristics and diversity of ecosystems as well as the governance characteristics of the social system (Folke et al., 2005; O'Rourke, 2006). Institutions and communities therefore are a central component linking social and ecological resilience. Tovey (2009b) highlighted different understandings of governance in this context. It is often understood in terms of its potential to reform relations between different knowledge systems, but the significance of

governance to local property systems and access to resources is also considered to be important. For example, complex rules regarding access and use of resources through common property systems can safeguard against the overuse of resources associated with open access systems and the tragedy of the commons (Berkes et al., 2003; Ostrom, 1990).

New models of community-based conservation involve adaptive co-management of protected areas through a process that combines local knowledge and scientific knowledge (Folke et al. 2005; Tovey, 2009b). According to Folke et al. (2005, p. 448) adaptive co-management systems are 'flexible community-based systems of resource management tailored to specific places ... and work with various organisations at different levels. The flexible structure allows for learning and ways to respond to and shape change ... institutional arrangements and ecological knowledge are tested and revised in a dynamic, ongoing, self-organised process of learning by doing'. Therefore feedback, experiment and continuous learning are critical features of this approach and case study research is highly valued (Berkes et al., 2003).

2.6 The civic role of partnerships for conservation

Broader social and environmental changes have contributed to the shift from top-down models of governance to collaborative governance of protected areas. These include a more informed citizenry, greater recognition of the rights of communities to have a say in decisions that affect them, and democratisation and devolution of power (Lockwood, 2010). Partnerships are believed to provide a 'dialogic' benefit in conflict situations in the environmental arena where deliberation between actors occurs at the interface of a range of perspectives and rationalities around environmental issues (Taylor, 2010). Partnership has been advocated to transform State power and control over policy implementation into a collection of actors that negotiate in the process of public policy decision making (ibid.). It has been recommended to assist in the identification of social preferences, political feasibility and shared goals to improve responsiveness to complexity and uncertainty in dynamic ecosystems (McCool, 2009). According to

Plummer and Fennell (2009) benefits of such alliances include expanding the pool of resources available, enhancing the breadth of decision making, reducing conflicts among competing interests, and effectively pursuing shared goals. Partnerships are therefore a principal instrument used by governments and regulatory authorities to enhance legitimacy of policy.

2.7 Habermasian communicative rationality

The transition to collaborative planning has been influenced by Habermasian communicative rationality and empowerment through deliberation and power-sharing between experts and citizens in more adaptive modes of environmental governance (Healey, 2006). According to Habermas (1986), actors in society can seek to reach common understandings through reasoned argument and consensus, as opposed to acting strategically in pursuit of their own interests. Through a Habermasian lens, partnerships facilitate the rescaling of governance downwards, from expert-led approaches towards power-sharing with community representatives in policy-making. At the core of Habermas's communicative rationality is openness and transparency between arguing parties and the consensus building force of argumentation (Flyvbjerg, 2001). Habermas believes in the power of law and institutions for helping to regulate power in society and the establishment of more democratic constitutions and institutions (ibid.).

Although the communicative model has become an emerging paradigm in environmental planning, there is little research to date on the dynamics of communication and power within partnerships, or on the success or costs of achieving 'consensus' (Fainstein, 2008). Healey (2006, p. 337) cautions that collaborative practices are 'not innocent and carry their own potential to mask critical power relations and obscure critical issues'. It is believed that the examination of power relations within partnerships helps to distinguish rhetoric around the implicit associations with community engagement from the reality of such processes on the ground (Edwards et al., 2001).

These tensions have implications for communication and power relations within partnerships. In contrast to Habermas, other power theorists such as Foucault argue that rhetoric and strategic interests characterise argument more typically than consensus seeking, and that to place belief in the regulation of power through institutional systems (such as partnerships) is naive. According to Healey (2006) power relations can be visible, less obvious or embedded in consciousness, and may privilege and legitimise some forms of knowledge over others. Lockwood (2010) points to the potential in partnerships for fragmented processes and confusion over which governing authorities are accountable. Uncertainty and ambiguity in partnership can lead to inertia and maintenance of the status quo (Gunderson, 2003). Others have argued that insufficient attention to stakeholder analysis in collaborative approaches to governance can mask the hidden agendas of vested interests (Collier & Scott, 2009; Rauschmayer et al., 2009; Reed, 2008). For Taylor (2010) the dialogue and actions associated with partnership approaches to protected area governance can feature a mixture of Foucauldian strategic action, instrumental action and Habermasian forms of communicative interaction.

2.8 The role of the State in collaborative environmental governance

Powerful stakeholders can deploy indirect power through discursive strategies and practices to retain prime influence in participatory governance (Bickerstaff & Walker, 2005; Edwards et al., 2001; Kamphorst et al., 2017). The State served by its unequal share of resources can retain influence by setting the territory and rules of the partnership, so partnership processes can be used as a means of government control (Taylor, 2010). Empirical evidence from Mid Wales and Shropshire indicates that partnerships provide a new means through which power of the State may be exercised (Edwards et al., 2001). Findings here indicate that partnerships cannot be seen as a diminution of the State, but rather must be viewed as complicit in controlling the regulatory functions of the State. The role of the State in initiating, structuring, steering, financing and regulating partnerships means that the capacity of partnerships to redistribute power from

the State is illusory (Edwards et al., 2001; Fainstein, 2008). Taylor (2010) highlights how the State can restrict meaningful inclusion by supporting the dominance of highly technical or complex science in the discursive working of partnership. Alternatively, for Clare et al. (2013) powerful industry actors' privileged access to State decision makers were significant in undermining collaborative wetland governance in Alberta, Canada. Turnhout et al. (2015) suggested that the shift towards participatory governance under the Habitats Directive was linked to the neoliberal trend in governance towards cost-effectiveness.

Recent literature on the other hand argues that the influence of the State can be distorted or diluted through collaborative processes as varying interests influence judgement in unexpected ways (Turnhout et al., 2015; Van Assche et al., 2011). It is evident that many questions remain on the power relations between the State and diverse stakeholders in the construction of legitimacy through partnership approaches to environmental conflict (Kamphorst et al., 2017; Turnhout et al., 2015; Van Assche et al., 2017; Wurzel, 2008). Further, it is also clearly articulated how Foucauldian governmentality provides an approach to examining how the State governs at a distance through collaborative governance processes (Dean, 1999; Edwards et al., 2001; Rutherford, 2007).

2.9 Foucauldian governmentality

Studies that adopt Foucault's concept of governmentality commonly draw on Foucault's 1979 essay of that name which was translated into English in 1991 in *The Foucault Effect* (Fletcher 2010; Huxley, 2007), while also drawing on references to governmentality and power across his wider body of work (Huxley, 2007). Indeed, recent translations of his Collège de France 1978-1979 lecture series into English in *Security, Territory, Population* (2007) and the subsequent publication *The Birth of Biopolitics* (2008) are leading to new perspectives on his theories on governmentality (Fletcher, 2010).

Governmentality is concerned with a concept of government as 'the conduct of conduct' through the strategies adopted to render society governable (Ettlinger, 2011; Foucault, 1991a). The concept of governmentality offers a framework for the analysis of systems of rule where government indirectly controls population and shapes the conduct of citizen subjects through governing at a distance (Dean, 1999; Edwards et al., 2001; Herbert-Cheshire, 2006). It provides insights into how norms are unconsciously produced and reproduced by citizen subjects through the circulation of discourse 'thereby making governance at a distance possible' (Ettlinger, 2011, p. 538). Governmentality is therefore recognised as an appropriate framework for the analysis of State regulation (Thompson, 2005). It is furthermore valued for analysis of politically sensitive issues such as domestic peat cutting, given the challenges of applying force in the face of resistance (Cooper & Roisin, 2014; Rutland & Aylett, 2008).

Foucault rejected many of the traditional assumptions of power. He did not conceive of power as centralised; instead for Foucault, power was multiple and decentralised and was exercised rather than possessed (Flyvbjerg, 2001). Foucault (2007) argued that the exercise of power through discourse and discursive practices actively creates regimes of power-knowledge consonant with social norms. Foucault (1980, p. 93) believed that the functioning of power centred on the 'production, accumulation, circulating and functioning of a discourse'. Foucault associated governmentality with different forms of power, and research has focused mainly on his ideas of disciplinary power and biopower. Disciplinary power relates to the exercise of power in order to control individuals. Techniques adopted in the exercise of disciplinary power include technologies of self and normalisation. Foucault concept of technologies of the self relates to how individuals shape their own conduct to norms of how people should behave and think and consequently is relevant to the political power of the State (Herbert-Cheshire, 2006, p. 23). Normalisation is linked to discourse construction, as it constitutes 'appropriate' ways of thinking and behaving around the object of discourse. Therefore, normalisation induces a form of subjectification in which individuals engage in self-transformation to fit with social norms. Thus the process of subjectification is linked to mentality or consciousness and has been

used to show how ethical norms or moral responsibility can change vis-à-vis the environment (Agrawal, 2005; Cooper & Rosin, 2014; Fletcher, 2010).

While disciplinary power attempts to control individual deviance it is closely linked to the exercise of biopower, which is aimed at the wider population (Fletcher, 2010). In biopower, governments (and their proxies) construct knowledge through the collection of information on living populations in a manner which serves to legitimate the authority of the State (Elden & Crampton, 2007; Rutherford, 2007). Such knowledge commonly claims to enhance the health and vitality of the population (Fletcher, 2010). Thus science is used to generate knowledge and assert what are then constructed as truths about the environment (Rutherford, 2007). Biodiversity provides a good example of this (Fletcher, 2010), as the State exercises biopower through collecting and measuring statistics on species and habitats to ensure its protection for the good of all life. Herbert-Cheshire (2006) emphasises that a primary objective of bio-power is the development of skills so that people can become capable of regulating their own behaviour according to social norms. Thus, an effect of biopower is the internalisation by citizens of the State's agenda, leading to self-regulating subjects that readily carry out the will of the State (Herbert-Cheshire, 2006).

In a seminal study by Agrawal (2005), governmentality was used as a framework to demonstrate how participatory processes can successfully influence citizens' behaviour in forestry conservation in Kumaon, India. In a process called environmentality, he explained how citizen involvement in community forestry councils led to a transformation in environmental consciousness and associated practices. Agrawal illustrated the operation of Foucauldian disciplinary power and biopower in this transformation. Kumaonis who previously opposed the protection of forests became persons who undertook the protection themselves, thus becoming active partners in self-regulation and in the governmentalisation of nature. Agrawal makes the case that the change in beliefs or subject positions are related to practical involvement in regulatory practices, rather than to social-structural location in terms of caste or gender. However, critics of this approach argue that there is a need to direct greater attention to the social and economic

forces that deter or foster conservation practices, especially in the early stages of these processes (Gupta, 2005; Hathaway, 2005).

According to Fletcher (2010) neoliberal governmentality involves an alternative approach to the formation of environmental consciousness than that represented by Agrawal's (2005) study of disciplinary environmentality. Rather than attempting to inculcate ethical norms or moral responsibility towards the environment, a neoliberal approach would endeavour to provide incentives to encourage a rational economic response supporting conservation-friendly behaviour (Fletcher, 2010). However, strongly held beliefs, or counterclaims can present significant challenges to neoliberal approaches to environmentality (Cooper & Rosin, 2014; Jepson et al., 2012). For example, Jepson et al. (2012) illustrate the incongruence of pro-wind and environmentally sceptical discourses amongst Texan stakeholders involved in wind farming. Thus, cultural beliefs rooted in deep anthropocentrism and possessive individualism were maintained amongst stakeholders despite their involvement in wind farming. Jepson et al. (2012) show that the basis of support for wind farms in Texas is rooted in economic development and that incentives failed to inculcate ethical subjectivities supporting renewable energy. Therefore, in the adoption of neoliberal governmentality other forms of governmentality, such as disciplinary power, biopower and 'culture governance' could be drawn upon to support the formation of moral responsibility for the environment (Cooper & Rosin, 2014; Dean, 1999; Fletcher, 2010).

Herbert-Cheshire's (2006) analysis of rural development in Australia demonstrated how culture governance was used to align attitudes of rural people with the socio-political objectives of State agencies. This was achieved through a range of governmental technologies such as community audits, capacity building workshops and community leadership training. This case also illustrates how rural communities were rendered knowable and the problems and solutions to rural decline were constructed in a manner fitting with the government agenda for rural development. Rutherford (2007) argues that governmentality research has focused too much on alignment with State aims, and highlights the need for governmentality research to focus on when rule goes awry.

2.10 Resistance of subjects

Governmentality as a means of regulating behaviour and practices presumes that actors have choices. This implies the possibility of rejecting norms and everyday practices associated with normalisation (Ettlinger, 2011). Foucault has been criticised for under-theorising resistance to power; however, new interpretations of his theories of resistance are becoming available through publication of his lecture series at the Collège de France in 1981-1982 (ibid.). Foucault argued that resistance depends on a holistic understanding of the system that objectifies, dominates, and produces behaviour (Cadman, 2010; Death, 2010; Ettlinger, 2011). According to Death (2010) theories around protest and resistance typically conceptualise resistance as the act of opposing more centralised power. However, Foucauldian analysts argue that the form protests take are linked to the broader regimes of power against which they are opposed, and at the same time practices of government themselves are shaped by the form of resistance (Cadman, 2010; Death, 2010; Ettlinger, 2011).

Foucault's concept of counter-conducts relates to how resistance to processes of governmentality could be problematised. Rather than being an outright rejection of government, Foucault used the term counter-conduct to describe a 'struggle against the processes implemented for conducting others' and 'the will not to be governed thusly, like that, by these people at this price' (Foucault, 2007, cited in Death 2010, p. 240). By advancing the idea of counter-conducts Foucault emphasised that governmental systems should be considered fragile and contingent achievements (Cadman, 2010). According to Ettlinger (2011, p. 549) the lack of intended effectiveness of a technique of power opens up analysis to resistance and potential for transformational mentalities 'in terms of challenging norms, discourses, mentalities – not entities or persons in particular positions of power'. Thus, this approach focuses on practices and mentalities of resistance, rather than movements, and seeks to show that power and resistance are mutually constitutive (Death, 2010). There is, however, a gap in studies analysing

the degree to which acts of resistance destabilise or reinforce existing power relations (Death, 2010).

2.11 Exploring governmentality and legitimacy through Q Methodology

Q methodology has previously been adopted to examine discourse and power in environmental networks. This literature review has revealed how power relations between diverse actors can create barriers to policy innovation in environmental conflict (Brannstrom, 2011; Clare et al., 2013; Lansing, 2013; Robbins, 2006). A point of debate is on the relative importance of structural power, and power-knowledge relations in the formation and functioning of discourse coalitions (Brannstrom, 2011; Lansing, 2013; Robbins, 2006). Robbins (2006, p. 198) for example, highlighted power-knowledge relations in the failure of in-State hunters in Montana to influence policy in Northern Yellowstone, despite 'remarkable similarities' between hunters' and environmentalists' discourses. Alternatively, exclusivist ideologies of property and nature came to prominence as ranchers and environmentalists coalesced across the sectoral divide on approving lucrative out-of-State hunters' permits, while less economically powerful in-State hunters' access to land was restricted. Thus, discourse coalitions can reproduce unequal power relations by denigrating some stories and elevating others as legitimate (Robbins, 2006). This can reinforce dominant yet simplistic narratives about actor positionality in environmental debates that serve to reinforce social and environmental injustice.

In contrast to Robbins (2006), the findings of recent Q methodological research on environmental conflicts return to more traditional dichotomous representations of the nature-society and expert-local divide. This literature implicates power imbalances reflected in actors' structural position as instrumental in poor environmental policy (Brannstrom, 2011; Lansing, 2013). Brannstrom (2011) demonstrated how discursive divergence between actors fell predominantly along sectoral lines reflecting deep distrust between farmers and

environmentalists in Western Bahia, Brazil. Lansing (2013) found power imbalances were reflected in structural divergence between expert and local actors in a carbon offset project in Costa Rica and were indicative of the failure of true participation and merely superficial forms of collaboration. Van Assche et al. (2017a; 2017b) have argued, however, like Robbins (2006) that there is a need for greater attention to power-knowledge relations in socio-ecological networks to identify hidden, more subtle forms of power within environmental networks and their implications in environmental conflicts. Drawing on these discussions and critiques, this research adopts both governmentality and Q methodology to elucidate power-knowledge relations between stakeholders and their implications for the construction of legitimacy. The methodological basis for this approach is outlined in Chapter 5.

2.12 Chapter summary

This chapter has reviewed previous literature examining the relationship between participatory governance processes and legitimacy of nature conservation. This has included a focus on the scope within the Habitats Directive for input and throughput legitimacy (Engelen et al., 2008) through participation of those impacted by nature regulation, and its scope for socio-economic consideration through Article 6. It has drawn attention to the contradictions in EU discourses in support of participation in nature regulation, and the limits to participation in practice, due to apparent restrictions in the legislation and the established technocratic ethos underpinning implementation.

The rationale for the broader international shift towards participation and inclusion of local knowledge in conservation processes is critiqued, revealing how reliance on the assumed legitimacy of scientific expertise has become increasingly unacceptable in contemporary society. In the transition to collaborative governance, the importance of examining the exchange of knowledge between stakeholders was emphasised. In this context, previous literature examining power relations between stakeholders and the role of the State as an agent of governmentality, in steering and controlling participation and knowledge

exchange in environmental partnerships was highlighted. The governmentality approach to analysis of regulation was critiqued and attention was drawn to the gap in this body of literature on the analysis of failures in regulation. In the final section, previous literature adopting Q methodology to examine discourse and power relations in environmental networks was critiqued. The final section also points towards the gap in the literature on the dual adoption of governmentality and Q methodology to inform research on stakeholders' power-knowledge relations and the construction of legitimacy in nature's regulation.

Chapter 3: **Environmental, Socio-Economic and Cultural Context for Raised Bog Regulation**

3.1 Introduction

This chapter presents the socio-ecological characteristics of raised bogs and reviews literature on the relationship between people and peatlands in Ireland. This includes a review of the policy context for supporting a change in values from socio-economic exploitation of peatlands, towards conservation and the ecosystem services approach. The gaps in previous literature on attitudes to conservation of peatlands are identified. The environmental impacts of turf cutting on raised bog are discussed alongside an overview of the diminishing prospects for raised bog conservation in Ireland. The influence of new scientific methods underpinning the State's review of the Irish raised bog resource (Mackin et al., 2017a, 2017b; DCHG, 2017) on policy development is analysed.

3.2 Peatlands

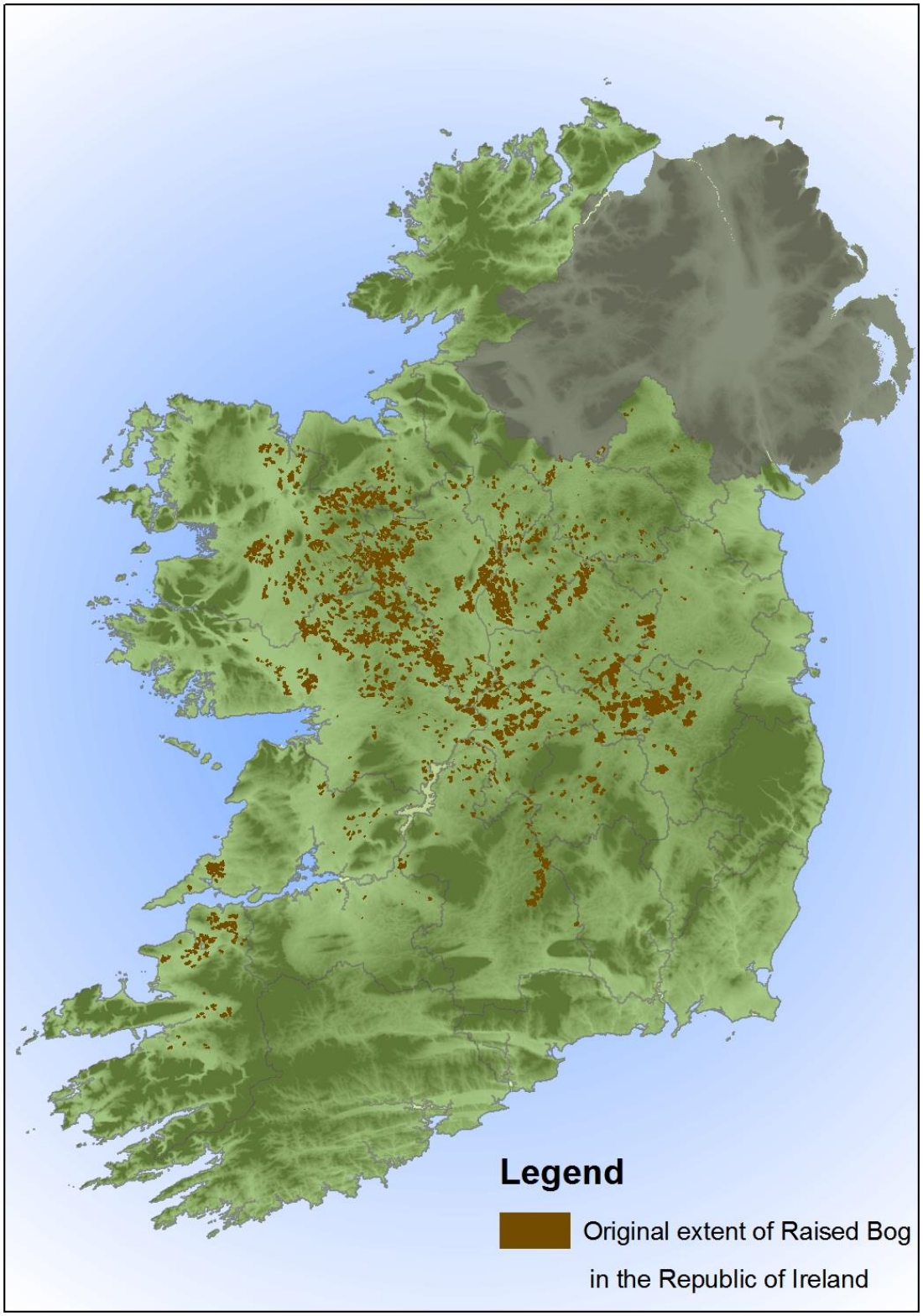
Peatlands are considered amongst the most significant ecosystems in the world due to their key values for biodiversity, climate regulation, water supply and filtration (DAHG, 2015). Peatlands are wetlands with naturally accumulated peat at the surface and are permanently waterlogged. They provide unusual and highly valued habitats with unique and specialised flora and fauna (DAHG, 2015; Renou-Wilson et al., 2011). Peat soils cover approximately 21% per cent of the Irish landscape, and consequently are distinctive features of this landscape (DAHG, 2015). Peat is an accumulation of partially decayed vegetation and is mainly composed of water, organic matter and small amounts of mineral material. It forms in wetland conditions where waterlogging obstructs contact with oxygen, thus slowing rates of decomposition of plant material. Although globally peatlands share many eco-hydrological characteristics, they are very diverse with regard to plant species and the composition of plant communities (Joosten, 2016). On

undamaged Irish peat bogs, *sphagnum* bog mosses dominate and are critical to peat formation. In Ireland peatlands are distinguished by the way they form as raised bogs, blanket bogs or fens.

3.3 Raised bogs in Ireland

Raised bogs are wetland ecosystems formed by the accumulations of deep peat at the end of the last glaciation 10,000+ years ago, in lakes or low-lying hollows in the post glacial landscape. Raised bogs are characterised by a base layer of fen overlain by mosses, sedges and heathers which are adapted to the waterlogged and acidic conditions. The surface of a relatively intact raised bog is typically acidic and supports a range of plant communities not typically found in other ecosystems (Fernandez-Valverde et al., 2014). The high (uncut) bog is primarily rainwater fed and is generally isolated from the local groundwater table (Mackin et al., 2017a). Active raised bog is the living, actively growing layer of acrotelm or vegetation layer on a raised bog, the surface of which is made up of sphagnum species (DCHG, 2017). This acrotelm is about 10-30cm in depth and grows at a rate of 1 to 3cm a year (DCHG, 2017). The acrotelm plays a vital hydrological role as it strongly influences the rate of water run-off from a bog. The acrotelm is distinguished from the underlying and relatively biologically inactive catotelm (Doyle & O' Críodáin, 2003) which is comprised of layer on layer of dead vegetation and which grows at a rate of 1mm per year (DCHG, 2017).

Raised bogs are so called due to their domed centres which raise above the surrounding countryside. They are distributed primarily in the midlands, in the low lying central plain, in areas where rainfall is between 800 and 1100mm per year (Doyle & O' Críodáin, 2003). The Irish climate is especially conducive to raised bog development as high levels of rainfall occur throughout the year helping to maintain high peatland water tables which are essential to support active raised bog (Mackin et al., 2017b). Raised bogs are the deepest of the Irish peatlands, with an average depth of 7 metres but they can have a depth of



Map 3-1 Original extent of raised bog in the Republic of Ireland. Source: Mackin et al., (2017a) on behalf of NPWS

up to 12 or 13 metres (Doyle & O' Críodáin, 2003; Malone & O'Connell, 2009). Consequently, raised bogs are especially suited to mechanised harvesting with all large bogs over 500ha in the eastern part of the Irish Midlands having been drained for production (Mackin et al., 2017b).

Figure 3-1Active raised bog in Ireland showing the highest quality vegetation. © Fernando Fernandez Source: Mackin et al., (2017a).

3.4 People and peatlands: Productive use of peatlands

Throughout history, peatlands have been perceived as places to be feared, or as useless wasteland (Clarke, 2010). These values began to change as they were reclaimed and became associated with productive uses. Due to its long cultural history most peatlands in Europe have been subject to degradation with the continent having the largest proportional loss of peatland (Joosten, 2016). This has occurred especially since the 1940s due to drainage and exploitation for

agriculture, forestry, or peat extraction for energy use (Anderson et al., 2016). In many European countries more than 90% of peatlands can be considered ‘dead’ because of their exploitation for productive use (Joosten, 2016). A similar picture is painted in Ireland where State policy has focused primarily on productive values through its semi-State agencies Bord na Móna and Coillte alongside other smaller commercial entities. This has involved exploitation of peat for electricity generation, but also for the support of afforestation, horticulture and wind energy on peatlands (Renou-Wilson et al., 2011).

It is estimated that approximately 100,000 ha of raised bog has been harvested industrially in Ireland (DCHG, 2017). Bord na Móna was established in 1946 and owns approximately 80,000 ha of peatlands (primarily raised bog), most of which has been harvested for electricity or horticultural use. It harvests approximately 4 million tonnes annually in peat for energy production and horticultural products and approximately 70,000 ha of peatlands are in active industrial production (Wilson et al., 2013). This has resulted in the complete loss of peatland ecosystem services and visual scarring due to the annual shaving of the peatland surface (Bullock et al., 2011; Wilson et al., 2013). Such large-scale harvesting involves the complete loss of the acrotelm, and severely impacts the hydrological functions and the carbon sequestering capability of the system (Wilson et al., 2013). Further emissions of carbon dioxide arise from combustion at three peat fired power stations owned by Bord na Móna and the Electricity Supply Board (ESB the State’s electricity company) and Bord na Móna’s sales of peat products. Afforestation has mainly occurred on blanket bog, but approximately 6,175ha of raised bog has been afforested in Ireland, the majority of this being managed by Coillte, the State-owned forestry company (Malone & O’Connell, 2009).

3.5 People and peatlands: Cultural and historical significance of domestic turf cutting and turbary rights

Irish people are closely connected to peatlands through a long history of cultural and economic exploitation. The earliest references to turf cutting in Ireland date

back to the 7th and 8th century Irish law texts which indicate that sod turf was a regulated socio-economic activity (Feehan et al., 2008). In Gaelic Ireland the bog was held in common by families associated with each townland and it was an important indicator of economic self-sufficiency and fuel security (Evans, 1957). Turf supplemented wood until it became scarce after the deforestations of the 17th and 18th centuries associated with the plantation of English settlers and dependence on turf was widespread (Clarke, 2010; Evans, 1957; Feehan et al., 2008). With changes in landownership associated with Ireland's colonial past, landlords or their agents managed turbary rights on their estates and sometimes withheld turbary rights from their tenants (Feehan et al., 2008). The Land Commission was established after the Irish land wars in 1881 and facilitated tenant purchase of land, including turbary rights (Fitzsimons, 2014). Thus the bog was intimately connected with the politics of colonisation and post-colonialism and these associations are dominant in literary representations of Irish peatlands (Gladwin, 2016).

During the 18th and 19th centuries turf was the only fuel most people used and as the urban population grew exploitation of Irish peatlands increased to supply sales of turf. The production of hand-cut turf peaked at 6 million tons in 1926, and thereafter dropped off as coal became more popular (Feehan et al., 2008). During the 2nd World War turf cutting became a strategic priority as coal supplies dried up and official policy supported hand-cutting schemes to support sales of turf for national fuel security (Loftus & Laffey, 2015). After the war hand cutting went into decline, as oil was cheap and by the 1970s hand-cut turf was down to about one million tons per annum (Feehan, et al., 2008). In recent decades domestic turf cutting increased with the advent of small-scale turf cutting machinery and due to State policies supporting larger-scale exploitation of private peatlands. Contemporary turf cutting is associated with those on lower incomes who continue to view turf cutting as a source of inexpensive fuel and fuel security (Bullock et al., 2012).

Given this long history, it is increasingly recognised that attitudes to domestic turf cutting and its cessation have complex socio-economic, cultural-historical and psychological associations in Ireland (Bullock & Collier, 2011; Bullock et al., 2012;

Renou-Wilson et al., 2011). The right to cut turf goes back several centuries. Turbary refers to the right to cut turf on an area of bog and these rights can arise due to the resettlement of confiscated land or occur by prescription (DAHG, 2015; Renou-Wilson et al., 2011). In the midlands and western parts of the country, Bord na Móna also played a role in conferring turbary rights for alternative bogs after compulsory purchase of peatlands in private use (Clarke, 2010). Rights through prescription relate to turf cutters' ability to demonstrate they have cut turf 'without secrecy, without permission and without force continuously for a period of 30 years' (Fernandez-Valverde et al., 2006, p. 75). Consequently, not all turbary rights will be formally registered (Fernandez-Valverde et al., 2006; Quirke, 2012) and it is believed that there are 20,000 rights holders across all designated peatland sites (both SACs and Natural Heritage Areas-NHA's) in Ireland (Fernandez-Valverde et al., 2006; TCCA, 2012a). The TCCA claim that 9,000 of these rights relate to the 53 raised bog SACs (TCCA, 2012a) at the centre of this research discussion. Ireland's long history of land agitation has meant that protection of turbary rights has strong emotional resonance in rural areas.

Somewhat ironically, degradation through domestic use accelerated in the 1980s as government policy and technological developments supported mechanisation (Fernandez-Valverde et al., 2006; Fernandez-Valverde et al., 2014; Renou-Wilson et al., 2011). The Turf Development Act of 1981 supported mechanical exploitation of private peatlands for domestic use (Renou-Wilson et al., 2011; Feehan et al., 2008). Contemporary approaches to domestic turf cutting therefore, often involve mechanical contractors cutting on behalf of those with turbary rights. This involves cutting of drains around the periphery of the bog and the peat being cut in blocks from a high vertical face typically with a hopper and digger (Bullock et al., 2012). Traditionally, this peat was cut by hand using a spade or *sleán*. However, this low intensity method of extraction has now generally been replaced by mechanical cutting mostly for supply direct to households but including also some extraction for commercial sales (ibid.). After mechanical cutting, turf continues to be harvested by hand in a traditional manner, often by families with the help of neighbours through a labour-intensive process of stacking and drying the turf. Although turf cutting has changed

significantly since mechanisation, its significance in cultural tradition, as a long-standing socio-economic and community-based activity is recognised (DAHG, 2015; DCHG, 2017; Feehan et al., 2008). On the other hand, within the environmental sector it has been asserted that the cultural aspects of turf cutting ceased with mechanisation (Chartered Institute of Ecology & Environmental Management, CIEEM, 2014).

Figure 3-2 Mechanical cutting with hopper and digger. Source: Author.

Figure 3-3 Cart carrying turf featuring spade and sleán. Source: Author.

3.6 Shifting values and policies towards ecosystem services

In recent decades there has been a shift away from the sole focus on productive values, and peatlands have become highly valued for their contribution to ecosystem services (Wilson et al., 2013). Peatlands offer a range of ecosystem services. In addition to their key role in biodiversity, the special role peatlands play in carbon regulation has only recently been fully appreciated (Bonn et al., 2014; Renou-Wilson et al., 2011). Although peatlands cover less than 3% of the world's surface, they represent more than 30% of the total global soil carbon store (Bonn et al., 2014). Natural peatlands play a critical role in carbon sequestration; conversely, however, exploitation of just a small proportion of peatland has worldwide consequences for GHG emissions (Joosten, 2016). The potential for peatlands restoration to mitigate against the negative impacts of peatlands

exploitation is increasingly recognised. Interest in restoration is also increasing due to obligations under international agreements to offset greenhouse gas emissions (Bullock et al., 2012; Wilson et al., 2013). There is also greater recognition of the role of restored peatlands in broader ecosystem services including water filtration and regulation. Mosses of a healthy peatland help to filter contaminants to release clean water, and healthy peatlands also play a role in regulation of water flows in water catchments and can help to mitigate flooding (Bonn et al., 2014; Renou-Wilson et al., 2011). Peatlands are also recognised in terms of nature appreciation and opportunities for spiritual, aesthetic and recreational experiences, and are characterised as threatened areas of wilderness (Bonn et al., 2014; DAHG, 2015; Renou-Wilson et al., 2011). Their cultural ecosystem services include their archival role as archaeological repositories and as palaeo-environmental archives (Geary & Fyfe, 2016). Consequently, peatlands are recognised as a significant source for human well-being and knowledge (DAHG, 2015). The failure to account for the environmental, economic and social value of these various hidden ecosystem services represents a form of market failure and has been a factor in their exploitation for more unsustainable uses (Bullock & Collier, 2011; Renou-Wilson et al., 2011). Peatland restoration was initially driven by the scarcity and recognition of the high biodiversity value of intact peatlands, but there is now increasing international interest in carbon regulation as a driver of peatlands restoration (Bonn et al., 2014; Joosten, 2016; Wilson et al., 2013).

Ecological restoration involves assisting the recovery of an ecosystem that has been, degraded, damaged or destroyed (Anderson et al., 2016). Somewhat ironically, restoration in Ireland has been led by Coillte and Bord na Móna, in addition to the involvement of NPWS, and it has been piecemeal in approach (Wilson et al., 2013). Restoration of afforested peatland is a relatively new activity and Ireland is one of the few countries in Europe (alongside the UK and Finland) pioneering this research in the last 25 years (Anderson et al., 2016). Coillte's EU LIFE (financial instrument for the environment) projects have revealed promising restoration potential for areas of afforested bog after clear-felling and blocking drains, and at some sites there was significant regeneration of Sphagnum

especially around blocked drains (ibid., 2016; Coillte, 2016). There has been restoration of approximately 700 ha under LIFE and 5 sites are designated as SAC and 12 NHAs are due to be upgraded to SAC status (Coillte, 2016). Bord na Móna's raised bog restoration programme has involved restoration of over 1,000 ha of raised bog across the Irish Midlands since 2009 (Bord na Móna, 2016). Although previously drained for production, the restoration potential of several sites was identified after ecological surveying (ibid.), with most being considered for designation as SAC or NHA as part of the State's *Scientific Basis for Raised Bog Conservation Study* (Bord na Móna, 2016). Since the 1990s, Bord na Móna has also been carrying out research into rehabilitation of cutaway bogs for the purposes of promoting biodiversity. It is evident, therefore, that notwithstanding their primary and traditional role in socio-economic exploitation of natural resources, these semi-State agencies have also gained significant expertise and knowledge on peatland restoration.

3.7 People and peatlands conservation in Ireland

Historical, social, cultural, economic and political influences on environmental subjectivities have variously been implicated in resistance due to the significance of peatlands to previous generations and the historic importance of property rights in Ireland (Bullock & Collier, 2011; Bullock et al., 2012; Renou-Wilson et al., 2013; O'Riordan et al., 2015). However, studies on the relationship between people and peatlands have often adopted an historical approach that reflects the values of the time (Clarke, 2010; Collier & Scott, 2009; Loftus & Laffey, 2015). Other recent research has been limited by the adoption of positivistic frameworks, such as large-scale surveys that have revealed 'puzzling' findings on attitudes that support *both* peatlands protection *and* domestic cutting (Bullock & Collier, 2011, p. 975). Consequently, there have been calls for further exploration of the psychology and subjectivities of Irish peatland communities (Bullock & Collier, 2011). Meanwhile, these contradictions have partially been explained as resulting from turf cutters' weak knowledge of peatland processes and the legitimacy implications and visual impacts of continued industrial harvesting, which results

in bleak, scarred landscapes due to the annual shaving of the peatland surface (Bullock & Collier, 2011; Bullock et al. 2012).

