Wild plant foraging in early twenty-first century Britain: implications for sustainable extraction, conservation and the contemporary valuation of nature

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Author declaration

I certify that the thesis I have presented for examination for the PhD degree is solely my own work other than where I have clearly indicated and identified that it is the work of others.

Abstract

Globally, wild plants face significant threats from habitat loss, land transformations and climate change and remain under-assessed for conservation purposes. Within this category, wild food plants are increasingly viewed as having an integral role to play in future-proofing global food security due to their genetic diversity, resilience to pathogens and adaptations to local environmental conditions. While they continue to provide essential sources of nutrition to communities around the world, trends in gathering wild food plants in post-industrial countries in the Global North indicate it is their cultural value that is gaining significance. Research has observed a resurgence in foraging among a younger demographic of predominantly urban professionals, influenced by global gastronomic and health trends, and a desire for novel ways of connecting to nature and cultural heritage. As an emergent social trend foraging is a unique form of socio-environmental practice with implications for sustainability, human-nature connections, and how nature is valued. Drawing on interdisciplinary theories and methods, this thesis empirically explores the implications of foraging to conservation, and its significance to people and nature in a coastal region of southeast England. Firstly, I identify the different forager groups visible today through an ethnobotanical assessment of their knowledge and practices. I show how these practices reflect historical and contemporary recreation and food traditions which are responding to socio-environmental change. Secondly, I examine foraging

field courses as an experience of nature in the context of conservation strategies. I employ ethnography to analyse the experiences of participants on foraging field courses identifying as 'foodies'. Contrary to stereotypes in the media, that implicate 'foodies' in unsustainable foraging practices, I argue that their relationships to wild foods, when examined through the experience of learning to forage, complicate the view of what connection to nature looks like; this suggests new opportunities with which to view foraging as a sustainable and direct form of human-nature experience. Thirdly, I examine the environmental impact of foraging using a threat assessment methodology to assess the risks of commercial foraging to wild food plants, finding that ecological risks are presently low but social and cultural risk factors are significant barriers to longer-term sustainability of foraging. Finally, I examine these sociocultural barriers drawing on ethnographic analysis to explore the political-ecological issues of foraging locally. I suggest that these conflicts highlight contrasting ethical positions in relation to the role of humans in nature and propose a way to bridging the divide between foragers and authorities through co-production of a voluntary foraging code. Overall, this research provides insights into foraging as an emergent social trend arguing that it has significant value to conservation, people and sustainable resource use.

Key words: foraging; sustainability; wild food plants; human-nature connection; nature experience; England

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Chapter 1: Introduction

1.1 Trends in wild food plant use

In postindustrial countries in the Global North, the gathering and consumption of wild food plants has garnered much attention from scholars in the last few decades, as well as from mainstream and social media that depict wild food plants as simultaneously provisioning goods and luxury items (Sachdeva *et al.*, 2018). Foraging is practiced by people from all walks of life (Robbins *et al*., 2008) and for diverse reasons ranging from subsistence to nature recreation (Shackleton *et al.* 2017). It not only involves direct human-nature interactions through the extraction of resources from marine and terrestrial environments across urban, rural, managed and unmanaged landscapes, but it is also manifested in the consumption practices of wild food diners eating out at restaurants and local food markets, and in the menus of high-end restaurants featuring wild foods. These ordinary and extraordinary values of wild food plants makes the study of foraging a multi-dimensional, socio-ecological project. Embedded in the food systems of advanced capitalist economies but often treated as an alternative to it (Paddeu, 2019), these 'peripheral' plants (Schulp *et al.*, 2014) and their relationships to postindustrial people present a unique study of nature-society relations in the early part of the 21st century. Foraging is I argue, emerging as a new trend in relation to nature with social and ecological

dimensions which are important to understand in relation to sustainability, human-nature relationships and biodiversity conservation.

Throughout this thesis I refer to 'nature' as a referent to 'social natures', where nature is "something made" (Castree and Braun, 1998: 4), i.e.., society and nature are together constructed. Put in another way, "what we perceive as natural is also cultural and social" (Escobar, 1999: 2). From this standpoint, I treat the social and ecological dimensions of foraging as constitutive of each other, rather than separate entities. In this introduction I review some of the main approaches to foraging in the literature and its resurgence in Britain and delineate the gaps in knowledge which this thesis addresses, before outlining my approach to the study and outline of my chapters.

But firstly, it is important to consider foraging in the broadest context of contemporary relationships to nature, and ask, as Mabey (2006) does, "why? Why should 21st century eaters-out, with easy access to most of the taste sensations on the planet, choose to browse about like Palaeolithics, or primates?" This question is, I suggest, a key locus of research on foraging, which has largely been centred around the motivations of foragers in postindustrial societies, pointing to the residual cultural values inherent in wild food traditions as key to this current revival (Reyes-Garcia *et al.*, 2015). I suggest that this cultural appreciation hypothesis explains the resurgent interest in gathering wild foods from different perspectives, expressed, for

example, through the 'heritagization' of food (Mina *et al.*, 2023), gastronomic aesthetics for sense of place (Redzepi, 2010), nature-based recreation (Schunko *et al.*, 2015) and as part of a wider 'nostalgia' for past human-nature connections (Hall, 2013). This latter point of view is I suggest implicit in many of these cultural validation arguments, reflecting a Western modern history with wild plants, where cultural traditions involving seasonal, recreational gathering have long been practiced and celebrated by people in their leisure time (Mabey, 1972). This cultural appreciation for wild foods is symptomatic of broader British traditions regarding wild plants, associated not only with edibility value, but medicinal, spiritual, ritual and calendar customs as detailed in Vickery's (2019) *Folk Flora*.

The 'nostalgia narratives' associated with wild food plants (de Jong and Varley, 2018) find symbolic expression in the revival of interest in foraging as a cultural heritage and traditional activity and, when viewed through this lens, I suggest that foraging is understood as a retrospective appeal to traditional and romantic attitudes to nature, albeit expressed in the form of 21st century preoccupations. In some cases, nostalgia is used directly, as a 'way in' to foraging practices as de Jong and Varley (2018) argue, evoking an ancestral memory of our original (hunter-gatherer) dependence on nature for sustenance and survival, connected to a sense of loss and disconnection from the past. It is present in foraging as a nod to pre and modern (Western) history, illustrative of the fact that wild food plants have sustained human

life since it began. It is perhaps this dimension to foraging, as a distant relation to past dependencies on nature that is persuasive in promoting its value as a way of 'connecting' to the natural world in current media. But foraging as a relevant and important 21st century practice is also developing, evident for example, in the recent publication of Mo Wilde's *The Wilderness Cure* (2022), in which her experiment of living only on wild food for one year is diarised. Motivated by the question of whether we could live off wild food in modern times and informed by the food security concerns arising from changing climate, political change, and the COVID-19 pandemic, her experiment testifies to an increasing linkage between wild food and sustainability in its broadest sense.

Contemporary foraging I suggest then, aligns with post-romantic attitudes to nature, which are seen throughout the UK, generating new forms of value of nature but also leading to new kinds of environmental conflicts (Murray and Simcox, 2003). In an essay on the changing attitudes to the Highlands of Scotland the environmental historian, Smout (1991) observed an emerging site of environmental conflict, as 'green consciousness' took root in the period of the late 20th century. He identified three ways in which post-romantic attitudes to the Highlands were changing perceptions of the landscape, impacting environmental debates through an increasing competition over land use: an increased demand for recreational and outdoor pursuits, a desire to experience 'unspoiled' nature and a space to be

reserved for nature (protection) characterised this transformation. Foraging resonates with these changing views, which, I argue, can be understood similarly, as expressions of post-romantic attitudes to nature in general. The increasing appeal of foraging to 'urbanites' (Paddeu, 2019:13) and the wider public is, I suggest, part of the growth in demand for nature recreation and outdoor pursuits more broadly (Bell *et al*., 2007; Elmahdy *et al*., 2017), while the appeal of 'wild' foods, as more 'natural' than industrial food systems (Carvalho and Morales, 2010) resonates with the desire for 'unspoiled' nature; these attitudes and valuations of nature moreover contrast and coincide with efforts to protect and restore nature for its own sake, leading to potential for conflict over how nature is used. Competing land-use conflicts are already observed in relation to nature spaces and foraging practices (McLain *et al.*, 2014; Shackleton *et al.*, 2017), and are brought into sharper focus when foraging is viewed through this lens. In the UK, Murray and Simcox (2003) identify these 'post-romantic' transformations as significant to future decisions and policies that will determine how people interact with nature, and how nature is managed. Thus, while some nostalgia and romanticisation is present in contemporary foraging ideologies, I suggest, that a more productive avenue to foraging studies is possible through adopting the position that foraging is part of the 'post-romantic' turn. It adjusts our focus from a retrospective approach to the values of nature and by extension, wild foods, to a consideration for how people think and act towards a 'present nature' and to ourselves as part of

this nature (Wilde, 2022). This view brings foraging into closer communication with sustainable resource use and conservation ideologies and with how people value nature today. As a modern trend, and possibly new form of relation to nature it is therefore important to understand the ways in which different actors in the contemporary foraging movement negotiate this terrain and in doing so, may generate new pathways for sustainable futures.

1.2 Approaches to wild food plants

1.2.1 Economic valuation

By the late 1980's concern over the impact of industrial scale timber extraction of tropical forests gave rise to the development of the 'non-timber forest products' (NTFPs) approach as a sustainable policy alternative to heavy timber extraction (Peters *et al.* 1989). This approach of re-evaluating the value and use of forests beyond the value of timber from trees, extended North to countries like the UK, the United States of America and Europe, stimulating assessments of the quantities and values of wild harvested non-wood resources from forested and non-wooded land. In the UK, the first attempts to systematically catalogue the uses of wild native plants and fungi from this perspective followed for Scotland (Milliken & Bridgewater 2001; Dyke 2002; Emery *et al*., 2006), Wales (Wong & Dickinson, 2003), England (Sanderson & Prendergast, 2002), and the United Kingdom as a whole (Morgan, 1996; Murray & Simcox, 2003), revealing a small but growing industry in wild harvested plants and fungi. In North America, on the other

hand, the results of NTFP assessments exposed communities of commercial harvesters operating on public lands and led to a research focus on the conflicts between individuals and federal management systems and between industrial versus localized production systems (Robbins *et al.*, 2008). In the USA researchers also pointed to the risks that an NTFP approach to wild food gathering presented in reinforcing gathering practices within dominant economic systems, despite the rationale for NTFP approaches to support alternative economic markets. Pierce (2014) makes a similar point in his study of gatherers in Vermont, noting that the NTFP approach limited both the conceptual scope of how people use forests, (limited to commercial scale gathering) as well as limiting the economic opportunities for providing secure employment through alternative, small-scale practice communities.

Whilst the underlying logic of the NTFP approach was to put an economic value on wild resources for the benefit of local economies and ecologies, in Europe, early reporting, for example, through the *State of Europe's Forests* reports in 1998 and in 2003 collected data on both private and commercial collection of NTFPs, rather than on export trade data alone, (Turtiainen & Nuutinen, 2012). These early data demonstrated that a range of wild edible plants and fungi are collected across Europe, for personal as well as economic reasons and helped to raise the profile of wild food use and practices in different regions of the Global North. The World Food and Agricultural Organisation's (FAO) requirements for country and regional

reporting of quantities and values of wild harvested foods is collated for the FAO's *State of the World's Biodiversity for Food and Agriculture* reports, which, as recently as 2019, reveal a widespread practice of gathering wild plants and fungi including across the developed regions of the world (FAO, 2019). Despite the recognition that these reports significantly underestimate the use of wild foods within middle- and high-income countries, research demonstrates their significant food value to both industrialized and developing economies (Bharucha and Pretty, 2010). Although the NTFP model has been criticized for failing to provide sustainable ecological and economic alternatives to forest communities (Homma, 1992) it captured a growing awareness and interest in the different practices and values wild plant foods hold in middle-and higher income countries. In some middle-income countries wild plants are still mainly gathered for food and medicinal purposes in comparison to high-income economies where wild plants are almost entirely gathered for recreational purposes (Stryamets *et al.*, 2015). An early study of foraging for NTFPs among residents in a densely populated region of the USA, furthermore, found that as many as 26% of residents gathered nontimber forest products, and when these rates of gathering were compared with rates of participation in other outdoor recreational activities the results show that NTFP gathering was more common than most sports and "wilderness" activities (Robbins *et al.*, 2008: 270). Within the literatures associated with NTFP valuations, developments in the food and pharmaceutical industries were also playing a part in

shaping perceptions of the potential in wild plants to support a range of societal needs. Grivins' (2016: 70) study on the trade in wild blueberries in Latvia for example, attributes the interest in wild blueberries to both the food and pharmacological industries: "The initial development of the sector in the early 1990s was mainly based on the food industry interest in blueberries." Grivins goes on to explain that the expansion of the trade was further facilitated by the pharmacological interest in the health benefits of wild berries that were discovered to contain high levels of an antioxidant known as anthocyanosides; in the UK, the early baseline assessment of the trade in wild plants similarly noted a growing demand for horse chestnut and yew from European pharmaceutical companies (Murray and Simcox, 2003).

At the same time that NTFP research had become an established approach to valuing wild foods in Europe and the Anglo-American world, focussing on their economic value in food and health markets, developments in gastronomy and food systems policy were also beginning to incorporate wild foods into these domains, providing another entry point for foraging research and practice to take shape.

1.2.2 Gastronomy and food systems research

The increased demand for wild foods at the beginning of the 21st century is exemplified by Vidale's (2014) observations on a wild mushroom harvesting business in Finland, observing that: "The use of boletes by the Finnish

population was not in existence before 1995. Then, in that year the company Valla Dalle Ltd. was founded and was selling boletes predominantly to the southern Italian market, making up to 3 million euros". But it was not only traditionally considered *gourmet* wild foods such as mushrooms for the southern European markets that were entering into food policy discourse. In 2014, the World Food and Agricultural Organisation (FAO) published two newsletters linking the culinary use of wild food plants in northern Europe to global debates on food security and health[1]. In January of that year, the newsletter focused on 'food security and nutrition' and featured an article by the Nordic Food Lab[2] entitled "Nordic Food Lab: Pursuing flavour, biocultural diversity and sustainability". In this article, the author makes the case for wild plant foods as part of a sustainable food system emphasising their genetic value. In highlighting this attribute, the association of wild foods as an epicurean pursuit is downplayed in favour of an emphasis on their value to food system diversity:

> "The pursuit of taste and flavor is often erroneously perceived as a prerogative of the elite…it is not elitist, it is real, and also has implications for food and nutritional security. Exploring taste is inherently about researching diverse food products, and diversity is key to sustainable food systems." (Reade, 2014).

1 Non-wood forest products. FAO newsletter. https://www.fao.org/forestry/nwfp/85186/en/ Last accessed 21/03/2024
2 Nordic Food Lab is the brain child of gastronomic entrepreneur Claus Meyer and head chef of Noma, René Redzepi. See: https://nordicfoodlab.org/. Last accessed 20/03/2024

Reade's message suggested that despite chefs reaching a different audience to development agencies such as the FAO, they share common ambitions about local food systems, biodiversity, and nutrition. In November of that year a second newsletter focussed on 'foraging', and showcased several wild plant food enterprises in Europe highlighting the nutritional and genetic value of wild plant foods to food production systems:

> "In current times, diet diversification has become the motto of a modern agriculture which is nonetheless responsible for the excessive homogenization of food resources produced worldwide and of the related drop in biodiversity in agricultural landscapes; only 12 plant crops and 14 animal species ensure 98% of the world's food needs. This is in stark contrast to the approximately 7,000 plants species that have commonly been used for human nutrition and health since the Neolithic." (Dounias, 2014).

1.2.3 Sustainable food systems

These developments highlighted the value of wild foods to food security, food biodiversity and cultural (gastronomy) agendas, drawing them closer into food systems than their prior peripheral status had granted. Their potential to address a number of challenges facing countries in the Global North, including food security, human health and economic security can thus be seen to have increased during this period. This development coincided with the period during and after the 2008 food price crisis, which

underscored food precarity even in high-income countries in the Global North, and which saw food sovereignty movements mobilising around this time (McMichael, 2009). The potential of wild foods to deliver food sovereignty and security to local communities also entered social science scholarship (Nolan and Pieroni, 2014). Quave and Pieroni (2014) examined the health and eco-tourism benefits of fermentation traditions of wild foods in Albania and the potential for sustainable wild food procurement as a component of a sustainable food system. Madej *et al*.'s (2014) study on the revival of juniper beer production in Poland demonstrated the potential economic and cultural importance of this tradition due to an increase in tourism interest for local regional produce. In north America urban foraging in green spaces and city parks was also examining foraging through the lens of food provisioning services (McLain *et al*., 2014), and in Spain, a natural yield assessment of wild vegetables was conducted to establish a baseline for sustainable wild harvesting regimes which could sit alongside mainstream food systems (Molina *et al*., 2012). These early forays into the potential of wild foods to be incorporated into current food systems have since expanded through research on their role in urban provisioning systems around the world (cf. McLain *et al*., 2012; Nyman, 2019; Sardeshpande and Shackleton, 2023) embedding a principle that wild foods are part of urban, postindustrial food systems.