The emotional attachment to turf cutting has been associated with the labour and time, previously spent cutting and harvesting turf, in the context of private turbary rights, but also through employment with the semi-State company Bord na Móna (Feehan et al., 2008; Clarke, 2010; Loftus & Laffey, 2015). Bord na Móna was established in the 1940s and has commercially exploited most of the peatlands in its ownership. It now claims to be committed to transitioning to more sustainable land uses, including restoration of industrial cutaway, but its continued role in industrial harvesting for electricity generation and in the burning of peat as a fossil fuel remains controversial (Bord na Móna, 2016; Bullock & Collier, 2011; Woodworth, 2016). Bord na Móna has transferred several bogs for conservation purposes to the NPWS (DAHG, 2012a), but its contribution to conservation has generally been dismissed or denied by protesting turf cutting groups (Quirke, 2012; TCCA, 2012a).

Alongside the pure biodiversity objectives for the 53 bogs designated as SACs, the critical emerging agenda for peatlands regulation is in its complementary role in ecosystem services, especially carbon storage and sequestration (Bonn et al., 2014; Bullock et al., 2012). In general, peatland ecosystem services are believed to be poorly understood at local level in Ireland and it is believed that there is a lack of political will and leadership in supporting a transition from the productive values of peatlands towards their ecosystem services (Renou-Wilson et al., 2011). Alternatively, high profile campaigners attached to the TCCA gained political advantage in Irish and European elections due to their connections with the campaign (Quinlivan, 2014). These circumstances point towards the significance of the politics of conservation and regulation to achieving legitimacy at ground level.

3.8 Protection of Irish raised bog under the European Habitats Directive

The EU Habitats Directive requires member states to implement measures aimed at conserving Annex 1 listed peatland habitats within their territories. SACs are selected to protect habitats and species that are rare and threatened in European terms. Annex 1 of the Habitats Directive contains four habitat types commonly associated with raised bog including active raised bog, degraded raised bog (capable of restoration to active within 30 years), bog woodland and depressions on peat substrates of the *Rynchosporion* (DAHG, 2017). The serious decline in raised bog habitat across Europe prompted the EU to classify peat-accumulating areas on raised bog as priority habitat under the EU Habitats Directive.

The European Commission is charged with ensuring member states meet their legal obligations on implementation of nature conservation. In the 1990s the European Commission took legal action against Ireland for failure to prevent ongoing large-scale exploitation of peatlands without being assessed under the Environmental Impact Assessment Directive (DAHG, 2015; DCHG, 2017). This case was closed after the State designated new peatland National Heritage Areas (NHAs) and took steps to end commercial extraction on designated raised bogs (DCHG, 2017). In 1999 a voluntary bog purchase scheme was introduced. Take up of the voluntary bog purchase scheme was poor and social pressures inhibited take up of this scheme (Renou-Wilson et al., 2011). Bullock et al. (2012, p. 926) have argued that it is critical that appropriate incentives be given to Irish turf cutters to cease cutting as ‘removing rights that have been held for generations risks large-scale opposition or disregard’. In this regard an opportunity exists in recognising the asset value of peatlands through remuneration for the emissions avoided from peat soils via linkage with the European Carbon Trading Scheme (Bullock et al., 2012; Renou-Wilson et al., 2011). Bullock et al. (2012) argue that this could be used as the basis for compensation for turf cutters willing to engage in peatlands restoration and could preserve the financial and cultural value of property rights. Alternatively, Renou-Wilson et al. (2011) have suggested that acquisition of the network of designated raised bogs is preferable to

compensation which entails complex social dimensions that can inhibit restoration.

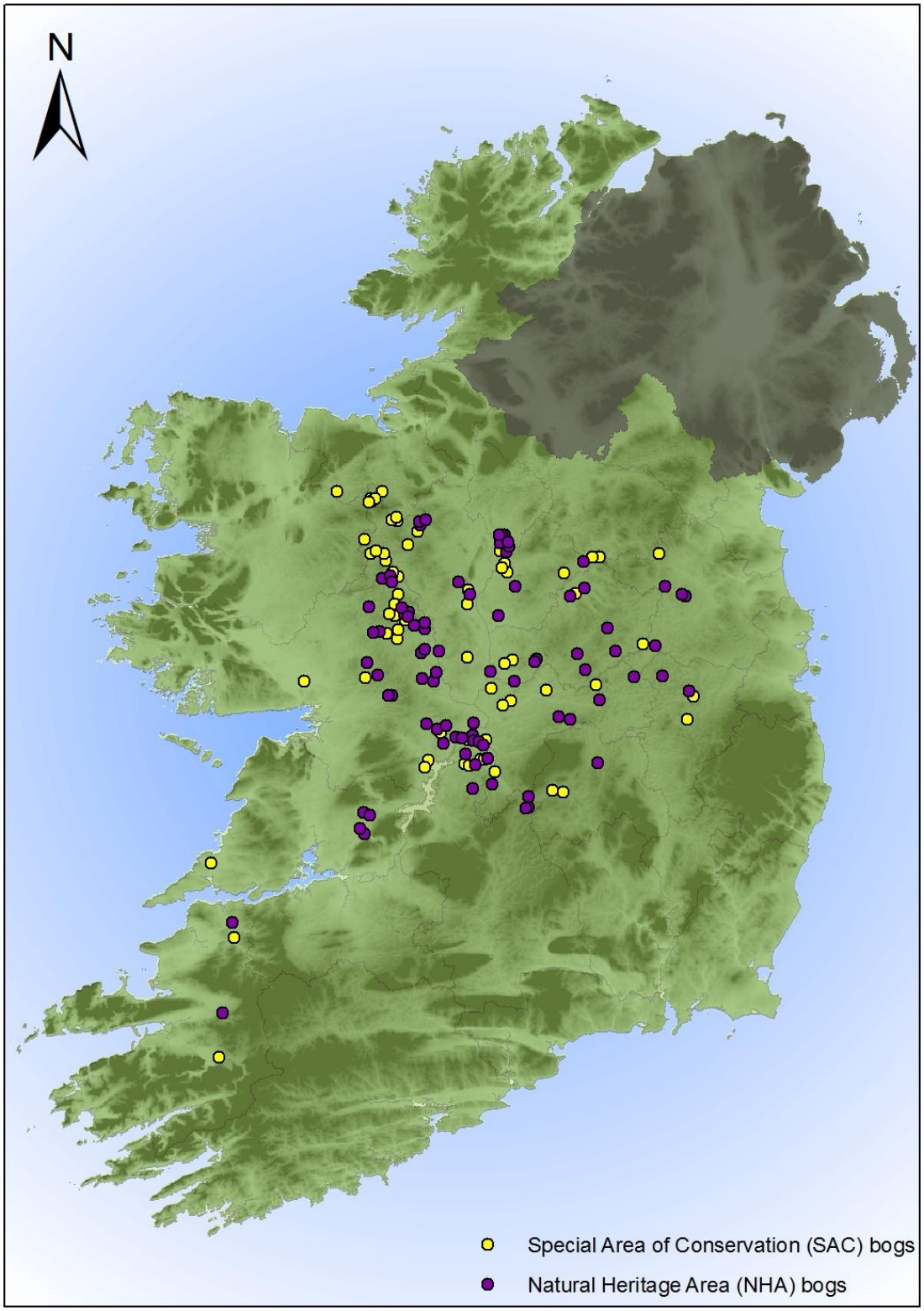
Alongside the voluntary bog purchase scheme, a ‘derogation’ on cessation of turf cutting for 10 years was offered to domestic turf cutters in 1999. This derogation has been criticized by environmentalists as illegitimate due to the failure of the Irish State to seek EU approval on granting this derogation (Fogarty, 2017; Renou-Wilson et al., 2011). The European Commission commenced infringement proceedings against Ireland for failure to implement the Directive in 2011 (DAHG, 2014; DAHG, 2015). This precipitated the establishment of the new policy and institutional framework for peatlands conservation that is the subject of empirical study in this thesis.

3.9 Conservation status of Irish raised bog SACs

The Republic of Ireland holds the most extensive remaining area of raised bog worthy of conservation in Western Europe (Fernandez-Valverde et al., 2014). It is, nevertheless, a dwindling resource. Of the 50,000 ha of remaining high (uncut) raised bog it is suggested that large areas continue to be degraded by drainage (Mackin et al., 2017a, 2017b; DCHG, 2017). The European Union requires Ireland to restore active raised bog to the extent of its active and degraded raised bog coverage to a reference period. This relates to the time when the Directive was first implemented in 1994, or when sites were first declared protected (Mackin et al., 2017b). At that time, it has been estimated that the area of active raised bog within the 53 SACs was 1,940ha and 650ha of degraded raised bog (DCHG, 2017). However, since 1994 approximately 37% of the active raised bog has disappeared from protected areas and consequently the degraded raised bog percentage has increased (DCHG, 2017; Mackin et al., 2017b). Therefore, it has been argued that the designation of the network of 53 raised bog SACs gave this network of sites little protection (Wilson et al., 2013). Because turf cutting generally impacts on the whole site, a significantly greater loss in active raised bog occurred relative to the amount of high bog cut during this period. The rate of losses of active raised bog in the network of 75 NHA sites is almost twice the

rate of loss within SACs bogs over the same period, indicating how national legislation has also failed to protect raised bogs (DCHG, 2017).

The national conservation status of active raised bog habitat has been assessed in six-yearly cycles under Article 17 of the Habitats Directive by the NPWS. Its status has been classified as *Unfavourable Bad-Declining* which is the worst rating possible (Mackin et al., 2017b). In these reports, as cited in DCHG (2017), there was an estimated a 25–36.7% decrease in active raised bog for 48 Irish raised bog assessed over the period 1994/95–2004/05. In the most recent raised bog monitoring report, Fernandez-Valverde et al. (2014) outlined the loss of approximately 13 ha (1.61%) of active raised bog within the 44 raised bogs assessed between 2004/05 and 2011/13. According to Fernandez-Valverde et al., (2014) the improvement in the figures in the later reporting period reflects the increased take up of incentives for cessation of turf cutting. However, it is clear that the legitimacy challenges relating to regulation of a significant number of bogs have persisted (DCHG, 2017).



Map 3-2 Raised bog SACs and NHAs 2011. Source: DAHG http://rbc.cfram.com

3.10 Threats to the raised bog SAC network

There can be many causes of active raised bog loss and in Ireland these are believed to relate mainly to changes in hydrology (Mackin et al., 2017b). This is because mean water levels need to be near or above the bog surface for active raised bog to survive. The main threats to conservation of raised bogs involve activities that involve drainage, causing them to dry out which in turn can cause cracking, deformation, collapse or bursts (DCHG, 2017; Fernandez-Valverde et al., 2014; Renou-Wilson et al., 2011). Drainage leads to the lowering of the water table. This results in peat being exposed to air as water levels drop, decomposition of the dead plants in the peat, and the release of carbon dioxide (DCHG, 2017). Drainage of raised bog habitat for peat harvesting and turf-cutting presents the principal threat to Irish raised bog conservation areas (Fernandez-Valverde et al., 2006; Fernandez-Valverde et al., 2014; Malone & O'Connell, 2009). Even where turf cutting has stopped, other threats such as agricultural reclamation and forestry can impact on drainage due to activities in surrounding habitats or cutover (Fernandez-Valverde et al., 2014, DCHG, 2017; Renou-Wilson et al., 2011).

3.11 Environmental impacts of domestic turf cutting

In general, it is accepted that mechanisation has altered the scale of domestic cutting to an intensive semi-industrial scale extraction which has greatly accelerated the drainage and degradation of Irish raised bogs (Fernandez-Valverde et al., 2014). Traditional hand cutting through the use of the *sleán*, is represented by the Irish Peatland Conservation Council (IPCC), an environmental non-government organisation (ENGO), as unsustainable (Malone & O'Connell, 2009). Others, however, suggest that because hand-cutting impacted peatlands more slowly than mechanical forms of cutting it may arguably represent a sustainable form of extraction (Bullock et al., 2012; Wilson et al.,2013).

Figure 3-4 Hand cut turf bank on blanket bog in 2016 near Ballycroy, Co. Mayo. Source: Author.

It is known that localised cutting on bog hydrology can extend from ten metres up to hundreds of metres from a cutting face into the high bog (Flynn et al., 2015; DAHG, 2014b). Consequently, complete cessation of turf cutting is considered imperative to ensure protection of SAC sites and partial de-designation to allow cutting alongside conservation, has previously been considered inappropriate in that context (Renou-Wilson et al., 2011). In the BOGLAND report (Renou-Wilson et al., 2011, p. 106) it is stated that:

> It is important to point out that turbary rights are incompatible with the management, restoration and future conservation of any important sites worthy of conservation as they directly and indirectly affect negatively the whole ecosystem (not only where the peat is cut).

The continuing conflict with stakeholders on meeting EU obligations on raised bog protection have prompted the State to consider solutions that meet the needs of both the EU and local community level (Flynn et al., 2015; DAHG, 2014b;

DCHG, 2017). Consequently, in 2012 the State commissioned a scientific review of Ireland's raised bog resource known as the *Scientific Basis for Raised Bog Conservation Study*[1]. This involved an assessment of the whole raised bog resource including designated and undesignated sites. It also announced its intention to include consideration of the scope for de-classification of SAC sites under Article 6 as part of this review (Quirke, 2012; DAHG, 2014b).

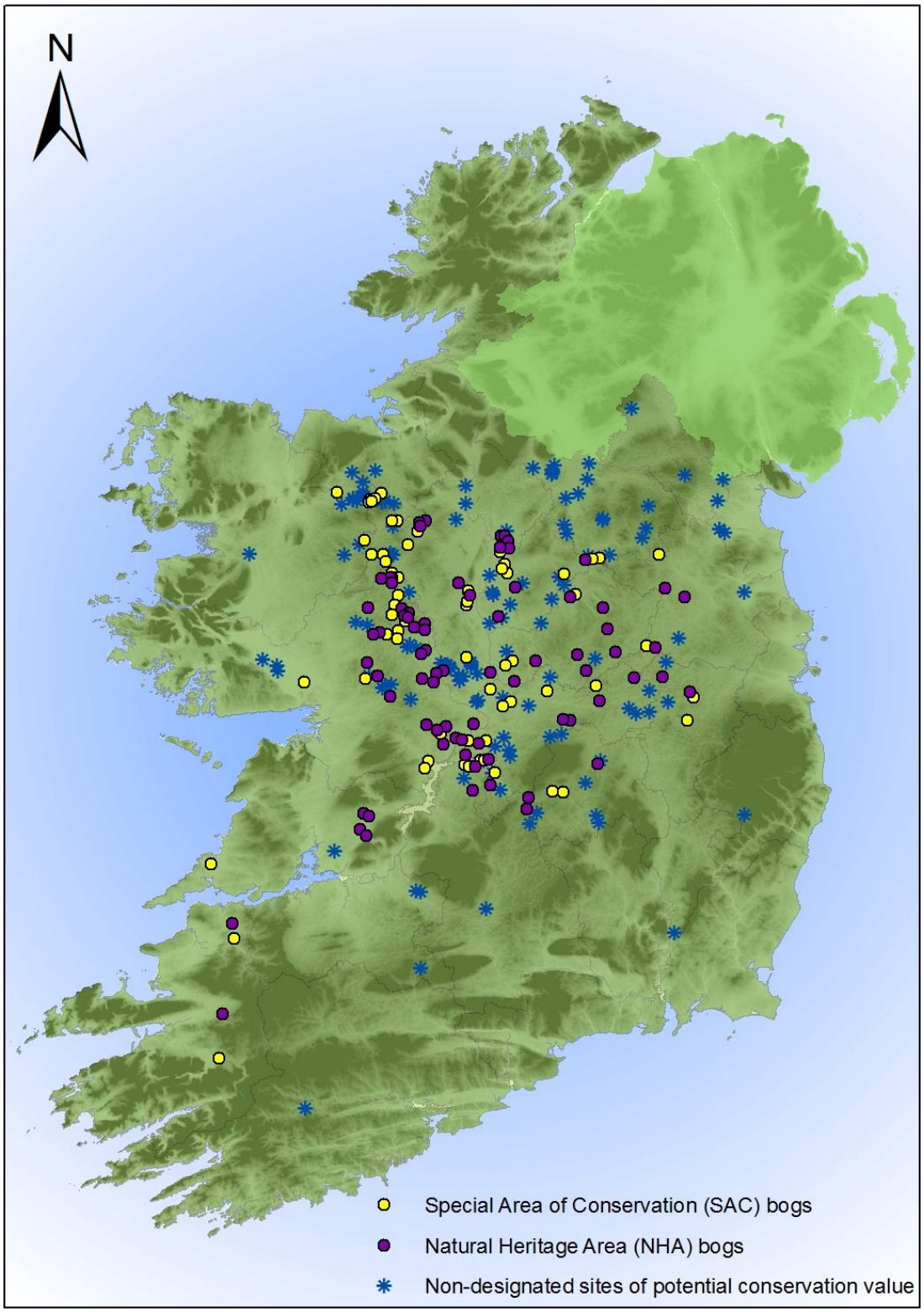
Further, as part of this review, and in response to submissions from the TCCA, site specific field hydrogeological investigations on the effects of localised cutting on bog hydrology have taken place with reference to peat substrate, hydrogeological conditions and extraction techniques employed (DAHG, 2014b; DCHG, 2017; Flynn et al., 2015; Mackin et al., 2017b). These investigations have revealed the possibility for turf cutting to be carried out alongside conservation at a number of SAC sites opening up the possibility for Article 6(3) to be invoked for these sites (DCHG, 2017).

3.12 New scientific techniques on raised bog restoration

The *Scientific basis for Raised Bog Conservation Study* has used new scientific techniques in combination with hydrological investigations to predict restoration potential and the findings have contributed to a reappraisal of prevailing concepts underlying active raised bog occurrence (Mackin et al., 2017b). LiDAR is a remote sensing technology that can measure vertical surface elevation and involves the collection of data using a low-flying aeroplane (DCHG, 2017). This technique provides more detailed and accurate raised bog topographical maps than can be collected by conventional surveying techniques (ibid.). This detailed topographic survey data from LiDAR data has contributed to a new model of raised bog eco-hydrological conditions and restoration potential based on the slope of raised bogs, rainfall and drainage patterns (Mackin et al., 2017b; DCHG, 2017). The model suggests that conventional measures, such as limiting further turf cutting or installing dams to raise water levels on high bog, will not sufficiently address

[1] See http://rbc.cfram.com/

Irelands obligations to meet active raised bog lost since the Directive was put in place (Flynn et al., 2015; Mackin et al., 2017b). These findings have contributed to proposals to restore cutover raised bog and formerly afforested high bog (Flynn et al., 2015). As developed land, such sites would not normally in the past have been associated with priority raised bog habitat. The importance of cutover to a raised bog eco-hydrological system and to restoration of active raised bog on high bog is also increasingly emphasised (Coillte, 2016; DCHG, 2017; Mackin et al., 2017a). Furthermore, depending on the extent of peat extraction and site-specific eco-hydrological characteristics, in some instances cutover has greater capacity for restoration of active raised bog than other sites classified as degraded raised bog (DCHG, 2017; Mackin et al., 2017a). Preliminary results indicate certain cutover sites to be capable of regenerating to support peat accumulating plant communities comparable to active raised bog, albeit on a longer time frame of between 50 and 100 years, relative to degraded raised bog which is, by definition, capable of restoration within 30 years (Mackin et al., 2017a). Cutover is also more challenging to restore than degraded raised bog and uncertainties remain about its potential for restoration to active raised bog (DCHG, 2017). These findings have implications for current definitions of active raised bog and degraded raised bog under the EU Habitats Directive and for meeting obligations on compensatory habitat (Fernandez-Valverde et al., 2014).



Map 3-3 Sites considered by the Scientific Basis for Raised Bog Conservation Study. Source: RPS Consultants (2017) on behalf of NPWS.

3.13 Policy implications of the raised bog conservation study

The government-commissioned scientific review on the Irish peatlands resource informed the publication of the *Draft Bog SAC Management Plan* (DAHG, 2014b). This plan anticipated continued challenges to the network by the TCCA and turf cutting communities, and the need to find compensatory habitat for active raised bog lost due to continued cutting. Consequently, this Draft Plan raised the possibility of continued cutting occurring through partial de-designations through Article 6 (3), and, even more controversially, of invoking de-designation through Article 6 (4) consents. In addition, under the Peatlands Council a *National Peatland Strategy* (DAHG, 2015) was published in 2015. This strategy and the review of the NHAs (2014) put forward a reconfigured network of raised bog NHAs) which are designated under Irish law. These plans proposed a reconfigured NHA network, with increased use of public peatlands owned by Bord na Móna and Coillte and included proposals to upgrade certain NHAs as SACs, alongside selected de-designations allowing for relocation of turf cutters from SACs (DAHG, 2015; DAHG, 2014b). The reconfigured NHA network would bring down the numbers of turf cutters affected by designation significantly.

The publication of the final *Raised Bog SAC Management Plan* (DCHG, 2017) reveals that the State intends to proceed with attempting to invoke Article 6(3) and 6(4), for turf cutting to continue, alongside conservation, at 14 SAC sites. It states that two new SAC sites of high ecological value are being restored for inclusion in a revised SAC network. These sites were previously drained for production purposes by Bord na Móna but were not cut and therefore have significant restoration potential (Bord na Móna, 2016; DCHG, 2017). The plan also states that there is also a need to include restoration of cutover to meet the EU targets on active raised bog. These outcomes illustrate the contingent nature of scientific rationality for the management of these sites as protected areas. The increased use of previously developed and publicly owned sites in the network, and the move towards partial de-designation represents a transition to more socially considerate conservation policies. Nevertheless, it also demonstrates the inability of the State to regulate a significant proportion of private bogs subject to

turbary rights and the decline in the regulatory authority of the State in terms of operating the cessation programme at these sites. The barriers to, and potential for, alternative more environmentally sustainable solutions to regulation of these sites is explored in Chapters six and seven.

3.14 Chapter Summary

This chapter has presented an overview of the environmental, cultural-historical and socio-economic context for the conservation and restoration of raised bog SACs in Ireland. The influence of turbary rights and State policies on peatlands exploitation was discussed. Previous literature addressing changing values in Irish peatlands regulation and legitimacy questions in the regulation of Irish raised bogs was critically reviewed. The context and rationale for a policy transition from productive values to the ecosystem services approach was presented. The policy context for Irish raised bog regulation and the implications of new scientific methods on meeting EU obligations on conservation and restoration was also discussed.

Chapter 4: **Methodology**

4.1 Introduction

The poststructuralist underpinnings to this research, and its relevance to the deconstruction of stakeholders' power-knowledge relations and their contested rationalities on nature conflicts are described in this chapter. The rationale for adopting a Foucauldian discourse analytical approach and the methods underlying its application to the deconstruction of Irish raised bog regulation are also presented. The philosophical basis to Q Methodology as a post-positivist approach to discourse analysis is outlined, as are the various steps to Q Methodology, the methods of evidence collection and the ethical considerations of the research.

4.2 Epistemology and ontology

Epistemology is concerned with the nature of knowledge production. The critical geographical approach adopted in this study draws upon poststructuralist approaches to researching the conflict on peatlands regulation. Post-structuralism is a form of analysis that raises questions about ontology and claims to truth. Contrary to structuralism's presumption of the primacy of structures (e.g. capitalism) in society in determining social order, poststructuralists consider the influence of structures in social order more subtly through their manifestation in languages and practices (Hubbard et al., 2002). Post-structuralism is associated with the work of Derrida, Foucault and others and is concerned with the instability of dominant knowledge claims that are taken for granted. For example, Foucault's research revealed how madness and sanity are categories that have been socially and discursively constructed and whose interpretations vary over time and space (ibid.). Foucault's idea that truth is an effect of power and is formed through the daily enactment of language and practices which enforce social order, has been highly influential in the social sciences (Fletcher, 2017). Such

research has a concern with exposing the value-laden nature of language as discourse and discursive practices and the power relations inherent in their manifestation. It is recognised that a gap remains on existing case study research examining the mutual constitutionality of the relationship between knowledge and power in environmental conflict and in resistance to regulation (Jepson et al., 2012; Robbins 2006; Rutherford, 2007; Van Assche et al., 2017).

Dominant contemporary accounts of environmental and ecological crises tend to adopt asocial frameworks and ignore the influence of political forces and power relations (Forsyth, 2008; Robbins, 2011). Political ecologists draw attention to how uncritical environmental science can give rise to environmental narratives and beliefs that are too simplistic. This research aligns with political ecologists' concerns by explicitly illustrating the political and social dimensions of environmental change. Research in this vein openly considers the winners and losers in environmental conflict, and the injustices within existing approaches to inform more socially and ecologically resilient ways of doing things. Such an approach is apposite in a context where despite many global scale agreements, including the EU Habitats Directive, there has been little success in addressing the global ecological and environmental crisis. It is increasingly recognised that the social aspect of the implementation of nature conservation is amongst its most challenging element (Adams, 2004; European Commission, 2016; Robbins, 2011; Tovey, 2009a; West, 2006;).

4.3 Positionality and reflexivity

Contemporary approaches to human geography contend that knowledge is both socially and spatially situated and is dependent on the location in which it is produced (Hubbard et al., 2002). Geographers are therefore expected to adopt a reflexive approach to research and to consider how their own views and histories affect their positionality in relation to a research problem. Personal values, subjectivities and identity play a role in the framing, conduct and write-up of research (Cloke et al., 2004). Prevailing approaches to environmental science and policy contain inherent biases reflecting the tendency to rely on positivist

frameworks for research (Castree, 2005; Ellis et al., 2007). In adopting a critical geographical perspective, this research has adopted an openly ideological framework to exposing the role of power relations, inequalities and politics in the deconstruction of the collaborative process for Irish peatlands regulation. These concerns and their mutual interdependency are to the fore in the dissection of the diverse stakeholders' knowledge claims on implementation of the Habitats Directive in this thesis. This reflects the ambition of this research to integrate these concerns into more equitable, and therefore more legitimate, solutions to the conflict on the regulation of the raised bogs. This thesis contributes to a methodological gap on the framing of environmental analysis and policy towards alternative solutions that address the injustices associated with the failure to address social barriers to implementation of regulation.

In guarding against the pre-determination of research outcomes reflecting subjective research biases, this research has adopted a self-reflexive approach to the methodology. To address issues of credibility and reliability, triangulation across a multitude of theories, methods and data forms has been key to the overall approach. The dual adoption of Foucauldian discourse analysis and Q Methodology has provided checks and balances associated with their strengths in deductive and inductive analysis respectively. In Paper One, the deductive element to Foucauldian discourse analysis was balanced by the inductive insights elicited from the evidence of intertextualities across the various data sources and the accompanying analysis of discursive practices (Sharp & Richardson, 2001). The inductive strengths of Q methodology which guided the analysis in Papers Two and Three, was balanced by the deductive analysis through the lens of Foucauldian governmentality.

4.4 Q methodology: A mixed methods approach to analysis of subjectivity

Q methodology is a mixed-methods approach that links traditional positivist approaches with post-positivist approaches to policy critiques, enabling

subjective perspectives to be measured quantitatively (Durning, 1999; Ellis et al., 2007). Although the subjectivity of the researcher necessarily influences the design and analysis, Q methodology has been acknowledged for its contribution to more democratic research design due to its ability to surrender the monopoly of control in the relationship with the researched (Barry & Proops, 1999; McKeown &Thomas, 2013; Robbins & Kreuger, 2000). This is evident, for example, in the naturalistic approach to the Q sample. Statements are derived from the language of the participants through pre-sort interviews, and can also draw on other naturalistic sources in social media commentary, consultation processes and media debates (McKeown & Thomas, 2013). The statistical element to Q methodology allows quantitative insights into dominant and marginal subjectivities which are triangulated with, and validated by, the pre-sort and post-sort interview data in the analysis. This structured approach to discourse analysis enables the identification of convergence and divergence of discursive subjectivity amongst participants, thus providing inbuilt checks and balances on issues of credibility and reliability (Ellis, 2007; Jepson et al., 2012; Lansing, 2013; Robbins 2006). Papers Two and Three furthermore provide two separate, but linked Q studies, which respectively focus on the distinct viewpoints of turf cutters and socio-economic and environmental-ecological professionals. The data sets for these distinct but linked groups provide evidence to cross-reference the viewpoints at ground level with those of professionals.

Q methodology was originally developed in the field of psychology and is now applied to a wide range of issues in the social and environmental arena. It was first introduced in the 1930s by William Stephenson who held two PhDs, in both psychology and physics, and in 1953 he published *The Study of Behaviour: Q Technique and Its Methodology* (Robbins & Kreuger, 2000). It is named Q methodology to distinguish it from standard approaches to research in social science through 'R-methodology' such as surveys and opinion polling which often align with more positivist ontologies. Stephenson believed subjectivity could not be measured through methods that remove the subject's frame of reference from an inquiry (McKeown & Thomas, 2013). Stephenson challenged two longstanding concepts of subjectivity in science as follows: (a) subjectivity is

immeasurable because it reflects pure mental experience in the unconscious mind (b) subjectivity reflects external attributes and can be measured by these traits (e.g. wealth or gender) (Robbins & Kreuger, 2000; Watts & Stenner, 2012). Stephenson's pupil Brown describes this position on subjectivity as follows: 'a person's subjectivity is merely his own point of view. It is neither a trait nor a variable, nor is it fruitful to regard it as a tributary emanating from some subterranean stream of consciousness. It is pure behaviour of the type we encounter during the normal course of the day' (cited in Watts & Stenner, 2012, p.26).

4.5 Foucauldian discourse analysis

Approaches to discourse analysis vary from reliance on the analysis of text alone to Foucauldian approaches that embrace discursive practices alongside text. These differences reflect the varying approaches taken to the definition of discourse in the literature. Essentially, discourse is understood to be synonymous with discussion and discourse has been defined as the sum of communicative exchange (Sharp & Richardson, 2001, p. 195). Understood in this way, a discursive approach to analysis can help to expose the value-laden nature of texts and linguistics and help to reveal inequalities in power (Hubbard et al., 2002; Sharp & Richardson, 2001). Foucauldian discourse analysis informs the principal methodological philosophy applied in paper one, and in papers two and three this approach is complemented by Q methodology, which itself, relies on discourse analysis.

Critical geographers and sociologists believe that people act in accordance with discourses they have internalised over time and therefore highlight the need to consider discursive practices, alongside text, in discourse analysis (Castree, 2005; Hajer, 1995; Robbins, 2011). Such approaches are often informed by Foucauldian approaches to discourse. The idea that knowledge and power are mutually constituted is central to Foucauldian discourse analysis. Therefore, discourse analysis can reveal how power operates, and how it is legitimated or resisted through discourses and practices associated with expert knowledge or

local knowledge. Foucault understood discourse to extend beyond communication into social systems and practices and recognised that discourse is shaped by the relations between power and knowledge (Sharp & Richardson, 2001). Discourse analysts in geography for example, envisage society as comprising multiple discourses that are sometimes contradictory and sometimes complementary (Castree, 2005). According to Hajer (1995, p. 44) a research methodology that takes a Foucauldian approach interprets discourses as 'an ensemble of ideas, concepts and categorizations that are produced, reproduced, and transformed in a particular set of practices through which meaning is given to physical and social realities'. Therefore, it is imperative to examine how norms are upheld by key actors both through discourse and discursive practices and the nature of forces seeking to contest or resist these constructs. Given that discursive practices are manifested in policy enactment, institutional analysis is central to the examination of discursive practices and to Foucauldian discourse analysis (Ettlinger, 2011; Hajer, 1995; Hajer & Versteeg, 2005; Sharp & Richardson, 2001).

In this study, attention is paid to the power relations inherent in the discourses and discursive practices embedded in regulatory policies and governance and in its resistance (Edwards et al., 2001; Foucault, 1991b; Hajer & Versteeg, 2005; Sharp & Richardson 2001). The analysis of the strategic or tactical dimension to environmental policy and in dominant and marginalised discourses of peatlands regulation provide a lens on the inter-relationship between power-knowledge reflected in these discourses (Hajer & Versteeg, 2005; Rutherford, 2007; Sharp & Richardson, 2001).

4.6 Methods of evidence collection: Paper one

4.6.1 **Secondary data collection**

The first stage of the research involved the collection of secondary documentary data relating to the period between April 2011 (when the Peatlands Council was first established) and July 2013. These included press releases published by the

DAHG, policy documents relating to raised bog regulation and Dáil (parliamentary) and Dáil Committee debates relating to the period concerned. Key policy documents published by the State included the *National Peatlands Strategy: Terms of reference and guidance (2011)* and the *Quirke Report (2012). The Quirke Report* provides direct insights into turf cutters' subjectivities on regulation as it provides a record of facilitators' notes on meetings with turf cutters affected in each bog. The publication by government of the *National Raised Bog SAC Management Plan, Draft for Consultation* (DAHG, 2014b), (which was published outside the data collection period, during the write up phase of paper one), was also drawn upon in the analysis due to its value in providing analytical insights into the impacts of the participatory process on policy development. A range of documents by the TCCA (published on its website) was accessed and are listed in the reference list. These include its plan entitled *TCCA proposals on 57 raised bog complexes to EU Commission and Irish Government, Revision* 6 (TCCA, 2012a). The TCCA claims this plan resulted from its consultations with bog communities and it represents the TCCA's alternative approach to implementing the Habitats Directive. These documents provide detailed insights into the TCCA's critique of regulation and its proposals on raised bog regulation.

The parliamentary debates provided insights into the political construction and contestation of policy development. This included insights into the role of Deputy Luke 'Ming' Flanagan (now a MEP), who was then an Independent TD (Teachta Dála or parliamentary representative) who had advocated for turf cutters' rights in his campaign for election and who also acted as the public relations officer for the TCCA. Other secondary documentary sources included contemporary newspaper accounts of the dispute published during the period concerned.

4.6.2 **Primary data collection: Choosing the sample (Paper one)**

In addition to the secondary data discussed above, further evidence of how the TCCA mediated and contested the policy process was provided through ethnographic field observation at one of a series of community consultation meetings organised by the TCCA. TCCA activists attended this meeting, along with politicians from mainstream Irish political parties, along with a crowd of

approximately 200 people. Acting as an observer at this meeting, notes were taken by the researcher on the speeches and the comments and questions of turf cutters and farmers in attendance, along with the responses of the panel of activists and politicians.

Further primary evidence involved a lengthy semi-structured interview with a contractor and activist involved in the TCCA in June 2013. This took place at the edge of a SAC bog in County Galway near where illegal cutting was taking place. Access was gained to the site (which was being patrolled at the edges by the Gardaí) once the author identified herself as a researcher. The researcher did not take part in any of the activities or in the protest at the site, being merely there to observe the behaviour of the protesters and to gain whatever insights possible, for example the range of age groups (which ranged from children to elderly) supporting the protest. Initially the TCCA interviewee assumed the researcher was an NPWS ranger, but was welcoming once given an explanation as to the nature of the research.

Additional insights into the grassroots perspective of the conflict were gained through 17 short informal interviews with turf cutters and their supporters conducted between June and July 2013. The main purpose of the interviews carried out at this stage was to gain direct ethnographic insights and understanding into the worldviews of protesting turf cutters. Eleven interviewees were randomly selected while they were protesting on behalf of turf cutters facing trial outside Galway City Courthouse in July 2013. Given the ethical considerations around recording illegal activity, it was decided not to digitally record these interviews or to use direct quotes from field notes of these interviews. Short informal interviews were also conducted with six turf cutters harvesting turf at a non-designated blanket bog. The researcher engaged in informal conversation with these turf cutters, while assisting them with harvesting activities on the bog; this was useful in gaining insights into the cultural activities associated with turf cutting (see Figure 4-2).

Figure 4-1 Peaceful protest outside Galway City Courthouse on 2nd July 2013. Source: Author

Figure 4-2 Harvesting turf in 2013. Source: Author

4.7 Methods of evidence analysis (paper one)

The process, method and structure of the discourse analysis followed Sharp and Richardson's (2001) approach to Foucauldian discourse analysis as both text and institutional practices. This involved the development of a critical narrative focusing on the deconstruction of power relations between the State and the TCCA as reflected in changing policy discourses and institutional practices underpinning implementation of the Habitats Directive. First, this involved analysis of the dynamic representation of the three key themes of participatory, democratic and scientific legitimacy in the rhetorical claims of the State and the TCCA as reflected in their respective policy positions. This textual analysis was drawn from the primary and secondary documentary sources referred to in the previous section and attention was paid to the inter-textuality of these documents

(Bryman, 2008; Sharp & Richardson, 2001). Secondly, the difference between the rhetoric on scientific, participatory and democratic legitimacy and the manifestation of these themes in institutional practices and policy outcomes was analysed. This included a focus on the timing and sequencing of discursive claims and the influence of these three norms of legitimacy in key events, institutional changes and policy outcomes. The use of interviews and ethnographic research helped to provide checks and balances to underpin this approach (Bryman, 2008).

4.8 Methods of evidence collection: Q Methodology (Paper Two and Paper Three)

Q methodology is recognised for providing a scientific approach to subjectivity through enabling the shared worldviews and diversity of individual accounts to emerge in a structured way through statistical analysis (Eden et al., 2005; Robbins & Kreuger, 2000). Traditional survey research measures patterns between people across variables selected *a priori* by the researcher. Instead, Q methodology measures the interrelation of subjective statements across individuals through statistical factor analysis. This allows for the holistic modelling and comparison of dominant discourses and provides insights into both dominant and more marginalised worldviews within the study group. Q methodology therefore permits comparison of attitudes, or values, irrespective of the number of people who populate them and is therefore amenable to small sample sizes or person-sets (McKeown & Thomas, 2013). In contrast to survey research which is mainly concerned with the proportion of a population holding a given attitude, the major concern of Q is with providing deep insights into world views, in other words, how and why people believe what they do (Brown, 1993). In papers two and three, Q methodology underpinned the approach taken to the Foucauldian analysis of turf cutters and professional stakeholders' viewpoints respectively. Q methodology is widely used in the social sciences for the qualitative measurement of attitudes and values but remains underutilised for its potential in

revealing power relations in natural resource and environmental conflicts (Brannstrom, 2011; Clare et al., 2013; Lansing, 2013; Robbins; 2006).

In Q methodology, subjectivity is assumed to be communicable and is defined as a person's own point of view or self-referent perspective about something real or perceived at a particular moment in time (McKeown & Thomas, 2013; Robbins & Kreuger, 2000). In this way therefore, it can be modelled through the rank–ordering of a purposefully sampled set of stimuli such as subjective statements relating to a social or environmental conflict (McKeown & Thomas, 2013). In terms of this research, established procedures in Q methodology were followed and the overall process was used reflexively.

The procedures themselves can be divided into three main steps: (a) establishing the 'concourse' i.e. a set of statements representing the sum of discourse on the research topic; (b) developing the Q sample which involves narrowing down the concourse to a representative and manageable set of statements; (c) allowing participants to sort the statements from the q sample into a grid of numbered columns ranging from positive to negative (McKeown & Thomas, 2013). The Q sort results are then analysed using correlation and factor analysis to identify shared discourses on the topic**.** The application of these procedures in this research is outlined in the following sections. As Paper Three involved a continuation of Paper Two, the process involved in the generation of the concourse of statements, its reduction into a Q sample and the use of a forced distribution is common to both papers.

4.8.1 **Methods of Evidence Collection for the Concourse (Paper Two and Paper Three)**

Given the principle of self-reference intrinsic to Q method, ideally concourses are composed of statements that are 'natural'. In other words, statements are in the language of the diverse parties to concourse (McKeown & Thomas, 2013; Watts & Stenner, 2012). This is in keeping with the inductive basis to Q and with the need to provide a comprehensive representation of the debate (McKeown & Thomas, 2013). A strength of the naturalistic approach to concourse

development is in its role in bringing the viewpoints of research participants to the fore in the development of the concourse. Naturalistic concourses can be fashioned in a number of ways through personal interviews or written or verbal narratives, for example from documentary or media sources (McKeown & Thomas, 2013). Developing the concourse of statements and the Q sample was a lengthy iterative process which proceeded by attention being paid to key stakeholders' construction of the debate. Interviewees and other naturalistic data sources, were selected to reflect the range of socio-economic and environmental-ecological viewpoints on implementation of the Habitats Directive on Irish raised bogs. Theoretical ideas also influenced development of the concourse, in particular Robbins (2006) ideas on environmental knowledge as situated, and influenced by daily experience of politics and governance.

Twenty-one semi-structured qualitative interviews were conducted between August and September 2014 and were recorded (except two as permission was not granted) and transcribed. Interviewees included eight turf cutters in areas directly affected by the ban on turf cutting (six at one SAC and two at another SAC site, both in the Irish midlands), and six turf cutters living just outside designated SACs in the midlands. This latter group was identified through attendance at a community event celebrating traditional turf cutting. Other key actors involved in peatlands regulation were also interviewed at this stage including two members of the Peatlands Council, two independent ecologists, one NPWS employee and two further informal interviews and email exchanges took place with two other ecologists. This collective ensured that key areas of disagreement and debate between regulators and turf cutters were included in the concourse. Attention was paid to triangulate the statements from naturalistic sources with the peatlands policy literature and archival searches on social media sites of turf cutting groups and relevant environmental NGOs. These included searches on Facebook sites of the environmental NGO, An Taisce (The National Trust) and the Kildare Turf Cutters Association, Barroughter and Clonmoylan Bog Action Group Facebook sites and boards.ie. Debates on the conflict on radio and television also provided sources. The primary and secondary sources used for

the first paper also provided insights into the development of the concourse and helped to ensure comprehensiveness as well as addressing potential gaps.

In terms of statement generation for the concourse, statements were elicited following the identification of prominent themes and sub-themes across the range of data sources reflecting the range of socio-economic and environmental-ecological opinions on implementation as described above. Two prominent themes of knowledge and governance were identified and key subthemes under knowledge included local/professional knowledge on ecological, socio-cultural and economic aspects of raised bog peatlands. Key subthemes under governance included local/professional knowledge of peatlands policy and politics. The concourse was defined as 'Professional/local environmental subjectivities relating to knowledge and governance of the EU Habitats Directive on Irish raised bogs'.

Figure 4-3 Community event featuring turf footing competition. Source: Author.

4.8.2 **Methods underlying the selection of the Q Sample (Paper Two and Paper Three)**

The goal of the Q sample is to provide a comprehensive, albeit manageable, representation of the concourse. As discussed in the previous section, major themes and sub-themes were identified to inform development of the concourse. In developing the Q set, statements from the concourse were sampled relative to each theme and sub-theme in a rigorous, systematic and exhaustive process to ensure comprehensive coverage of the sub-themes and in order to avoid repetition of similar ideas. Two main axes of inquiry were developed to progress the development of the Q sample. These were (a) local/professional environmental subjectivities on daily ecological, socio-cultural and economic knowledge of peatlands and (b) local/professional knowledge relating to governance through the daily application of peatlands politics and policy. Statements remain faithful to their original sentiment, and as a result some are lengthy (some statements required editing to ensure clarity). An initial pilot of 52 statements with five turf cutters, an NPWS employee and an ecologist was conducted in December 2014. These Q sorts and post-sort interviews took one and half hours on average to complete with each participant. This process revealed that the Q sample of 52 statements still contained some elements of repetition and redundancy, therefore on the basis of the feedback received through the pilot sort it was possible to reduce it down to 36 statements [See Appendix B]. Previous research has identified this as a manageable number of statements sufficient to generate statistically meaningful results (Barry & Proops, 1999; Dryzek & Berejikian 1993).

4.8.3 **Methods of evidence collection through Q sorts (Paper Two and Paper Three)**

Q sorts were completed with turf cutters and with the wide range of socio-economic and environmental-ecological professional stakeholders over the period January 2015 to June 2015. Most Q studies in environmental or land use policy typically examine the viewpoints of a wide range of stakeholders (e.g. Brannstrom, 2011; Iribarnegaray et al., 2014) however, there are a few

exceptions that focus on the viewpoints of one group (e.g. Barry & Proops, 1999; Duenckmann, 2010). Following the dominant trend in the literature, it was initially intended to focus the study on the wide variety of stakeholders, but as the research progressed, it became clear that the complexity of discourses within the turf cutting group and the professional group required their own in-depth studies. Throughout the field work the researcher had discerned a general pattern of divergence between the socio-economic stakeholders and environmental-ecological professionals on key issues of relevance to implementation. However, through the process of collection of data relating to the individual Q sorts and the rich qualitative data through interviews, it was also evident that there was significant divergence within the two sectors on approaches to implementation. Therefore, rather than examining areas of polarisation and consensus between socio-economic and environmental-ecological stakeholders along the lines of the previous literature, the researcher identified an opportunity to analyse the consensus and divergences in worldviews within these two groups respectively through two separate Q studies. This provided scope for indepth analysis of the role of local knowledge and expert knowledge respectively in two separate, but linked, publications contributing to this article-based thesis. Furthermore, the researcher believed this approach would provide scope to address the gaps in the literature on the subtle or hidden influences of power-knowledge (Robbins, 2006) in structural imbalances in collaborative environmental governance (see Section 2.11). Therefore, the Q sorts for turf cutters and professional stakeholders, applying to paper two and three respectively, were analysed separately.

4.8.4 **Choosing the sample of turf cutters for Q sorts (Paper Two)**

The Q sort with sixteen turf cutters was administered in person and was followed by an individual post-sort interview or focus group interview. The sample size was small which is appropriate to Q methodology. Q methodology avoids large sample sizes in favour of smaller purposive samples in keeping with its objective of intensively researching the construction of worldviews of a specific category of people, rather than with understanding opinions across populations (Lansing,

2013). Given the ethical and access issues around researching illegal activities, the hotly contested SAC sites where protesters continued to cut turf were eschewed in favour of other areas that provided access to ground level discourses of relevance to regulatory legitimacy. High profile members of the national pressure group, the TCCA, were not selected due to the focus on ground level discourses in this stage of the research. Given the large numbers that had opted for financial compensation it was evident this group was of minor relevance to the target population on diverse ground level viewpoints on achieving regulatory legitimacy.

The final sample included eight 'relocators' that had previously protested against the ban on turf cutting and three 'ineligible compliers', i.e. turf cutters that had ceased cutting but remained dissatisfied with policy due to their ineligibility for the compensation package. These participants were all associated with an area of compliance and were identified with the assistance of a senior regional staff member in the NPWS who was contacted by email and by telephone. The assistance of the leader of the turf cutting community was particularly important in gaining practical access to this group. The turf cutting leader was liaised with directly by email and telephone to agree individual slots for each turf cutter for the Q sort and post-sort interview. The sample also included five 'self-identified objectors' to cessation regulation from areas close to SAC bogs. Most of this latter group had already been identified through the researcher's previous attendance at a community event in the midlands in August 2014 (celebrating turf cutting) to carry out interviews for concourse construction.

4.8.5 **Carrying out the Q sort with turf cutters (Paper Two)**

The sixteen turf cutters were asked to rank-order the 36 statements from *least in agreement (-4) to most in agreement (+4)* based on their personal views on the implementation of the EU Habitats Directive on raised bogs using the sorting grid in Table 4-1. [see also Appendix C].

-4	-3	-2	-1	0	1	2	3	4

Table 4-1 Q Sort Grid

The Q sorts with the eleven compliers were conducted in a room in the local heritage centre managed by the NPWS. Turf cutters were familiar with this as a community space, and they had also previously attended numerous meetings with officials aimed at resolving the turf cutting issue in the room used. It took on average 30 minutes to carry out each Q sort and this was followed by a Q sort interview which varied in duration from 30 minutes to 1 hour. Each of these individual interviews was recorded and transcribed.

The Q sorts with the self-identified objectors took place in a community centre. The researcher contacted the organiser of the turf cutting community event that she had attended in August 2014 (when pre-sort interviews were carried out) and he assisted in organising the meeting with this group. Given constraints of time and access to individual turf cutters, the leader's suggestion of a group meeting was consented to by the researcher. Q sorts were conducted by each member of this group individually in the community centre at the same time and this took 30 minutes. This took place after a short introduction by the researcher on how to complete the sort and on the necessity to complete the task individually. It was clear that turf cutters took the task seriously and some asked questions to clarify the meaning of some statements. This was followed by a post-sort focus group discussion. The focus group was 1 hour in duration and all the turf cutters in attendance contributed to it. The researcher acted as facilitator for the discussion

and it was recorded and later transcribed. The qualitative interviews and focus group provided crucial insights into participants' subjectivities as expressed by these rankings.

Strong familiarity developed with several turf cutters as many were interviewed on two or three occasions. Five compliers were interviewed three times. First, for concourse generation, second after the pilot Q sort and finally in the Q sort proper. Four self -identified objectors were interviewed twice, first individually for concourse generation and secondly in a post sort focus group.

4.8.6 **Use of a forced distribution (Paper two and Paper three)**

The use of a forced distribution (Table 4-1) is typical in Q studies and was used to encourage participants to consider the rankings. Being a relative scale and not an absolute scale, theoretically participants can rank statements in a relative order, even if they agree or disagree with all statements (Barry & Proops, 1999; Iribarnegaray et al., 2014). This was explained to the participants. In practice, participants interpreted zero as neutral, ambivalent or uncertain, with the negative and positive scales relating to relative scales of disagreement and agreement respectively (following McKeown & Thomas, 2013). Consequently, participants did not always stick exactly to the recommended grid design when ranking the statements. Some preferred to add statement cards to the column on the scale that most represented their emotional response, even when it was already full. This is not unusual in Q studies and the PQ Method software (Schmolk, 2014) allows for deviance from the forced distribution (Barry & Proops, 1999). This is because the range and distribution shape are irrelevant to the factors that emerge, rather it is the pattern of distribution that counts (Watts & Stenner, 2012). Both the turf cutting group and the professionals included participants that conformed to the distribution and those that did not.

4.8.7 **Methods of evidence collection: Choosing the sample of professionals for Q sorts (Paper Three)**

Eighteen diverse participants were identified through purposive non-random sampling to rank-order the 36 statements in the Q sort grid. The participants were selected through the snowball technique and represent ecological and socio-economic aspects of Irish peatlands regulation. Access was gained to this group initially through a key member of the Peatland Council who suggested a range of names associated with both the socio-economic and environmental ecological aspects of the Peatland Council. All of those contacted consented to be involved in the research and the researcher proceeded to carryout interviews and Q sorts with this group and with others named by this initial list of interviewees. The researcher also gained insights into professionals' views on the debate through attending the *Irish Peat Society Conference* 14th October 2014 and its seminar on *People and Peatlands* at which professionals debated policy issues effecting conservation of Irish raised bogs. Attendance at this event also helped to confirm the relevance of the initial list of interviewees to researching expert views on the conflict. The researcher also emailed other NPWS staff (not directly involved in the raised bog conflict), but on review it was felt that saturation point had been reached in the diverse viewpoints expressed and there was no need to seek out further participants. This approach is in line with Q Method's emphasis on diversity through variability in the person set and with comprehensiveness, rather than with representativeness or quantity (Eden et al., 2005). The final sample of participants involved a well-balanced representation of the varying stakeholders. All actors were paid professionals in their field of work, apart from one semi-professional (unpaid) community actor. This latter actor had many years' experience at leadership level of negotiation on behalf of turf cutters in governance. Given this special status as a community leader, it was decided to include this sort in the analysis focused on professional stakeholders' viewpoints. Due to this actor's dual role as turf cutter and community leader this Q sort had also been included in the group of sixteen turf cutters analysed in the second paper. All participants had knowledge of the governance domain (Brannstrom, 2011). Strong familiarity developed with a number of professionals. For example,

a consultant ecologist and an NPWS employee were interviewed first for the concourse, second for the pilot Q sort and third after the Q sort proper. Others were interviewed twice, including a consultant ecologist and Bord na Móna employee, first for the concourse and second for the Q sort. The researcher also gained insights through informal conversations on the debate by mixing with professionals when attending the conference titled *Peatlands: A new conversation* 7-11th June 2015 in Tullamore, Co. Offaly, which was hosted by the Irish Peat Society.

4.8.8 **Conducting the Q sorts with professionals (Paper Three)**

Q sorts were administered in person (except one) between February and June 2015 and followed by post-sort interview. Respondents were met individually, usually in a coffee shop, hotel or in their place of work. Interviews were recorded and transcribed in fifteen cases, and in three cases notes were taken during interviews. One Q sort was carried out by post and followed by a recorded telephone interview. Three actors did not wish to be quoted directly (two of these did not consent to recording the interview), notwithstanding their consent for the use of Q sort and interviews to inform the research. Participants included environmental NGO representatives, consultant ecologists, Coillte (forestry) and Bord na Móna (peatland) semi-State company employees, NPWS, the Irish Farmers Association (IFA) and the turf cutting community leader. Participants were asked to place the cards in the appropriate box according to their professional views on the implementation of the EU Habitats Directive on raised bogs.

4.9 Methods of evidence analysis

4.9.1 **Correlation and Factor Analysis (Paper Two and Paper Three)**

Turf cutters' rankings of the statements in their individual Q sorts were subjected to correlation and factor analysis using principal components analysis through PQ Method free software (Schmolk, 2014) [see Appendix D]. Five unrotated

factors had eigenvalues above one indicating the possibility of five distinct viewpoints. Different potential factor solutions were assessed. In terms of the theoretical basis to the study and the qualitative insight into worldviews gained from the interviews, it was believed that the two factor solution offered automatically by the software missed the variance in worldviews expressed. A three factor solution was selected as best representing the distinct clusters of multi-subjectivity as expressed by the sample in the Q sorts and pre and post-sort interviews. There were sufficient numbers of individuals (at least two) loading on each distinct viewpoint in this factor and the correlation between factor scores was satisfactory [See Appendix E] (McKeown & Thomas, 2013; Watts & Stenner, 2012). The three factor solution also satisfied Humphrey's rule which states that 'a factor is significant if the cross product of its two highest loadings (ignoring the sign) exceeds twice the standard error' (Brown, 1980, p. 223 cited in Watts & Stenner, 2012, p.107). Therefore, three significant factors, that is, common orderings of statements or shared discourses, were extracted and subjected to varimax rotation, which accounts statistically for the maximum common variance i.e. those views adopted most frequently by the study (see Watts & Stenner, 2012). PQ method created factor estimates via a weighted averaging of the Q sorts (known as z scores) that load significantly on the rotated factors (ibid.). These were converted into factor arrays, providing rankings for each statement in each discourse for interpretation.

A similar procedure was followed for paper three. The ranking of statements by professionals (and one semi-professional) in their individual Q sorts were subjected to correlation and factor analysis using principal components analysis through PQ Method free software (Schmolk, 2014) [See Appendix F]. Three of the unrotated factors had eigenvalues above one, indicating the existence of up to three significant viewpoints. A two factor solution was also assessed but the three factor solution represented the distinct viewpoints expressed in the Q sorts and in the qualitative interviews more effectively. It also had sufficient numbers of individuals loading in each of the three factors. The correlation between factor scores revealed a borderline correlation of significance in the context of this study (i.e. above 0.43) between factor 1 and factor 2, but it was clear from the statistical

results and interview data that these factors represented distinct viewpoints [See Appendix G]. The three factors were extracted and subjected to varimax rotation. Again, the software created z scores, and these were converted into factor rankings for each discourse for interpretation (the factor rankings are presented in the results section of Chapters 6 and 7).

4.9.2 **Methods of evidence analysis: Interpretation of consensual views and factors (Papers Two and Three)**

Q methodology is considered a particularly suitable approach to discourse analysis (Ellis et al., 2007). The analysis section in each paper focuses first on areas of consensual agreement revealed through the statistical analysis [See Appendix J and K] and interpreted with the aid of the post-sort interviews or focus group. This is followed by an interpretation of divergent perspectives revealed through the factor analysis. The interpretation proceeds through reference to the distinguishing statements and highest rankings for each factor (see results section of Chapter 6 and 7 and Appendix H and Appendix I). Distinguishing statements are those that a factor has ranked in a significantly different manner to the other factors. When scores for statements are relatively higher or lower in each factor, these can also inform the analysis, thus allowing for a holistic and nuanced interpretation of the whole factor array (Watts & Stenner, 2012). The statistical element is supported by reference to the qualitative interviews representing defining sorts for each factor and with particular reference to the highest loaders, i.e. those sorts that score highest in each factor. Supporting statements from pre and post sort interviews are referenced in the text in accordance with the relevant code for each participant. Each participant's statistical loading on each factor is revealed in the tables accompanying the analysis. These alignments are discussed, and in a novel approach to Q methodological analysis in environmental geography, the role of confounders (those that load significantly on two factors) in power relations underscoring the policy process is also discussed. The interpretation of the factors is supported by the critical application of governmentality analysis.

4.10 Ethical issues: Anonymity and confidentiality (Papers One to Three)

In terms of the ethical issues of this research, interviewees were given prior information about the purposes of the research and were informed that their viewpoints would remain anonymous and confidential. Informed consent was granted by interviewees and Q sort participants prior to carrying out the interviews and Q sorts [see Appendix L]. Professionals were contacted individually by email and informed about the research in advance of meeting [see Appendix M]. Two community leaders were liaised with by telephone and/or email when arranging meetings with turf cutters. Each individual was also given further verbal information on the research directly prior to carrying out the interviews and/or Q sorts.

Given the highly contentious nature of the conflict it was decided at an early stage not to reveal the exact location of the study areas. This was an important consideration in protecting the anonymity and identifiability of key informants associated with the study areas. In the analysis, interviewees are labelled by organisational affiliation where the employee numbers are sufficiently large to protect anonymity. Alternatively, sectoral affiliation is revealed for those working within smaller organisations. Ethical issues arising in the selection of the sample were previously discussed in Section 4.6.2 and Section 4.8.4.

4.11 Summary

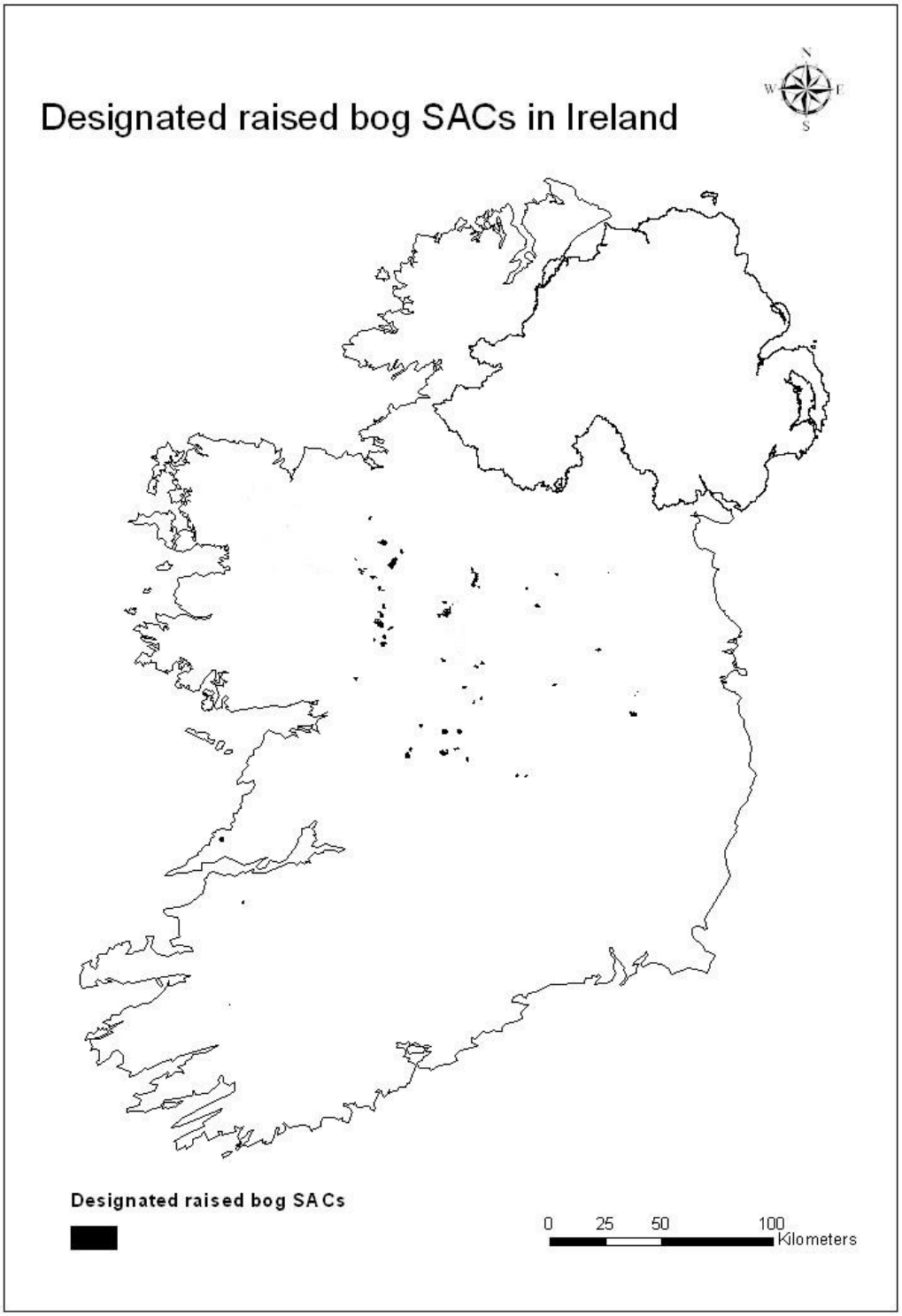
This chapter has outlined the poststructuralist underpinnings adopted in this study and its relevance to the contested rationalities on legitimacy questions underlying peatlands regulation. The rationale and methods underlying Foucauldian discourse analysis and its application to this study have been presented. The philosophical basis to Q Methodology as a mixed methods and post-positivist approach to discourse analysis have also been outlined. The various steps to Q Methodology have been described, along with the methods of

evidence collection and the ethical considerations in the research. The next three chapters present the three articles which form the core discussion and outcomes of this research.

Chapter 5: **Authors accepted manuscript of O'Riordan, M., Mahon, M., & McDonagh, J. (2015). Power, discourse and participation in nature conflicts: The case of turf cutters in the governance of Ireland's raised bog designations. Journal of Environmental Policy and Planning,17(1),127-145. https://www.tandfonline.com/doi/abs/10.1080/1523908X.2014.914895**

5.1 Abstract

This paper explores how participatory processes and the politics of contestation and resistance converge to influence changes in discourses and institutional structures underpinning the implementation of the EU Habitats Directive in Ireland. It highlights the potential of environmental partnership processes to disrupt the usual scalar hierarchy for regulation. The focus is specifically on the designation of raised bogs and the role of power relations and legitimacy discourses in participatory governance processes established by government. In particular, this paper critiques the participatory governance process and attempts to legitimise the enforcement of the Habitats Directive in the face of resistance by the TCCA. Whilst the purpose of the designation is to protect unique habitats, another effect has been to prohibit the traditional right to cut turf on Special Areas of Conservation (SACs). The rationale behind the designation and the mechanisms by which this process has been mediated has been highly contested, with the TCCA claiming the scope inherent in the Directive to consider the de-classification of SACs to have been inadequately addressed by government. The paper concludes with a Foucauldian critique of regulatory authority, legitimacy discourses and agency in the application of participatory processes underpinning environmental regulation.



Map 5-1 Raised bogs designated between 1997 and 2002 under the EU Habitats Directive

Key words: Power, legitimacy, participatory governance, designation, agency

5.2 Introduction

Peatlands (referred to as bogs in Ireland) make up a significant proportion of the Irish landscape. Most of these peatlands have been exploited as natural resources both at commercial level but also at domestic level for use as fuel. In global terms, Ireland's remaining raised bog habitats are considered particularly important due to the presence of active raised bog. In recognition of this, 53[2] raised bog Special Areas of Conservation (SACs) were designated between 1997 and 2002, representing 2% of the available area nationally where domestic cutting can occur on raised bog (DAHG, 2011b). The right to cut peat, or turf as it is known in Ireland, for household use through traditional turbary[3] rights dates back several centuries and is currently an activity associated with low income rural families (Bullock et al., 2012). While the traditional form of turf cutting by hand, has now been almost totally mechanised, its resonance with the rural way of life endures in the image of the communal toil of harvesting turf by hand.

Scientific evidence underpinning conservation policy has established that domestic turf cutting undermines the ecological character of peatlands, in addition to reversing their positive role in carbon regulation (Bullock & Collier, 2011; Bullock et al., 2012). Despite its negative environmental impacts, both the turf cutters and the general public do not necessarily see any contradiction between conservation and what is perceived as small-scale low impact cutting for domestic use (Renou-Wilson et al., 2011). This presents significant challenges for regulation of protected peatland sites in the face of contestation

[2] Originally the number of sites affected was classified as 55 SACs, however three sites were subsequently classified together as one SAC (NPWS, 2012). The TCCA refer to the 53 SACs as 57 sites, arguing that one of the SACs includes five individual bog complexes (TCCA, 2012a).

[3] Turbary is a term used to denote the right to cut turf on a particular area of bog and can apply even when there are no other land rights to the bog. Turf cutting rights are often historic or customary in nature (Feehan and O'Donovan, 1996). The use of the term 'turf cutter' in this paper is consistent with its general use in the policy documentation and refers to those with turf cutting rights, on behalf of whom contractors cut the turf.

and resistance by the Turf Cutters and Contractors Association (TCCA), formed in 1998 to defend the rights of domestic turf cutters. The TCCA has engaged in performative protest through continued turf cutting (Bryan, 2012), which, in combination with delayed enforcement[4] of regulations has contributed to the annual loss of up to 4%[5] of active raised bog on designated sites (Renou-Wilson et al., 2011). In 2011, following the threat of European Union sanctions for non-compliance with the Habitats Directive, the Peatlands Council was established as a mechanism for the inclusion of the various stakeholders affected by the designations (DAHG, 2014b; 2015). This move by the Irish government reflected the international transition towards collaborative environmental governance over the past decade, and is seen as central to efforts to promote participatory approaches to environmental regulation.

In unpacking this approach, this paper addresses the empirical oversight in the analysis of power relations underpinning State-led participative discourses in environmental regulation (Taylor, 2010; Taylor & Lawrence 2012). It adopts Foucault's governmentality perspective which has been identified as an appropriate framework for deconstructing power relations and legitimacy discourses underlying environmental governance (Edwards et al., 2001; Rutherford, 2007; Sharp & Richardson, 2001). Although the scope of this research does not allow for detailed attention to all the actors involved or the analysis of leadership in participative governance, it does address the gap in the literature on the potential of agency and resistance to reshape environmental policy (Davies, 2005; Ettlinger, 2011; Rutherford, 2007). The analysis focuses principally on the discursive claims of those most central to the governmentality perspective i.e. the State as agent of regulation and the TCCA as the interest group for turf cutting subjects. Particular attention is paid to the relative power of the State and the TCCA to affect changes to regulatory policy.

[4] Following an initial ban on turf cutting on the SACs, the government granted a 'derogation' which was not sanctioned by the EU. This effectively gave turf cutters 10 years notice to cease cutting until 2009, when conflict escalated (Renou-Wilson *et. al,* 2011).

[5] This figure relates to the loss of active raised bog on both Natural Heritage Area sites (designated under Irish law) and SAC sites (Renou-Wilson et al., 2011).

The paper is structured as follows. First, it discusses Habermasian and Foucauldian frameworks for community based conservation. Following the methodology, which outlines the rationale for the adoption of Foucauldian discourse analysis, Section 4 discusses the governance of nature in its Irish and EU contexts, which provides a contextual background to the empirical analysis in Section 5. The paper concludes with a Foucauldian critique of the relationship between the construction of legitimacy for nature's regulation and the alteration of the official discourses and the participatory structures underpinning the regulatory process. It also addresses questions concerning the scalar implications of the partnership approach to environmental regulation.

5.3 Participatory discourses and power relations in community-based conservation

Participatory approaches are common across many spheres of rural governance in Ireland, but nature's governance has been characterised for the most part by its top-down approach (Tovey, 2009a). The Irish State's adoption of participatory discourses in the conservation of nature reflects the growing critique of traditional conservation practices in international literature (Adams & Hutton, 2007; Hamin, 2002; Lockwood, 2010; O'Rourke, 2005; Selman, 2009). These critiques draw attention to the coercive approach of the classic nature reserve and its influence in separating people from nature. New participatory discourses emphasise the need for greater consideration of the socio-economic impacts of designation (Adams & Hutton, 2007; Hamin, 2002; Heritage Council, 2009; Lockwood, 2010) and the potential for benefits to conservation that arise from community engagement (Agrawal, 2005; Borrini-Feyerabend et al., 2004; Collier, 2011; European Commission, 2004). International agreements urge conservation authorities to take local socio-economic concerns seriously (European Commission, 2004; Roth & Dressler, 2012), but it has been questioned if such agreements have sufficient impact in practice (Adams, 2004; Roth & Dressler, 2012). Issues relating to displacement are the principal cause of conflict with regard to protected area regulation (Adams & Hutton, 2007; West et al., 2007).

This includes both physical displacement in terms of eviction from home or use of land but also economic displacement in terms of lost income or potential income (West et al., 2007).

A crisis of democratic legitimacy and questions around the effectiveness of relying on State expertise to inform governance has contributed to the transition to collaborative forms of environmental governance (Fischer, 2000; Healey, 2006; Taylor, 2010). This transition has been influenced by Habermasian communicative rationality and empowerment through deliberation and power-sharing between experts and citizens in more adaptive modes of environmental governance (Healey, 2006). According to Habermas (1986), actors in society can seek to reach common understandings through reasoned argument and consensus, as opposed to acting strategically in pursuit of their own interests. Through a Habermasian lens, partnerships facilitate the rescaling of governance downwards, from expert-led approaches towards power-sharing with community representatives in policy-making.

In the collaborative governance of nature, Halpin (2006) highlights that tensions exist between legitimacy claims based on representation or participation and those based on scientific knowledge. Halpin (2006) questions implicit associations between legitimacy and participation, and whether it is appropriate that legitimacy should be derived from participatory criteria in the context of nature's governance. He argues, for example, that arising from the inability of nature to speak for itself, environmental NGOs engage in solidarity with nature, rather than representation as such. On the other hand, the dominance of scientific rationality and marginalisation of local knowledge have been criticised as significant barriers to more democratic approaches to environmental policy making (Fischer, 2000; Healy et al., 2012; Rutherford, 2007; Tovey, 2009a). Thus legitimacy in collaborative governance is not a given, but is a construct that is maintained through power and discourse (Connolly, Richardson & Miles, 2006; Flyvbjerg, 1998).

Foucauldian governmentality provides an appropriate epistemological approach to the deconstruction of claims of legitimacy and devolution associated with

participatory discourses (Edwards *et al.,* 2001). Foucault (1980, p. 93) believed that the functioning of power centred on the 'production, accumulation, circulating and functioning of a discourse' (see also Section 5.4). Foucault rejected many of the traditional assumptions of power. He did not conceive of power as centralised, instead for Foucault, power is multiple and decentralised and is exercised rather than possessed (Flyvbjerg, 2001).

The concept of governmentality offers a framework for the analysis of systems of rule where government indirectly controls population through the employment of discourse strategies aimed at shaping the conduct of citizen subjects and 'governing at a distance' (Dean, 1999; Edwards *et al*., 2001; Herbert-Cheshire, 2006). Governmentality is, therefore recognised as an appropriate framework for the analysis of State regulation (Thompson, 2005). Studies adopting governmentality as a framework for the analysis of environmental regulation have recently begun to emerge. It has been used to demonstrate how participatory processes can successfully influence citizens' behaviour in forestry conservation (Agrawal, 2005) and in the adoption of a path-breaking climate action programme (Rutland & Aylett, 2008). Others have drawn attention to the value of Foucauldian conceptualisations of power to reveal how participatory discourse can be used as a means of government control (Edwards *et al*., 2001; Bickerstaff & Walker, 2005). For example, the framing of environmental problems through technocratic discourse can form significant barriers to equality between stakeholders in environmental partnerships (Healey, 2006). This is a theme which is also strong in critiques of Habermasian deliberation in processes for resolution of environmental problems (e.g. Collier & Scott, 2009; Taylor, 2010). For instance, Taylor (2010, p. 384) has highlighted the contradiction between broadening participation on the one hand, while on the other 'restricting meaningful inclusion' through 'increasing institutional and scientific complexity'. Similarly, Atkinson observes (1999, p. 59) that the discursive context of partnership working 'privileges official discourse(s) over others' (cited in Edwards et al., 2001).

5.4 Methodology

The methodology employed discourse analysis from the perspective of governmentality to deconstruct the State's adoption of participatory discourses for the governance of the protected peatlands. This involved the adoption of a dual approach to discourse analysis, through attention to the power relations embedded in language as discourse and in their associated discursive practices (Edwards et al., 2001; Foucault, 1991b; Hajer & Versteeg, 2005; Sharp & Richardson 2001). Following Sharp and Richardson (2001), the methods employed focused both on text and practice in the construction of the participatory governance process by the State and in its mediation and contestation by the TCCA. The collection of primary and secondary data as outlined in the paragraph below, relate to the period between April 2011 (when the Peatlands Council was first established) and July 2013.

The textual analysis of the discursive claims of the State and the TCCA was drawn mainly from primary documentary sources and particular attention was paid to the inter-textuality of these documents (Bryman, 2008; Sharp & Richardson, 2001). These included government documents in the form of press releases from the DAHG, various relevant policy documents, Dáil (parliamentary) debates[6] and a range of documents by the TCCA which it published on its website. The publication by government of the *National SAC Raised Bog Management Plan, Draft for Consultation* (DAHG, 2014b), albeit outside of the data collection period, has also been drawn upon due to its value in providing analytical insights into the impacts of the participatory process on policy development. The parliamentary debates provided insights into the political construction and contestation of policy development through analysis of parliamentary dialogue. This included analysis of the role of Deputy Luke 'Ming' Flanagan, an Independent TD (Teachta Dála) who had actively advocated for turf

[6] 69 unrevised Dáil Debates and 5 Dáil Committee Debates that referred to the Peatlands Council were analysed.

cutters rights in his campaign for parliament and who also acts as the public relations officer for the TCCA.