1.2.4 Cultural ecosystem services

The role of wild foods within postindustrial food systems remains relatively under researched however, in comparison to research describing the cultural importance of foraging for wild foods as a recreational practice in postindustrial societies. The evidence available through the NTFP approaches has subsequently been applied to non-economic evaluations of wild food practices and to theorising the role of wild plant foods as a cultural ecosystem service (Schulp *et al.* 2014; Reyes-Garcia *et al.* 2015). Using data from national reports and social science studies on wild food use across Europe, Schulp *et al.* (2014: 292) estimated that over 100 million European citizens consume wild foods, and concluded that because the value of this consumption represented only insignificant income – "a few thousand GDP", wild food consumption should be understood as a cultural benefit to European citizens. Given the persistence, traditions and regularity of collection, Schulp *et al*. (2014) proposed that wild food be re-valued as a 'cultural ecosystem service'. Reyes- Garcia *et al.* (2015) similarly assessed current uses and consumption of wild plant foods in eight rural regions in Spain and the Balearic Islands, finding a general decline in traditional uses of many wild edible plants but a persistence in consumption and gathering of some popular species associated with regional identities and sense of place. These plants, for example, some fruits, nuts, herbs and wild asparagus, are considered 'typical foods' in these regions, and are also linked to higher market values, with many of them widely available to buy in formal and

informal markets. The study found a correlation between popular plant consumption and cultural appreciation concluding that "non-use values, such as those associated with cultural identity and heritage values" are significant reasons for the continued collection of certain species (Reyes-Garcia *et al.*, 2015: 310). They proposed that wild foods should be viewed as an important dimension to the provision of cultural ecosystem services, reinforcing the cultural services approach to foraged wild foods. While this approach explains the cultural significance of wild foods in general terms of benefit to people, it does not capture the complexities and diversity of foraging practices or the ways in which the socio-ecological systems that constitute foraging interact beyond a cultural 'service'.

1.2.5 Biocultural approaches

Broadly speaking, biocultural approaches to wild food practices, consider the inextricable linkages between cultural values and ecological resources and uses (Cocks and Wiersum, 2006), and are represented by a considerable inter-and trans-disciplinary set of literatures including, *inter alia*, human ecology, economic botany, political-ecology, geography, anthropology, ethnobiology and ethnobotany. Their application in research on wild food use in the Global North has considerably expanded the knowledge and scope for understanding the place of wild foods in contemporary society over the last couple of decades. Many of these studies are cited in the subsequent chapters of this PhD where their relevance to a particular topic

is applicable. As such, it is not my intention to review these literatures here, but to highlight some of the key insights and utility from one such biocultural approach, ethnobotany.

The approach from ethnobotany provides a rich lens through which to explore how cultural values, including aesthetics and lifestyle preferences, alongside ecological values and transformations are shaping knowledge of wild foods, their consumption, and practices, as well as the longer-term survival of human-plant relations. The first study to engage with this multi-dimensionality is Łuczaj *et al*. (2012) in their review of the changing uses of wild foods in Europe. In this review, converging trends associated with healthy lifestyles, culinary fashions and revival of heritage traditions are identified as part of "the new thinking about food" (2012: 367). Ecological changes are also identified as part of this dynamic to illustrate the non-linear nature of wild plant practices through time as well as how social and ecological change affects the transmission and generation of knowledge of wild foods. Whilst conducted in Europe and written as a review piece, it set the stage for subsequent locality-specific studies that approach foraging from multiple and interdisciplinary perspectives. Studies from Iceland and the Faroe Islands for example, reviewed the historical ecology of wild food plants utilised by communities in the past and highlighted the current growth in wild food products described as 'artisanal', such as the Icelandic moss bread selling "in the better bakeries of Akureyri and Reykjavik" and

the organic crowberry and wild blueberry wine high in antioxidant properties (Svanberg and Egisson, 2012: 327). The research demonstrated changing uses, ecologies and social trends captured through foraged wild foods. Grasser *et al.* (2012) and Magnani (2016) explain the significance of wild plant gathering to regional identities in Austria and Finland respectively and the importance of keeping knowledge of wild food plants live and responsive to change. Similarly, Hart *et al*., (2014) found that indigenous Hawaiian communities continue to gather and consume wild seaweeds as part of contemporary foodways, and that family practices are the greatest predictor of younger generations' picking behaviours. In the last ten years, urban ethnobotanical studies have begun to document the social and ecological significance of foraging practices (Landor-Yamagata *et al.* 2018; Teixidor-Toneu *et al.* 2023) and the practices of professional foragers instrumental in generating knowledge of wild foods in contemporary society (Łuczaj *et al.* 2021). These studies are contributing to an understanding of a breadth of values and applications of wild foods in the contemporary lives of 21st century individuals, communities and markets. In tandem with the wider literatures on NTFPs and food policy initiatives biocultural approaches are documenting the socio-ecological changes and trends that shape the ways in which people relate to nature through the medium of wild foods. In 2006, Richard Mabey, leading author and founder of the 'new foraging' commented that foraging was going through one of its "periodic hey-days" and proceeded to trace the literary traditions of wild food use in

Britain through to its contemporary practice. The following section provides a background to foraging in Britain and the key moments and movements that have shaped it today.

1.3 British traditions

1.3.1 Culinary media

Two books, published in 1972, Mabey's *Food for Free,* and in 1983, Phillips' *Wild Food: A complete Guide for Foragers*, heralded the beginning of a folk revival in foraging in Britain by providing the first contemporary wild food guides replete with colour illustrations of wild foods, recipes and folkloric knowledge on their uses. These publications had many print runs, but it wasn't until the end of the 20th century that foraging began to become visible beyond a readership audience through food, social and lifestyle media. Beginning in the early 00's, foraged foods and foraging for wild edible plants, became increasingly visible in UK print, radio and television media. Early reports on wild foods from this period seemed to identify more with high-end dining than with the survivalist-oriented edge that had come out of North America, although elements of this 'back to nature' movement were evident in the work of British wild food enthusiast and bushcraft guide, Ray Mears[3]. In a newspaper report about a leading wild food company, the

3 While both trends flourished and overlapped to some degree, the survivalist origins expressed in the writings of authors such as Euell Gibbons, Stalking the Wild Asparagus, are often accredited with the origins of contemporary foraging in north America, whereas in Britain, it is the cultural writings of Richard Mabey and others that have maintained a consistent influence.

British restaurateur and gastronomist, Marc Hix, highlighted these associations of British wild foods and haute cuisine:

> "As Mark Hix, chef and Director at Caprice Holdings and the creative force behind the kitchen at the Rivington Grill as well as The Ivy, says, "It's about time, long overdue in fact, that chefs had someone offering them foodstuffs native to this country and direct from the land. It makes our menus more interesting, more diverse and more authentic" (The Independent, 2006).

In the same year, the London *Time Out* magazine gave foraging an accessible quality that could appeal to everyone:

> "Now foraged food is back on the menus of many top London restaurants, including The Ivy, Lindsay House, and Fifteen. Meanwhile, TV programmes such as BBC1's 'Full on Food' and the escapades of Hugh Fearnley-Whittingstall have uncovered the weird and wonderful food growing all around us" (*Time Out*, London, 2006).

By the mid 00's foraging and foraged foods had become popularised through food and cooking television shows featuring chefs and aspiring cooks using a range of wild edibles from the British coast and countryside. In the 00's, these quotidian programmes successfully picked up from where the chef, Hugh Fearnley-Whittingstall's quirkier, off-beat *Cook on the Wild Side*[4] TV

4 Channel 4, 1995-1997

show had left viewers the previous decade. This show was a combination of wild food cookery demonstrations and presentation of a foraging lifestyle, as Hugh walked, boated and cycled through the wilder landscapes in England gathering, hunting and catching wildlife. Representations of foraging as a *lifestyle* became considerably more visible and, arguably, mainstream by the mid-00's.

1.3.2 Lifestyle

Lifestyle magazines such as *Country Living*[5] included glossy features about entrepreneurial foragers, which invited readers to imagine foraging as a lifestyle imbued with a glamour which had previously only been present in gastronomic media coverage. In 2017, the online lifestyle magazine, *Perfect Bound*[6] featured a profile of two foragers from Kent with the strapline: "Foraging is a full body sensory experience as well as an act of rebellion". The mission of the magazine states: "Our aim is to inspire, to stimulate imagination, to initiate debate and conversation, to get away from the illusions of a binary way of looking at the world and at people" (Perfect Bound, Facebook, n.d.).