Secondary documentary sources included contemporary newspaper accounts of the dispute. Further analysis of how the TCCA mediated and contested the policy process was developed through field notes from ethnographic field observation at one of a series of community consultation meetings organised by the TCCA (Field Journal 1). One lengthy semi-structured interview was conducted and recorded by field notes, with a prominent activist within the TCCA in June 2013 (Field Journal 2a). Additional insights into the grassroots perspective on the conflict were gained through 17 short informal interviews (Field Journal 2b) with turf cutters and their supporters conducted between June and July 2013. Six interviews were conducted with turf cutters harvesting turf at a non-designated bog and 11 interviewees were randomly selected while they were protesting on behalf of turf cutters facing trial outside Galway City Courthouse.

Figure 5-1 Sign denoting court hearing for turf cutters. Source: Author

Figure 5-2 Peaceful protest outside Galway City Courthouse on 2nd July 2013 in support of turf cutters. Source: Author

The research findings in Section 5 are presented in the form of a Foucauldian critical narrative from the perspective of governmentality. The analysis of the strategic or tactical dimension to environmental policy making and the relationship between power-knowledge were important elements of this approach (Hajer & Versteeg, 2005; Rutherford, 2007; Sharp & Richardson, 2001). Attention to participatory discursive practices was drawn through a focus on institutional change and to the timing and sequencing of key events of relevance to the participatory governance process (Sharp & Richardson, 2001). The dual approach to the analysis of discourse, as both text and institutional practices, and the focus on the opposing arguments of the State and the TCCA helped to substantiate the critical narrative (Sharp & Richardson, 2001). The use of interviews and ethnographic research also helped to provide checks and

balances to the reliance on documentary evidence associated with the discourse analytic approach (Bryman, 2008).

5.5 Protected area designations: Science knows best?

In Ireland there have been many disputes around processes relating to heritage management and designation of protected areas. The principal State body with responsibility for implementation of nature designations, the National Parks and Wildlife Service (NPWS), has been criticised for taking an autocratic approach to nature's governance, which has resulted in the exclusion of landowners and community from the designation process (Tovey, 2009a). Researchers have also drawn attention to the tendency of the NPWS to emphasise its scientific knowledge in order to position itself outside political negotiation (Healy et al., 2012; Tovey, 2009a). State bodies, however, argue that the prescriptive top-down character of the nature designation process comes from the way it is designed at EU level (O'Rourke, 2005).

Despite promising consideration of social, cultural and economic factors, Bryan (2012) outlines how the *Natura 2000 EU Protected Areas Scheme* remains a science first conservation initiative. The EU Habitats Directive of the 1990s provided for the creation of SACs for listed species and habitats. Along with Special Protection Areas (SPAs) (already established under the Birds Directive in the 1970s), they form the *Natura 2000* designations. The scientific basis to the selection of these sites and habitats is regularly cited in its legal and informative publications and is considered, as Pinton (2001) argues, essential for the credibility and proper application of the directive (as cited in Bryan, 2012). Once selected, the designations can only be objected to on scientific grounds (Bryan 2012; O'Rourke, 2005). Consequently, many farmers and landowners are extremely frustrated with 'the science-first, top-down, non-communicative manner' in which designations are made and implemented (Bryan, 2012, p. 86). Recent literature has pointed to the need for greater opportunities for local engagement in nature conservation in Ireland (Heritage Council, 2009; Tovey, 2009a; 2009b) and in the ecological restoration of Irish peatlands (Collier, 2011;

Collier & Scott, 2009). Others have cautioned that insensitive conservation policy could provoke more entrenched opposition from those subjected to peatlands regulation (Bullock & Collier, 2011).

Article 6 of the Directive governs the management of Natura 2000 and would apparently allow for some flexibility around social and economic issues in certain designated areas. According to Article 6, these designated areas must be protected from all development that can have negative ecological impacts 'except on public interest grounds including, in some instances, economic and social considerations' (cited in Bryan, 2012, p. 83). Interpretation of the socio-economic scope of Article 6 has, however, been highly problematic in practice (Opdam et al., 2009).

The European Commission (2004) argues that collaborative principles and consideration for economic, social and cultural issues are enshrined in the Habitats Directive. It has also acknowledged that problems arose from the early stages of the implementation of the Directive due to a lack of sufficient consultation with landowners, and a reluctance among national conservation authorities to engage in dialogue until the *Natura* network was complete *(ibid.)*. The *El Teide Declaration* was signed by all members of the EU in 2002, and is cited by the Commission as evidence of its commitment to stakeholder involvement in the implementation of the Habitats Directive (European Commission, 2004). It has been argued, however, that the dominance of scientific rationality underpinning the implementation of *Natura 2000* constitutes a significant barrier to the fulfilment of its participative remit (Bryan, 2012; Tovey, 2009a).

5.6 Foucauldian critical narrative.

5.6.1 **The Peatlands Council as an instrument of power and discourse**

The research findings are presented here in a narrative grounded in the Foucauldian epistemology previously outlined. This section includes an analysis

of the mobilisation of the participatory approach through the setting up of the Peatlands Council, followed by an interpretation of the role of power relations in the decision of the TCCA to leave the Peatlands Council.

In terms of framing the issue from a governance perspective, the choice of representation on the independently chaired Peatlands Council reflects the effort to provide an equal distribution of conservation and socio-economic interests. It included the principal State body with responsibility for nature protection, i.e. the NPWS and Bord na Móna, the semi State company for management of Ireland's peatlands. Two environmental non-governmental organisations (NGOs) were represented, including a representative of the Irish Environmental Network and the Irish Peatland Conservation Council. Turf cutting, and landowning interests were represented by the Irish Farmers Association, Irish Rural Link (an NGO representing rural communities), and the TCCA. Frequent references were made by Minister Deenihan in the Irish parliament to the role of the Peatlands Council in 'independent mediation' of the conflict[7].

The State's discursive framing of the Peatlands Council would appear to have been in line with Habermasian principles of participatory empowerment and discursive deliberation among equal partners. In the official discourse this is illustrated by reference to the role of the Peatlands Council in representing 'the rights and needs of turf cutters' (2011b, p. 3) and as 'a forum for discussion, debate and review of the needs of turf cutters' (ibid., p. 9). In the press release indicating the establishment of the Peatlands Council, the Minister at the DAHG referred to its role in providing for parity in decision making: 'It is vitally important that the views of turf cutters and land-owners are brought much more centrally into decision making on these matters' (NPWS, 2011a). It was indicated that the Peatlands Council would play a role in facilitating relocation to alternative bogs and in examination of 'the scope for amending or adjusting boundaries, extent, number and location of designated peatlands sites' (NPWS, 2011b p. 3). Through this discursive framing, the TCCA would have had a reasonable expectation that

[7] Content analysis of the 74 Dáil debates (see note 5) revealed twenty-one references to the Peatlands Council's independent status.

the Peatlands Council would provide a discursive opportunity structure (Garavan, 2009) to influence decision-making with regard to their key concern on the continued right to cut turf through relocation or de-classification of SACs.

The framing and scope of debates have been identified as critical in determining whether deliberative processes can meet their participative ideals or continue to reinforce established power relations (Bickerstaff & Walker, 2005). Inequalities in power relations were demonstrated at an early stage through State influence on key policies and processes, thus reducing the scope for truly independent mediation of the conflict. This is demonstrated first, by the Peatlands Council's role in reviewing the new compensation package (involving relocation or financial recompense) *after* its initial design by the DAHG (NPWS, 2011b); and secondly, in that control over the terms of reference and responsibility for the *National Peatlands Strategy* was retained by the State (*ibid*.).

Mirroring Edwards et al*.* (2001) the State's retention of control over these policies and processes privileged the official scientific discourse in a manner consistent with the regulatory objectives of the State. This is reflected, for example, by the emphasis on scientific rationality in the *National Peatlands Strategy: Terms of reference and guidance*:

> the Peatlands Strategy ... is required to give direction to Ireland's approach to peatland management, including bog conservation ... This direction will be informed by a scientific review, which is being undertaken as part of the Strategy and by other relevant studies ... (DAHG, 2011b, p. 3).

This was contested by the TCCA which perceived the scientific emphasis to be in conflict with the State's framing of the Peatlands Council as a platform for the inclusion of the socio-economic concerns of the turf cutters. The following quote which was in response to a call for submissions on the proposed Peatlands Strategy, illustrates how the TCCA was willing to engage in adversarial posturing notwithstanding its status as an official partner (Taylor & Lawrence, 2012) on the Peatlands Council:

> The terms of reference of the newly trumpeted 'National Peatlands Strategy' make it crystal clear that the real decisions will be taken by the Minister and a

> ‘Scientific Committee’ ... [and] ... amounts to nothing more than an attempt to retrospectively lend a veneer of democratic legitimacy ... The TCCA will not lend its credibility to such an illegitimate and antidemocratic process (TCCA, 2011b).

It also points to how the TCCA saw itself becoming compromised by the participatory process, and a process of co-option that could result in a neutering of its socio-economic concerns (Bickerstaff & Walker, 2005). This concern also echoes research that illustrates how rural interest groups have found their ideological remit compromised through their alignment with rationalities of government in policy communities, thus compromising the scope for effective opposition (Murdoch, 1995; Taylor & Lawrence, 2012, Woods, 2003).

Different representations of the deliberations held by the Peatlands Council also suggest the discursive exercise of power through the tactical use of language. Following reports of the continued occurrence of illegal turf cutting on the protected bogs, the Peatlands Council held an ‘emergency meeting’ (NPWS, 2011c), indicating its significance at a critical moment in the policy process (Sharp & Richardson, 2001).

After the meeting, the Minister Deenihan published a press release announcing the following: *‘We now have a clear understanding that turf cutting cannot continue on these sites, that the requirements of the Directive must be met’* (*ibid.).* The TCCA had a more nuanced view of the basis to the agreement as illustrated here:

> Our interpretation of the statement released after the 1 June meeting was that no further cutting would take place on the SACs. The twist was that a certain amount of the 55 bog complexes would no longer be SACs after a review and negotiations with the turf cutters to establish from which of the bogs they could reasonably relocate ... It is a twist in the English language but that was what was required to satisfy everyone at the meeting ... (Flanagan, 2011).

In other words, it had been agreed[8] that no turf cutting would take place conditional to a case being put to the European Commission for de-classification of sites where relocation to alternative sites would not be possible. From this perspective, the Minister's statement following the emergency meeting, is illustrative of its circumscription of the discursive field (Foucault, 1991b, p. 60) to reflect the official position on the implementation of the Directive.

Given the general reluctance of protest groups to engage in formal negotiations with government (Woods, 2003), the TCCA's position 'within' the official negotiation process can be interpreted as an experimental attempt to influence policy making. In September, the signing into law of the European Communities (Birds and Natural Habitats) Regulations 2011 gave greater powers to the State to protect SACs (DAHG, 2011a). This contributed to claims by the TCCA, as reported in national newspapers, that the State had no genuine commitment to the June agreement or to the negotiations with turf cutters on the Peatlands Council (Siggins, 2011a; 2011b). The following quote illustrates how the TCCA represented the introduction of the legislation as an instrumental act to pre-determine the outcome of negotiations, and as a key factor in its decision to depart from the Peatlands Council in September 2011:

> On Monday of this week the TCCA walked out of the Peatlands Council. The purpose of the Peatlands Council as we had understood it was to find a solution to this issue. How then can both Ministers ... expect the TCCA to continue with this process when they have already decided the result ... the signing into law of The European Communities (Birds and Natural Habitats) Regulations 2011 will make it impossible for turf cutters to continue a practice which has been carried out for hundreds of years (TCCA, 2011a).

On the other hand, nervousness and uncertainty features in State decision-making around granting partner status to interest groups in partnerships relevant to land-use conflicts (Taylor & Lawrence, 2012). Governments also have the capability of recapturing errant partnership initiatives and emerging discourses

[8] Friends of the Irish Environment (2011), an environmental NGO and member of the Irish Environmental Network, supported the TCCA's interpretation of the June agreement in terms of its basis being in partial de-classification by stating in its letter to The Irish Times on June 14 : 'the Peatlands Council agreement is based on flawed science ... to isolate parts of the protected bogs to allow cutting to continue ...'.

that are contrary to State objectives (Edwards et al., 2001). Davies (2005), for instance, has highlighted the willingness of the Irish State to strategically amend legislation during land-use disputes. From these perspectives, the introduction of the new legislation at that time, could be interpreted as a tactical move to engineer a voluntary departure by the TCCA from the negotiation process. The exit of the most vocal critics of the Peatlands Council would be in line with future attempts by government to re-capture the emerging discourse on de-classification. This interpretation is supported by Minister Deenihan's defence of the legitimacy of the Peatlands Council in October 2011, as a participatory forum despite the exit of the TCCA from formal negotiations:

> The Peatlands Council has shown that it can be … a credible forum where the interests of turf cutters can be represented and accommodated. While one group – the Turf Cutters and Contractors Association – has withdrawn … (Deenihan, 2011a).

As experienced actors within rural policy networks the remaining turf cutting and landowning representatives on the Peatlands Council were likely to adopt a more docile position on the official line on de-classification (Taylor & Lawrence, 2012; Woods, 2003; 2008). The TCCA had indeed distanced itself from Irish Rural Link and the Irish Farmers Association, arguing that these groups did not represent the TCCA or ordinary turf cutters (Bryan 2012; TCCA, 2012b). The apparent attempt to claw back the recalcitrant discourse on de-classification, after the exit of the TCCA from negotiations is supported by Minister Deenihan's assertions here in parliament in November 2011:

> When I was given the responsibility for this matter I contacted the European Commission to see whether we could renegotiate or if there was any wriggle room. I was told there was not ... The European Commission wants us to enforce the law (Deenihan, 2011b).

The discussion above has indicated that legitimacy for policy development through the Peatlands Council was derived primarily through scientific rationality, rather than participatory criteria. It failed to provide a discursive opportunity structure (Garavan, 2009) to the TCCA to influence the official policy position on de-classification through deliberation. This stage of the governance process therefore supports previous research (e.g. Bickerstaff & Walker, 2005; Davies,

2005; Edwards et al., 2001; Flyvbjerg, 1998; 2001; Rutland & Aylett, 2008) on the failure of Habermasian ideals to neutralise power relations in environmental partnerships. Further, it demonstrates how the State used the Peatlands Council as a mechanism to govern at a distance (Foucault, 1991a) through its reinforcement of the centralised role of the State in nature's regulation.

5.6.2 **The TCCA and the politics of contestation and resistance**

Outside of its formal involvement in policy making, the TCCA engaged in a plurality of strategies to mobilise discourse change on the prevalent scientific rationality for implementation of the Directive. These included first, mobilisation of the turf cutting communities to engage with consultation; and secondly, the instrumental use of parliament through debate and protest.

Prior to its departure from the Peatlands Council, the TCCA had commenced a consultation process which included meetings with the peatland communities affected by the designations (TCCA, 2012a). In conformity with Derkzen, Franklin and Bock (2008), this demonstrates how the State-led partnership process acted as a stimulus for grassroots engagement with policy development. According to the Chairman of the TCCA, one aim of its consultation process was to engage in a process of self-help to find reasonable solutions to the conflict that would provide feedback into the Peatlands Council's participatory process (Field Journal 1). During this consultation process the TCCA departed from the Peatlands Council, but it nevertheless continued to meet and consult with each of the peatland communities. The TCCA published its findings in a report entitled *TCCA Proposals on 57*[9] *Raised Bog Complexes to EU Commission and Irish Government (ibid.).*

The TCCA's report (2012a) brought into focus the legitimacy of the selection of the designated sites by alleging failure to notify[10] and consult communities in advance. It also claimed that communities had a lack of trust in the approach

[9] See note 1.
[10] According to Linehan (2005, p 1), in the transcription of the Habitats Directive into Irish law 'landowners were given the right to notification and participation to an extent not laid down or envisaged in the Habitats Directive'.

taken by the NPWS to implementation of the Directive. The report concluded that most turf cutters preferred relocation or de-classification, rather than financial compensation, which it deemed to be inadequate. It also challenged the dominant scientific rationality of nature's governance as exemplified by the selection of SACs on the basis of scientific criteria alone. It argued that this had exacerbated the displacement effects and spatial inequities of designation in disadvantaged rural areas. Further, the report cited the practical impediments to finding relocation solutions in areas of high conservation value where designations were spatially concentrated.

The TCCA (2012a) presented proposals which it claimed derived from its consultations with turf cutters. On SAC sites where relocation to alternative bogs would not be feasible, partial de-classification and full de-classification were recommended. It framed de-classification as a feasible proposition within the terms of the Habitats Directive through the identification of 'compensatory habitat' for the de-classified areas arising from its proposals. In this manner it claimed that 98% of the existing SAC network of raised bogs could be conserved, and that the designation of additional 'compensatory habitat' in line with Article 6 of the Habitats Directive, would offset the remaining 2% (TCCA, 2012a, p. 9). Its analysis however, did not take into account the scientific evidence (e.g. Renou-Wilson *et. al*, 2011) underpinning peatlands conservation, that partial de-classification would undermine the ecological integrity of peatland habitats. The TCCA's (2012a) proposals thereby represented a significant challenge to the scientific rationality underpinning the selection of sites in the SAC network and its spatial territory.

In spite of its representing a significant challenge to the regulatory authority of the State, the prevailing commentary on the TCCA's report (2012a) by government deputies in parliament was positive as illustrated in these examples:

> If we are going to get through this, we have to work together. I acknowledge the role played by the TCCA because the issue had continued for a long time ... I welcome ... the TCCA submission as they have a very good understanding of the position on the majority of bogs and of how the process will work and be implemented (Connaughton, 2012).

> I am delighted the Turf Cutters and Contractors Association which enjoys the trust of turf cutters throughout the country, is using its leadership role to engage and make positive suggestions (Corcoran-Kennedy, 2012).

The establishment of the Peatlands Forum pointed to a new government concern over the legitimacy of its regulatory policies and the Peatlands Council, in the absence of the TCCA. This alteration to the participatory governance process was as a direct result of the political impact of the TCCA's local consultations, the legitimacy of government policy being intrinsically linked to its social acceptance (Dean, 1999).

The Peatlands Forum was a once off event which took place between 28th February and 2nd March 2012. It was independently chaired by a High Court Judge and its proceedings were published as *The Quirke Report* (2012). Turf cutters were given the opportunity for direct representation and deliberation with officials. The new emphasis on deriving legitimacy through participatory practices is apparent in the structure of the forum, which allowed for significant numbers of turf cutters to address the forum as described in the Quirke Report:

> Approximately 140 representatives from more than 50 turf cutting communities addressed the Forum in open plenary sessions. Speakers representing other interested parties also made oral submissions (Quirke, 2012, p. 8).

The Quirke Report affirmed the TCCA's (2012a) claims of turf cutters' lack of trust in the NPWS and that a majority of turf cutters preferred to continue cutting turf over compensation. The *Quirke Report* effectively reframed the conflict to focus on the displacement impacts of the designations and the apparent failure of State agencies to address the rights of turf cutters:

> the rights enjoyed by the turf cutting communities are complex in nature, varied and often difficult to define ... The task of identifying the owners of property and other rights enjoyed over the relevant bogs has been daunting for the State agencies. Perhaps unsurprisingly it does not appear to have been achieved (Quirke, 2012, p. 162).

In a move contrary to existing State policy, Quirke (2012) directed attention to the provisions of Article 6 of the Habitats Directive for consideration of socio-

economic issues and recommended that a ‘national plan’ should be prepared to invoke these provisions. The report also recommended that the turf cutters should be (more) adequately compensated for the restrictions on turf cutting (*ibid*.).

The subsequent government *volte face* on the consideration of the issue of de-classification in official policy *after* the Quirke Report, should not be attributed to the Peatlands Forum alone. Other contributory factors were the political significance of the TCCA’s consultations with turf cutters discussed earlier *and* Flanagan’s dual role as activist and public representative.

The parliamentary debate on 6th March 2012 on a motion put forward by Flanagan (2012)[11] detailed the TCCA’s (2012a) proposals, and in keeping with the *Quirke Report*, sought the submission of a ‘national plan’ to the EU. By occurring shortly after the Peatlands Forum and coinciding with the TCCA’s public protest outside the Irish Parliament, the debate was of particular significance as a discursive event (Sharp & Richardson, 2001). Flanagan’s (2012) motion was passed unanimously by parliament, marking a critical moment in the power struggle between the TCCA and the State. It also marked a discursive shift from the government’s position of inflexibility on the issue of de-classification, towards the consideration of the possibility of de-classification in evolving policy. The outcome of the parliamentary debate, therefore, illustrated the agency of the TCCA and its potential to influence environmental policy processes. The government emphasis on the democratic legitimacy of its policy process is illustrated in this quote, which also invokes the significance of the parliamentary debate and the increased involvement of the European Commission in policy development:

> the development of a National Raised Bog SAC (Special Area of Conservation) Management Plan ... is a core part of the Government response to the turf issue. A Peatlands Forum was held in 2012, under the Chairmanship of Judge Quirke, which recommended that a national plan be developed. A unanimous vote in Dáil Éireann also called for such a plan. The development of this plan was agreed with the European Commission. When completed, this plan can form the basis for a submission seeking flexibility,

[11] Deputy Flanagan put forward the motion on behalf of the Dáil Technical Group.

> under the habitats Directive Article 6(4), for the most difficult bogs where relocation options may be limited (DAHG, 2013).

The discursive shift towards the consideration of de-classification in the policy process was also evidenced by the publication by government of the *National Raised Bog SAC Management Plan, Draft for Consultation* (DAHG, 2014b). Significantly, this has identified the possibility of partial de-classification on at least one SAC under Article 6(3), and on other sites under Article 6(4), subject to further investigation and the completion of the public consultation process for the plan (ibid., pp. 85-89). The empirical results presented here suggest that research on the power relations underpinning this planning process would provide further insights into the processes behind the future adoption, or not, of de-classification of SACs in official policy.

5.7 Conclusion

In order to gain insights into environmental governance, this study adopted a Foucauldian perspective on the power struggles emanating from a participative approach to the resolution of conflict resulting from nature's regulation. The focus on power has illustrated the tensions between participative and scientific forms of legitimacy underpinning nature's regulation (Halpin, 2006), and how the collaborative approach led to a reframing of the basis to legitimacy for implementing the EU Habitats Directive.

Despite the State's discursive construction of the Peatlands Council as a participatory forum for turf cutters, in practice, the State exerted a dominant influence over official policy and ensured that legitimacy for peatlands regulation was derived primarily from scientific criteria. Nevertheless, the Peatlands Council also acted as a medium for community resistance to the State's centralised approach to regulation processes, through the TCCA's initial position within the official negotiations. The TCCA's exit from official negotiations, and its grassroots mobilisation of turf cutters proved politically significant and forced government to reconsider the legitimacy of the partnership process, as represented by the Peatlands Council. The subsequent alteration of the governance structure

through the establishment of the Peatlands Forum, represented an attempt by the State to reconstruct legitimacy through the new emphasis on the direct participation of turf cutting communities affected by the Directive. The Peatlands Forum effectively reframed the debate and contributed to the development of a transformatory discourse around the implementation of the Directive. Flanagan's dual role as activist and parliamentary deputy was also instrumental in this shift towards a greater emphasis on democratic legitimacy and displacement issues in official discourse.

It is beyond the scope of this paper to reflect on the longer term impact of these institutional and discursive shifts on the longer term resolution of the conflict. Nevertheless, some conclusions can be drawn on the broader implications of the research with regard to rural environmental governance processes. Previous research has highlighted the dominating influence of the State in networks of environmental governmentality, and hence, the limited ability of protesting interest groups to influence regulatory control frameworks (Davies, 2005; Edwards et al., 2001; Taylor & Lawrence, 2012). Alternatively, Derkzen et al. (2008) have emphasised the potential for the disruption and diminution of State control arising from partnership approaches in the context of rural development. This case has demonstrated how the participative governance process and the politics of resistance converged, so that the TCCA influenced institutional and discursive change for implementation of the Directive, thus pointing to the rescaling of governance downwards. A further consequence would appear to be the subjection of the Irish State to greater supra-national EU involvement in evolving policy. Consequently, following Derkzen et al., (2008) the impact of the partnership process over the period examined in this research, has been to disrupt the regulatory authority of the Irish State, and to expose it to possible future weakening. The findings also reveal the potential within participatory governance processes for interest groups to exert local agency, to resist centralising State control and to shape transformation in environmental policy.

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6.1 Abstract

In this paper Q Methodology and environmentality are utilized to dissect multi-subjectivities on local environmental knowledge underlying peatland conservation through the implementation of the EU Habitats Directive in Ireland. The results offer insights into the cultivation of moral responsibility for nature regulation and its legitimacy at ground level. Alignments and gaps between local cultural and ecological knowledge and the science and governance of peatlands are revealed across three discourses. Legitimacy of regulation of domestic turf cutting is found to be undermined by deeply-held postcolonial subjectivities on property rights and governance in addition to perceived government failure to regulate ongoing harvesting on non-SAC (Special Areas of Conservation) peatlands. The science-first and exclusionary approach adopted by conservation authorities in its approach to designation has served to undermine trust in the science underlying peatland regulation and in the national agency for nature conservation. Recent moves integrating bottom-up practices and local knowledge into relocation policy through adaptive governance reveal a more positive attitude to conservation management but also foster ambivalence towards the conservation potential of non-SAC peatlands. Overall, the research exposes how local environmental subjectivities respond to perceived inequities and inconsistencies in peatlands regulation.

Key words: Local knowledge, environmentality, peatlands regulation, moral responsibility, subjectivities

6.2 Introduction

Conflict and contestation are never far from the surface when discourses on the use, management, ownership and conservation of natural resources are expressed. This is particularly prevalent in the case of marginal landscapes, fragile environments and areas of high nature value. In the context of the EU Habitats Directive and its designation of Special Areas of Conservation (SACs), Ireland provides numerous examples of how dispute and contestation is played out between landowners, conservationists and government institutions. Nowhere is this more evident than in the case of Irish peatland conservation and the controversies that have emerged between government desires for protection of raised bog SACs in the face of European Union (EU) sanction for non-compliance, and local populations' demands to continue with their 'traditional' right of resource extraction.

The right to cut peat (or turf as it is known in Ireland) through turbary rights[12] goes back several centuries, and successive generations have relied on turf as their sole source of heat. Contemporary turf cutting is associated with lower income rural families who continue to view their turbary right as an important source of cheap fuel and fuel security (Bullock et al., 2012). Since the 1980s, the slow and laborious process of traditional hand cutting has been almost wholly mechanised. Traditional hand cutting, like most contemporary mechanical cutting, also removed peat from the vertical face of the bog but did not go down as deep as machine harvesting. Different varieties of machinery are used to cut turf and often commercial contractors are hired to cut on behalf of turf cutting communities (Feehan et al. 2008). After cutting, however, turf continues to be harvested by hand in a traditional manner, often by families with the help of neighbours through a labour intensive process of stacking and drying the turf. In many cases, mechanisation has altered the scale of domestic cutting to an intensive semi-industrial scale extraction which has greatly accelerated the drainage and

[12] The use of the term 'turf cutter' in this paper refers to those with turf cutting rights, whose turf is typically cut mechanically. This is consistent with its use in Irish peatlands policy documentation.

degradation of Irish raised bogs (Fernandez-Valverde et al., 2013; Foss et al., 2001).

Ireland's remaining raised bog peatlands are internationally significant due to the potential for conservation and restoration of active raised bog, which is a priority habitat under the EU Habitats Directive. In recognition of this, fifty-three Irish raised bog Special Areas of Conservation were designated in the 1990s under the EU Habitats Directive, but formal regulation was delayed by turf cutters' resistance. Many of the best examples for inclusion in the SAC network included those bogs that had not been considered large enough for commercial harvesting and were in private ownership, or had been granted turbary rights (DAHG, 2014a).

With a starting point that saw the EU declaring the necessity for member states to have 15% of their area designated as SACs, to the enactment of designations without prior consultation with landowners, it is easy to understand how widespread controversy was generated on the ground (Visser et al., 2007). Although the EU Habitats Directive is founded on the supremacy of expert scientific knowledge, it is argued that local peoples' understandings and interpretations of biophysical processes hold the greatest import for the implementation of environmental change (Bryan, 2012; Harris, 2009). Therefore, the likelihood of failure, or resistance to environmental regulation was greatly increased through the top-down, science-first and exclusionary approach adopted in the initial survey and selection process for sites designated as Special Areas of Conservation by the National Parks and Wildlife Service (NPWS) in Ireland (Bryan, 2012; Moran & Rau, 2014; O'Rourke, 2005; Tovey, 2009a).

Historical, social, cultural, economic and political influences on environmental subjectivities have variously been implicated in resistance due to the significance of peatlands to previous generations and the historic importance of property rights in Ireland (Bullock & Collier, 2011; Bullock et al., 2012; O'Riordan et al., 2015; Renou-Wilson et al., 2013). However, studies on the relationship between people and peatlands have often adopted an historical approach that reflects the values of the time (Clarke, 2010; Collier & Scott, 2009; Loftus & Laffey, 2015). Other

recent research has been limited by the adoption of positivistic frameworks, such as large scale surveys that have revealed ‘puzzling’ findings on attitudes that support *both* peatlands protection *and* domestic cutting (Bullock & Collier, 2011, p. 975). Consequently, there have been calls for further exploration of the psychology and subjectivities of Irish peatland communities (Bullock & Collier, 2011). Meanwhile, these contradictions have partially been explained as resulting from turf cutters’ weak knowledge of peatland processes and the legitimacy implications and visual impacts of continued industrial harvesting, which results in bleak, scarred landscapes due to the annual shaving of the peatland surface (Bullock & Collier, 2011; Bullock, et al. 2012).

The emotional attachment to turf cutting has been associated with the labour and time, previously spent cutting and harvesting turf, in the context of private turbary rights, but also through employment with the semi-State company Bord na Móna (Clarke, 2010; Feehan et al., 2008; Loftus & Laffey, 2015). Bord na Móna was established in the 1940s and has commercially exploited most of the 80,000 hectares of peatland in its ownership, predominantly in the midlands and west of Ireland (Woodworth, 2016). It is now committed to transitioning to more sustainable land uses, including restoration of industrial cutaway, but its continued role in industrial harvesting for electricity generation and in the burning of peat as a fossil fuel remains controversial (Bullock & Collier, 2011; Woodworth, 2016). Bord na Móna has transferred several bogs for conservation purposes to the NPWS (DAHG, 2012a), but its contribution to conservation has generally been dismissed or denied by protesting turf cutting groups (Quirke, 2012; TCCA, 2012a).

Alongside the pure biodiversity objectives for the fifty-three bogs designated as SACs, the critical emerging agenda for peatlands regulation is in its complementary role in ecosystem services, in particular, carbon storage and sequestration (Bonn et al., 2014; Bullock et al., 2012). In general, peatlands ecosystem services are believed to be poorly understood at local level in Ireland and it is believed that there is a lack of political will and leadership on supporting a transition from the productive values of peatlands towards their ecosystem services (Renou-Wilson et al., 2011). Alternatively, high profile campaigners that

contested the regulation of turf cutting gained political advantage in Irish and European elections as a result of their connections with the campaign (Quinlivan, 2014).

Implementation of the EU Habitats Directive became urgent in 2011 as a result of EU sanctions for non-compliance and new governance arrangements were established to incentivise and legitimise regulation (DAHG, 2014b; Fernandez-Valverde et al., 2014). This included the establishment of the Peatlands Council, which represents a devolved mechanism for stakeholder inclusion, thus reflecting international guidelines on governance for responsible peatland management (Clarke & Rieley, 2010). Membership has included the national pressure group, the Turf Cutters and Contractors Association (TCCA) and its Public Relations Officer and then parliamentary deputy Luke Ming Flanagan, environmental NGOs, farming and rural interest groups and State representatives (see O'Riordan et al., 2015). The State also sought to reassemble turf cutters' economic interests with environmental behaviours (Cooper & Rosin, 2014; Fletcher, 2010) through the establishment of the *Cessation of Turf Cutting Compensation Scheme* (CTCCS) (DAHG, 2014b). This involved financial compensation or relocation to alternative bogs 'where feasible' or the supply of fuel for up to fifteen years (*ibid.,* p. 90) and applied only to those actively cutting in the previous five years.

The historic and customary nature of turbary rights and challenges of regulating spatially dispersed sites however undermined the CTCCS from the start (Cooper & Rosin, 2014; Quirke 2012;). It is estimated that there are 20,000[13] turbary rights holders across all designated peatland sites in Ireland, but the lack of registration of some sites due to their basis in prescription made it difficult to identify those eligible (Fernandez-Valverde et al., 2014; Quirke, 2012). The majority of the 3,156 applications to date have opted for financial compensation, and over one fifth has applied for relocation (pers. com., Department of Arts, Heritage and the Gaeltacht, November, 2015). The option of relocation was framed as the means

[13] This figure refers both to turbary rights on SACs and to Natural Heritage Areas which were designated under Irish legislation.

by which policy recognised the significance of turf cutting as a longstanding traditional rural activity, but it has proven highly controversial. The TCCA's campaign contesting regulation centred on 'difficult bogs', where relocation is not feasible (TCCA, 2012a). It did not accept the scientific basis to cessation policy that drainage of high bog occurs due to domestic turf cutting at the edge of the bog and severely undermines active raised bog formation (Fernandez-Valverde 2006; Renou-Wilson et al., 2011). The TCCA campaign has had a significant political impact and has undermined the regulatory authority of the State by instigating a process seeking flexibility from the EU for full or partial de-classification of SACs (DAHGa, 2014; DAHGb, 2014; O'Riordan et. al, 2016; Quirke, 2012). The challenge of implementing relocation is also reflected in the statistics which show that only 48 turf-cutters, from 708 applications, have been accommodated to date on relocation bogs (pers. com., DAHG, November, 2015).

Given the continued challenges of regulation, and the sense of ownership and cultural attachment to peatlands, more qualitative frameworks are required to address the aforementioned ambiguities on attitudes to peatland conservation. This paper confronts these gaps in two ways; through the lens of 'environmentality' (Agrawal, 2005; Luke, 1999) and through the application of Q Methodology. It also advances the environmentality literature by analysing ground level multi-subjectivities in a situation where regulatory legitimacy is challenged (Cooper & Rosin, 2014; Jepson et al., 2012). The focus on environmental multi-subjectivities follows recent approaches to local environmental knowledge, as knowledge conditioned by socio-economic concerns and embedded in daily political and environmental activity (Robbins, 2006). The paper explores how turf cutters' place-based knowledge conditions, and in turn is conditioned by, environmental subjectivities on peatlands governance and regulation. It provides a noteworthy example of the role played by deeply-held environmental subjectivities in presenting challenges to regulatory legitimacy and the cultivation of moral responsibility. The next section provides an overview of the nature of subjectivities from an environmentality context, particularly the ways in which it discursively frames issues of contestation and compliance. The paper then discusses the application of Q methodology as a

basis for analysing divergence and convergence of environmental multi-subjectivities on regulatory legitimacy among compliers and self-identified objectors to regulation.

6.3 Environmentality research and the significance of multi-subjectivities on local environmental knowledge

Governmentality is concerned with liberal and neo-liberal forms of rule and with a concept of government as 'the conduct of conduct' (Thompson, 2005)**.** This incorporates the ways in which State power is used to govern 'at a distance' in order to influence citizen's subjectivity and behaviour so that people come to see environmental policy as legitimate and comply with regulation. Foucault (2007) saw power as productive, creating regimes of power-knowledge whereby government attempts to direct citizen subjectivity in a manner in keeping with social norms. In the context of the EU Habitats Directive, the top-down science-led nature of designations and their resistance at local level point to Foucauldian power asymmetry whereby the 'politics of facts' and how 'science speaks truth to power' have become 'the backbone of current policy making … and the technocratic hollowing out of democracy' (Pellizzoni, 2011, p. 766). Challenging this science applied to policy approach however, has been a dramatic growth in discourse and debate which argues that dependence on scientific knowledge alone is not sufficient and that engagement with, and understanding of, local knowledge is imperative (Bryan, 2011; Collier & Scott, 2009; Harris, 2009; Moran & Rau, 2014; Reed et al., 2008; Siebert, 2009; Tovey, 2009b; Visser, 2007). Recognition of the need to bridge this gap between technocratic and local knowledge has influenced a burgeoning literature on environmentality and the role of local environmental subjectivities in determining success or failure of regulation (Cooper and Rosin, 2014; Haggerty, 2007; Jepson et al., 2012; Shoreman & Haenn, 2009). Subjectivity is a complex concept that involves expression of identity, cultural values and practices which can change over time (Cooper & Rosin, 2014). There is a close relationship between environmental subjectivity and recent understandings of environmental knowledge and

knowledge exchange, as embedded in situated politics and environmental experience (Robbins, 2006; Haggerty, 2007; Siebert, 2008). The manner in which official and scientific knowledge becomes translated by local subjects is of particular interest in environmentality studies.