The idea of a world of novelty waiting to be discovered promotes an aesthetic appeal through these media, and the fact that these experiences can

5 Country Living 2016. Superfood from the Shore. (July) 58-64
6 The magazine is also on Instagram

be found, not a million miles away but in a domestic wilderness close by, gave foraging a marketing edge and broad appeal to a wider range of people who may not have previously been dedicated foragers. The proliferation of foraging courses appearing online and through social media channels by this time also attests to these food and lifestyle drivers underpinning the surge of interest in UK foraging. During this period, two BBC programmes[7] regularly featured foraging entrepreneurs in their weekly broadcasts, providing an additional rural-economic lens through which to understand foraging and its value in contemporary British life. This filter showcased and celebrated local, rural foraging enterprises and entrepreneurs, from seaweed harvesters to artisan chocolatiers flavouring their products with wild plants. It echoed earlier interests in the potential for non-timber forest products to revitalise the British rural-agronomic sector (cf. Sanderson and Prendergast, 2002) and, I suggest, presented foraging as something of a serious contender in broader approaches to sustainable, rural livelihoods for a small sector of artisan producers. During this period in the UK, numerous books on foraging[8] were also being published by wild food experts featuring a combination of styles from folksy, foodie and technical perspectives, facilitating the growing popularity and appeal of foraging among diverse sectors of the public.

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7 Back to the Land, (BBC2, 2017) and Countryfile, (BBC1, 2009-1017) report on rural and agricultural life across Britain.

[8] There are too many to list, as examples: John Wright's River Cottage Handbooks: Mushrooms, Edible Seashore, Hedgerow Harvest (2007 -2010); Irving (2009) The Forager Handbook: A Guide to the edible plants of Britain; Rensten (2016) The Edible City: A Year of Wild Food.

1.3.3 Rupture

In 2012, *Food for Free* was re-printed for the twelfth time since 1972. The re-print came in two formats, including a conveniently portable pocket edition. For the first time the book included a section on conservation and 'picking rules'. It signalled a shift in the discourse which, until now, had largely portrayed foraging in the British media as a benign cultural practice and celebrated tradition. With foraging reportedly on the increase across the British countryside concerns from conservationists and environmental policymakers regarding the sustainability of foraging began to filter through to the public domain generating something of a public debate over the right to forage (Bawden, 2015) and the question of its sustainability became increasingly vocalised. Although the accusations of unsustainable harvesting were largely targeted at commercial foragers (Barrie, 2015), the action of many wildlife charities and organisations at this time was to implement total bans on picking. Whereas five years previously, Britain's 'wild harvest' was reified as a country tradition (Prendergast *et al.*, 2004), it was now, in the mid-to late-00's, something of an anomalous practice. In 2015, Natural England, the UK's environmental governance body, served a Stop Notice[9] on a commercial wild food company. Prior to this case, there

9 Civil sanction served by Natural England under The Regulatory Enforcement and Sanctions (RES) Act 2008, The Environmental Civil Sanctions (England) Order 2010 and the Environmental Civil Sanctions (Miscellaneous Amendments) Regulations 2010.

had been only one other prosecution in the UK, of an individual harvesting wild mushrooms in Epping Forest which had been widely publicised in the press[10] . The 2015 case signalled a more proactive approach from public authorities towards curtailing foraging in managed and protected areas and caused tensions at the local level between foragers, the public and conservation practitioners (Irving, 2018, pers. comm). From this period onwards, the sustainability of foraging emerged as a new narrative and subject of debate.

1.3.4 The professionalisation of foraging

In that same year, 2015, a professional network of foragers, the Association of Foragers, (AoF), was established in the UK, marking the beginning of a more formalised approach to foraging and the creation of a professional body of foragers. Members of this association are foragers who teach and write about foraging, and who come together to exchange knowledge and practices as a community (Łuczaj *et al.*, 2021). Membership criteria are that foragers make all or part of their living through foraging. As a collective they are also a 'voice' for foraging, and present an opportunity to advocate for foraging as a sustainable practice with value to contemporary society. Whether this organisation will have an influence on foraging futures will

10 In 2002, a wild mushroom forager was arrested and charged under the Theft Act (1968) for picking wild mushrooms for commercial purposes without the landowner's permission, but the case was later dismissed. See: http://bbc.co.uk/1/hi/england/hampshire/6170458.stm Last accessed 12/10/2023

depend on the directions it chooses to take, and whether it chooses to engage with the anti-foraging lobby more directly.

1.4 Research Objectives and Methodological Approach

Against this background to foraging in Britain, and in the context of increasing pressures to protect biodiversity through conservation measures, extractive and alternative activities such as foraging are at risk from further restrictions or marginalisation. At the same time, foraging provides unique ways of connecting to nature and learning about wild food plants which may also hold significant value to human-nature relationships, including biodiversity conservation. Several questions and issues emerge from the story of foraging and its presentation through literature, such as, how the distinction between commercial and recreational foraging manifests in practices and what the impacts of these different practices are; where foraging field courses fit in this contemporary movement - coastal foraging courses can fetch high prices and could be conceptualised as part of the production and consumption of food or nature tourism (de Jong and Varley 2018) - yet forager-teachers differentiate their practice from commercial foraging despite also making a living through foraging education; surveys of recreational foragers captured through attendance on foraging and outdoor learning courses point to an educated, environmentally aware group of people (de Jong and Varley 2018; Lee 2012; Fenton 2008), which raises questions over its significance to nature-connected experiences for

these consumers, and of the value of foraging as a form of wildlife education. Finally, whilst commercial foraging may be understood as characteristically focussed on economic transactions of value, the associations with exploitation for profit and environmental harm are poorly understood. This thesis addresses these gaps through the following research objectives:

- To explore the social and ecological significance of contemporary foraging practices.
- To assess the sustainability of commercial foraging practices and its implications for conservation.
- To examine the implications of foraging as an emergent social trend in relation to nature.

I address these research objectives through a case study of foraging in a coastal region of east Kent, and by capturing both objective measures of the species foraged and how they are used as well as people's experiences and relationships to wild foods.

1.4.1 Ethnobotanical approach

As stated in the first section of this introduction, my conceptualisation of 'nature' follows Braun and Castree's (1998: 6) definition of "social natures" that emphasises the 'constructedness' of nature and society. This suggests considerable complexity and variety in relation to nature through this interpretation. A study of any of these constituents, of which foraging is a part, depends on multiple theoretical positions for explication rather than a single, overarching logic. Here, I draw primarily on ethnobiological and

ethnographic methods to address my aims but also on approaches from sustainability social science, environmental history, political-ecology and cultural studies that reflect the plurality of values that constitute the foraging field. Ethnobiology's interdisciplinarity and its attention to multiple knowledge systems is recognised as having an important role to play in addressing the needs of the 21st century world witnessing "rapid ecological change and shifting political economies" (Wyndham *et al.*, 2011: 124). It is furthermore, uniquely poised to serve as an "interdisciplinary umbrella" for scholars engaged in applied research on human-environment interactions (Wolverton, 2014: 21) integrating both cultural and biological values into inquiry. As a sub-set of ethnobiology, ethnobotany encompasses multidisciplinary domains of study on human-plant relationships that make it difficult to categorize under any unitary theory (Ellen 2016), but it is precisely this quality that makes it relevant as an approach to addressing a study of foraging. As a dynamic research program, ethnobotany is well placed to study interstitial domains that exist within more established frames, for example, urban-rural, local-cosmopolitan, social-natural, human-nonhuman, giving it a 'strategic' place amid the current social, political, cultural and environmental concerns that constitute the conditions of late modernity (Alexiades 2018). Foraging is, I argue, an interstitial space and site of practice, carried out in and at geographically diverse socio-ecological contexts and scales, among diverse people and communities, and with species whose statuses range from the wild and unmanaged through to

domesticates, ornamentals and invasives. The aims of this thesis moreover align with ethnobotany's interests in, "The extent to which plant-based knowledge and interactions are socially patterned at different scales, how and why these patterns emerge and change over time, and the ecological or evolutionary dimensions of these dynamics" (Alexiades, 2018: 2). Ethnobotany can also be a useful "mediator" serving to illuminate struggles between conservation practitioners and communities (Wolverton *et al.* 2014: 130). This approach therefore fitted with the politicised nature of the study field, moving as I did, between foragers, wild food landscapes and local authorities representing very different and generally opposing views on foraging. To capture these phenomenological dimensions in the research I approached people and practices from an ethnographic perspective.

Ethnographic methods, including participant-observation and qualitative interviews are integral to ethnobotanical field research (Alexiades, 1996) and complement quantitative ethnobotanical measures by drawing out the *emic* perspectives not captured by quantitative assessments (Quinlan, 2005). I moved between these approaches using ethnography as both a method of inquiry and approach to analysis. This included participant-observation and ethnographic interviews with foragers, participants on foraging field courses, landowners, conservation managers, practitioners, and policy makers with the objectives of providing a "thick description" (Geertz, 1973) of the social contexts and perspectives of these actors, their relationships and their experiences with wild food plants. The names of all participants of this

research have been changed to ensure confidentiality through ascription of pseudonyms.