Environmentality, which is an adaptation of governmentality in the environmental context, has been defined as the process through which individuals and communities self-regulate their environmental discourses and practices with State ends (Agrawal, 2005). Earlier environmentality studies demonstrated how 'technologies of government' aim to diffuse subjectivities and influence local knowledge on nature protection to positively influence environmental practice (Agrawal, 2005; Luke, 1999). For example, scientific survey and risk assessment acts as a form of bio-power to legitimate environmental regulation (Elden & Crampton, 2007; Rutherford, 2007). This was demonstrated by Agrawal (2005) to work in tandem with devolved governance and engagement in new environmental practices to create responsible environmental subjects. Recent work has emphasised how such forms of 'culture governance' can also be influenced by local leadership training or education to discreetly influence ground level mentalities and steer actors towards governmental aims (Agrawal, 2005; Cooper & Rosin, 2014; Dean, 1999). Critical perspectives however point to the challenges of deeper value-based and structural barriers to environmental transformation (Brannstrom, 2011; Jepson et al., 2012; Robbins, 2006; Rutherford, 2007). For example, Robbins (2006) has shown how hunters' knowledge in the controversy over elk population control and wolf reintroduction in Yellowstone National Park was dismissed as 'barstool biology', despite hunters' considerable discursive alignments with environmentalists. Hunters' marginalisation in policy making resulted instead in alignments between environmentalists and ranchers and in the dominance of exclusivist ideologies on property and nature in Yellowstone National Park.

Environmentality has paid inadequate attention to its failures and to the remaking of subjectivities through regulation (Cooper & Rosin, 2014; Rutherford, 2007). Subjects of regulation, such as hunters or turf cutters, have agency and can conform to, reproduce and elaborate discourses and prescribed norms or they

can challenge them (Ettlinger, 2011). Recent translations of Foucault's *oeuvre* provide opportunities for greater insights into discursive subjectivity and resistance in governmentality studies (*ibid*.). Foucauldian resistance involves challenging the power-knowledge nexus by identifying weak points in the connections between knowledge and governance regimes (*ibid*.). Consequently, there is a need to examine how subjects translate or transform the knowledge's emanating from the dominant top-down discourses of nature's regulation into discourses of compliance or resistance.

More recently the environmentality optic has been adopted to examine multi-subjectivities around governance and knowledge amongst those affected by environmental regulation (Cooper & Rosin, 2014; Haggerty, 2007; Jepson et al., 2012; Shoreman & Haenn, 2009). For example, Jepson et al. (2012, p. 852) examined the process of changing environmental subjectivity 'when strongly held beliefs, or coherent counterclaims, challenge new institutional, regulatory, and enforcement practices.' They used Q methodology to demonstrate how a desire for economic accumulation rather than environmental benefit underlies support for renewable energy in Texas, USA. They conclude that the formation of environmental subjects is a process that can be incomplete and in tension with deeply held beliefs and cultural identity, leading to unexpected environmental discourses. In contrast to Agrawal (2005), engagement in environmental practices through renewable energy projects did not modify anthropocentric or environmentally sceptical views regarding energy and environment. Cooper & Rosin (2014) demonstrated how farmers' enduring cultural knowledge and longstanding farming practices clashed with economic rationality underpinning New Zealand's *Emissions Trading Scheme*, even amongst those positively disposed to environmentalism, ultimately resulting in its failure (Cooper & Rosin, 2014). Therefore, environmental subjects that object or comply with regulation are not merely 'anti-environmental' or 'pro-environment' respectively, as can often erroneously be assumed in environmental conflicts.

6.4 3. Q Methodology: a hybrid approach to explore subjectivity

Q methodology was originally developed in the field of psychology and is now applied to a wide range of issues in the social and environmental arena. It combines qualitative and quantitative research characteristics and is a particularly suitable approach to discourse analysis. It has been applied as a method which links traditional positivist and recently emerging post positivist approaches to policy critiques, enabling more subjective and value-based public perspectives to be taken into account (Durning, 1999; Ellis et al., 2007). In Q method, subjectivity is assumed to be communicable and is defined as a person's own point of view or self-referent perspective about something real or perceived at a particular moment in time (Robbins & Kreuger, 2000). Therefore it can be modelled through the rank-ordering of a purposefully sampled set of stimuli such as subjective statements relating to a social or environmental conflict (McKeown & Thomas, 2013). Q Methodology has been described as providing a scientific approach to subjectivity, by relinquishing the modelling of the data insofar as possible to the participant, and enabling the shared worldviews and diversity of individual accounts to emerge in a structured way (Eden et al., 2005; Robbins & Kreuger, 2000). Traditional survey research measures patterns between people across variables selected apriori by the researcher. Instead Q method measures the interrelation of subjective statements across individuals through statistical factor analysis allowing for the holistic modelling and comparison of dominant discourses. Thus Q enables the identification of convergence and divergence of discursive subjectivity amongst research participants and is recognised for its contribution to the investigation of environmental conflict (Jepson et al., 2012; Lansing, 2013; Robbins 2006).

Q should not be viewed as a purely objective research technique for measuring subjectivity that totally removes the subjectivity of the researcher (Duenckmann, 2010; Robbins & Kreuger, 2000). This research followed established procedures in Q methodology and we used it reflexively as detailed below. The procedures we followed can be divided into three steps: (a) establishing the 'concourse' i.e. a set of statements representing the sum of discourse on the research topic; (b)

developing the Q sample which involves narrowing down the concourse to a representative and manageable set of statements; (c) allowing participants to sort the statements from the q sample into a grid of numbered columns ranging from positive to negative. The Q sort results are then analysed using correlation and factor analysis to identify shared discourses on the topic. The application of these procedures in this research is outlined in the following paragraphs

6.4.1 **The concourse**

Developing the concourse of statements was a lengthy iterative process which adopted the naturalistic approach to statement generation through attention to key stakeholders' construction of the debate. The attention to the variety of stakeholders in this stage of the research reflected the collaborative approach to finding solutions to the conflict (O'Riordan, et al. 2015). This allowed a variety of subjective viewpoints on the turf cutting conflict to come to the fore, in keeping with the inductive basis to Q (McKeown & Thomas, 2013). Most Q studies in environmental or land use policy typically examine the viewpoints of a wide range of stakeholders (e.g. Brannstrom, 2011; Iribarnegaray et al., 2014) however there are a few exceptions that focus on the viewpoints of one group (e.g. Barry & Proops, 1999; Duenckmann, 2010). It was initially intended to adopt the former approach but as the research progressed it became clear that the complexity of discourses within the turf cutting group itself required its own in-depth study. This study therefore adds to this gap in the literature.

Twenty-one semi-structured qualitative interviews were conducted between August and September 2014 and were recorded (except two as permission was not granted) and transcribed by the lead author. Interviewees included eight turf cutters in areas directly affected by the ban on turf cutting (six at one SAC and two at another SAC site, both in the Irish midlands), and six turf cutters living just outside designated SACs. This latter group was identified through attendance at a community event celebrating traditional turf cutting. Other key actors involved in peatlands regulation were also interviewed at this stage including two members of the Peatlands Council, two independent ecologists and one National Parks and Wildlife Service (NPWS) employee. This collective ensured that key areas of

disagreement and debate between regulators and turf cutters were included in the concourse. Attention was paid to triangulate the statements from naturalistic sources with the peatlands policy literature and archival searches on social media sites of turf cutting groups and relevant environmental NGOs. In total, this approach helped to ensure comprehensiveness of the concourse and address any potential gaps.

6.4.2 **The Q Sample**

The goal of the Q sample is to provide a comprehensive, albeit manageable, representation of the concourse. Two main axes of inquiry informed the Q sample design (a) environmental subjectivities on daily ecological, socio-cultural and economic knowledge of peatlands and (b) environmental knowledge relating to governance through the daily application of peatlands' politics and policy. Statements remain faithful to their original sentiment, and as a result some are lengthy (some statements required editing to ensure clarity) and 36 statements were chosen for the main study (see Table 1) to represent the concourse after an initial pilot Q sort. Previous research has identified this as a manageable number of statements sufficient to generate statistically meaningful results (Barry & Proops, 1999; Dryzek & Berejikian 1993).

6.4.3 **The Q Sort**

The next stage involved conducting the Q sort with sixteen turf cutters. It was administered in person by the lead author and was followed by an individual post-sort interview or focus group interview. The sample size was small which is appropriate to Q methodology which avoids large sample sizes in favour of smaller purposive samples, and is in keeping with its objective of researching the construction of worldviews rather than with understanding opinions across populations (Lansing, 2013). Given the ethical and access issues around researching illegal activities, the hotly contested SAC sites where protesters have continued to cut were eschewed in favour of other areas that provided access to ground level discourses of relevance to regulatory legitimacy. High profile

members of the national pressure group, the Turf Cutters and Contractors Association, were not selected due to the focus on ground level discourses and the existing research on its influence on policy (O'Riordan et al., 2015). Given the large numbers that had opted for financial compensation this group was of minor relevance to the target population on diverse ground level viewpoints on achieving regulatory legitimacy. The final sample included eight 'relocators' that had previously protested against the ban on turf cutting (see section 6.2) and three 'ineligible compliers' i.e. turf cutters that had ceased cutting but remained dissatisfied with policy due to their ineligibility for the CTCCS. These participants were all associated with an area of compliance and were identified with the assistance of the NPWS. The sample also included five 'self-identified objectors' to cessation regulation from areas close to SAC bogs. This latter group was identified through attendance at a community event celebrating turf cutting. Strong familiarity developed with a number of interviewees as many were interviewed on two or three occasions[14].

-4	-3	-2	-1	0	1	2	3	4

Table 6-1 Q Sort Grid

The sixteen turf cutters were asked to rank-order the 36 statements from *least in agreement (-4) to most in agreement (+4)* based on their views on the implementation of the EU Habitats Directive on raised bogs using the sorting grid in Table 6-1. The use of a forced distribution is typical in Q studies and was used to encourage participants to give careful consideration to the rankings. Being a relative scale and not an absolute scale, theoretically participants can rank statements in a relative order, even if they agree or disagree with all statements

[14] Five compliers were interviewed three times. Firstly for concourse generation, secondly after the pilot Q sort, and finally in the Q sort proper. Four self-identified objectors were interviewed twice, first individually for concourse generation and secondly in a post-sort focus group.

(Barry & Proops, 1999; Iribarnegaray et al, 2014). This was explained to the participants. In practice, however, participants interpreted zero as neutral, ambivalent or uncertain, with the negative and positive scales relating to relative scales of disagreement and agreement respectively (following McKeown & Thomas, 2013). Consequently, participants did not always stick exactly to the recommended grid design when ranking the statements. Some preferred to add statement cards to the column on the scale that most represented their emotional response, even when it was already full. This is not unusual in Q studies and the PQ Method software (Schmolk, 2014) allows for deviance from the forced distribution (Barry & Proops, 1999). This is because the range and distribution shape are irrelevant to the factors that emerge, rather it is the pattern of distribution that counts (Watts & Stenner, 2012). The qualitative interviews also provided crucial insights and triangulation on participants' subjectivities as expressed by these rankings. The statistical rankings were subjected to correlation and inverted factor analysis using principal components analysis through PQ Method free software (PQ Method, 2014). Three significant factors, that is, common orderings of statements or shared discourses, were extracted and subjected to varimax rotation, which accounts statistically for the maximum common variance i.e. those views adopted most frequently by the study (see Watts & Stenner, 2012). In terms of the theoretical basis to the study and the qualitative insight into worldviews gained from the interviews, we believed that the two factor solution offered automatically by the software missed the variance in worldviews expressed. Instead a three factor solution was selected as best representing distinct clusters of multi-subjectivity as expressed by the sample in the Q sorts and pre and post-sort interviews. The three factor solution also satisfied Humphrey's rule which states that 'a factor is significant if the cross product of its two highest loadings (ignoring the sign) exceeds twice the standard error[15].' (Brown, 1980, cited in Watts & Stenner, 2012, p. 107). The three rotated factors account for 13 of the 16 sorts in the study and for 54% of the study

[15] The standard error is calculated by following Brown (1980) cited in Watts and Stenner (2012, p. 107). Standard error = 1/(square root of no. of items in Q set). Therefore the standard error for this study is 0.17 and twice the standard error for the study is 0.34. Only three factors satisfied this criterion in the unrotated factor matrix.

variance (Tables 6.3 and 6.4). PQ method creates factor estimates via a weighted averaging of the Q sorts that load significantly on the rotated factors (Table 6-4) and these are converted into factor rankings for each discourse for interpretation (Table 6-2).

Interpretation of the factors was guided by particular reference to the distinguishing statements and the highest rankings, but lower and middle rankings are also used to inform the analysis, providing for a holistic and nuanced interpretation of turf cutters complex multi-subjectivities (Watts & Stenner, 2012). Subjects sit along different points of commitment relative to the empirically significant discourses revealed by the individual loadings (Table 6-4). The qualitative interviews with turf cutters that loaded significantly in each factor also provided crucial insights into factor interpretation (Table 6-4). Factor interpretation is supported in particular by those of the highest loaders i.e. those sorts that score highest in each factor. Turf cutters are referenced by their number according to Table 6-4 (e.g. TC#1).

6.5 Results

	Local environmental knowledge on governance (Policy and Politics)	F1	F2	F3
1.	All the SAC boundaries were surveyed on the ground and the greatest habitats of interest are within the designated areas	-3**	1	1
2.	It is difficult to get information justifying SAC site selection	0	-3*	0
3.	NPWS is willing to engage with bog communities to find solutions	-1	4**	-1
4.	The government fulfilled its obligation to notify turf cutters by placing advertisements in newspapers or by letter	-2*	4**	-4*
5.	Rangers didn't have a chance to meet with landowners due to lack of resources	-4**	0	0
6.	Europe imposed these SACs on us	1*	-2**	3*
7.	It's a bit dodgy for the wildlife service to highlight the role of peatlands for conservation when Bord na Móna is still harvesting and burning peat for electricity	0	-1	3**
8.	Bord na Móna should have conserved their lands, but the Habitats Directive doesn't apply to it	3	-3**	1
9.	Turf cutters can relocate where possible, and alternatively are offered compensation or turf, so the compensation package is good	-2	3**	-4
10.	Ming Flanagan voicing the anti-restoration interests gives more debate, at least he got it talked about.	1	1	-2**
11.	Ming Flanagan makes a lot of outlandish statements about turf cutting	1	3	-1**
12.	When they originally designated SACs, it wasn't looked at in terms of numbers of turf cutters and restoration potential, so there is a need to revise them	3	3	1
13.	The vested economic interests of the turf cutting contractors have driven the campaign against the ban on turf cutting	0	0	-2*
14.	The landowners own the carbon credits in bogs and should be able to benefit from them for being proactive about conservation	-1	1	0
15.	Environmental regulations have not affected big farmers as much as the smaller farmer and turf cutters with the worst land	0	-1	0
16.	There is no political champion of peatlands conservation so there is inadequate funding, poor understanding and begrudgery associated with implementing it	0	-1	2*
17.	Maybe the SACs will have to be bought to ensure their survival	-1	-2	3**
	Local environmental knowledge (ecological, cultural, socio-economic)			
18.	Turf cutting at the edge of the bog, damages it by disturbing its water system	-2**	1	2
19.	Cutting turf has no environmental effect on the bog, it replenishes itself, you can start to see heathers and the fauna coming back	1**	-1	-3
20.	The turf machines that are being used, they're only cutting the same amount of turf as for the house	-1	0	-3
21.	No-one should have the right to dig free fuel out of the ground	-4	-4	-4
22.	I can't see how de-classifying some or all of a SAC can be allowed in any context given that there is so little intact raised bog remaining.	-3	-3	-3
23.	Peatland conservation can work hand in hand with carbon storage so it also benefits climate regulation	-4**	2	1
24.	Turf cutting is a way of life	4*	1*	-1*

25.	You have to have sympathy for people who cut turf for generations and their fathers before them cut in the one spot, they don't want to cut turf elsewhere	4	2	2
26.	Turf cutters have property rights which need to be acknowledged	4	2*	4
27.	Its rather ironic with the centenary of 1916 coming up, that people should have to protest their right to cut turf	0	-1*	0
28.	The peace of mind that you get on the bog, there's a great sense of wilderness out there	2	2	4
29.	With the turf cutting contractors involved, there is much more being cut, it's just easier with the machine	1	0	-1
30.	The bog wasn't important before the machines came in	-3	-4	-2
31.	The compensation wouldn't cover what the turf cutter can save on heat and fuel security	2	-2**	1
32.	The greed of a few, who have been offered ample financial compensation, is allowed to defeat everyone's right to a beautiful countryside	-2	-2	-2
33.	Irish raised bog SACs contain rare and threatened habitats which we have a duty to protect for future generations	-1**	4	4
34.	Turf cutters on SACs should continue to exercise their right to cut turf on their own bogs	2**	-4**	-1**
35.	Traditional hand-cutting on raised bogs was environmentally sustainable	3	0*	2
36.	There's a lot of bog in Ireland that could be preserved that never will be cut	2**	0	0

*Table 6-2 Statements and Factor Arrays. Distinguishing statements are shown by * at p <.05 and ** indicates significance at p<.01*

	F1	**F2**	**F3**
No. of Defining Variables (sorts)	6	3	4
Average Relative Coefficient	0.800	0.800	0.800
Composite Reliability	0.960	0.923	0.941
Standard Error of Factor Z-Scores	0.200	0.277	0.243
% of explained variance	21%	15%	18%

Table 6-3 Characteristics for rotated factors

Table 6-4 Factor matrix with an X indicating a defining sort[16]

Turf cutter (TC)	Profession/background	F1	F2	F3
1 Relocator	Farmer	0.2451	0.4266	0.4673
2 Ineligible Complier	Farmer and tradesman	-0.1817	0.2324	0.3062
3 Relocator	Civil servant	0.7559X	-0.1748	0.1584
4 Relocator	Teacher	-0.2353	0.4838	0.4436
5 Ineligible compliers	Farmer with eco-tourism/amenity	0.1440	0.2935	0.8380X
6 Ineligible Complier	Farmer with eco-tourism/ amenity	0.2420	-0.0515	0.6447X
7 Relocator	Farmer	0.4780X	-0.5141	0.0766
8 Relocator	Civil servant	0.0130	0.7511X	0.0166
9 Relocator	Civil servant	-0.0031	0.6312X	-0.0810
10 Objector	Labourer	0.6360X	0.2538	-0.0908
11 Objector	Farmer with tourism/recreation	0.7797X	0.2814	0.0695
12 Objector	Transport (driver)	0.8194X	0.0351	0.3745
13 Objector	Transport (driver)	0.6976X	-0.3050	0.3117
14 Objector	Bord na Móna	0.0691	-0.0863	0.6244X
15 Relocator	Farmer	0.3056	0.6194X	0.1502
16 Relocator	Tradesman	0.1984	-0.0986	0.6927X

6.5.1 **Consensus discourses**

This section presents the consensus discourses across all three factors relevant to the legitimacy challenges to implementation of regulation. Extreme emotional intensity is attached to the right to dig turf (S21), there is agreement on the need for acknowledgement of property rights (S26), trenchant challenge to lack of flexibility on de-classification (S22) and agreement on the need for revision of the SAC network (S12). Considered together these subjectivities would at first appear to represent widespread disregard for peatlands conservation based on an ontology of possessive individualism and anthropocentrism. However, a

[16] Note significant loadings at the 0.01 level are calculated using the equation 2.58 x (1 / no. of statements). Significant loadings are calculated as +/- .43), those that significantly load on two factors are not selected as defining sorts (See Watts and Stenner, 2012, p. 107)

contradiction emerges as there is also a consensus on the wilderness and therapeutic qualities of peatlands (S28), the place-based significance of turf cutting as cultural tradition (S25) the longstanding importance of the bog before intensive cutting became possible (S30) and consensual disagreement on the representation of protesters as greedy seekers of higher compensation (S32). The subsequent analysis reveals that discourses on cultural-historical conditions, and perceived inequities and contradictions underlying peatlands policy are essential to understanding legitimacy issues and barriers to moral responsibility in Irish peatlands conservation.

6.5.2 **Factor One (F1): Cultural resistors: 'only a very small percentage of the way of life has changed'**

This discourse explains 21% of the study variance. Six participants are significantly associated with this factor as outlined in Table 6-4. This discourse is distinguished by its cultural attachment to turf cutting and continuity of tradition, despite the transition to mechanisation (S24, +4; S25, +4): 'It's being cut, and people are getting their plots and they are footing their turf and they are doing the same thing, so there is only a very small percentage of the way of life has changed' (TC#11). The qualitative interviews with this group displayed strong place-based emotions relating to turf cutting as socio-economic heritage and inter-generational tradition:

> when they tried to take the bogs off people, it really brought out the pride that people here has in the bog ... the bog saved us from mass emigration, that's what turf means, turf saved us ... Relocation is totally unfair, in so far as its the bog that your father cut ... it's not the same, it's not your bog, there's Moran's bog and Beans bog and this type of thing, it's our bog and that's it. (TC#12)

In common with the compliers in the other factors, these resistors have enduring emotions on property rights, and these emotions are particularly intense (26, +4). In this factor the earning of these property rights is linked to perceived historic exploitation by successive agents of authority. The post-sort interviews and focus group revealed intergenerational memories of exploitation under colonial

landlords or the Land Commission[17] in the nineteenth and early twentieth century, from whom turbary rights were eventually gained. This discourse claims that the purchase of their bog from the Land Commission meant that turf cutters were obliged to cut turf under duress:

> All the bog my father had, he had to cut to pay for it every year. It took him years and years and he had 13 children and he used to have to cut turf to pay the Land Commission for the bog. (TC#10)

Another commented:

> People were subservient ... to the landlord for their bog ... to go from that then to owning your own bog, the elation of that, then to go to the government saying or Europe saying, 'sorry, you can't cut that bog', you know, we are under the jack boot again. (TC#12)

Therefore, these postcolonial sentiments are transposed onto Europe and the NPWS in the context of the EU Habitats Directive. Dissatisfaction towards the NPWS for the failure of State compensation to account for the quantity and quality of peat targeted for designation mirror these historic resentments. Furthermore, this discourse alleges that Bord na Móna also exploited communities through appropriating its land rights by compulsory purchase[18] of local bogs in the recent past. The erroneous perception that Bord na Móna failed to contribute to the Habitats Directive is a significant source of grievance (S8, +3):

> Like there's a fierce problem here going back; Bord na Móna took our bogs, bought bog off people and compulsorily purchased bogs; why didn't they go to Bord na Móna and say here give us so many hundred acres; I can never accept that ... I would like to know the proportion to the amount of bog in the country, who owns most, Bord na Móna or the private citizen, that was the answer, yeah but why Bord na Móna won't conserve the bogs ... they are the big bold boy as far as I'm concerned .... (TC#12)

The turf cutters' negative perspective on Bord na Móna also influences views on State authority to implement conservation: 'They didn't care about wildlife. Now

[17] The Land Commission was established after the Irish land wars in 1881 and facilitated tenant purchase of land, including turbary rights. (Fitzsimons, 2014).
[18] Bord na Móna was awarded compulsory purchase powers under the Turf Development Act 1946 (Clarke, 2010).

they do, the government, Bord na Móna *was* the government'. (TC#10). Therefore, the Irish State itself, through its proxy Bord na Móna, is perceived as the chief culprit of peatlands degradation through intensive commercial harvesting.

This discourse reveals disdain for science-led top-down governance. For example, it lacks belief in the scientific survey underlying designation (S1, -3) and in the staff of the NPWS due to its poor initial engagement, which it perceives as a strategic top-down approach, rather than as a resourcing issue (S5, -4). Nor is it convinced that officials today (S3, -1) are willing to engage: 'The solutions they want to find, [are] whatever ones that suit themselves'. (TC#13)

The perceived lack of consultation further influences turf cutters' economic rationality on financial compensation which it perceives as unfair due to the failure to take account of reserves of peat left in bogs. These turf cutters claim that hidden economic costs arising from the inconsistent calorific quality and transport costs of turf from relocation bogs is not accounted for in the package (S9, -2; S31, +2). Their economic rationalities are also complicated by the lost potential for what is represented as small-scale sales of turf, as relocation involves an upper limit on the amount of turf cut. The highest loader claims that its role in selling turf is 'sustainable' relative to the practices of other more intensive domestic cutters:

> We could sell a lot more turf, but we don't want to sell it … we could cut lots and lots of plots, and recut it and make a right few bob in a couple of year and then have no bog; the bog has to be preserved for us. (TC#12)

However, it can be seen that local knowledge and climate-sceptic views are completely at odds with scientific rationality underlying peatlands policy (S18, -2; S19, +1; S33, -1; S36, +2; S23, -4). Instead it asserts an environmental sensibility of its own that claims that small-scale cutting, predominantly for household use, has a relatively lower environmental impact than other forms of peatland harvesting. For example it reveals concern regarding the intensive nature of domestic cutting by contractors that cut for domestic sales of turf and claims that hand-cutting was sustainable (S20, -1; S29, +1). Relative to domestic cutting it perceives commercial harvesting to have a more detrimental impact on bogs

through its removal of the top acrotelm: ‘Once Bord na Móna move down there is no heather, no moss, no nothing’. (TC# 11). By contrast it asserts its custodianship of the biodiversity potential of domestic cutover (S19, +1):

> As far as damage to the environment is concerned people who cut at the face bank, that is, the front of the high bog, the uncut bog, people who cut with their own machines are not doing that much harm because they are taking off the top off it and all the mosses and they are throwing them down, they are taking out 5 or 6 or 10 foot of turf and they are filling that, bog hole if you like, with the top of the bog, so as they move on they are actually leaving the bog more or less, the way they found it, except its 6 or 7 foot lower. (TC#13).

Turf cutters also commented on the ability of cutover to regenerate naturally: ‘Some of it now is in great condition, you know, coming back ... and the finest pools of moss and all these things growing’. (TC#13)

Claims on cultural grounds (S9, -4) and suggesting that ‘I wouldn’t take the compensation package no matter what it was, I wouldn’t give up the bog ...’ (TC#12) become more complicated, when one takes into account the potential for sales of turf, even at a small scale. However, this factor is not interested in gaining higher compensation through selling the bog back to government (S17, -1): ‘You see they are finding something that’s not for sale ...’ (TC#12) Therefore its resistance to the ban on turf cutting has a strong basis in the expression of cultural heritage as place-based tradition and as an expression of a longstanding property right. The combined subjectivities on knowledge and governance conspire to ensure that moral responsibility to cease cutting or economic rationality in terms of incentivisation towards the CTCCS is not established (S33, -1; S34, +2). Like the other two factors, it seeks flexibility on declassification and revision of the network of SACs designated under the EU Habitats Directive.

Overall, in F1 the deep-seated opposition to regulation is revealed not simply as opposition rooted in tradition and property rights, but also as opposition to the power-knowledge regime underlying governance which it perceives as exclusionary, authoritarian, inequitable and hypocritical. Its entrenched resistance represents a cautionary example of Foucauldian resistance to nature conservation through the mobilisation of a discourse that has reacted to the

inequities and failures in conservation policy by highlighting the weak points in the governance-knowledge nexus (Ettlinger, 2011; Foucault, 2007). Moreover, these discourses are revealed, not as simple rhetoric, but as authentic experience of the environment and perceived socio-economic and cultural-historical experience of peatlands management.

6.5.3 **Factor two (F2): Market pragmatists: 'We think it's kind of the cheapest to relocate'**

This discourse explains 15% of the study variance. Three participants, all relocators, were significantly associated with this factor as outlined in Table 6-4. Interviewees frame contemporary turf cutting primarily in economic terms, and alignment with the CTCCS is established (S9, +3; S31-2): 'I would say you want to keep a tradition going on, but we think it's kind of the cheapest to relocate and continue, my mother and father are there, there's two or three brothers living up around us and we all get a little bit out of it, that's the way we do it.' (TC#9) Relocation is also perceived as attractive financially due to its longevity; up to 65 years relative to the 15 year financial package. Because the relocation bog is of better calorific quality than their original bogs, this provided a further incentive for relocation.

In contrast to the other two factors, this discourse emphasises Bord na Móna's contemporary role in peatlands conservation (S8, -3). Further, it emphasises Bord na Móna's legacy of peatland destruction as a reasonable trade-off against the socio-economic contribution to the region in terms of employment:

> [Bord na Móna] didn't understand at that stage what damage [it was doing].. and now Bord na Móna are getting more conscious of conservation ... I would see that they would be damned a lot, but ... it happened when employment was the major thing. (TC#8)

Unlike the other two discourses, F2's neutrality on the intensity of domestic turf cutting by turf cutting contractors (S20, 0; S29, 0) reflects ambivalence over the threats that non-SAC peatlands face. This is not surprising given that it relies on turf cutting contractors to cut its own turf on its relocation bog. This ambivalence

is also reflected in subjectivities on the potential role of peatlands in carbon mitigation:

> we have given up, for conservation purposes, an equal area of bog, so we have the carbon sink on one hand and we have the emissions on the other and I feel that it's not a big price to have to pay, particularly when you go out any morning with a clear sky and see the amount of international transport in the sky, that I'm sure is emitting a lot more than my few sods of turf (TC#8)

In terms of peatlands' politics and governance, this discourse concedes that Luke Ming Flanagan of the Turf Cutters and Contractors Association helped to raise the profile of the campaign on turf cutters' rights (S10, +1), but it remains critical of Flanagan's framing of the debate (S11,+3). It is in sole disagreement with the framing of policy as European imposition, arguing that Ireland signed up to the EU Habitats Directive (S6, -2).

Preceding paragraphs demonstrate that on the one hand this discourse privileges economics of peatland use over environmental knowledge and values, but it also expresses a very strong moral obligation to protect SACs (S33, +4; S34, -4). To a certain extent this contradiction may relate to its playing along with State policy due to its benefiting from relocation (Herbert-Cheshire, 2006). It can also be partly explained by the trust and respect for officials, who had engaged to negotiate relocation (S3, +4):

> [Initially] there seemed to be a standoff … As the whole process progressed through, particularly with a change of officers, one has to be honest, we were very very lucky with the senior officer in our area ... and we found him excellent in his dealings. Excellent from the point of view, he didn't give us everything we wanted, but he was honest with what he could deliver and what he couldn't deliver... (TC8)

The interviews revealed that this trust was rooted in the efforts made to match remaining turf reserves equitably in the relocation bog and the acknowledgement of the traditional access for the wider family, to one family member's turbary rights. Further, the significant role of leadership of the local bog committee in negotiating these terms with the NPWS was highlighted. Thus, even though turf cutters conforming to this discourse are not fully convinced by the hydrological

and ecological science underlying regulation of SACs (S18, +1; S19, -1,) they are willing to accept the need for conservation of SACs for the most part. Their relative enthusiasm about the carbon storage potential of raised bogs (S23, +2) is related to optimism on the potential for future compensation for its conservation of the carbon sink in the SAC bog (S14, 1). There are doubts, however, regarding how fit for purpose the initial survey underlying designation of all 53 SACs (S1, +1) is. The highest loader questioned the conservation potential of some SAC sites (S12, +3; S22, -3) given the extent of damage already done to some sites by turf cutting:

> The declassification of the bogs, I'm sure can still happen … I think there's some scientific information there to back it up, would show that some of the bogs that have been designated just cannot be saved. (TC8)

Overall, F2 perceived relocation to redress the lack of equity underlying policy by its capacity to compensate proportionally for the peat reserves associated with turf cutters turbary rights. The perceived fairness derived through local consultation on their turbary rights, and peat reserves associated with these rights, lay at the root to its positive shift towards moral responsibility and compliance. However, due to the lack of feasibility of relocation policy in some areas and its critical perspective on the initial survey justifying designation, F2 believes a minority of sites may not now be suitable as SACs. Therefore it supports flexibility on revision of the raised bog SAC network and potential de-designation of some sites. Furthermore, its relocation to alternative bogs has fostered a sense of ambivalence on the threats non-SAC peatlands face.

6.5.4 **Factor three (F3): Compensation-seekers: 'we stopped [cutting] when it was first mooted and we never got compensated in any way'.**

This discourse explains 18% of the study variance. Four participants are significantly associated with this factor as outlined in Table 6-4. This factor is the most enthusiastic about the wilderness and therapeutic benefits of peatlands (S28, +4) and is distinguished by its belief that turf cutting as a way of life in the countryside is now in decline (S24, -1). Its local knowledge aligns with science and this group is particularly aware of the issues threatening the conservation

value of raised bog habitats (S19, -3; S33, +4; S18, +2; S23, 1). This is due, in particular, to two farmers (TC#5 and TC#6) who had good knowledge of ecological peatland processes due to their previous aspirations to develop peatlands based eco-tourism. One of these, the highest loader, had self-trained as a guide and explained how access to a peatlands ecologist had triggered interest in gaining knowledge on peatlands conservation:

> he brought us for a walk and he could name everything … He identified every plant and had a little story to go with each, he'd be all into the botanical names, he made it interesting for us because we were such amateurs. It was when this idea got hold and we asked his advice ... rural tourism was all the rage then ... [he] opened my eyes, he did, that walkway, I could learn that. (TC#5)

This interviewee also explained that, ultimately, tourism benefits from the development of the walkway were not realised, and it now functioned as a public amenity instead. TC#5 continued to play a voluntary role in peatlands conservation education.

This discourse is distinguished by its intense dissatisfaction regarding the initial notification process regarding the designations (S 4, -4) and is the most dissatisfied regarding compensation (S9, -4). Two interviewees were particularly aggrieved that those that stopped cutting initially (prior to the derogations delaying cessation policy) were deemed ineligible for compensation. According to the highest loader: 'What vexed us mostly was the ones that complied got on worse than the ones that didn't comply; we stopped [cutting] when it was first mooted, and we never got compensated in any way '. (TC5) Dissatisfaction with the lack of compensation for curtailment of farming practices affected by designation was also a feature of this discourse.

This discourse strongly believes that Europe imposed the SACs (S6, +3), but views this positively as it believes that Irish politicians do not sufficiently champion the cause of peatlands conservation and there is inadequate funding for it (S16, +2). It perceives that Flanagan played a legitimate role representing turf cutters interests (11, -1; 13, -2), but that he negatively influenced the debate towards protestors interests (10, -2), with the result that those that had complied earlier failed to qualify for compensation. Indeed, it is the sole factor to assert purchase

of SACs (S17, +3): ‘If they are all that important why don’t they buy them?’ (TC#5) Its intense dissatisfaction regarding acknowledgement of property rights is related in particular to what it perceives as a flawed compensation system for turf cutters.

Like F1, this discourse dismisses Bord na Móna’s recent efforts to engage in conservation and rehabilitation as insignificant given its legacy in the severe degradation of peatlands (S8, +1; S7, +3). It is not only concerned about the illegitimacy of Bord na Móna’s continued harvesting of peatlands (as in F1), but also about the burning of fossil fuels in the context of conservation regulation. Like F1 and F2, greater flexibility on the issue of de-classification of SACs is sought. This discourse disagrees that protesters should continue to cut on SACs (S34, -1), but this low score and its broader worldview suggests that it has sympathy for those that continue to protest and contest conservation policy.

Overall in F3, the fragile nature of compliance is rooted in the perceived failure to compensate equitably and adequately for property rights relinquished by designation and the narrow terms of reference for compensation. Scientific knowledge was highest in this factor due, in particular, to the profession/ backgrounds of two participants. It was clear that for these participants, this knowledge, which was consonant with the motivation to develop peatlands eco-tourism, played a role in cultivating moral responsibility for compliance, notwithstanding the maintenance of a critical perspective on the compensation system for cessation of cutting.

6.6 Discussion on convergence and divergence of turf cutters’ dominant discourses on implementation of regulation on Irish raised bog SACs

Looking more closely at discursive convergence and divergence provides further insights into how perceptions of inequities and contradictions underlying peatlands policy have contributed to a lack of trust in the national conservation authority and the scientific rationality for regulation of the SACs. Firstly, there was

a perception that an inconsistent approach was taken to notification of turf cutters on the designations, with only F2 responding positively on this (S4). Even though this inconsistency derives from historical conditions in that many turbary rights have a basis in prescription (Quirke, 2012) and therefore are difficult to identify, the interview data revealed that discourses on lack of notification perceived this as an unfair dismissal of those turf cutters' property rights.