1.5 Positionality

Up until the year before my PhD I had little knowledge about wild edible plants in the UK, and even less knowledge about the practice of foraging, although I had been a seasonal gatherer of blackberries since moving to the UK as an undergraduate student, some 20 years ago. Here I briefly reflect on how my early experiences of nature and wild plants informed my entry into studying foraging. I was born into apartheid South Africa and lived there for the first 18 years of my life enjoying privileged access to the wild spaces and places the country possesses. This immersion in nature and exposure to wildlife facilitated a deep connection to the wild spaces, wild animals and the landscapes that were open only to white south Africans during this period[11] and was fundamental to my developing interest in conservation and social equality as I grew up. I studied Social Anthropology as an undergraduate, and later, a Master's in Anthropology focussing on indigenous environmental knowledge systems.

My earliest memories of wild plants are as healing entities when I was very young. I was born on a wild stretch of the Indian ocean coast, and it was there that I first learned that plants have therapeutic power. Spread across

[11] During apartheid for example, only whites were allowed on beaches, nature reserves and municipal green spaces.

the sand dunes at the top of the beach below our house was a colony of a succulent plant (*Carpobrotus chilensis*) whose leaves would be plucked and broken and the juice rubbed onto the skin as an antidote to bluebottle[12] (*Physalia physalis*) stings. Everyone in our family, including the children, knew to run up to the dunes and pick this plant as soon as someone had been stung by a bluebottle while swimming. The relief was almost instantaneous, as memory serves. For a small child, this simple remedy to the agony of a sting was miraculous, and I became attached and fascinated with plants from that moment. As an older child, when we moved to the suburbs of Durban, I was familiar with the presence of 'muti' shops in downtown Durban, with their bunches of dried leaves and roots hanging in the shop windows, along with dried animal skins, organs, feathers and bones. In South African English, the term 'muti' is a colonial translation of the Zulu word 'umuthi' meaning 'tree' and is used as a synonym for 'medicine' (de Wet, 1998). Although I never had occasion to draw on African traditional medicine, there was nothing extraordinary to me about this use of wild plants as healers of illness or pain. My formative experiences of coastal plants and beach life most likely influenced my later choices to live near the coast in Kent, and went on to provoke my curiosity with coastal plants in this region.

The diversity of species and landscapes I was immersed in growing up in South Africa had given me a strong sense of connection to nature however,

[12] A marine hydrozoan found in the Atlantic and Indian oceans.

when I moved to England in the early 1990's, I experienced a profound sense of loss of that connection and identity. England seemed to me to be devoid of nature as I knew it, with its small carved out parcels of farmland adjacent to towns and cities and rows of terraced housing and urban sprawl; it was a small, grey place. Even the city parks in London seemed to me to be contrived, confined by urban settlement and priorities, a small gesture to its inhabitants of what had been, before us, *a priori*. This unconscious relationship to nature as something wild and unconstructed (Cronon 1996) meant that I approached my university friends' professed love of the outdoors with some scepticism and naivety at first (that 'real' nature was here in the UK), but then I met a friend who picked mushrooms in the autumn, and she took me with her, out of the city to farmland fields and woodlands in search of mushrooms. My scepticism prevailed during my undergraduate years (I never ate her mushroom dishes), but, as I traipsed the fields with her, walked along rural lanes and discovered blackberries, I became curious to understand how people in this urbanised environment related to 'nature' and what kinds of connections were possible.

I thus embarked on a PhD about foraging with curiosity, a degree of scepticism, and ignorance. The journey has not only informed me of the diversity of wild plants, fungi and marine algae available to us, but it has also taught me to see nature wherever there is life.

1.6 Thesis outline

Chapter two situates contemporary foraging practices in a cultural context by reviewing the literary traditions that have historically been the conduits of knowledge of wild food plants in Britain. This knowledge is then evaluated in relation to contemporary trends using ethnobotanical methods to analyse the knowledge and practices of three groups of foragers visible today: recreational, professional and commercial foragers. In presenting a current *state of foraging knowledge* this chapter sets the scene for subsequent chapters to engage with different aspects of these practices and the various ways in which these are concerned with sustainability.

Chapter three is an in-depth, ethnographic exploration of the experiences of participants on coastal foraging field courses in Kent. It identifies a sub-set of people interested in foraging, who are self-reported foodies, and whose interests and knowledge of foraging is informed by lifestyle preferences for novel foods and nature-based experiences. The focus on how this group of consumers connect to nature through foraging is a unique contribution to the field, illustrating the diversity of ways in which people connect with nature and the role of foraging field courses in this.

Chapter four addresses the ecological impacts of foraging using a threat assessment methodology to assess the risks to commercially harvested wild food plants in Kent. It is the first sustainability assessment of foraged plants

in Britain addressing a core knowledge gap on the evidence for ecological impacts of wild harvesting. Using county flora, conservation data and ethnobotanical inventories of commercially foraged plants in Kent, this chapter provides a unique resource and baseline assessment for research on the sustainable extraction of wild food plants in countries in the Global North.

Chapter five uses ethnography to explore the political tensions surrounding foraging in Kent. I apply the concept of political ecology to foraging in Kent looking at how the conflicts between forager communities and local authorities reveal contested positions in relation to rights to nature, the proper conduct of humans in nature, as well as the institutional arrangements that underpin these conflicts. I discuss how local conflict led to the production of a "Foragers code" as an output of my research, written and produced as a result of the social conflicts observed during my field work.

Chapter six provides a synthesis of the findings from across the thesis, highlighting my empirical contributions to the field. I also make recommendations for how they can be applied in policy and practice with regard to addressing sustainability issues.

Chapter 2: A state of foraging knowledge

2.1 Introduction

This chapter explores how foraging, as a particular form of food procurement and relation in 21st century Britain, is manifested in contemporary societal trends. I analyse the knowledge and practices associated with three groups of foragers active today: forager educators, recreational and commercial foragers using ethnobotanical inventories compiled during fieldwork and published ethnobotanical studies on British foragers. I also review a selection of historical and modern publications on wild food plants that contextualise current practices in light of the cultural histories within which this knowledge is positioned. In presenting a current *state of foraging knowledge* this chapter sets the scene for subsequent chapters to engage with different aspects of these practices and actors, and which, in different ways, are concerned with the question of foraging's 'sustainable' status in Britain.

In the last few decades, ethnobotanical research in Europe has highlighted the erosion of traditional environmental knowledge of wild plants gathered for food and medicine as a result of outmigration from rural areas and modern lifestyles, limiting opportunities for knowledge transfer by older generations (Pardo-de-Santayana *et al.*, 2010). Beyond Europe, Pilgrim *et al.* (2008) demonstrated that increasing levels of economic modernisation

correlates with decreasing levels of ecological knowledge, less contact with nature and decreasing value given to intergenerational knowledge transfer. While these global trends indicate a loss of ecological knowledge associated with urbanisation and modernisation, scholars have also observed an increase in consumption of certain 'culturally appreciated' wild foods by a younger, urban population within economically developed countries (Carvalho and Morales 2010; Reyes-Garcia *et al*., 2015). In tandem with these consumption patterns, a rapid transmission of information about wild food plants and their culinary applications has led to an increase in the circulation of knowledge about wild food plants through newer information channels. Furthermore, as wild food knowledge is transmitted in these diverse ways, scholars have noted an increasingly distant relationship between local practices and traditions, and contemporary knowledge and practices. There are claims that contemporary modes of transmission, for example, decontextualise this knowledge from "sources of origin" (Schunko *et al.* 2015: 2). As Łuczaj *et al.* (2012: 82) note: "neither the published guides nor the workshops relate to local practices. They are an amalgamation of proposals regarding how to utilize local floras referring to the traditions of use of these plants in North America, Asia, and other parts of Europe." These methods of knowledge transfer have been problematised in relation to traditional environmental knowledge systems. Pieroni (2016: 10) for example, highlights how current trends for the popular white truffle (*Tuber magnatum* Pico) short circuits the complex ethnoecological knowledge of the region and

its relations between truffle hunters and their dogs, focusing instead on the 'spectacularisation' of the hunt for the 'magic truffle'. While this is problematic from Pieroni's point of view, leading to potentially destructive harvesting practices through the dilution of traditional ethnoecological knowledge, others have noted that these contemporary routes of transmission and hybrid forms of knowledge lead to innovation and benefits to communities (cf. Leonti 2011; Magnani 2016). Examining the significance of traditional plant revitalisation forums for the Skolt Sami of northern Finland, where traditional plant knowledge is presented alongside scientific (health) knowledge about particular plants, Magnani (2016: 101) concludes: "The resulting demonstrations and presentations invariably become mixtures of conservation and innovation, encouraging the revival of older uses (such as the more past-oriented discussion of pettu), while stimulating experimentation (such as with pakurikääpä and its popularized health uses)." Similarly, Leonti's (2011: 550) analysis of the impact of written records on the transmission of medicinal plant knowledge observes that syncretic knowledge transmitted through contemporary routes leads to "rapid changes and innovations assured by one-to-many oblique and horizontal knowledge transmission." In this analysis Leonti (2011) argues that traditional modes of transmission in literate societies depended on the re-cycling of textual records, leading to a "progressive conditioning" of results, which in turn has a conservative effect on knowledge generation, and limits research agendas.

These debates highlight scholarly tensions around the impacts of modernisation on traditional ways of knowing and doing but also illustrate that knowledge-making is dynamic and responsive to social, cultural, political, ecological and economic conditions. Undoubtedly, the foraging movement is changing the ways in which knowledge of wild foods is acquired, applied, and what that knowledge looks like, for example, which species are selected and valorised in certain contexts. These contexts are therefore important to questions of how and why certain practices and knowledge come to be significant. Ellen (2016: 20) reminds us, "all plants that have a use become cultural artifacts in some form or another and must, by definition, be socially embedded." Yet few studies on foraging in postindustrial countries explore the social contexts within which these practices become articulated and are embedded. The risk is that in a domain such as wild food knowledge, where rapid changes in access to knowledge creates practices which appear to be dislocated from local knowledge traditions, its 'social embeddedness' is obscured by generalized descriptions of 'traditions', old and new. Conceptually, Grivins' (2021) classification of contemporary forager types using the theory of social constructionism (Berger and Luckmann, 1966), provides a useful analytic frame within which to explore the social contexts of wild food plant practices. He proposes that practices are both a reflection of knowledge and a site where knowledge is reproduced and created. He identifies between traditional 'long-standing'

foraging practices and modern practices that are informed by "sensory explorations, new lifestyles and new experiences" (Grivins, 2021: 523) arguing that these two different fields of knowledge lead to different foraging practices. A recent study characterising professional foragers provides further empirical scope for this project (Łuczaj *et al.*, 2021). It suggests that a "post-industrial foraging cuisine" is becoming established by forager-educators and entrepreneurs whose knowledge is circulated and shared among this network and disseminated to a wider public through their activities. This study is the first to expressly consider 'foraging knowledge' as a distinct type of knowledge contributing to "new traditions" (Łuczaj *et al.*, 2021:18). I develop this further in this chapter, examining the practices of three groups of foragers active today to explore what insights these 'traditions' offer to the social contexts of foraging today, and the effects of these social dynamics on knowledge generation and species selection. The broad aims of this chapter are to explore in what ways foraging knowledge is distinguished or shared by different practice pathways and to situate the production of this within its socio-historical and contemporary cultural context.

2.2 Wild food plant traditions in Britain: an historical perspective on knowledge-making

In Mabey's (2006) review of what he has called, 'the New Foraging' he traces the origins of foraging through the literary traditions of wild food writers in which he himself has been a major influence. Evidence of these traditions are present in the 17th to 20th century publications he references as sources of inspiration and learning in *Food for Free* (1972), providing clues to a 'textual trail' of knowledge of wild food plants that can be traced from the Middle Ages to the present day. These 17th, 18th and 19th century texts reference common sources of knowledge found in old Herbals and monastic registers, which were themselves based on reproductions from ancient Greek physicians (Johnson, 1862). This mode of transmission has been analysed by Leonti (2011) for medicinal plant knowledge in Europe, demonstrating how knowledge of wild plants in cultures and regions with rich writing traditions are traceable through printed media, generated by a literate population for literate audiences (Leonti, 2011). In Britain this is evident in the wild food literature and writers involved in the generation and reproduction of wild food plant knowledge. The significance of wild food literature to contemporary foragers is noted in Łuczaj *et al.*'s (2021) study that describes the sources of knowledge that circulates among this network as based on a shared cannon of published materials. Within this canon, *Food for Free* (Mabey, 1972) and *Wild Food* (Phillips, 1983) are among foragers' key learning resources. The importance of wild food literature is also illustrated in Drennan's (2011) review of 10 publications on wild foods for which the merits of each are assessed in regard to: the quality of information (does it

contain folklore, historic and botanical information?), utility (on plant identification, uses, locations of plants, processing techniques, recipes) and visual information (colour photos, quality of pictures, aesthetic representation). Drennan himself is considered one of the leading foragers in today's movement and his review of this literature is testament to the weighting given to these texts as sources of knowledge and learning among professional foragers today.

Łuczaj *et al.* (2021) identify the current return to wild food literatures and practices as stemming from the 1970's 'back to nature' movement, reflected in cookery and wild food writing in that period, including Mabey's work (1972). While Mabey's intention was to revive a cultural connection to nature, in his review of the foraging revival, a prevailing 'epicurean' interest in wild plant foods, coupled with a 'rural romantic' interest in the countryside is evident (Mabey, 2006). The historical writings on wild food plants he draws on attests to the enduring interests of an affluent and educated sector of society in wild food plants; in his words, "the urban, artisan middle-class profile of the forager" (Mabey, 2006). The picture that emerges is a classed association with wild food consumption and affluence. What is interesting from the historic records referenced in his work is that the species are, for the most part, common weeds and wild plants widely distributed throughout Britain whose transformation to epicurean status among certain social groups might, I argue, be explained by the symbolic

value they hold. In *Food and Identity in England, 1540-1640: Eating to Impress*, Lloyd (2016:15) reminds us that, "food consumption four centuries ago was as symbolic as it was functional. Like any other method of expressing oneself, eating enabled people to cultivate 'self and otherness' mentalities." Contemporary foodie discourse (de Solier, 2013), resonates with Lloyd's argument that food is a form of self-expression, and, I suggest, with a section of people in the foraging movement interested in this aspect of wild food. Yet food practices are also indicators of wider social change (Lloyd, 2016). This is illustrated in the British texts where circulation of knowledge about wild food plants appears to be punctuated by periods of food stress or cultural and political change, creating a flurry of interest and study of wild edible plants among educated scholars and writers, who then wrote for similarly educated audiences (Albala, 2014). In the case, for example, of Evelyn's *Acetaria: A discourse of Sallets*, (1699), written at the turn of the 18th century, in which 73 edible greens are mentioned and their preparations meticulously described, the political climate was one where the dominant discourse was of health, linked to debates on what the ideal diet for the English character entailed (Guerrini 2012). Evelyn's contribution, as a natural philosopher, and founding member of the Royal Society, was to produce something of a manifesto for rural living and simple subsistence based on vegetables. However, it was not only 'healthful' food that was a prevailing discourse at the time of Evelyn's writing, but the period is also noted as "an example of the rising fashion (borrowed from the continent) for

simply and delicately flavoured vegetables in seventeenth-century Britain" (Lieffers, 2018: 113). Thus, both health discourse and food fashions were represented through the medium of wild food plants in Evelyn's work, like today, indicating a particular practice of wild food use among elite society. However, while he references food traditions from Europe, particularly France, Italy, and Spain, he also anecdotally refers to local practices among non-elites, such as the consumption of *Alliaria petiolata* (garlic mustard) by "country people" or *Conopodium majus* (pignuts) by "northern rustics". These passing references to rural, poorer folk, suggest that practices of consuming wild plants persisted, among the rural poor, but became differentiated through social status, and in the symbolic values they present for Evelyn's audiences, preoccupied by health, diet, and identity. Oddy (2003) explains how the effects of industrialisation in Britain disrupted domestic food production and provisioning leading to a situation by the 19th century where attention to cooking was only the concern of a wealthy class with leisure time and access to domestic labour. The recipes elaborated by Evelyn are clearly intended for this social class, for example, in detailing the tools required to prepare these plants, he insists that the knife "be of silver so as not to corrode" and the bowl "be of porcelain or Holland delftware" (1699:94-95). He further writes that many of the recipes have been passed to him from "noble housewives". This record, and that of subsequent publications discussed, suggest how wild food practices became socially

stratified and symbolically resonant for members of the educated classes while continuing to be gathered and consumed by ordinary folk as well.

The next flurry of publicity on wild food plants comes in the 19th century. In 1892 a report in the *British Medical Journal* describes the situation of a lack of fresh vegetables in towns and reports on a range of wild edible plants that could be substituted in their place. Describing the use of nettles as a nutritional replacement for spinach, its status as a 'poor man's food' is downplayed while its culinary potential is emphasised: "In some districts the practice of eating nettles has survived, and in others it has been revived, but not usually by the poorer people, who are often more fastidious in such matters than their well-to-do-neighbour. Boiled in a small quantity of water until tender, and served with a little butter, pepper, and salt, nettles are at least a good substitute for spinach" (1892: 1263). Eight years later, urban populations were still suffering from a shortage of fresh vegetables, the writer Henry Vaughn (1899) published an article in the literary magazine, *Longman's Magazine*, providing an erudite review of several substitutable wild food plants. The descriptions of *Crambe maritima* (sea kale), *Salicornia europaea* (samphire) and *Beta vulgaris* (sea beet) refer to their use in commercial trade and as subsistence foods for "the poorer people" but the culinary applications and aesthetic tastes described resonate with the earlier writings of Evelyn. On *Crambe maritima*, he writes: "It is said, and doubtless with some truth, that the wild plant, blanched with sand on its *native* shore,

is superior in flavour to the cultivated vegetable" (1899: 55, my emphasis). This aesthetic is, I suggest, echoed in contemporary gastronomic narratives that appeal to the authentic quality of 'ancient' (native) coastal species (Sachs 2012) and which also find aesthetic expression as a 'sense of place' and authenticity, popularised by the 'new Nordic cuisine' in which wild foods are a key part (Redzepi, 2010).