The legitimacy of the survey underlying regulation was significantly challenged by the 'cultural resistors' in F1, but it was also questioned in factors two and three, as reflected by the low score for S1 (+1) and in interviews across the factors. Overall, as seen also by the consensus across the three factors on S12, the lack of consultation regarding the initial survey is perceived as a systematic disregard of the local knowledge of turf cutters. There was a widespread perception that inappropriate land, particularly farming land, was included in some SACs. The time lapse between the initial surveys justifying designation which occurred in the 1990s (Fernandez-Valverde et al., 2006) and the delayed implementation of cessation policy in 2011 are also likely to have contributed to the poor legitimacy for the survey. The 'cultural resistors' in F1 perceived the dismissal of biodiversity potential of cutover as counter-intuitive and interviewees in F2 and F3 also revealed widespread confusion on this issue. This demonstrates the need to take into account place specific knowledge when devising regulatory policy for land use conservation. For example, one of the farmers in F2 stated:

> ____ as far as we could see just cutting a bit of turf at the edge of the bog and bringing it out was in fact adding a bit of life, you know the cutaway (*sic*) is where you disturb the high bog, the vegetation that grows after being cut is far more diverse and a lot nicer and nicer to look at and more colourful altogether than what's growing on the high bog … [but] the like of ___ would argue that it's definitely going to drain out, and if you take the waters from under the moss and the growing bog it will die, so who are we to say, and I don't know do they have all the answers either, you know the parks and wildlife and all the scientists and all the rest of it, I don't know if they have all the answers they are supposed to have (TC#6).

Moreover, the insights into environmental multi-subjectivity reveals that 'cultural resistors' dismissal of the value of SAC peatlands relates not just simply to poor

knowledge of peatland processes and the legitimacy impacts of continued industrial harvesting (Bullock & Collier, 2011; Bullock et al. 2012), but also to the failure of governmentality as evidenced by the lack of trust in the NPWS and its survey. The corollary of this is that many turf cutters do not distinguish between SAC peatlands and non-SAC peatlands when considering legitimacy of peatlands policy. This view is most prevalent amongst those that resist or contest policy in F1 and F3, notwithstanding the alignment with ecological knowledge shown in F3. Therefore, in both these discourses cessation policy has mobilised discourses and environmental subjectivities that highlight the contradictions and perceived hypocrisy of peatlands regulation when unregulated intensive harvesting continues. The perceived inequities and contradictions underlying the designations are further underlined by the postcolonial resentments evident in F1 arising from perceived exploitation associated with historic peatlands management.

Despite its weak alignment with the scientific rationality for conservation the 'market pragmatist' discourse of F2 accepts the need for conservation of SACs and strong claims of moral responsibility for conservation and compliance are made. Crucially, F2 perceived relocation to substantially redress the lack of trust and inequities underlying policy. This is due to officials' engagement with the local bog committee on negotiating an agreement that is perceived to sufficiently compensate for turbary rights. The leadership role of the local bog committee in encouraging ground level compliance through relocation was a key theme in interviews with relocators that loaded across the factors. It was generally perceived that relocation provided both fairness and economic advantage over financial compensation.

Along with the inconsistent notification of the designations, another theme underlying widespread convergence of dissatisfaction over acknowledgement of property rights (S26) was the lack of feasibility of relocation everywhere and the perceived failure of the financial package to fairly compensate for the fuel security provided by turbary rights. Further, it was generally perceived that, besides relocation, the CTCSS scheme failed to take account of rights for compensation for wider family members that had traditionally benefited from one turbary right.

In examining the discursive positions of the eight relocators in Table 6-4, only three ascribe exclusively to F2. Therefore, despite compliance, the majority of relocators in this study can relate to the discourses of resistance and/or contestation that were dominant in F1 or F3. In F2, relocation has cultivated ambivalence towards conservation potential of non-SAC peatlands, in those whose compliance was shown to be rooted in discourses of market pragmatism, rather than in the desire to continue the cultural practice of turf cutting. Only one relocator loaded highly in the 'cultural resistance' discourse of F1. This implies that financial compensation based on remaining peat reserves associated with an individual's turbary rights, for example through the introduction of a system of carbon credits, would satisfy others seeking relocation. The 'compensation seekers' discourse in F2 shows the potential for cultivation of environmental values through economic incentives for repositioning peatlands to support amenity, conservation education and/or eco-tourism. Therefore, regulatory policy needs to pay greater consideration to the alignment of incentives for compliance with the eco-system services provided by peatlands. This would help to cultivate deeper environmental values, rather than risking the cultivation of values that are consonant with the politics of unsustainability through relocation.

Q methodology focuses on comparison of social perspectives, and although not claiming to represent all possible world views on the conflict, the preceding analysis has provided particular insights into regulatory legitimacy and turf cutters' ground level discourses on outright resistance, contestation of compensation policy and compliance through relocation. There was insufficient scope in this research to explore in detail the basis to the convergence of views in F1 and F2 that Flanagan, PRO of the TCCA, had made outlandish claims about turf cutting, however, the highest loaders in these factors, both commented in interviews that Flanagan had made exaggerated claims on the sustainability of mechanised turf cutting. These views and F3's perception that Flanagan had negatively influenced the debate, by skewing the compensation package towards protesters, point to the need for attention to the varying interests of turf cutters and contractors in emerging policy for SAC regulation (DAHG, 2014b).

Through Q Methodology it is also possible to examine the extent to which socio-economic background influences the discursive position of participants. In examining Table 6-4, there is a higher proportion of lower skilled professions ascribing to F1 than in the other two factors; of the three relocators in F2, two were civil servants and the third described himself as a 'good productive farmer' suggesting greater affluence and/or higher education amongst these participants. This suggests the possibility of a structural basis to the contrasting discursive positions of outright objection and enthusiastic compliance in F1 and F2 respectively. On the other hand, #11 in F1 is pluri-active and #3 is a civil servant suggesting greater affluence and/or higher education (Woods, 2005), revealing an inconsistency in the structural influence on these discursive positions. The most resistant discourse therefore, cannot be proven to exclusively hold less well off or less educated turf cutters.

6.7 Conclusion: towards environmentality and moral responsibility

Nurturing responsible behaviour is a critical component of research on environmental governmentality. This paper has explored how environmentality was influenced by multi-subjectivities on local knowledge and regulatory governance in the context of legitimacy challenges to the implementation of the EU Habitats Directive on raised bog SAC peatlands in Ireland. It has demonstrated the value of Q Methodology both as an ends and as a means to providing insights into worldviews on contested regulation through semi-structured interviews (Brannstrom, 2011), and has also contributed to the gap on the analysis of viewpoints within one stakeholder group. The research demonstrates how lack of attention to place-based environmental knowledge in conservation regulation can fuel unexpected counterclaims, based not simply in rhetoric, but on local knowledge and experience. The rigid separation of local and scientific knowledge in the designation process through the EU Habitats Directive undermined legitimacy as local environmental subjectivities clashed both with scientific rationality and the governance regime underlying conservation. Foucauldian power-knowledge asymmetry is evident in resistance and

contestation discourses that emphasise lack of trust in the national agency for wildlife conservation and perceived inconsistencies, contradictions and inequities underlying conservation policy. This points to how deep and often competing values exist in communities' and conservationists' worldviews on the relationship between nature and society and this has also contributed to the conflict. Consequently environmentality and its tools such as 'culture governance' (Dean, 1999; Cooper & Rosin, 2014) will have limited effect until conservation authorities seek to understand the world views of local communities.

The paper has also provided insights into the cultivation of moral responsibility relating to more equitable economic alignment with property rights in relocation policy. This would suggest that models of conservation that integrate local knowledge through more adaptive modes of governance can contribute to more positive attitudes towards peatlands regulation. Greater prospects for the cultivation of environmentality and moral responsibility in peatlands regulation will require attention to compatibility between local knowledge and incentives that align with wider environmental values through peatlands ecosystem services.

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Chapter 7: **O'Riordan, M., McDonagh, J., & Mahon, M. (2018). Unlikely alliances? Knowledge, power and the collaborative governance of Irish peatlands. Under review in Geoforum.**

7.1 Abstract

This paper adopts governmentality and Q methodology to analyse three professional legitimacy discourses on regulation of Irish raised bogs designated under the European Habitats Directive. Governmentality provides a lens on the power of the State within collaborative governance to reconstruct scientific legitimacy to converge with socio-economic priorities and with resistance. The paper also contributes to the debate on the relative influence of structural imbalances and power-knowledge relations (Brannstrom, 2011; Lansing, 2013; Robbins, 2006) in collaborative approaches to nature conflicts. The empirical results illustrate the significance of power-knowledge in the dominant discourse coalition emphasising a one-size-fits-all approach to compensation and an emergent, albeit marginalised discourse on site-specific implementation. This provides insights into the strategic alliance reinforcing technocratic rationalities and agricultural priorities at a key stage in the policy process. Although policy outcomes illustrate structural divergence between the socio-economic and environmental-ecological sectors, power-knowledge within and between these sectors underlies this structural divergence.

Key words: power-knowledge, Habitats Directive, nature conflicts, raised bogs

7.2 Introduction

Raised bogs are wetland ecosystems formed by the accumulation of deep peat and are highly valued for their contribution to ecosystem services, especially biodiversity and carbon sequestration (Wilson et al., 2013). In Europe raised bogs

continue to decline due to longstanding preferences for peatlands productive values. The Republic of Ireland holds the most extensive remaining area of raised bog worthy of conservation in Western Europe (Fernandez-Valverde et al, 2014). A representative sample of fifty-three raised bogs are designated as Special Areas of Conservation (SACs) in Ireland since 1994, due to the presence of active raised bog, which is classified as a priority habitat under the Habitats Directive. Although the focus of the designation is to protect these sites, it has also prohibited the traditional right to cut peat (known as turf in Ireland). Since 1994 approximately 37% of active raised bog has disappeared from protected areas (DCHG, 2017). This loss of active raised bog is primarily associated with ongoing domestic turf cutting and associated drainage (DAHG, 2014; DAHG, 2015). Therefore, it has been argued that the designation of the network of 53 raised bog SACs gave it little protection (Wilson et al., 2013; Renou-Wilson, et al., 2011). The European Union (EU) nevertheless requires Ireland to restore its active and degraded (restorable to active within a reasonable time frame) raised bog to the extent of its coverage when the Directive was first implemented, or when sites were first declared protected (Mackin et al., 2017b).

Governmentality provides an analytical lens on processes underlying the cultivation of legitimacy (Fletcher, 2010; Foucault, 2007). It has previously been adopted to analyse the institutional approach to regulation of the network of raised bog SACs and the alternative power-knowledge configuration represented by resistance (author, 2015; 2016). This paper addresses a gap in governmentality by focusing on power-knowledge and structural relations underpinning the collaborative approach to peatlands regulation under the Habitats Directive. This is advanced by elucidating expert legitimacy discourses on regulation through Q Methodology. The next section reviews scholarship on legitimacy of EU nature conservation policy and highlights its relevance to governmentality. Section 7.4 provides a background to Irish raised bog conservation policy and the conflict underlying implementation. Section four outlines the basis to the adoption of Q methodology and its application to professional perspectives on Irish peatlands regulation. Section 7.5 elucidates a series of consensual and divergent discourses revealed through Q methodology.

Three divergent discourses are identified and interpreted as *technocratic environmentalists*, *agri-environmentalists* and *pragmatic environmentalists*. Each discourse provides insights into the knowledge regimes underpinning the evolution of policy to address the conflict. Section 7.6 discusses the convergence and divergence of the three legitimacy discourses and how power-knowledge and structural relations emerge to support the dominant discourse coalition. This section also critiques object construction (through the State's scientific review of Irish peatlands and its role in policy outcomes), and subject construction through governmentality. Section 7.7 presents the conclusions of the research.

7.3 Constructing legitimacy in EU nature conflicts through governmentality.

EU nature policies are not stable categories but rather are contested and dynamic due to their multi-interpretability, therefore governance shapes policy but does not determine it (Beunen & Duineveld, 2010; Beunen, Van Assche & Duineveld, 2013). Legitimacy involves examining the extent to which the process and product of governance is accepted by those whose interests are affected (Bernstein, 2011; Engelen et al., 2008). Studies have revealed that the purely scientific legitimation underlying selection of sites under the Habitats Directive is associated with the top-down approach and with conflict (Alphandery & Fortier, 2001; Beunen, Van Assche & Duineveld, 2013; Engelen et al., 2008; Kamphorst et al., 2017; Rauschmayer et al., 2009; Wurzel, 2008). Where designation is contested, Article 6 of the Habitats Directive provides for consideration of social and economic issues. Consents for alternative use under Article 6(3) are granted only after it can be scientifically determined that site integrity is not compromised by proposed development. After a negative assessment under Article 6(3), and in the absence of alternatives consents may be granted for 'imperative reasons of over-riding public interest' under Article 6(4) (European Commission, 2012, p. 3). However, in the context of priority habitat, such as active raised bog, extra safeguards exist for consents under Article 6(4). These safeguards limit consents to proposals affecting public health and safety, projects involving beneficial

environmental consequences, and, beyond these circumstances an ‘opinion’ is required for other ‘imperative reasons of overriding public interest’ (*ibid.*). Between 2007 and 2016, just 9 opinions were issued by the European Union and secured consent under Article 6(4) (European Commission, 2016). Where consents are granted compensatory habitat must be provided to maintain the integrity of the SAC network. This can include habitat creation and restoration, enlarging existing sites and including new sites in the *Natura 2000* network (*ibid.).* However, compensating habitat loss is controversial as it raises questions about commensurability and regulatory flexibility, monitoring and enforcement (McGillivray, 2012).

In practice interpretation of Article 6 is very challenging (Bryan, 2012; Opdam et al., 2009) and many experts continue to view technocratic and scientific norms as key to implementation (Ferranti et al., 2014). Such beliefs can be in tension with the contemporary shift in environmental governance towards procedural sources of legitimacy reflected in democratic norms (Engelen et al., 2008; Fischer, 2000; Healey, 2006; Taylor, 2010, Wurzel, 2008). Although the Habitats Directive does not mention participation, it is emphasised in guidance on implementation, and has gained legal standing through the Directive providing for public participation in environmental policy (European Union, 2003; Turnhout et al., 2015). Therefore, although collaborative governance arguably represents a shift towards post-normal scientific rationality (Rauschmayer et al., 2009), it also provides opportunities for diverse strategic interpretations and contestation (Beunen, Van Assche & Duineveld, 2013; Beunen & Duineveld, 2010). According to Turnhout et al. (2015), recent studies reveal the dominating influence of democratic norms in the construction of legitimacy in European environmental policy relative to the legal principles underlying these policies.

Studies have also revealed that barriers to participation can remain notwithstanding the establishment of collaborative governance mechanisms. Powerful stakeholders such as the State, can deploy indirect power through discursive strategies and practices to retain prime influence in participatory governance (Bickerstaff & Walker, 2005; Edwards et al., 2001; Kamphorst et al., 2017). For example Clare et al. (2013) found that powerful industrial actors’

privileged access to State decision makers were significant in undermining collaborative wetland governance in Alberta, Canada. In EU nature conservation, although participatory governance is increasingly evoked, Turnhout et al., (2015) argue that it is in the service of the neoliberal agenda on cost-effectiveness. On the other hand, State power can be distorted or diluted through collaborative processes as varying interests influence judgement in unexpected ways (author, 2015, Turnhout et al., 2015; Van Assche et al., 2011). Therefore, greater attention to stakeholder analysis is required to unmask the role of hidden interests in the governance of nature (Collier & Scott, 2009; Rauschmayer et al., 2009; Reed, 2008). Van Assche et al. (2017b, p.245) furthermore argue there is a need to examine the 'knowledge infrastructures that foster and enable the quest for control' amongst stakeholders in natural resource governance.

Foucauldian governmentality provides insights into the role of the State in governing at a distance through collaborative governance processes (Dean, 1999; Edwards et al., 2001; Rutherford, 2007). Governmentality is concerned with a concept of government as 'the conduct of conduct' through the strategies adopted to render society governable (Ettlinger, 2011; Foucault, 1991). Foucault (2007) argued that power is de-centralised and exercised through discourse and discursive practices, thus creating regimes of power-knowledge consonant with social norms. Actors exercise power consciously or unconsciously when drawing on discourse to inform policy making and power-knowledge can represent path dependencies or barriers to reform (Van Assche et al., 2017b). Governmentality therefore provides insights into how particular knowledge regimes come to dominate and become normalised amongst communities of practice through power-knowledge. Van Assche et al. (2017a) argue that resistance to progressive change can be located in institutional rigidities and/or in alternative power-knowledge configurations and/or it can be a product of actors strategizing to protect their perceived interests.

A growing number of studies have adopted Q methodology to examine discourse and power in environmental conflicts, yet few have adopted a governmentality framework. In this body of research, a point of debate is on the relative importance of structural power and power-knowledge in discourse coalitions, and

how such processes form barriers to innovation (Brannstrom, 2011; Lansing, 2013; Robbins, 2006). Recent work has placed less emphasis on power-knowledge and instead highlights structural dissonance as instrumental in poor environmental policy (Brannstrom, 2011; Clare et al., 2013; Lansing, 2013). For example, Brannstrom (2011) demonstrated how discursive divergence fell along sectoral lines reflecting deep distrust between farmers and environmentalists in Western Bahia, Brazil. Lansing (2013) found that structural divergence between expert and local actors in a carbon offset project in Costa Rica was indicative of superficial forms of collaboration. Alternatively, Robbins (2006, p. 198) in an earlier Q study in Northern Yellowstone, implicated power-knowledge in a discourse coalition between ranchers and environmentalists on approving lucrative out-of-state hunters' permits, while in-state hunters' access to land was restricted. This outcome reproduced exclusivist ideologies of class and property, despite the similarities between environmentalists and in-state hunters' discourses suggesting the lost opportunity for more progressive policy.

7.4 Raised bog conservation policy in Ireland.

Peatlands are a characteristic landscape feature in Ireland, covering 21 per cent of the national land area (DAHG, 2015). State policy has historically emphasised socio-economic exploitation through industrial scale harvesting of peat for electricity generation and through afforestation. A significant portion of Irish peatlands are privately owned and domestic turf cutting is a longstanding traditional activity. Degradation through domestic use accelerated in the 1980s as government policy supported mechanisation of turf cutting to replace hand-cutting (Fernandez-Valverde et al., 2006; Fernandez-Valverde et al., 2014; Renou-Wilson et al., 2011). Contemporary approaches to domestic harvesting generally involve commercial mechanical contractors cutting on behalf of those with turbary rights (known as turf cutters), while 'footing' or stacking turf by hand is carried out in the traditional fashion. Turbary rights relate to the right to cut turf on an area of bog and can be customary and/or historic arising due to the resettlement of confiscated land (DAHG, 2015). Ireland's postcolonial status and

history of land agitation has meant that protection of turbary rights has strong emotional resonance in rural areas (author, 2016). This context is believed to have contributed to the political inertia that characterised the response to domestic turf cutters resistance to regulation until the establishment of the collaborative process (Renou-Wilson et al., 2011). In general, it is accepted that mechanisation has altered the scale of domestic cutting to an intensive semi-industrial scale extraction which has greatly accelerated the drainage and degradation of Irish raised bogs (Fernandez-Valverde et al., 2014). It is known that the impact of localised cutting on bog hydrology can extend from ten metres up to hundreds of metres from a cutting face into the high bog (Flynn et al., 2015; DAHG, 2014). Consequently, complete cessation of turf cutting informed the development of regulatory policy for SAC sites in the initial stages of collaborative governance (Renou-Wilson et al., 2011; author, 2015).

In 2011, under threat of European sanction for non-compliance the Peatlands Council was established to advance a collaborative approach to resolve the conflict on regulation of domestic turf cutting. On the Peatlands Council environmental-ecological interests have been represented by State officers from the National Parks and Wildlife Service (NPWS) and environmental non-governmental organisations (ENGOs). It also involves representatives from Coillte and Bord na Móna, the semi-State bodies traditionally involved with afforestation and industrial harvesting for electricity respectively, and now also involved in peatlands restoration. Rural interests have been represented by the Irish Farmers Association (IFA), along with the NGO Irish Rural Link, representing rural communities, and the Turf Cutters and Contractors Association (TCCA). This latter group, which is the interest group claiming to represent turf cutters and contractors (i.e. turf cutting machinery owners), exited in protest from the Peatland Council at an early stage claiming its outcomes were pre-determined (author, 2015). Through the Peatland Council a compensation package was agreed which involved financial compensation or, relocation to an alternative bog where feasible (DCHG, 2017). However the historic nature of turbary rights undermined the compensation package from the beginning (author, 2016). Although a majority of those deemed eligible opted for financial compensation

approximately one fifth of eligible applicants applied for relocation (*ibid*.). The TCCA argued that genuine relocation options were limited due to the spatial concentration of designations in some regions (TCCA, 2012). The TCCA also claimed financial compensation, which is an annual payment for 15 years amounting to approximately €23,000 in total (DAHG, 2014), was inequitable. It argued that it failed to sufficiently compensate for the fuel security provided by turbary rights, and proposed de-classification where relocation was not possible (TCCA, 2012). The campaign of resistance led by the TCCA influenced participatory and parliamentary processes effecting regulation and contributed to the de-stabilisation of the technocratic approach to regulation (author, 2015; Quirke, 2012).

In response to ongoing contestation and resistance, the State commissioned a scientific review of Ireland's raised bog resource in 2012, including designated and undesignated raised bog sites. In a turn-around from its previous policy position, this review included scope for consideration of de-classification under Article 6 (author, 2015; DAHG, 2014; Quirke, 2012). New scientific techniques, including eco-hydrological modelling and LiDAR technology, which provides greater accuracy on restoration potential, informed the review (Mackin et al., 2017a; Mackin et al., 2017b). This has contributed to a new model of raised bog eco-hydrological conditions and restoration potential based on the slope of raised bogs, rainfall and drainage patterns (Mackin et al., 2017b; DCHG, 2017). In 2014, interim results were published in the *Draft SAC Bog Management Plan* (DAHG, 2014). This plan raised the possibility of Article 6(3) consents arising for turf cutting to continue in contested areas where scientific assessments determined turf cutting would not undermine conservation. Furthermore, in a novel interpretation of Article 6, it suggested invoking Article 6(4) consents for 'imperative reasons of over-riding public interest' (DAHG, 2014) at contested sites where there were no alternatives through relocation and where Article 6(3) assessments for consents proved negative. The draft plan also indicated that new SAC sites would be identified for restoration to compensate for any losses of active or degraded raised bog in the network. It also indicated that it would be necessary to earmark 230 ha of cutover (particularly sites previously cut by hand

or small-scale machinery where a reserve of peat remained) for restoration to meet the national conservation objective of 3,600ha of active raised bog (*ibid*.). As a secondary quality habitat relative to active and degraded raised bog (DCHG, 2017; IPCC, 2014) this (i.e. inclusion of cutover) raised questions concerning commensurability of compensatory habitat and definitions of raised bog as priority habitat under the EU Habitats Directive (McGillivray, 2012; Fernandez et al., 2014). Following this draft plan, emerging policies for a reconfigured network of protected raised bog sites including those designated separately under Irish (as Natural Heritage Areas) and EU law (as SACs) were outlined in the national *Peatland Strategy* (DAHG, 2015). This proposed increased use of publicly owned sites owned by Coillte and Bord na Móna, to upgrade certain peatlands to SAC status, and selected de-designations of Natural Heritage Areas through the provisions for socio-economic consideration under Irish law, thus claiming to create more flexibility for relocation from SACs (DAHG, 2014; DAHG, 2015).

Legitimacy of peatlands regulation was also influenced by instability within the Irish political system following the economic crash of 2008. The 2014 Local and European elections in Ireland revealed a shift in voter patterns with the greatest gains made by independent candidates (Kavanagh, 2015; Quinlivan, 2014). The turf cutting issue featured strongly in the political campaigns of independent candidates, Luke Ming Flanagan (public relations officer for the TCCA) and Michael Fitzmaurice (Chairman of the TCCA), who gained their first seats as MEP and Irish parliamentary representative respectively in these elections (*ibid.*). The *Partnership Programme for Government* (2016) agreed upon by the minority government with independent politicians, included a commitment to draft legislation to de-designate 46 raised bog Natural Heritage Areas in the first 100 days of government and reflected the ongoing prominence of the conflict in Irish political affairs. The continuing challenges under EU regulation were reflected in prevarication on finalisation of the *SAC Bog Management Plan* (European Commission, 2017) which was not published until late 2017. The implications of this final policy plan in terms of legitimacy and governmentality of raised bog conservation are critiqued in Section 7.7.

7.5 Methodology

Q methodology is widely used in the social sciences for the qualitative measurement of attitudes and values but remains underutilised for its potential to reveal power relations in natural resource and environmental conflicts (Brannstrom, 2011; Clare et al., 2013; Lansing, 2013; Robbins, 2006). In Q methodology, subjectivity is believed to be communicable and is defined as an individual's own point of view, at a moment in time. Therefore, it can be measured through the rank ordering of purposefully sampled stimuli such as subjective statements relating to a natural resource conflict (McKeown & Thomas, 2013), and is considered relevant to constructivist accounts of social and natural reality (Durning, 1999; Robbins & Kreuger, 2000). Q methodology combines quantitative and qualitative elements that allows diverse viewpoints to emerge in a structured manner (Eden et al., 2005). It proceeds through several stages paraphrased here with attention to the aims of this paper.

The first stage involves the development of the concourse of communication representing the range of subjectivity under examination. The sample informing the concourse was selected to reflect the range of socio-economic and environmental-ecological opinions relevant to the legitimacy crisis on regulation. Initially it was intended to analyse turf cutters and professionals within one Q study and the development of the concourse proceeded on that basis. A naturalistic approach to the development of the concourse was taken by conducting twenty-one semi-structured interviews. Given the significance of ground level opinion to regulatory legitimacy, turf cutters were over-sampled and included fourteen interviews with 6 turf cutters associated with an area of compliant relocation and 8 self-identified resistors. Interviews were also carried out with two members of the Peatlands Council, one NPWS employee, two ecologists and two further informal (unrecorded) interviews and email exchanges took place with two other ecologists. Insights were also gained into the diverse views of environmental-ecological actors and semi-State professionals' views on regulatory legitimacy through attendance at the *Irish Peat Society Conference 14th October, 2014* and its seminar *People and Peatlands.* This included an

update by State officials on regulatory policy on raised bogs and an open debate between professionals on the challenges underlying resolution of the conflict. This provided insights into the inter-textualities between local and professional perspectives on the conflict. Attention was also paid to emerging peatlands policy, to media construction of the debate and to the social media sites of turf cutting groups and environmental NGOs. After a lengthy iterative process persistent themes of relevance and understanding to turf cutters and to diverse socio-economic and environmental-ecological professionals were identified. Two main axes of inquiry were identified (a) local/professional knowledge informed by ecological, socio-cultural and economic experience of peatlands (b) local/professional knowledge of governance through experience of peatlands policy and politics. After an initial pilot, thirty-six statements were chosen to represent the concourse (as listed in Table 1). The lead author completed Q sorts and interviews with all the actors between February and June 2015. The collection of this field data provided insights into the range of opinions within the turf cutting group itself and within the group of professionals. Therefore, we decided to analyse local knowledge and professional knowledge separately to allow sufficient scope for their respective analysis through Q methodology. This study represents the follow-on study focusing on professional knowledge after prior publication of the study on turf cutters' local knowledge on raised bog regulation in Ireland (author, 2016).

The second stage of direct relevance to this study, involved the identification of eighteen diverse professionals through purposive non-random sampling to rank-order the thirty-six statements in the Q sort grid (Figure 1). The use of a forced distribution is typical in Q studies and was used to encourage full consideration of the rankings given to statements. Nevertheless, the shape of the grid is irrelevant to the factors that emerge, rather it is the pattern of distribution that counts (Watts & Stenner, 2012). The professionals were selected through the snowball technique to represent environmental-ecological and socio-economic perspectives on Irish peatlands regulation. This is in line with Q Method's emphasis on variability in the person set (Eden et al., 2005). Attendance at the *Irish Peat Society Conference 2014* also helped in the identification of key actors

and inclusion of diverse professional viewpoints in the sample. All actors are paid professionals in their field of work, apart from one semi-professional (unpaid) community turf cutting leader with longstanding experience in Irish peatlands regulation (# 18 community leader). All participants have knowledge of the governance domain either through direct input into the Peatlands Council (ten participants) or through direct experience in the application of peatlands policy on the ground (eight participants) (Brannstrom, 2011). As outlined in Table 3, participants include environmental NGO representatives, consultant ecologists, Coillte (forestry) and Bord na Móna (peatland) semi-state employees, state NPWS employees, and those representing the IFA, in addition to the community leader. To ensure confidentiality and anonymity participants' organisational (where large) or sectoral affiliation is revealed rather than specific job title. Q sorts were administered in person (except one conducted by post) between February and June 2015 and followed by post-sort interview. This was a key stage in the policy process after the *Draft SAC Management Plan (2014)* had been published and during which time the national *Peatlands Strategy* (2015) was being finalised. Interviews were recorded and transcribed in fifteen cases, and in three cases notes were taken during interviews. The Q sort which was carried out by post was followed by a recorded telephone interview. Three actors did not wish to be quoted directly (two of these did not consent to recording the interview), notwithstanding their consent for their perspectives to inform the research more generally.

In the third stage the Q sort rankings were subjected to correlation and factor analysis through PQ Method software (Schmolck, 2014). Factors represent shared discourses amongst those that sort the statements in a similar fashion. Three factors had eigenvalues above one, indicating the existence of three significant viewpoints and these were extracted and subjected to varimax rotation. The three rotated factors account for 13 of the 18 sorts in the study and for 68% of the study variance (see Table 2 and Table 3). The software creates factor estimates through a weighted averaging of those sorts that significantly load on the rotated factors (see Table three), and these are converted into factor rankings for each discourse for interpretation (see Table 1). The next section

discusses results on consensual agreement revealed through the statistical analysis and this is interpreted with the aid of post-sort interviews. This is followed by an interpretation of divergent perspectives on implementation with reference to the distinguishing statements (highlighted in bold in the text) for each factor. When scores for statements are relatively higher or lower in each factor, these can also inform the analysis, thus allowing for a holistic interpretation (Watts & Stennar, 2012). The statistical element is supported by reference to the qualitative interviews representing defining sorts for each factor. Each participant's statistical loading on each factor is revealed in Table 3. In the discussion, these alignments are discussed alongside the role of confounding (i.e. those that load significantly on two factors) ENGO actors in power relations underscoring the policy process.

7.6 Results

*Table 7-1 Statements and Factor Arrays. Distinguishing statements are shown by * at p <.05 and ** indicates significance at p<.01*

	Local/professional knowledge on governance (policy and politics)	**F1**	**F2**	**F3**
1.	All the SAC boundaries were surveyed on the ground and the greatest habitats of interest are within the designated areas	4**	-1	-1
2.	It is difficult to get information justifying SAC site selection	-1*	0	0
3.	NPWS is willing to engage with bog communities to find solutions	4**	0	-2**
4.	The government fulfilled its obligation to notify turf cutters by placing advertisements in newspapers or by letter	3**	0**	-4**
5.	Rangers didn't have a chance to meet with landowners due to lack of resources	1	-3**	1
6.	Europe imposed these SACs on us	-2	1**	-1
7.	It's a bit dodgy for the wildlife service to highlight the role of peatlands for conservation when Bord na Móna is still harvesting and burning peat for electricity	-2	-2	1**
8.	Bord na Móna should have conserved their lands, but the Habitats Directive doesn't apply to it	-3	-2	0**
9.	Turf cutters can relocate where possible, and alternatively are offered compensation or turf, so the compensation package is good	3	2	1
10.	Ming Flanagan voicing the anti-restoration interests gives more debate, at least he got it talked about.	0	1	1
11.	Ming Flanagan makes a lot of outlandish statements about turf cutting	1	3	2
12.	When they originally designated SACs, it wasn't looked at in terms of numbers of turf cutters and restoration potential, so there is a need to revise them	-4**	2	4

13.	The vested economic interests of the turf cutting contractors have driven the campaign against the ban on turf cutting	2	1	2
14.	The landowners own the carbon credits in bogs and should be able to benefit from them for being proactive about conservation	0	1	0
15.	Environmental regulations have not affected big farmers as much as the smaller farmer and turf cutters with the worst land	0	-4**	0
16.	There is no political champion of peatlands conservation so there is inadequate funding, poor understanding and begrudgery associated with implementing it	-1	-1	3**
17.	Maybe the SACs will have to be bought to ensure their survival	0	0	-3**
	Local/professional knowledge (ecological, cultural, socio-economic)			
18.	Turf cutting at the edge of the bog, damages it by disturbing its water system	1	0	4**
19.	Cutting turf has no environmental effect on the bog, it replenishes itself, you can start to see heathers and the fauna coming back	-2	-3	-4
20.	The turf machines that are being used, they're only cutting the same amount of turf as for the house	-4	-2	-4
21.	No-one should have the right to dig free fuel out of the ground	-1	-4**	0
22.	I can't see how de-classifying some or all of a SAC can be allowed in any context given that there is so little intact raised bog remaining.	2**	-1	-2
23.	Peatland conservation can work hand in hand with carbon storage so it also benefits climate regulation	3	3	3
24.	Turf cutting is a way of life	0	4**	-2**
25.	You have to have sympathy for people who cut turf for generations and their fathers before them cut in the one spot, they don't want to cut turf elsewhere	2	2	1
26.	Turf cutters have property rights which need to be acknowledged	1*	4**	-1*
27.	Its rather ironic with the centenary of 1916 coming up, that people should have to protest their right to cut turf	-1	-3	-1
28.	The peace of mind that you get on the bog, there's a great sense of wilderness out there	1	2	3
29.	With the turf cutting contractors involved, there is much more being cut, it's just easier with the machine	2	1	2
30.	The bog wasn't important before the machines came in	-3	-1	-1
31.	The compensation wouldn't cover what the turf cutter can save on heat and fuel security	-3	-2	-2
32.	The greed of a few, who have been offered ample financial compensation, is allowed to defeat everyone's right to a beautiful countryside	0	-1**	2
33.	Irish raised bog SACs contain rare and threatened habitats which we have a duty to protect for future generations	4	4	4
34.	Turf cutters on SACs should continue to exercise their right to cut turf on their own bogs	-4	-4	-3
35.	Traditional hand-cutting on raised bogs was environmentally sustainable	-1	3**	-3
36.	There's a lot of bog in Ireland that could be preserved that never will be cut	-2*	0	0

	Factor 1	Factor 2	Factor 3
No. of Defining Variables (sorts)	6	4	3
Average Rel. Coef.	0.800	0.800	0.800
Composite Reliability	0.960	0.941	0.923
Standard Error of Factor Z-Scores	0.200	0.243	0.277
% of explained variance	26%	19%	23%

Table 7-2 Characteristics for rotated factors

Q Sort	F1	F2	F3
1BnaM1	0.4750x	0.3693	0.3941
2BnaM2	0.1852	0.5812X	0.3310
3BnaM3	0.1783	0.4424	0.7190X
4IFA1	0.1693	0.7663X	0.0633
5IFA2	0.0810	0.8861X	0.0536
6Coillte	0.2238	0.6206	0.4936
7NPWS1	0.8524X	0.3906	-0.0170
8NPWS2	0.7434X	0.2855	0.4381
9NPWS3	-0.0124	0.1001	0.8827X
10NPWS4	0.1213	0.3149	0.6884X
11ENGO1	0.5493	-0.0045	0.5959
12ENGO2	0.5480	- 0.0847	0.6594
13ENGO3	0.6447X	0.2464	0.2161
14 ConEcol1	0.6022	0.2056	0.5390
15 ConEcol2	0.4588	0.2474	0.6777
16 ConEcol3	0.7516X	0.3824	0.2089
17ConEcol4	0.8839X	-0.0110	0.0646
18 Leader of Bog Community	0.3941	0.5764X	0.2392

Table 7-3 Factor Matrix with an X indicating a defining sort[19]

[19] Note significant loadings at the 0.01 level are calculated using the equation 2.58 x (1 / no. of statements). Significant loadings are calculated as +/- 0.43, those that significantly load on two factors are not selected as defining sorts (see Watts and Stenner, 2012 p 107).

7.6.1 **Consensus (Shared Values)**

There was consensual alignment on the negative environmental implications of turf cutting, the benefits of cessation for carbon sequestration (S19: -2, -3, -4; S23: 3,3,3) and the need for compliance (S33: 4, 4, 4; S34: -4, -4, -4). Professionals perceived strategic misrepresentation and the construction of ambiguity within elements of the TCCA's campaign rhetoric. This is evident in the consensual disagreement with the wording of S20 (-4, -2, -4), a statement reflecting one of the key claims of TCCA campaign suggesting that the scale of cutting did not change in the transition to mechanisation. It was perceived that contractors had opportunistically and successfully embraced the concerns of turf cutters in the TCCA's campaign rhetoric (S13, 2, 1, 2).