In 20th century Britain, knowledge about wild foods recirculated during a period of food insecurity brought on by World War II. In 1940, de Maudit's *They Can't Ration These* was followed by the Ministry of Food's *Hedgerow Harvest* (1943), which produced public information promoting the nutritional value of wild plants and how to find them in the British countryside. While de Maudit's work is in the same vein as Evelyn (1699) and Vaughn's (1899) writing, written for a gentrified rural population, the Ministry of Food's publication was a practical guide to foraging for recognisable, vitamin-rich wild plants. Thirty years later, Mabey (1972) and Phillips (1983) capture the interests of a broader public, publishing many of the more sophisticated recipes gleaned from cookery books and writers such as Evelyn etc. but also including folk recipes and practical information, such as where to find common species and how to identify them. These two books, I suggest, combine an appreciation for both the ordinariness of wild foods with their *gourmet* value but are also more explicit in advocating foraging as a connected relationship to nature, reflecting a growing modern

consciousness of the value of wild food gathering in an increasingly nature-disconnected world[13]. The social conditions which made *Food for Free* so popular are suggested by Moran (2014: 54) who writes: "in an era when the rise of laboratory food technology and pre-packaged supermarket food was beginning to make soil and labour seem part of another existence, the book also fed into an emergent sense that the severing of food production from ordinary life was a symptom of broader social problems." This early modern revival in foraging, was therefore also coalescing around broader social and political movements beyond the food trends and lifestyle interests seen in the literary traditions reviewed above. Environmentalism too, I suggest, expressed through an awareness of the disconnect between people and nature, had a place in its resurgence. The historical publications reviewed demonstrate that wild food traditions in Britain have involved both subsistence and culinary trajectories and that interest in wild food plants has periodically resurfaced under particular socio-economic and political conditions. I suggest that in the current foraging movement we are seeing contemporary concerns and interests in, *inter alia*, food, health, identity, and nature reproduced through this resurgent interest in foraging.

13 Mabey (2012:7) writes later about how it is in the 'intimacy with wild things' that foraging holds its value.

2.2.1 Wild food plant traditions in Britain: Conceptualising foraging practices through contemporary scholarship

Contemporary British scholarship on foraging tends to separate practices into the normative use categories 'recreational' and 'commercial'; within this, there is a body of grey literature concerned with the economic potential of wild harvesting from the perspective of non-timber forest products (NTFPs). From this perspective, reviews have sought to understand the potential of woodland products to support and diversify rural economies and as an additional revenue stream for sustainable woodland management, as discussed in Chapter One. Four reviews of commercially harvested wild resources in the UK, conducted in the early 00's, presented a picture of commercial foraging as a small but increasing cottage industry, influenced by social trends for artisanal foods and 'traditional' products (Sanderson and Prendergast 2002; Murray and Simcox 2003; Wong and Dickinson 2003; Emery *et al.*, 2006). The focus of these reviews was on the economic potential for rural development, but cultural values are highlighted in these studies as significant. Emery *et al.* (2006: vii) for example, note a strong "woodland culture" among NTFP harvesters in Scotland, while Murray and Simcox's (2003: 100) review of commercially managed wild resources concluded, "This historical national heritage has a value to society that is far greater than can be captured by surveys based on economic criteria alone". Following on from these reviews, the first published ethnobotanical study of wild plant uses in Britain, (Prendergast *et al.*, 2004) documented a diversity of wild

plants, fungi and marine algae harvested for food, leisure, and crafting purposes. The study also underlined the significance of cultural and natural heritage values as integral to commercial operations.

Two unpublished ethnobotanical dissertations since, turned the attention to recreational uses and practices (Fenton, 2008; Lee, 2012). Fenton's (2008: 32) study recruited 100 "wild food enthusiasts" through a wild food course mailing list and two Internet forums – "a bushcraft and survival skills online community" – and a "TV celebrity chef's" forum - and surveyed the motivations, knowledge, and practices among participants but also included a study of a commercial foraging company, recording the species harvested and the trade networks of the company. Fenton's research distinguished commercial foraging as "involvement in commercial market chains" from recreational foraging as "personal use outside of any economic context" (2008: 44) capturing information on the different motivations of these groups. Although treated as distinct practices this study found some variation between and within these categories. Among recreational foragers for example, two profiles were identified: people who "embrace the activity of collection and consumption" and individuals who display "a culinary appreciation" (2008: 74-75). The research pointed to a need for research on this latter group who were more likely to experience wild food through restaurant consumption than through foraging directly. Lee's (2012) PhD study surveyed 100 participants through distribution of a questionnaire to

members of the Women's Institutes, National Trust, and staff and visitors to the Eden Project in Cornwall. Lee found that less than half of people surveyed collected more than blackberries and sloes and suggested this reveals a general loss of knowledge of "location and use of foods" among the public (2012: 170). Nevertheless, both unpublished studies reported uses for 106 species (Fenton, 2008) and 73 species (Lee, 2012) respectively, revealing a persistence in recreational foraging knowledge for common plants among a segment of their samples.

In contrast to these recreational-focussed studies, an ethnobotanical Master's project focussed exclusively on commercial foraging (Jones, 2016). Adopting a phenomenological approach, Jones challenges the stereotype of commercial foraging as an exploitative, unethical practice, suggesting that commercial pickers operate between two ontological frames: a "political-ecological frame" where commercial quotas for wild products demand an "output-oriented perception of the environment" and, through continued involvement in these activities, pickers become relationally 'entangled' with the plants and their environments, in what Jones refers to as an "animic frame" (2016: 56). Her research revealed relational values inherent within commercial foraging practice, contrary to perceptions of commercial practices as operating purely for economic gain, and is a point also inferred by Fenton (2008: 44), who notes a "genuine passion for retaining and re-

inventing TEK" (traditional ecological knowledge) among the commercial collectors surveyed.

Recently, a third type of foraging practice has been identified, focussed on a group of foragers who teach foraging through field courses, published materials and online activities (de Jong and Varley, 2018; Townsend, 2020; Łuczaj, Wilde and Townsend, 2021). Their practices cut across the categories of recreational and commercial in unique ways. de Jong and Varley's (2018) research with foraging course leaders and course participants positions these activities within a commercial 'food tourism' sector, while Łuczaj *et al.*'s, (2021: 4) study defines this group of foragers as a mixture of "instructors and entrepreneurs working with wild foods in the delivery of wild food and drink products, and services". This involvement in wider markets for nature, for example, through the provision of foraging field courses to paying members of the public, food tourism and small-scale production of artisanal wild food products, is characteristic of today's foraging movement's eclecticism, and challenges the sharp distinctions between recreational and commercial practices that are so entrenched in public and academic discourses.

The reviewed research demonstrates differences in the motivations driving different foraging practices but it also indicates overlaps in interests and dimensions of practice which have not to date been analysed but are

addressed here. The following research questions provide the framework for the empirical focus of this chapter:

1. Which wild edible plants are foraged in Britain?
2. Are the same wild edible plants gathered by different forager communities?
3. How has knowledge and practice changed over time?

2.3 Materials and Methods

The following analysis is based on ethnobotanical methods that uses inventory data on wild and foraged plants in Kent and ethnographic data collected through participant-observation and semi-structured interviews with course providers, recreational foragers, and commercial collectors. The methods used to compile the inventory are described below. Identification of species follows Stace (2010). To maintain consistency in the records, the genus name was given in cases for taxa containing multiple species and/or subspecies, e.g. for dandelion – *Taraxacum* spp.; blackberry – *Rubus* spp. etc. In all other cases taxa were named to species level.

2.3.1 Kent flora

The botanical records for Kent's vascular flora were entered into an Excel database. Taxa that were genus only, hybrids, aggregates, variants, subspecies, and casuals were removed from the dataset so that only species whose populations are naturally sustained in the wild were included. A

dataset named 'Kent flora' was created with this list of plants and forager inventories subsequently included (See supplemental materials Appendix 1).

2.3.2 Forager inventories

Recreational foragers: The names, plant parts and recipes reported by recreational foragers were taken from the results of an online questionnaire (Appendix 2) distributed to 100 participants attending foraging field courses in Kent between April and August 2018 with a total of 69 responses returned. A free listing question (Survey question 6, Appendix 3) stated: 'Please list all the wild edible plants that you know. If you have also gathered them, please specify how you have used them' These results were entered into the database under the inventory name 'recreationally foraged.'