7.6.2 **Factor One Technocratic environmentalists: scientific-technical rationality**

Technocratic discourse on implementation, immutability of SACs under EU law, conflict resolution through compensation

This factor explains 26% of the study variance and six participants are defining sorters as outlined in Table 3. This discourse is distinguished by its opposition to revision (**S12, -4**) and de-classification (**S22, +2**) and asserts that socio-economic concerns are completely irrelevant to the selection of sites based on conservation interest. According to the highest loader: 'The turf cutting issue should have absolutely no impact whatsoever on whether or not an SAC needs to be revised; it's a fundamental point, the SACs are designated specifically because of the criteria about the habitat.' #17ConsEcol4. High loaders perceived SACs as immutable and scientific-legislative arguments were used to defend the legitimacy of the existing SAC network in terms of legal constraints and precedence under the Habitats Directive, and insufficient availability of compensatory habitat (**S36, -2**) to justify the possibility of de-designation. This factor strongly asserts the authority of the State to regulate through the legitimacy of the survey underlying the network of SACs (**S1: +4**), the notification process (**S4: +3**), and the willingness of NPWS to engage (**S3: +4**). It expresses strong

confidence that compensation addresses displaced turbary rights (S9, +3; S31, -3).

7.6.3 **Factor Two: Agri-environmentalists: socio-economic rationality**

Technocratic discourse on implementation, immutability of SACs under EU law, conflict resolution through compensation

This factor explains 26% of the study variance and six participants are defining sorters as outlined in Table 3. This discourse is distinguished by its opposition to revision (**S12, -4**) and de-classification (**S22, +2**) and asserts that socio-economic concerns are completely irrelevant to the selection of sites based on conservation interest. According to the highest loader: 'The turf cutting issue should have absolutely no impact whatsoever on whether or not an SAC needs to be revised; it's a fundamental point, the SACs are designated specifically because of the criteria about the habitat.' #17ConsEcol4. High loaders perceived SACs as immutable and scientific-legislative arguments were used to defend the legitimacy of the existing SAC network in terms of legal constraints and precedence under the Habitats Directive, and insufficient availability of compensatory habitat (**S36, -2**) to justify the possibility of de-designation. This factor strongly asserts the authority of the state to regulate through the legitimacy of the survey underlying the network of SACs (**S1: +4**), the notification process (**S4: +3**), and the willingness of NPWS to engage (**S3: +4**). It expresses strong confidence that compensation addresses displaced turbary rights (S9, +3; S31, -3).

7.6.4 **Factor Three: Pragmatic environmentalists: scientific-ecological site-specific approach**

Scientific-ecological site-specific approach advocated, associates the collaborative process with communications failure

This discourse explains 23% of the study variance. It includes three defining sorts as outlined in Table 3. In opposition to F1's technocratic stance on immutability

of SACs, this discourse perceives potential for flexibility under EU law for revision both upwards and downwards of the SAC network on a scientific-ecological basis (**S18, +4**; S22, -2; S12, +4). This discourse represents the technocratic perspective in F1 on immutability of SACs as unpragmatic and counterproductive in terms of resolving peatlands conflict.It represents the official policy position (at the time) as represented by F1, on immutability of SACs as untenable. This is due to its view that Article 6(3) de-classifications might arise through the ongoing scientific review, and that further, the compromised restoration capacity of some SACs due to continued cutting (S18, +4) undermines the case for immutability of SACs. It prescribes a narrowly defined site-specific approach to revision and restoration of the network on a scientific basis and, further, to address conflict resolution through partial de-classifications and relocation:

> I think that when they were classified initially I do think there was some reasoning behind it, but looking at the boundaries of some of them, that include areas that are maybe cut off by road or areas that have been really badly cut and that are no longer of value, that that piece may be defunct, and it's not either worth keeping and that there's greater benefit in extending it on another area, possibly relocating somebody onto the heavily damaged part, but if it's not integral to the working of the system, if it's not absolutely 100% necessary to keep the SAC then I think there has to be a debate about it … so the other part of it is, some of the SACS are so heavily cut that the reasons that they were designated no longer apply, and that to pretend that that is not the case, is again another case of sticking your head in the sand and not accepting reality … also if you discover that it's not as you had thought and you want to extend an area or further include an area within an SAC you have to have that, there has to be a scientific basis upon which you remove or add and if you don't have that you are probably having a missed opportunity to benefit the site and benefit all aspects of it … (#3BnaM3).

This factor perceives breakdown of trust in conservation authority due to the failure to communicate effectively with bog communities (**S4, -4; S3, -2**). It advocates a fundamentally different communicative approach to underpin any process for revisions to the network: 'because something gets de-designated or changed, why does that happen, so again it's down to communications, which was really bad initially… it was just atrocious, it's not a whole lot better now.' (#3BnaM3). The perceived need to build better community relations also informs

its opposition to purchase of SAC sites to ensure protection (**S17, -3**). ‘I can’t see why they should have to be bought just to protect them, because it infers that people can’t be trusted to protect them.’ (#3BnaM3). In contrast to F1 and F2, this discourse perceives wider lack of political will to implement conservation (S16, 3) and concedes that legitimacy of regulation is also impacted by Bord na Móna’s involvement in industrial scale harvesting and burning of peat (**S7, +1**).

7.7 Legitimacy construction through governmentality: structural imbalances or power-knowledge

Analysing discursive convergence and divergence across the factors provides insights into the role of structural imbalances and power-knowledge in the construction of legitimacy through collaborative governance. A dominant discourse coalition is evident in the cross-sectoral convergence between F1 and F2 focusing on immutability of the 53 SACs, and narrowly on financial compensation as a one-size-fits-all solution to appease turf cutters. This was in direct opposition to the key claims of the TCCA campaign, pointing towards the strategic de-legitimisation of its campaign in light of the consensual concerns with the influence of contractors (i.e. commercial cutting) on campaign rhetoric. The agency of State NPWS actors and the IFA is evident in the dominant discourse coalition as is the IFA’s access to authority. This also demonstrates how in practice, the IFA adopted a strategic position relative to its discursive claims and elucidates the rhetorical basis to its worldview as expressed in F2.

The marginalised F3 discourse shared by a Bord na Móna actor and two (mid-ranking) NPWS actors provides an alternative legitimacy discourse. Although critical of contractors influence on the debate (in line with the consensus discourses), F3 represents institutional rigidity through the technocratic stance represented by F1, and its failure to communicate effectively with turf cutters as greater obstacles to legitimacy of regulation. F3’s advocacy of a narrowly defined

site-specific approach to conservation reveals how it perceived scope under Article 6(3) for partial de-classifications to provide greater flexibility for relocation to address the equity concerns underlying the compensation package. Other semi-State actors (e.g.#1 the Bord na Móna low loading actor on F1, the confounding #6 Coillte actor and #2 the Bord na Móna actor significantly loading on F2) viewpoints also converged on supporting revision and de-classification due to the view, as expressed in F3, that restoration potential was already compromised in some areas. This site-specific discourse falls short however, on advocating other forms of compensation beyond relocation to address equity concerns on the varying peat reserves and fuel security associated with turbary rights.

In the dominant discourse coalition it is evident that the interests of the State and farming interests converged on opposing F3. F3 not only entangled with the TCCA's campaign for de-classification, but also with ENGO discourses as revealed in post-sort interviews, on the potential for alternative forms of compensation for turf cutters. For the environmental-ecological actors aligned to F1, F3 was perceived as inconsistent with the scientific-technocratic approach to regulation of priority habitats as SACs. However, for the more rhetorical position represented by F2 the emerging site-specific discourse and its entanglement with ENGO's discourses on compensation, could threaten the status quo on funding structures for nature conservation relative to productive farming interests under the CAP. This was especially the case given that the CAP represents the main EU fund for agriculture *and* conservation (see Turnhout et al., 2015), and the imbalance between capitalist agricultural priorities relative to nature conservation often highlighted in debates on the reform of the CAP. This is also consistent with previous research that has that has highlighted how the IFA tend to favour more intensive farmers relative to smaller, less productive farmers located in areas associated with high conservation value (Visser et al., 2006). In the shared opposition to F3, therefore, the dominant discourse coalition restricted consideration of a more holistic site-specific approach requiring direct communication with turf cutters to identify alternative forms of compensation, and also restricted consideration of the TCCA's (2012) proposals on implementation.

It furthermore inhibited debate on seeking consents for de-classifications in areas where restoration capacity was already compromised through continued cutting as claimed in F3.

Insights on the formation of the dominant discourse alliance can also be gained through examining confounding ENGO actors' discourses in support of its key claims. In contradiction with their discursive convictions on the need for an alternative to the compensation on offer, these actors revealed a defeatist attitude to the potential for renewable energy options and carbon credits for conservation to contribute to conflict resolution. This is evident in the muted emotions expressed on the lost potential for more flexible site-specific approaches to compensation in the following two quotations. The latter quote provides insights into how the ENGO position aligned with the IFA in its opposition to the TCCA, in spite of its view that the IFA was ill-fitted to negotiate effectively on behalf of turf cutters.

> The idea of peatlands and carbon, I think the government are not really that strongly committed to it, like, to work with people on a one to one basis … It's positive, but nobody has given them the practical methods of dealing with that yet. I do have sympathy for those … turf cutters and … I do think people should be given a bit of cash for carbon or carbon credits; it's going to be very important in the future, or today it's very important but we haven't recognised it #11ENGO1.

> The IFA to be fair have been very constructive on the Peatlands Council because they have supported the [pause], because the IFA like to think they have a sort of moral authority over rural Ireland, so it's a real annoyance to the IFA that having agreed the compensation package that there was so much opposition to it. But you'll find so much opposition, is not farmer opposition, it's driven by the contractors and by the non-IFA house dwellers who are not farmers. Farmers are too busy farming to make much of a fuss and are happy with the compensation. Some of the IFA people I've ended up establishing a very good rapport with, the people on the ground … the SACs will stand, but there are a number of hardcore turf cutters and contractors that do not accept this … the majority of people with peat cutting plots are actually not farmers but people living in rural houses … they are people not with a very high income ... so that's why our interest from the beginning was to see people in that situation

> being given a constructive alternative which would be to the long term benefit, in terms of insulation and more comfortable house, but that didn't happen #12ENGO2.

ENGO actors' subjectivities on the lost potential for alternatives to the compensation package contrasts with their heightened emotions on de-classification as revealed in the next two quotations. These perspectives indicate how the principle of immutability of SACs was defended by ENGOs despite new scientific information indicating that in a minority of cases, Article 6(3) consents for turf cutting could arise due to site specific eco-hydrological characteristics. It was also defended despite the identification of compensatory habitat and the announcement of a restoration programme to address habitat losses (DAHG, 2014; DAHG, 2015). However, ENGOs were opposed to de-designation in principal, and were critical of the inclusion of cutover in compensatory habitat in a context where active and degraded raised bog habitat was being de-designated in the NHA network (IPCC, 2014). These ENGO perspectives, which have much in common with F1, also reveal how purely technocratic planning is incompatible with the site-specific approach to conservation emerging through the scientific review of the peatland resource. These viewpoints also provide insights into the practical challenges of implementing a site-specific approach and ENGO's concerns that such an approach would diverge from the technocratic approach to EU nature conservation.

> In the SAC Management Plan for raised bogs, there are five sites in contention for partial or complete de-designation … But I think the turf cutters' position on it is if you can do it for five you can do it for them all. We are absolutely no way about that … I think some of the decisions they are making they kind of abandon the science, the science is there, the science says this should be an SAC, and then someone says well look there is a problem there, there's a flashpoint, there's this, and then you get some people going down from National Parks and Wildlife service and they won't stick to their guns; its compromise, and once you yield on one, you have to go with them all then, you've lost track of the process; you know it has to be robust, that's the point, and we just see any decisions that are being made to de-designate, especially the SACs, it's absolutely suicide, its actual wildlife suicide (#11 ENGO1).

> Declassifying some of an SAC in relation to bogs is contradictory because that means that if you allow cutting you undermine the conservation status of the remainder of the SAC but by considering the principle of declassifying at all what you are saying is that the destruction of an SAC will be rewarded by declassification and that is not a way to implement the Habitats Directive … (#12 ENGO2).

The preceding discussion has demonstrated how the State operated through the Peatlands Council and its dominant discourse coalition to repress site-specific discourses entangled with the TCCA's campaign. Yet, governance changes and policy outcomes also indicate how the State leveraged the marginalised F3 discourse advocated mainly by semi-State actors, towards the latter stage of policy evolution through establishment of the *Peatlands Strategy Implementation Group* (DAHG, 2015). This excludes ENGOs and interest groups and is comprised of State and semi-State bodies affected by peatlands regulation and the Chair of the Peatland Council to "ensure a whole of government approach and complement the work of the Peatlands Council" (DCHG, 2015, p. 60). Furthermore, it established a *Scientific Advisory Committee* to advise the Peatlands Council on the progress of the scientific review of the Irish peatlands resource (DCHG, 2017).

The final *Raised Bog SAC Management Plan* (DCHG, 2017) provides insights into how scientific-technocratic legitimacy (F1) for implementation of the Habitats Directive on priority habitat was undermined through the collaborative process. The Plan goes beyond the F3 discourse, and is in direct opposition to F1 in its proposals to invoke Article 6(3) or Article 6(4) for effective partial de-designations at 14 SAC sites, where relocation alternatives are not possible. This move, together with provision of compensatory habitat primarily through new designations on public land removes the requirement to compensate significant numbers of turf cutters. However, it also reveals the over-arching focus on maintaining longstanding socio-economic priorities and divergence from the principles underlying *Natura 2000* by reinforcing

public disengagement from conservation. The plan also reveals how recent scientific investigations on cutover indicate its potential for restoration of peat forming communities, and notwithstanding challenges and uncertainties, its potential for restoration to active raised bog albeit over a longer time-frame (50 to 100 years) than degraded raised bog (typically 10 to 20 years) (DCHG, 2017). This outcome entangles with claims of the TCCA and turf cutters, on the potential for restoration of cutover to meet compensatory habitat (TCCA, 2012; author, 2016), thus further undermining the scientific-technocratic approach to implementation.

From the governmentality perspective the policy outcomes suggest the power of the State to reconstruct scientific legitimacy under the Habitats Directive, to converge both with its socio-economic priorities and with resistance. In combination with the empirical analysis the policy outcomes reveal that the barriers and solutions to resolving the conflict have been constructed to evoke the delinquency of Irish culture and local politics in terms of an inability to transition away from turf cutting, thus normalising resistance on private peatlands. These policy outcomes also reveal how ENGOs and environmental-ecological sector actors in F1 were used as instruments of government and their positions were compromised through involvement in a policy transition towards de-classification of a significant portion of SACs. The plan explicitly implicates resistance and democratic processes in this policy transition, revealing insights into how the environmental-ecological sector failed to sufficiently consider these path dependencies in the formulation of its policy position in collaborative governance. Therefore, following Van Assche et al. (2017a), this outcome is not just the product of the power-knowledge regime represented by resistance, but is also a product of the regime underpinning institutional inertia on public disengagement with the scientific-technocratic approach to conservation. In addition, the governmentality perspective has elucidated the lost opportunity provided through collaborative governance to challenge the privileged relationship between agricultural stakeholders and the State that inhibited alternative outcomes.

7.8 Conclusion

This paper has adopted Q methodology to reveal power relations underlying a collaborative approach to resolving conflict on peatlands conservation under the EU Habitats Directive. The policy outcomes reflect structural divergence between the socio-economic and environmental-ecological sector, but we have revealed the underlying significance of power-knowledge to more fully understanding this structural divergence. The focus on power-knowledge was instrumental in revealing how a strategic cross-sectoral alliance formed as professional actors converged to protect their interests in the face of resistance. This perspective also elucidated how divergence between stakeholders and political-economic inequities within the socio-economic sector, and institutional rigidities within the environmental-ecological sector contributed to these structural outcomes. The paper has also added to the literature critiquing the overbearing dominance of scientific-technocratic rationality in EU nature conservation, as too narrow a basis for constructing legitimacy (Beunen, Van Assche & Duineveld, 2013; Turnhout et al., 2015; Wurzel, 2008). Governmentality has provided a lens on the power of the State within collaborative governance to reconstruct scientific legitimacy to converge with socio-economic priorities and with resistance. It has also revealed its central role in reinforcing the broader political-economic inequities and imbalances that inhibit more progressive nature conservation policy.

Conflicts of interest: none

Chapter 8: **Conclusions**

8.1 Introduction

This concluding chapter provides an overview of the research approach, and a synthesis of key findings in and across the three peer reviewed articles. It also includes a discussion on how the research contributes to the wider body of academic knowledge on the construction of legitimacy in EU nature regulation. The central research aim across the three peer reviewed articles addresses the role of power-knowledge relations between stakeholders in the construction of legitimacy through the collaborative process for EU nature regulation. The second related research aim focused on addressing the gap in the governmentality literature on the role of resistance in shaping legitimacy discourses in nature conservation. Each paper applied Foucauldian discourse analysis and governmentality theory to the power struggles between stakeholders relevant to the collaborative efforts to resolve the conflict on regulation. The empirical analysis in each paper focused on different levels of governance and has provided insights into the relationships between power-knowledge, collaborative governance and the legitimacy issues underlying the conflict.

8.2 Synthesis of key findings

In the first paper titled *Power, discourse and participation in Nature Conflicts: The case of turf cutters in the governance of Ireland's raised bog designations*, the Foucauldian approach to discourse analysis was applied to examine the power relations between the State as agent of regulation and the TCCA as the representative group for turf cutting subjects. The focus on power and discourse illustrated the tensions between participative and scientific forms of legitimacy in the collaborative process underpinning nature's regulation. This revealed that, despite the State's construction of the Peatlands Council as a participatory forum,

in practice, the State exerted a dominant influence over official policy and ensured that input and throughput legitimacy was derived primarily from scientific criteria. This approach restricted the discursive field for consideration of de-classification of bogs, a key concern of the TCCA and resistant turf cutters. The discourse analytic approach also focused on the TCCA's strategies of resistance. It revealed how the Peatlands Council had also acted as a medium for community resistance through the TCCA's initial membership of the Peatland Council and its position within the official negotiations. The TCCA's exit from the Peatlands Council and its grassroots mobilisation of turf cutters proved politically significant. This forced government to reconsider the legitimacy of the partnership process, as represented by the Peatlands Council in terms of the fairness and inclusivity of its decision making procedures. The MEP Luke (Ming) Flanagan's dual role as activist and parliamentary deputy (at the time), was also instrumental in the shift towards a greater emphasis in official discourse on democratic legitimacy and the need to address displacement issues arising from the designations. The subsequent alteration of the governance structure through the establishment of the Peatlands Forum, represented an attempt by the State to reconstruct legitimacy with more emphasis on throughput legitimacy in terms of the direct participation of turf cutting communities affected by the Directive. The Peatlands Forum and the parliamentary debate on turf cutting which was instigated by Flanagan, effectively reframed the debate by broadening the discursive field to include consideration of the potential for de-classification through invoking Article 6(3) and 6(4) of the Directive. This illustrated how Flanagan and the TCCA applied power-knowledge strategies to effectively contest, resist and de-stabilise the top-down approach to regulation.

Previous research has highlighted the dominating influence of the State in networks of environmental governmentality, and hence, the limited ability of protesting interest groups to influence regulatory control frameworks (Davies, 2005; Edwards et al., 2001; Taylor & Lawrence, 2012). In the context of this research, the empirical analysis in the first paper demonstrated how the participative governance process and the politics of resistance converged, so that the TCCA influenced institutional and discursive change for implementation of the

Directive, pointing to the rescaling of governance downwards. The consequent impact of the partnership process in the early stages of the policy process (i.e. between 2011-2012), disrupted the regulatory authority of the Irish State. This stage of the research therefore revealed the potential within collaborative governance processes for interest groups, such as the TCCA, to exert local agency, to resist centralising State control and to shape transformation in environmental policy.

In the second paper titled *Local knowledge and environmentality in legitimacy discourses on Irish peatlands regulation*, Q methodology was adopted to analyse ground level turf cutters' local environmental knowledge and viewpoints on governance of the conflict. The results provide insights into the convergence and divergence of legitimacy discourses between a group of compliant relocators and a group of self-identified resistors to regulation. The rigid separation of local and scientific knowledge in the designation process through the EU Habitats Directive undermined legitimacy as local environmental subjectivities clashed both with scientific rationality and the governance regime underlying conservation. This demonstrates like previous studies on environmental conflict how lack of attention to place-based environmental knowledge can fuel unexpected counterclaims, based not simply on rhetoric, but also on local knowledge and authentic experience (Jepson et al., 2012; Robbins, 2006).

Foucauldian power-knowledge asymmetry was evident in turf cutters' resistance and contestation discourses that emphasise inconsistencies, contradictions and inequities underlying conservation policy. A prominent theme underlying the convergence of dissatisfaction over acknowledgement of property rights, was the perceived failure of the compensation package to fairly compensate for the fuel security provided by turbary rights. Given the lack of progress on relocation options, (except at a very small number of sites), turf cutters perceived it was offered as a token gesture that lacked any real commitment.

The science-first and top-down approach towards designation also undermined trust in the national agency for nature conservation and in the science underlying conservation. Cultural resistors' dismissal of the value of SAC peatlands relates

not simply to poor knowledge of peatland processes and the legitimacy impacts of continued industrial harvesting (Bullock & Collier, 2011; Bullock et al. 2012), but also to the failure of governmentality as evidenced by the lack of trust in the NPWS and its initial survey justifying designation. The corollary of this is that many turf cutters do not distinguish between SAC peatlands and non-SAC peatlands when considering legitimacy of peatlands policy. This view was shown to be most prevalent amongst those that resist or contest policy. Therefore, cessation policy has mobilised discourses and environmental subjectivities that highlight the contradictions and perceived hypocrisy of peatlands regulation when unregulated intensive harvesting continues. Perceived exploitation associated with historic peatlands management suggests that Ireland's postcolonial legacy and the tradition of top-down governance by State and semi-State agencies reinforce negative perspectives on the displacement aspects of regulation.

Nurturing responsible behaviour is a critical component of research on environmental governmentality. The second paper made visible a positive relationship between the cultivation of moral responsibility and more equitable economic alignment with property rights in relocation policy. For example, the 'market pragmatist' discourse accepted the need for conservation of SACs and strong claims of moral responsibility for conservation and compliance were made. Crucially, market pragmatists perceived the relocation process to substantially redress the lack of trust and inequities underlying policy. This was due to officials' engagement with the local bog committee on negotiating an agreement that was perceived to sufficiently compensate for turbary rights. The leadership role of the local bog committee in encouraging ground level compliance through relocation was also a key theme in the success of relocation in the interviews with relocators that loaded across the factors. It was generally perceived that relocation provided both fairness and economic advantage over financial compensation. This process has provided insights into a model for peatlands conservation that integrates local knowledge through a more adaptive mode of governance. It points to the need for a more equitable approach to compensation, on site specific basis, based on the remaining peat reserves associated with an individual's turbary rights. For market pragmatists however, relocation also cultivated

ambivalence towards conservation potential of non-SAC peatlands. The positive perspectives on relocation nevertheless reveals potential for an alternative site-specific approach to financial compensation that could satisfy other protesters. Greater prospects for the cultivation of environmentality and moral responsibility in peatlands regulation, will require attention to compatibility between local knowledge and incentives that align with peatlands ecosystem services. There is potential for a shift to more imaginative governmental technologies to incentivise conservation through proportional compensation for peat reserves associated with individuals' turbary rights. Potential incentives raised by the participants in this research include home grants for renewable energy refits, support for eco-tourism and carbon credits for peatlands conservation. These could be funded through existing measures for nature conservation within the *European Agricultural Fund for Rural Development*, and/or other financial instruments facilitated by the policy shift towards payments for ecosystem services, and the need to address climate change (Turnhout et al., 2015). This research asserts that fundamental governance change from the current top-down system, to a communicative and adaptive approach to governance at local level would be required to enact such policies effectively.

In the third paper titled *Unlikely alliances? Knowledge, power and the collaborative governance of Irish peatlands* the focus was on analysing expert discourses on the conflict, and the power relations between professionals in the functioning of a dominant discourse coalition emerging from collaborative governance. Recent literature adopting Q methodology to research environmental conflicts revealed structural dissonance (i.e. between actors aligned to socio-economic and environmental sectors or between experts and locals) as barriers to innovation in environmental networks (Brannstrom, 2011; Clare, 2013; Lansing, 2013). Such findings seem insufficient in regards to explaining the complexity of relationships in environmental networks and in nature conflicts.

In this research, the sectoral dissonance evident between environmental-ecological and socio-economic actors provides only partial insights into policy evolution. Like Robbins (2006), the empirical insights gained through the

application of Q Methodology and governmentality theory to the analysis of professional discourses on regulation have revealed the significance of power-knowledge underpinning these policy outcomes. This is evident in the emergence of alliances reflecting how certain actors adopted unexpected positions in defence of their greater interests. This was illustrated by the opposition to the site-specific approach in the dominant discourse coalition shared by IFA actors in F2 and actors aligned to the environmental-ecological sector in F1 (NPWS, ENGO and ecological consultants). The focus on power-knowledge also elucidated how divergence within the socio-economic sector (i.e. between positions adopted by the I.F.A. and the T.C.C.A.), and institutional rigidities within the environmental-ecological sector underpinned sectoral divergence and policy outcomes.

The analysis revealed the IFA's instrumental role in suppressing discursive support for the site-specific approach, revealing how it saw such a transition as a threat to its interests. It also drew attention to the key role of the IFA as a power broker in this dominant discourse coalition and in maintaining the technocratic approach at a key stage in the conflict. The potential transition to a site-specific approach for nature regulation represented high stakes not only for the IFA, but also for the State and the EU in the context of the imbalance between Common Agricultural Policy funding for productive farming at the expense of nature conservation on less productive land (Crowley, 2006; Fogarty, 2017; Visser et al., 2007). The agency of the State in maintaining this dominant discourse coalition is also evident by the ease with which the IFA displaced the TCCA as the main interest group representing socio-economic interests in official policy making, and also demonstrates the IFA's access to authority. In essence, what becomes clear is how structural issues are at the root of the barriers to resolving this conflict, as reflected in the dominance of the agricultural agenda and productive farming over nature conservation priorities in EU public funding. This longstanding structural imbalance was sustained by the subtle deployment of power-knowledge by these powerful stakeholders in collaborative governance at national level.

ENGO actors' with apparently ambivalent (these actors confounded across two discourses) views on the official line on regulatory policy also sustained the

dominant discourse coalition. This was evident in their defeatist attitude to incentives such as renewable energy options and carbon credits for conservation, and in their opposition to declassifications in any circumstance. This revealed the preference for maintaining the technocratic regime on implementation of Article 6 in the face of the threat posed by the site-specific approach to the established approach to implementation of the Habitats Directive. It appears that these actors were blinded by the belief that this policy position would help to secure the established mode of implementation of the Habitats Directive.

The re-assertion of the technocratic approach in collaborative governance represented an apparently virtuous attempt, following the Peatlands Forum and the parliamentary debate on turf cutting, to minimise or reverse the possibility of Article 6 consents arising for de-classification. It also represented an attempt to de-legitimise the resistance discourses associated with the TCCA. The empirical research demonstrates how the State operated through the NPWS, and through ENGOs and the IFA in collaborative governance to de-legitimise the TCCA and the discourses associated with it. This is also reflected in the dominant narrative in professionals' consensus discourses refuting the TCCA's legitimacy as a representative body for turf cutters, due to its association with the vested interests of contractors' (i.e. commercial turf cutting). The governmentality perspective adopted in this analysis reveals however that notwithstanding the regulatory challenges arising from the blurring of turf cutters and contractors interests in the resistance campaign, the representation of the contractors as the sole 'villains' in the conflict is overly simplistic and misleading.

An alternative perspective on the role of the TCCA in the debate can be gained from F3 and semi-State officials' (Bord na Móna and Coillte) marginalised discourses emphasising ineffective consultation with turf cutters and the TCCA. These actors also believed that emerging science on the variable ranking of sites in terms of conservation or restoration potential from the *Scientific Basis for Raised Bog Conservation Study* (DCHG, 2017; Mackin et al., 2017b) was being disregarded in favour of more technocratic interpretations of the legislation. In the absence of alternative solutions to address the displacement impacts of the designations, and given the outcomes of the Peatlands Forum and parliamentary

debate on turf cutting, it was inevitable that the TCCA and its campaign for de-classification would capitalise from the failure to provide alternatives to the compensation package.

The final *Raised Bog SAC Management Plan* (DCHG, 2017) reflects the re-establishment of negotiations with the TCCA in an attempt to move beyond the impasse on regulation (DCHG, 2017). The plan explicitly implicates the ongoing resistance and the attention to throughput legitimacy processes in its concessionary proposals to invoke Article 6 for turf cutting to continue alongside conservation, at 14 SAC sites, where relocation is not possible. In contrast to previous policy, and on foot of the new scientific evidence emerging from the State's *Scientific Basis for Raised Bog Conservation Study* it has been determined that turf cutting may continue in a part of several sites without necessarily damaging the whole SAC (DCHG, 2017). The proposal to invoke Article 6(4), subject to seeking an opinion from the EU, for consent for turf cutting applies to sites where ongoing scientific investigations determine that Article 6(3) consents cannot be granted. Consequently it seeks to invoke Article 6 (4) through a novel interpretation of the Habitats Directive legislation, and one which is not considered legitimate by ENGOs or environmental scientists (CIEEM,2014; IPCC, 2014; Irish Wildlife Trust, 2014).

In the plan it is proposed that compensation for habitat lost through continued turf cutting by protesters on designated sites and through de-designation will be provided for through new designations, which are mainly on public land and through the restoration of certain areas of cutover (DCHG, 2017). Nevertheless, although the plan and scientific assessments claim that the compensatory measures will address the requirements of the Habitats Directive, uncertainties remain in relation to the restoration potential of cutover which is more challenging and takes longer to restore than degraded raised bog (DCHG, 2017). ENGOs and environmental scientists had taken a negative stance on inclusion of restoration capacity of cutover in habitat requirements for the Habitats Directive in a context where de-classification of better quality sites was promoted in the revision of the NHA network (CIEEM, 2014; IPCC, 2014). From the perspective of ENGOs positioning in the debate, it is clear that the outcomes of the

collaborative governance process for resolving the conflict can be considered a failure.

On one level the *National Raised Bog SAC Management Plan* (2017) reflects a transition to more socially considerate conservation policies, and arguably a certain level of policy innovation on alternative approaches to peatlands conservation in the face of the ground level legitimacy challenges relating to its implementation. This is evident in the recognition of the restoration value of Bord na Móna sites that were previously drained for production for restoration as SACs and restored afforested peatlands owned by Coillte. It is also evident in the recognition of the restoration potential of some areas of cutover and in the proposals for turf cutting to occur alongside conservation. The outcome has vindicated the TCCA's policy position on utilising the scope within the Habitats Directive to seek consents from the EU for de-classification and resistant turf cutters' stance on the legitimacy of partial de-classification and the plausibility of the restoration potential of cutover. It has thus undermined ENGOs policy positions on the need for full cessation of turf cutting on raised bog SAC and the scientific evidence that cessation of turf cutting is required to ensure the integrity of the whole SAC (Renou-Wilson et al., 2011). In terms of cultivating environmental attitudes and behaviours amongst turf cutters, the policy outcomes do not bode well for the future regulatory prospects of those parts of the SAC network that are subject to private turbary rights. In many ways the policy outcomes represent the weakening of regulatory authority over SACs subject to turbary rights, and the failure of collaborative governance to identify other more environmentally sustainable solutions, beyond de-classification to resolve the conflict on these sites. The potential for an adaptive site-specific approach to conservation and compensation was missed as a consequence of the unequal power knowledge relations enacted through collaborative governance at national level.

8.3 Contribution to critical (political ecology) perspectives on the construction of legitimacy in EU nature regulation in Ireland

In adopting a political ecological approach this research has sought to expose the role of power relations, inequalities and politics in the collaborative process for Irish peatlands regulation. This case of Irish raised bog regulation under the Habitats Directive has affirmed previous research (Jepson et al., 2012; Robbins 2006; Rutherford, 2007; Van Assche et al., 2017) on the mutual constitutionality of the relationship between knowledge and power in environmental networks and in resistance to regulation. This research has revealed how resistance can and will emerge from contexts within which power is applied in a way that attempts to marginalise local knowledge of conservation and that fails to deliver effective policy solutions to the displacement impacts of conservation. Theoretically, it reflects findings advanced by Engelen et al. (2008), Opdam (1999), Bryan (2012), O'Rourke (2005) and Tovey (2009a; 2009b) that approaches to nature conservation that effectively constitute forms of coercion (Vaccaro et al., 2013) through exclusion of local knowledge are virtually impossible to achieve.

The policy outcomes indicate the key role of the State in determining the outcomes of power-knowledge and structural relationships in collaborative governance at national level. The research has illustrated how the State set out to construct specific narratives around nature conservation that asserted the superiority of scientific knowledge over local knowledge at key stages of the policy process. This case has also illustrated how participatory and scientific norms for implementation competed as discursive forces within the policy process. Resistance, and its related participatory discourses, influenced a transformation in policy, which in turn influenced a reconstructed form of scientific legitimacy that legitimised the move towards de-classification. Therefore, this study affirms previous research (Turnhout et al., 2015) that EU nature regulation in Ireland has not so much relied on the legal principles or the scientific premise underlying the Habitats Directive, but rather has been highly influenced by democratic norms and resistance. At the same time, the collaborative approach to meeting EU regulatory requirements in the face of resistance, also reflects

Turnhout et al., (2015) on the prominence of cost-effectiveness in the construction of legitimacy in implementing Natura 2000. In this case, cost-effectiveness is evident in the move towards de-classification to meet social equity concerns, and in the provision of compensatory habitat through new SAC sites on public land. Cost-effectiveness is also reflected in the position adopted by the dominant discourse coalition that effectively side-stepped the transition to a site-specific approach for conservation and compensation. Meanwhile, ENGOs were used as instruments of government in a policy transition that has ultimately failed to deliver on their priorities and their positioning in opposition to de-classification in collaborative governance.

This research has reflected upon the issue of interpretation of the Habitat's Directive (in particular Article 6) by Ireland by means of an overbearing application of scientific rationality. It adds to previous literature critiquing the dominance of scientific-technocratic rationality in the implementation of EU nature conservation policy, as too narrow a basis for constructing legitimacy (Beunen, Van Assche & Duineveld, 2013; Turnhout et al., 2015; Wurzel, 2008). The research asserts that the legitimacy and integrity of scientific knowledge itself becomes undermined and discredited through its forced application as a technical or legal instrument of government that suppresses or sidesteps the claims to local knowledge advanced by the public and by civil society. The policy transition represented by the *SAC Bog Management Plan* illustrates the contingent nature of scientific legitimacy for the management of the raised bog SACs as enacted through the collaborative governance process. This research has demonstrated how the State reconstructed scientific legitimacy to respond to political and ground level resistance and how this has converged with its economic priorities. It therefore reflects Edwards et al. (2001) in finding that the State continues to steer and direct environmental partnership processes. This research also asserts that the State is furthermore capable of reconstructing collaborative governance for nature conservation, in the face of resistance, to divert any threat to its core socio-economic priorities.

The logic of governmentality has been driven by the technocratic approach, cost-effectiveness and the protection of domestic socio-economic priorities. Through

the scientific review of the raised bog resource, the problems and solutions relating to the conflict have been constructed and reconstructed to evoke the delinquency of Irish culture and local politics in terms of an inability to support a transition away from turf cutting. Collaborative governance policies and the intended effectiveness of EU law and incentives for conservation have failed to protect 14 SACs, a sizeable portion of the SAC network. In de-legitimising the resistance discourses of the TCCA and the local knowledge of turf cutters these voices were framed as deficient in meeting regulatory requirements. This has instrumentally been used by the State to justify the recourse to de-classification of sites in a novel interpretation of the scope of Article 6 of the Habitats Directive to address socio-economic concerns on priority habitat. Therefore, the outcomes of the policy process have reinforced the marginalisation of nature conservation in political priorities and have effectively normalised resistance. Collaborative governance processes at national level suppressed the potential for biopower and culture governance (Cooper & Rosin, 2014; Dean, 1999; Fletcher, 2010) to positively influence attitudes in a transformative socio-ecological transition.

Local knowledge as part of the package of participatory approaches to governance was never regarded as desirable in its own right. Instead the State has drawn upon scientific or technical norms in terms of its response to meeting the requirements of the Habitats Directive through the Raised Bog SAC Management Plan, and has evoked democratic and participatory norms to legitimise the recourse to de-designation. This has reinforced the simplistic and misleading idea that participation in nature regulation processes creates barriers to effective regulation. This is despite the paradoxical alignment of the final policy outcomes associated with the scientific review of the SAC network, with the principles outlined in the TCCA's (2012a) strategy, including declassifications and inclusion of cutover sites in compensatory habitat. This approach glosses over the contingent nature of scientific knowledge in terms of how the policy process and its outcomes have addressed the resistance of turf cutters and the TCCA. In this way, calls in academic and policy literature for the co-production of knowledge between locals and scientists to enable a transition to holistic site-specific approaches to conservation have been repressed (Folke et al., 2005;

Renou-Wilson et al., 2011; Tovey 2009a; 2009b). This affirms previous research that the reticence of environmental-ecological actors to actively engage with local knowledge systems is a barrier to ecological resilience (Collier & Scott, 2009; Siebert 2008; Tovey 2009a; 2009b). It also points to the need to review the Habitats Directive and its Guidance documents in terms of addressing the dominant and problematic perception amongst environmental-ecological actors, that the form that scientific knowledge takes is one that excludes local knowledge.

8.4 Contribution to methodological approaches to research on legitimacy in nature conservation

This research has brought Foucauldian discourse analysis (Sharp & Richardson, 2001) into a productive relationship with Q methodology to demonstrate how combining these approaches provides insights into multilevel governance discourses in environmental conflict. Q methodology has predominantly been used to analyse viewpoints of diverse stakeholders involved in environmental governance rather than the viewpoints of the broader public that key actors claim to represent (Brannstrom, 2011). An exception to this is provided by Ellis et al., (2007) who used Q methodology to examine public discourses of support and objection in the case of an onshore wind farm in Northern Ireland. This article-based thesis represents one of the first published studies to utilise Q methodology to intensively focus on one stakeholder group at ground level (i.e. turf cutters) in the context of a dynamic collaborative policy process to resolve environmental conflict. The subsequent adoption of Q Methodology to analyse diverse professional stakeholders' viewpoints in a separate, but linked study, is also novel in environmental geography. This approach provided deeper analytical insights into the relationship between ground level and expert legitimacy discourses, than the more conventional approach to Q methodology focusing on key stakeholders in environmental conflict research. The use of two separate Q studies provided scope for analysis of convergence and divergence of discourses within local and professional knowledge systems respectively, and allowed for intensive analysis of the power-knowledge dynamics between key stakeholders involved in

governance. This provided evidence which contributed to the triangulation of the qualitative and quantitative data across the various sources and governance levels researched in the three articles, while also demonstrating the validity and credibility of the research framework. Therefore, despite the reliance on a small sample of participants, the holistic and multi-level approach adopted has helped to offset the limitations on generalisability of viewpoints associated with Q Methodology research. Overall the thesis has demonstrated how Q methodology can provide a rigorous and reliable means to analyse the convergence and divergence of discourses at various levels of environmental governance. This approach has addressed the methodological gap on the framing of policy and analysis towards alternative solutions that address social barriers to nature's conflict. This reflects the fulfilment of the ambition of the research to identify more equitable and ecologically resilient solutions to the legitimacy crisis in EU nature regulation.

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Appendix A: Text of Article 6(3) and 6(4) of the European Habitats Directive

Article 6 (3). Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

Article 6 (4). If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted. Where the site concerned hosts a priority natural habitat type and/or a priority species, the only considerations which may be raised are those relating to human health or public safety, to beneficial consequences of primary importance for the environment or, further to an opinion from the Commission, to other imperative reasons of overriding public interest. (cited in DAHG, 2014a)

Appendix B: Q sample of 36 statements with source

	Environmental knowledge on governance (Policy and Politics)	Source of Claim
1.	All the SAC boundaries were surveyed on the ground and the greatest habitats of interest are within the designated areas	Consultant ecologist interview
2.	It is difficult to get information justifying SAC site selection	Official's observation on concerns of Bog users Quirke Report,
3.	NPWS is willing to engage with bog communities to find solutions	Official's comment in the Quirke Report /Consultant ecologist interview
4.	The government fulfilled its obligation to notify turf cutters by placing advertisements in newspapers or by letter	Consultant ecologist interview
5.	Rangers didn't have a chance to meet with landowners due to lack of resources	Consultant Ecologist interview
6.	Europe imposed these SACs on us	Turf cutters placards in June 2013 protest/TCCA 2012a
7.	It's a bit dodgy for the wildlife service to highlight the role of peatlands for conservation when Bord na Móna is still harvesting and burning peat for electricity	NPWS interviewee/ TCCA campaign
8.	Bord na Móna should have conserved their lands, but the Habitats Directive doesn't apply to it	Turf cutter interview/ TCCA (2012a)
9.	Turf cutters can relocate where possible, and alternatively are offered compensation or turf, so the compensation package is good	Consultant Ecologists/Bord na Móna employee/ Relocated turf cutters interview
10.	Ming Flanagan voicing the anti-restoration interests gives more debate, at least he got it talked about.	Consultant ecologist interview
11.	Ming Flanagan makes a lot of outlandish statements about turf cutting	Turf cutter interview

12. When they originally designated SACs, it wasn't looked at in terms of numbers of turf cutters and restoration potential, so there is a need to revise them	Consultant ecologist interview
13. The vested economic interests of the turf cutting contractors have driven the campaign against the ban on turf cutting	ENGO interview
14. The landowners own the carbon credits in bogs and should be able to benefit from them for being proactive about conservation	Consultant ecologist interview / TCCA (2009)
15. Environmental regulations have not affected big farmers as much as the smaller farmer and turf cutters with the worst land	Turf cutter interview
16. There is no political champion of peatlands conservation so there is inadequate funding, poor understanding and begrudgery associated with implementing it	Bord na Móna interview
17. Maybe the SACs will have to be bought to ensure their survival	Turf cutter interview (self-identified complier)
Environmental knowledge (ecological, cultural, socio-economic)	
18. Turf cutting at the edge of the bog, damages it by disturbing its water system	Turf cutter interview (self-identified complier)
19. Cutting turf has no environmental effect on the bog, it replenishes itself, you can start to see heathers and the fauna coming back	Turf cutter campaigner social media comment on An Taisce Facebook site
20. The turf machines that are being used, they're only cutting the same amount of turf as for the house	TCCA campaigner radio interview on turf cutting conflict, RTE radio 26 August, 2013

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21. No-one should have the right to dig free fuel out of the ground	Social media comment on boards.ie Project seeking to protect Irelands peatland bogs seeking public support
22. I can't see how de-classifying some or all of a SAC can be allowed in any context given that there is so little intact raised bog remaining.	Email from consultant ecologist
23. Peatland conservation can work hand in hand with carbon storage so it also benefits climate regulation	Consultant ecologist interviewee
24. Turf cutting is a way of life	Turf cutter interview
25. You have to have sympathy for people who cut turf for generations and their fathers before them cut in the one spot, they don't want to cut turf elsewhere	Turf cutter interview
26. Turf cutters have property rights which need to be acknowledged	TCCA campaign (2012) / Academic lit e.g. Bullock & Collier (2011)
27. Its rather ironic with the centenary of 1916 coming up, that people should have to protest their right to cut turf	TCCA campaign
28. The peace of mind that you get on the bog, there's a great sense of wilderness out there	Turf cutter interview
29. With the turf cutting contractors involved, there is much more being cut, it's just easier with the machine	Consultant ecologist interview

30. The bog wasn't important before the machines came in	Social media / Turf cutter complier
31. The compensation wouldn't cover what the turf cutter can save on heat and fuel security	Turf cutter interview/ TCCA campaign
32. The greed of a few, who have been offered ample financial compensation, is allowed to defeat everyone's right to a beautiful countryside	ENGO activist, RTE Radio interview on 26th August, 2013 on the turf cutting conflict
33. Irish raised bog SACs contain rare and threatened habitats which we have a duty to protect for future generations	Policy documentation
34. Turf cutters on SACs should continue to exercise their right to cut turf on their own bogs	TCCA campaign
35. Traditional hand-cutting on raised bogs was environmentally sustainable	Turf cutter interview
36. There's a lot of bog in Ireland that could be preserved that never will be cut	Turf cutter interview

Appendix C: Information on the research and Q sort instructions

PhD Title: Collaborative governance of protected areas: Study of raised bogs SACs in Ireland. Part-time PhD under Geography Department, National University of Ireland, Galway.

Research context - The collaborative approach to protected area governance has emerged as 'best practice' in recent years, but many questions remain about its adoption as a model for environmental conservation. The research involves a deconstruction of the range of conflicting ideals that can lie behind the collaborative approach to resolution of the conflict around raised bog designation as SACs in Ireland. The Q sort is an established procedure in the social sciences and is increasingly being adopted in research on environmental conflicts to give deeper insights into varying stakeholders perspectives on environmental regulation. Strict principles of research ethics apply, thus respondents input remains anonymous and unidentifiable.

Instructions for the Q-sort. In the envelope there are 36 statements relating to the public debate on the cessation of turf cutting on SACS. These are direct quotes which have been gathered from previous interviews with stakeholders or from public statements by stakeholders, therefore they include both statements of opinion and more objective statements. The Q sort chart has 36 boxes and you are asked to rank the statements in the chart based on your professional perspective on the implementation of the EU Habitats Directive on protection of raised bog Special Areas of Conservation. The Q sort involves rating your perspective on the statements on a relative scale from least in agreement with / disagree TO most in agreement with/ least in disagreement with. Therefore you should be able to find a box for each quote.

Step 1 Conducting the Q sort Please start by reading the cards and placing them in the AGREE BOX on the bottom right of the chart, and in the DISAGEE / LEAST IN AGREEMENT BOX on the bottom left. Then place cards in the NEUTRAL/ DON'T KNOW / AMBIVALENT BOX. You then begin sorting from those piles into

the chart proper starting with those statements with which you are most certain about at the extremes (+4 and -4 followed by +3 and -3 and so on) and ending with those you are least certain about in the middle area. The + 1 and - 1 columns relate to those statements you may be relatively ambivalent about or somewhat in agreement/disagreement with in relation to the debate. The 0 column relates to those statements about which you are generally NEUTRAL or DON'T KNOW or AMBIVALENT.

Step 2 Recording the numbers of the statements on the chart or miniature chart

Step 3 Post Q sort interview to gain further insights into why you placed statements in the columns at the extremes, as these are the most important to the research analysis. You will also be given the opportunity to comment on the survey. If you have any questions or need clarification on any aspect of the research please email or telephone me. Margaret O'Riordan, GMIT Mayo, 094-9043153

Appendix D: Correlation matrix and unrotated factor matrix (PQ method output file Article 2)

Correlation Matrix Between Sorts

SORTS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 TurfCut1	100	15	14	26	57	30	-7	26	8	22	28	32	23	11	37	24
2 TurfCut2	15	100	-7	20	22	14	-23	10	1	8	7	-4	-14	-17	-1	32
3 TurfCut3	14	-7	100	-22	17	23	42	-7	-4	21	49	63	60	27	20	23
4 TurfCut4	26	20	-22	100	33	10	-8	21	37	5	-7	6	-20	21	30	26
5 TurfCut5	57	22	17	33	100	58	-11	25	5	6	31	43	27	50	33	46
6 TurfCut6	30	14	23	10	58	100	12	3	-9	17	33	42	26	26	-5	36
7 TurfCut7	-7	-23	42	-8	-11	12	100	-27	-27	22	11	32	45	13	-6	27
8 TurfCut8	26	10	-7	21	25	3	-27	100	33	10	15	-3	-19	7	50	-9
9 TurfCut9	8	1	-4	37	5	-9	-27	33	100	13	10	2	-16	11	23	-10
10 TurfCu10	22	8	21	5	6	17	22	10	13	100	50	55	19	-20	9	20
11 TurfCu11	28	7	49	-7	31	33	11	15	10	50	100	65	42	0	33	15
12 TurfCu12	32	-4	63	6	43	42	32	-3	2	55	65	100	63	34	26	39
13 TurfCu13	23	-14	60	-20	27	26	45	-19	-16	19	42	63	100	33	16	33
14 TurfCu14	11	-17	27	21	50	26	13	7	11	-20	0	34	33	100	14	25
15 TurfCu15	37	-1	20	30	33	-5	-6	50	23	9	33	26	16	14	100	14
16 TurfCu16	24	32	23	26	46	36	27	-9	-10	20	15	39	33	25	14	100

Unrotated Factor Matrix

	Factors 1	2	3	4	5	6	7	8
SORTS								
1 TurfCut1	0.5474	0.4008	-0.0104	0.0976	-0.2293	0.1922	-0.3788	-0.3926
2 TurfCut2	0.0921	0.3622	-0.2028	0.6652	-0.0138	0.1774	0.4951	0.0284
3 TurfCut3	0.6466	-0.4173	0.1866	-0.1763	-0.0627	0.0531	0.3441	0.0213
4 TurfCut4	0.1770	0.6410	-0.2100	-0.0377	0.5695	0.0132	-0.1384	-0.0529
5 TurfCut5	0.6854	0.4310	-0.3918	-0.0294	-0.2433	-0.0764	-0.0668	-0.0305
6 TurfCut6	0.5844	0.0372	-0.3660	0.2320	-0.2290	-0.4138	-0.1749	0.2803
7 TurfCut7	0.3322	-0.6206	-0.0560	-0.0808	0.4130	0.2268	-0.2184	0.2807
8 TurfCut8	0.1354	0.6509	0.3501	-0.1684	-0.2021	0.1132	-0.0334	0.4957
9 TurfCut9	0.0429	0.5261	0.3554	-0.2383	0.3780	-0.4083	0.2575	-0.1620
10 TurfCu10	0.4633	-0.0663	0.5081	0.4505	0.3013	-0.1632	-0.2424	0.0483
11 TurfCu11	0.6781	-0.0562	0.4785	0.1795	-0.1808	-0.1392	0.1138	0.0089
12 TurfCu12	0.8639	-0.2005	0.1624	0.0043	0.0901	-0.1467	0.0170	-0.0706
13 TurfCu13	0.6797	-0.4633	-0.0150	-0.1863	-0.0749	0.1331	0.0828	-0.2021
14 TurfCu14	0.4351	0.0722	-0.4556	-0.6228	0.0535	-0.1985	0.1342	0.0654
15 TurfCu15	0.4217	0.4542	0.3399	-0.3267	-0.0252	0.4920	0.0211	0.0414
16 TurfCu16	0.5746	0.0277	-0.4450	0.2642	0.3211	0.2576	0.1302	0.0621
Eigenvalues	4.2795	2.6244	1.6944	1.4652	1.0907	0.9124	0.7906	0.6466
% expl.Var.	27	16	11	9	7	6	5	4

Appendix E: Correlations between factor scores and Factor matrix indicating defining sorts (PQ method output file for Article 2)

Correlations Between Factor Scores

	1	2	3
1	1.0000	0.0742	0.4125
2	0.0742	1.0000	0.1677
3	0.4125	0.1677	1.0000

Factor Matrix with an X Indicating a Defining Sort

	Loadings		
QSORT	1	2	3
1 TurfCut1	0.2451	0.4266	0.4673
2 TurfCut2	-0.1817	0.2324	0.3062
3 TurfCut3	0.7559X	-0.1748	0.1584
4 TurfCut4	-0.2353	0.4838	0.4436
5 TurfCut5	0.1440	0.2935	0.8380X
6 TurfCut6	0.2420	-0.0515	0.6447X
7 TurfCut7	0.4780X	-0.5141	0.0766
8 TurfCut8	0.0130	0.7511X	0.0166
9 TurfCut9	-0.0031	0.6312X	-0.0810
10 TurfCu10	0.6360X	0.2538	-0.0908
11 TurfCu11	0.7797X	0.2814	0.0695
12 TurfCu12	0.8194X	0.0351	0.3745
13 TurfCu13	0.6976X	-0.3050	0.3117
14 TurfCu14	0.0691	-0.0863	0.6244X
15 TurfCu15	0.3056	0.6194X	0.1502
16 TurfCu16	0.1984	-0.0986	0.6927X
% expl.Var.	21	15	18

Appendix F: Correlation matrix and Unrotated factor matrix (P Q method output file Article 3)

Correlation Matrix Between Sorts

SORTS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 BnaM1	100	28	51	32	36	45	54	67	32	42	46	45	59	62	54	48	22	59
2 BnaM2	28	100	52	36	53	40	45	48	31	42	32	26	27	35	56	44	19	41
3 BnaM3	51	52	100	37	43	63	32	63	68	56	36	52	44	69	61	51	18	38
4 IFA1	32	36	37	100	56	57	41	35	13	21	21	13	29	36	37	38	12	49
5 IFA2	36	53	43	56	100	55	41	30	20	38	3	5	35	25	25	47	11	46
6 Coillte	45	40	63	57	55	100	43	52	53	54	47	40	32	48	53	52	32	59
7 NPWS1	54	45	32	41	41	43	100	73	0	26	47	46	58	53	46	78	72	49
8 NPWS2	67	48	63	35	30	52	73	100	36	43	59	67	53	74	76	77	63	58
9 NPWS3	32	31	68	13	20	53	0	36	100	51	51	59	27	46	49	23	14	31
10 NPWS4	42	42	56	21	38	54	26	43	51	100	54	42	28	43	63	37	21	37
11 EnvNGO1	46	32	36	21	3	47	47	59	51	54	100	60	45	58	64	44	54	46
12 EnvNGO2	45	26	52	13	5	40	46	67	59	42	60	100	39	58	68	60	48	29
13 EnvNGO3	59	27	44	29	35	32	58	53	27	28	45	39	100	64	44	49	55	37
14 ConEcol1	62	35	69	36	25	48	53	74	46	43	58	58	64	100	66	59	53	39
15 ConEcol2	54	56	61	37	25	53	46	76	49	63	64	68	44	66	100	56	40	45
16 ConEcol3	48	44	51	38	47	52	78	77	23	37	44	60	49	59	56	100	70	47
17 ConEcol4	22	19	18	12	11	32	72	63	14	21	54	48	55	53	40	70	100	39
18 BCLeader	59	41	38	49	46	59	49	58	31	37	46	29	37	39	45	47	39	100

Unrotated Factor Matrix

	Factors							
	1	2	3	4	5	6	7	8
SORTS								
1 BnaM1	0.7182	0.0099	-0.0362	0.5120	0.0374	0.3302	-0.0683	-0.2409
2 BnaM2	0.5941	0.3500	-0.0786	-0.4229	-0.2783	0.3305	0.0052	0.1743
3 BnaM3	0.7509	0.3018	0.2996	0.1055	-0.3291	-0.1502	-0.0662	-0.0552
4 IFA1	0.5155	0.4630	-0.3739	0.0849	0.1759	-0.1945	-0.3287	0.3593
5 IFA2	0.5098	0.6087	-0.4052	-0.0364	-0.1543	-0.0737	0.2603	-0.1240
6 Coillte	0.7337	0.3746	0.0185	-0.0423	0.2754	-0.3118	0.0111	-0.0683
7 NPWS1	0.7331	-0.2764	-0.5154	-0.1071	-0.0348	0.0553	0.0097	-0.0327
8 NPWS2	0.8787	-0.2237	-0.0614	-0.0218	-0.0709	0.0949	-0.2287	-0.1279
9 NPWS3	0.5582	0.1956	0.6629	0.0374	0.0269	-0.2640	0.1189	-0.0349
10 NPWS4	0.6344	0.2412	0.3565	-0.1721	0.1032	0.2219	0.3405	-0.0469
11 EnvNGO1	0.7057	-0.2897	0.2738	-0.0795	0.3891	0.1156	0.1090	0.2572
12 EnvNGO2	0.7036	-0.3400	0.3628	-0.1116	-0.0592	-0.1247	-0.1978	-0.1627
13 EnvNGO3	0.6653	-0.2160	-0.1837	0.4275	-0.1969	-0.0084	0.3483	0.2407
14 ConEcol1	0.8077	-0.1765	0.1095	0.2571	-0.1941	-0.0857	-0.0741	0.1889
15 ConEcol2	0.8157	-0.0331	0.2541	-0.1461	-0.0357	0.2291	-0.2008	0.1493
16 ConEcol3	0.7961	-0.1869	-0.2934	-0.2178	-0.1462	-0.1653	-0.0361	-0.2262
17 ConEcol4	0.6086	-0.5838	-0.2725	-0.2111	0.0963	-0.2323	0.2192	0.0412
18 BCLeader	0.6740	0.1967	-0.2275	0.0885	0.4757	0.1419	-0.0221	-0.1808
Eigenvalues	8.7321	1.8546	1.7663	0.8942	0.8249	0.7026	0.6355	0.5555
% expl.Var.	49	10	10	5	5	4	4	3

Appendix G: Correlations between factor scores and Factor matrix with defining sorts (PQ method output file for Article 3)

Correlations Between Factor Scores

	1	2	3
1	1.0000	0.4499	0.3140
2	0.4499	1.0000	0.3857
3	0.3140	0.3857	1.0000

Factor Matrix with an X Indicating a Defining Sort

	Loadings		
QSORT	1	2	3
1 BnaM1	0.4750X	0.3693	0.3941
2 BnaM2	0.1852	0.5812X	0.3310
3 BnaM3	0.1783	0.4424	0.7190X
4 IFA1	0.1693	0.7663X	0.0633
5 IFA2	0.0810	0.8861X	0.0536
6 Coillte	0.2238	0.6206	0.4936
7 NPWS1	0.8524X	0.3906	-0.0170
8 NPWS2	0.7434X	0.2855	0.4381
9 NPWS3	-0.0124	0.1001	0.8827X
10 NPWS4	0.1213	0.3149	0.6884X
11 EnvNGO1	0.5493	-0.0045	0.5959
12 EnvNGO2	0.5480	-0.0847	0.6594
13 EnvNGO3	0.6447X	0.2464	0.2161
14 ConEcol1	0.6022	0.2056	0.5390
15 ConEcol2	0.4588	0.2474	0.6777
16 ConEcol3	0.7516X	0.3824	0.2089
17 ConEcol4	0.8839X	-0.0110	0.0646
18 BCLeader	0.3941	0.5764X	0.2392
% expl.Var.	26	19	23

Appendix H: Distinguishing statements with factor ranking and z score (PQ method output file Article 2)

No.	Statement	No.	Factors 1 Q-SV	1 Z-SCR	2 Q-SV	2 Z-SCR	3 Q-SV	3 Z-SCR
24	Turf cutting is a way of life	24	4	1.42	1	0.60	-1	-0.14
36	There's a lot of bog in Ireland that could be preserved that	36	2	0.93*	0	-0.12	0	-0.10
34	Turf cutters on SACs should continue to exercise their right	34	2	0.84*	-4	-1.49	-1	-0.27
6	Europe imposed these SACs on us	6	1	0.60	-2	-0.77	3	1.27
19	Cutting turf has no effect on the bog, it replenishes itself	19	1	0.33	-1	-0.52	-3	-1.20
33	Irish raised bog SACs contain rare and threatened habitats w	33	-1	-0.41*	4	2.07	4	1.38
4	The government fulfilled its obligation to notify turf cutte	4	-2	-0.91	4	1.82	-4	-1.59
18	Turf cutting at the edge of the bog damages it by disturbing	18	-2	-1.12*	1	0.39	2	1.04
1	All the SAC boundaries were surveyed on the ground and the g	1	-3	-1.32*	1	0.49	1	0.36
23	Peatland conservation can work hand in hand with carbon stor	23	-4	-1.45*	2	0.74	1	0.57
5	Rangers didn't have a chance to meet with landowners due to	5	-4	-1.61*	0	-0.01	0	0.11

No.	Statement	No.	Factors 1 Q-SV	1 Z-SCR	2 Q-SV	2 Z-SCR	3 Q-SV	3 Z-SCR
4	The government fulfilled its obligation to notify turf cutte	4	-2	-0.91	4	1.82*	-4	-1.59
3	NPWS is willing to engage with bog communities to find solut	3	-1	-0.81	4	1.77*	-1	-0.67
9	Turf cutters can relocate where possible, and alternatively	9	-2	-1.11	3	1.51*	-4	-1.65
26	Turf cutters have property rights which need to be acknowled	26	4	1.65	2	0.70	4	1.56
24	Turf cutting is a way of life	24	4	1.42	1	0.60	-1	-0.14
35	Traditional hand-cutting on raised bogs was environmentally	35	3	1.11	0	-0.17	2	0.63
27	Its rather ironic with the centenary of 1916 coming up, that	27	0	0.28	-1	-0.57	0	0.27
6	Europe imposed these SACs on us	6	1	0.60	-2	-0.77*	3	1.27
31	The compensation wouldn't cover what the turf cutter can sav	31	2	0.94	-2	-0.77*	1	0.54
2	It is difficult to get information justifying SAC site selec	2	0	0.04	-3	-0.93	0	-0.06
8	Bord na Mona should have conserved their lands, but the Habi	8	3	1.05	-3	-0.98*	1	0.49
34	Turf cutters on SACs should continue to exercise their right	34	2	0.84	-4	-1.49*	-1	-0.27

No.	Statement	No.	Factors 1 Q-SV	1 Z-SCR	2 Q-SV	2 Z-SCR	3 Q-SV	3 Z-SCR
6	Europe imposed these SACs on us	6	1	0.60	-2	-0.77	3	1.27
17	Maybe the SACs will have to be bought to ensure their surviv	17	-1	-0.62	-2	-0.73	3	1.24*
7	It's a bit dodgy for the wildlife service to highlight the r	7	0	-0.19	-1	-0.52	3	1.07*
16	There is no political champion of peatlands conservation so	16	0	-0.06	-1	-0.47	2	0.74
24	Turf cutting is a way of life	24	4	1.42	1	0.60	-1	-0.14
34	Turf cutters on SACs should continue to exercise their right	34	2	0.84	-4	-1.49	-1	-0.27*
11	Ming Flanagan makes alot of outlandish statements about turf	11	1	0.69	3	0.80	-1	-0.59*
13	The vested economic interests of the turf cutting contractor	13	0	0.32	0	0.08	-2	-0.71
10	Ming Flanagan voicing the anti-restoration interests gives m	10	1	0.81	1	0.55	-2	-0.79*
4	The government fulfilled its obligation to notify turf cutte	4	-2	-0.91	4	1.82	-4	-1.59

P<.05; Asterisk (*) indicates significance at P<.01

Appendix I: Distinguishing statements with factor ranking and z score (PQ output file for Article 3)

No.	Statement	No.	Factors 1 Q-SV	1 Z-SCR	2 Q-SV	2 Z-SCR	3 Q-SV	3 Z-SCR
3	NPWS is willing to engage with bog communities to find solut	3	4	1.71*	0	0.33	-2	-0.87
1	All the SAC boundaries were surveyed on the ground and the g	1	4	1.53*	-1	-0.46	-1	-0.49
4	The government fulfilled its obligation to notify turf cutte	4	3	1.11*	0	-0.29	-4	-1.86
22	I can't see how de-classifying some or all of a SAC can be a	22	2	0.93*	-1	-1.05	-2	-0.70
26	Turf cutters have property rights which need to be acknowled	26	1	0.56	4	1.47	-1	-0.18
24	Turf cutting is a way of life	24	0	0.28*	4	1.52	-2	-0.76
2	It is difficult to get information justifying SAC site selec	2	-1	-0.80	0	-0.00	0	0.17
36	There's a lot of bog in Ireland that could be preserved that	36	-2	-0.86	0	0.46	0	-0.02
12	When they originally designated SACs, it wasn't looked at in	12	-4	-1.62*	2	0.91	4	1.54

No.	Statement	No.	Factors 1 Q-SV	1 Z-SCR	2 Q-SV	2 Z-SCR	3 Q-SV	3 Z-SCR
24	Turf cutting is a way of life	24	0	0.28	4	1.52*	-2	-0.76
26	Turf cutters have property rights which need to be acknowled	26	1	0.56	4	1.47*	-1	-0.18
35	Traditional hand-cutting on raised bogs was environmentally	35	-1	-0.84	3	1.13*	-3	-1.18
6	Europe imposed these SACs on us	6	-2	-0.89	1	0.54*	-1	-0.65
3	NPWS is willing to engage with bog communities to find solut	3	4	1.71	0	0.33*	-2	-0.87
4	The government fulfilled its obligation to notify turf cutte	4	3	1.11	0	-0.29*	-4	-1.86
32	The greed of a few, who have been offered ample financial co	32	0	0.32	-1	-0.74*	2	0.86
5	Rangers didn't have a chance to meet with landowners due to	5	1	0.54	-3	-1.31*	1	0.69
15	Environmental regulations have not affected big farmers as m	15	0	-0.07	-4	-1.38*	0	0.09
21	No-one should have the right to dig free fuel out of the gro	21	-1	-0.49	-4	-1.52*	0	-0.11

No.	Statement	No.	Factors 1 Q-SV	1 Z-SCR	2 Q-SV	2 Z-SCR	3 Q-SV	3 Z-SCR
18	Turf cutting at the edge of the bog damages it by disturbing	18	1	0.70	0	0.45	4	1.84*
16	There is no political champion of peatlands conservation so	16	-1	-0.43	-1	-0.52	3	1.17*
7	It's a bit dodgy for the wildlife service to highlight the r	7	-2	-0.90	-2	-1.17	1	0.56*
8	Bord na Mona should have conserved their lands, but the Habi	8	-3	-1.29	-2	-1.11	0	-0.03*
26	Turf cutters have property rights which need to be acknowled	26	1	0.56	4	1.47	-1	-0.18
24	Turf cutting is a way of life	24	0	0.28	4	1.52	-2	-0.76*
3	NPWS is willing to engage with bog communities to find solut	3	4	1.71	0	0.33	-2	-0.87*
17	Maybe the SACs will have to be bought to ensure their surviv	17	0	0.07	0	0.20	-3	-0.99*
4	The government fulfilled its obligation to notify turf cutte	4	3	1.11	0	-0.29	-4	-1.86*

P<.05; Asterisk (*) indicates significance at P<.01

Appendix J: Consensus statements (PQ method Article 2)

Consensus Statements -- Those That Do Not Distinguish Between ANY Pair of Factors.

All Listed Statements are Non-Significant at P>.01, and Those Flagged With an * are also Non-Significant at P>.05.

			Factors					
			1		2		3	
No.	Statement	No.	Q-SV	Z-SCR	Q-SV	Z-SCR	Q-SV	Z-SCR
14	The landowners own the carbon credits in bogs and should be	14	-1	-0.28	1	0.49	0	0.17
15	Environmental regulations have not affected big farmers as m	15	0	-0.05	-1	-0.62	0	0.30
22*	I can’t see how de-classifying some or all of a SAC can be a	22	-3	-1.36	-3	-1.17	-3	-1.30
27	Its rather ironic with the centenary of 1916 coming up, that	27	0	0.28	-1	-0.57	0	0.27
28	The peace of mind that you get on the bog, there’s a great s	28	2	0.97	2	0.70	4	1.58
30	The bog wasn’t important before the machines came in	30	-3	-1.28	-4	-1.94	-2	-1.15
32*	The greed of a few, who have been offered ample financial co	32	-2	-0.94	-2	-0.67	-2	-0.95

Appendix K: Consensus statements (PQ method Article 3)

Consensus Statements -- Those That Do Not Distinguish Between ANY Pair of Factors.

All Listed Statements are Non-Significant at P>.01, and Those Flagged With an * are also Non-Significant at P>.05.

			Factors					
			1		2		3	
No.	Statement	No.	Q-SV	Z-SCR	Q-SV	Z-SCR	Q-SV	Z-SCR
10*	Ming Flanagan voicing the anti-restoration interests gives m	10	0	0.14	1	0.55	1	0.29
11	Ming Flanagan makes alot of outlandish statements about turf	11	1	0.41	3	1.14	2	0.89
13*	The vested economic interests of the turf cutting contractor	13	2	0.75	1	0.74	2	0.79
14*	The landowners own the carbon credits in bogs and should be	14	0	0.09	1	0.70	0	0.11
19	Cutting turf has no environmental effect on the bog, it repl	19	-2	-1.06	-3	-1.23	-4	-1.76
20	The turf machines that are being used, they're only cutting	20	-4	-1.50	-2	-1.10	-4	-1.95
23*	Peatland conservation can work hand in hand with carbon stor	23	3	1.02	3	1.15	3	1.28
25*	You have to have sympathy for people who cut turf for genera	25	2	0.96	2	0.85	1	0.57
27*	Its rather ironic with the centenary of 1916 coming up, that	27	-1	-0.83	-3	-1.18	-1	-0.57
28*	The peace of mind that you get on the bog, there's a great s	28	1	0.67	2	1.05	3	0.90
29*	With the turf cutting contractors involved, there is much mo	29	2	0.72	1	0.73	2	0.80
30*	The bog wasn't important before the machines came in	30	-3	-1.09	-1	-0.64	-1	-0.49
31*	The compensation wouldn't cover what the turf cutter can sav	31	-3	-1.26	-2	-1.13	-2	-0.66
33*	Irish raised bog SACs contain rare and threatened habitats w	33	4	1.54	4	1.33	4	1.66
34*	Turf cutters on SACs should continue to exercise their right	34	-4	-1.64	-4	-1.41	-3	-1.45

Appendix L: Research consent form

My name is Margaret O'Riordan and I am a lecturer in Heritage Studies at the Galway Mayo Institute of Technology, Mayo Campus (GMIT). I am conducting research towards a PhD under the Geography Department at the National University of Ireland. Primary research is focused on perceptions of the governance of the Raised Bog Special Areas of Conservation (SACs) and on domestic turf cutting. I wish to invite you to participate in this research and I assure you that participants will be guaranteed confidentiality and anonymity.

I request your consent to take part in this research project. This will involve an interview and/or a follow up questionnaire (q sort) in which you would be asked to rank your agreement or disagreement with statements associated with the turf cutting debate. The research analysis will be submitted to an academic journal for publication purposes. Thank you for your generous co-operation.

SIGNED

Researcher .....

Research Participant .....

Contact Details .....

.....

.....

DATE ……..

Appendix M: Text of email to professionals

Dear

My name is Margaret O'Riordan and I am a lecturer in on the BA in Heritage Studies at the Galway Mayo Institute of Technology, Mayo Campus (GMIT) and I am also doing a PhD (part-time)under the Geography Department at the National University of Ireland, Galway (NUIG). Primary PhD research is focused on social perceptions around the governance of the Raised Bog Special Areas of Conservation and on the environmental impact of turf cutting. If you are interested in participating in the research, I can assure you that your viewpoints would be confidential and anonymous and you would not be identifiable in any report and or publications arising from the research.

I can travel to where you are based and conduct the interview/ Q sort next week ideally (any day bar Monday or Tuesday), or at another time that suits you. I would be grateful if you could contact me to indicate your availability. Please find attached further information on the research process.

Kind regards,

Margaret O'Riordan,

Lecturer,

Heritage Studies,

Galway Mayo Institute of Technology,

Mayo Campus 094-9043153

Appendix N: Email from Geoforum confirming submission of Article 3.

Editor handles GEOFORUM-D-18-00136

G Geoforum <eesserver@eesmail.elsevier.com>
Thu 22/02, 14:56
Margaret ORiordan

Inbox

Ms. Ref. No.: GEOFORUM-D-18-00136
Title: Unlikely alliances? Knowledge, power and the collaborative governance of Irish peatlands
Geoforum

Dear Mrs. Margaret O'Riordan,

Your submission "Unlikely alliances? Knowledge, power and the collaborative governance of Irish peatlands" will be handled by Editor Robert Fletcher.

You may check the progress of your paper by logging into the Elsevier Editorial System as an author at https://ees.elsevier.com/geoforum/.

Your username is: margaret.oriordan@gmit.ie
If you need to retrieve password details, please go to:

http://ees.elsevier.com/geoforum/automail_query.asp

Thank you for submitting your work to this journal.

Kind regards,

Elsevier Editorial System
Geoforum

Appendix O: Dissemination of the research (in addition to the peer reviewed articles)

Non-peer reviewed articles

O'Riordan M. (2017) Cultivating environmental values in Irish peatlands regulation. *Peatlands International*, The magazine of the International Peatland Society, 3, 22-24.

Oral Presentation at Conferences

O'Riordan, M. (2017). Local knowledge and contested values in Irish peatland regulation. Trans-Disciplinary Conversations on Peatlands, University College Cork, 8th July.

O'Riordan, M. McDonagh J., Mahon, M. (2017). Cultivating environmental values in Irish peatlands regulation, 49th Conference of Irish Geographers, University College Cork, 6 May .

O'Riordan, M, Mahon, M.; McDonagh, J. (2016) Compliers and protesters attitudes to peatlands regulation: Implementation of the EU Habitats Directive on Irish raised bogs, The Third International Symposium on Environment and Health, 15 August, National University of Ireland, Galway.

O'Riordan, M. (2014) Collaborative Governance of Protected Areas, GMIT Tourism and Arts Research Colloquium, June, GMIT Galway.

O'Riordan, M. (2014) Insights into the scalar impact of the partnership approach on public policy discourses underlying nature's regulation, 46th Conference of Irish Geographers, 10 May, University College Dublin.

O'Riordan, M. (2013) Governance of SACs on Irelands Raised Bogs, 45th Conference of Irish Geographers, 16 May, National University of Ireland, Galway.

Poster Presentations

O'Riordan, M. McDonagh J., Mahon, M. (2017). Cultivating environmental values in Irish peatlands regulation. 49th Conference of Irish Geographers, University College Cork, 6 May

O'Riordan, M. McDonagh J., Mahon, M. (2016). Legitimacy discourses on Irish peatlands regulation using Q Methodology, The Inaugural International Conference on Natural and Constructed Wetlands, Interactions between Scientists and Engineers, Galway, Ireland, on 21-22 June.

Appendix P: PQ method output file on disc