Professional foragers: three local foragers, one of whom is a registered member of the Association of Foragers, were interviewed during ethnographic fieldwork and the names and parts of plants harvested were recorded and added to over an 18-month period during which I participated and observed these professional foragers at work, through the public courses they ran, and outside of these events, while preparing for courses or foraging for personal food stores. In addition, species were searched for on the webpages of all local foragers registered with the Association of Foragers between October 2017-February 2018 and checked again in December 2019 for any additional

species reported (none found). In 2021, the published list of professionally foraged wild food plants (Łuczaj *et al*., 2021) was cross-checked for additional species (none found). A total of 111 species were recorded in a dataset under the inventory name, 'professionally foraged'.

Commercial foragers: Data was obtained from a commercial company that provided a list of all wild plants sold during 2015-2016. The database mentioned the names of 153 plants, plant parts harvested, volumes of products for sale and price per unit (e.g. wild garlic (100g) @ £2.50). In addition, two unpublished studies (Jones 2016; Fenton 2008) were checked for additional plants (2 species identified) and added to the dataset. Volumes and prices were removed from these lists so that only the names of the plants are recorded in the inventory (See Supplemental materials, Appendix 1). This resulted in a total of 155 species recorded under the inventory name, 'commercially foraged'.

2.4 Analysis

2.4.1 Frequency counts

The datasets from excel were transposed into SPSS (Appendix 4) and the case variable 'Kent Flora' was created using the 'Kent flora' dataset. For this case, species were assigned values according to edibility where 0 = not edible, 1 = edible, and status, where 1 = native, 2 = non-native/naturalised. Status was checked through The Plant Atlas (Stroh *et al*., 2023) and edibility status was

checked through the *Plants for a Future* online database[14] and Sturtevants' *Notes on Edible Plants of the World* (1919). Frequency counts were conducted across the database resulting in counts for the number of native and naturalised species, the number of species foraged across distinct forager groups (commercial, recreational, and professional) and the total number of species foraged for food purposes (Table 2.1, p. 60).

2.4.2 Relative Cultural Importance Indices (RCI)

A salience analysis (Quinlan *et al*. 2005) was carried out on the freelist results from recreational foragers. This method of analysis infers importance based on the order and frequency that a species is mentioned by informants and is an effective method of quantifying RCI in a given domain. It was selected to account for variations in wild plant use reporting among the participants of foraging courses. This method gives better insight into species selected, for example, if participants had simply listed plants according to the course attended. To assess the variability in practice among this group and that of the broader population of recreational foragers, the top 10 species were compared with the ranked results from Fenton's (2008) and Lee's (2012) recreational foragers. The ten most frequently used plants by local professional foragers were recorded during ethnographic observation and unstructured interviews over the fieldwork period and compared to Łuczaj

[14] https://pfaf.org/user/. Last accessed 27-03-2024

et al.'s (2021) national survey to assess for commonalities and differences between local professional practices and the general professional community. The top 10 commercially foraged species were identified according to the highest revenue in sales and the highest volumes sold in 2015 and 2016 to allow comparison with the 'top 10s' in all three categories of practice.

2.5 Results

2.5.1 Which wild edibles are foraged in Kent?

Table 2.1 Frequency count of the Kent flora

Variables	**Number**	**Total (%)**
All wild plants	1700	100
Native	958	56
Non-native	742	44
Edible	737	43
Not edible	963	57
Commercially foraged	155	9
Professionally foraged	111	6
Recreationally foraged	46	3
No. of species foraged in Kent	178	10

A frequency count (Table 2.1) revealed that out of a total of 1700 species in Kent 43% are edible while 57% are not edible. Just over half of species (56%) are native while 44% of species are naturalised[15] populations. In total 178 species (10%) are foraged in Kent, out of a possible 737 (43%) species. Recreationally foraged species represent the lowest proportion of plants

[15] This includes both neophytes (established populations after 1500) and archeophytes (established prior to 1500).

foraged – just 3% - while commercially foraged species represent the highest number of plants harvested by any forager group, at 9%. Professional foragers forage more than recreational foragers – 6%, but less than commercial foragers.

2.5.2 Are the same plants foraged by all foragers?

2.5.2.1 Recreational forager knowledge

58 responses were collected for the freelist question (Appendix 3) and 4 responses excluded for the following reasons: one participant stated that they knew too many species to list: 'I know somewhere between 100 and 200 plants'; one participant stated time constraints: 'Sorry I don't have time!'; one response was too generalised: 'I forage mainly fruit'; one respondent had not yet attended the course: 'Have not completed the experience yet'. Many people included mushrooms and seaweeds in their lists although the question asked for 'edible plants'; these taxa have been included to demonstrate the salience of these particular taxa in contemporary foraging practices. Fungi have been grouped together under the vernacular term 'mushrooms' since many respondents simply stated 'mushrooms,' 'field mushrooms' or 'bolete family' etc. Marine algae are a taxon that participants listed only as 'seaweeds' with no-one identifying them by their scientific names. A total of 46 species were reported with 22 use reports.

Table 2.2 Salience analysis (SI) of recreational foraging knowledge and practices

All values (excluding values below 1) of wild edible species reported by participants of foraging courses in Kent (2018).

Salience value	**Botanical name**	**Common name**	**Part used**	**Uses**
29.49	*Allium ursinum*	Wild garlic/ramsons	lf	Salad, sauce, herb, oil
18.05	*Urtica dioica*	Nettles	lf	Soups, sauce, tea
13.62	*Rubus fruticosus*	Blackberries	fr	Jam, pies, fruit, liqueurs, syrups
11.94	*Prunus spinosa*	Sloe	fr	Gin, jams, flavour chocolate
9.89	*Sambucus nigra*	Elderflower	fl, fr	Champagne, cordial, 'Turkish delight;' vinegars
9.29	*Marine algae*	Seaweeds (brown, red, green)	lf	Flavour butter, seaweed bread, crispy seaweed hors d'oeuvres
8.37	*Fungi*	Mushrooms		Cooked in risotto, omelette, fried on toast, raw
6.38	*Salicornia europaea*	Marsh samphire	st	Cooked as vegetable, salad, fish accompaniment
5.94	*Foeniculum vulgare*	Wild fennel	lf, fr,p	As herb, salads, condiment to fish & meat dishes, flavour gin
5.58	*Prunus domestica*	Damsons/bullace	fr	Pies, jams,
4.1	*Rosa* spp.	Rosehip/rose	fl, fr	Syrups, cordial, flavour desserts

3.87	*Suaeda maritima*	Sea blite	lf	Salad
3.84	*Taraxacum* spp.	Dandelion	lf, fl	Salad
3.29	*Hippophae rhamnoides*	Sea buckthorn	fr	Juice, preserves
2.83	*Crataegus* spp.	Hawthorn	fl, fr	Flowers, berries for syrup
2.59	*Beta vulgaris* subsp.	Sea beet/wild spinach	lf	Cooked as vegetable
2.44	*Armoracia rusticana*	Horseradish	rt	Sauce
1.72	*Castanea sativa*	Chestnut	fr	Cooked in savoury and sweet dishes, ground for flour
1.67	*Smyrnium olusatrum*	Alexanders	st, lf,	Cooked as vegetable
1.67	*Malus* spp.	Wild apples	fr	Jam, in pies, chutney
1.51	*Artemisia vulgaris*	Mugwort	lf	Tea
1.51	*Atriplex portulacoides*	Sea purslane	lf	Salad
1.45	*Rumex acetosa*	Common sorrel	lf	Salad
1.11	*Diplotaxis tenuifolia*	Wild rocket	lf	Salad

Lf = leaf; fr = fruit/seed; fl = flower; st = stem; rt = roots; p = pollen

This record of species and their domestic applications reveals a mix of commonly recognisable species and traditional home recipes as well as species that are specialists of ecosystems, (e.g. coastal plants) many of which are also popular wild foods promoted in food media and on gastronomic

platforms. Among the species with the highest salience values in Table 2.2 are *Allium ursinum*, (Wild garlic), *Urtica dioica* (Nettle), *Rubus fruticosus* (Blackberry), *Prunus spinosa*, (Sloe), *Sambucus nigra* (Elderflower/elderberry), seaweeds and fungi. Except for *Allium ursinum*, which is not found in the open (Tutin, 1957), these are plants with a widespread distribution that have been gathered as part of seasonal recreational and subsistence activities historically (Mabey, 1972). Other common plants are woodland and hedgerow fruits and flowers: *Rubus fructicosus* (Blackberry), *Prunus spinosa* (sloe), *Prunus domestica* (damsons), *Rosa spp.* (rose), *Crataegus monogyna* (Hawthorn), *Castanea sativa* (Chestnut), *Malus spp*. (wild apples). *Taraxacum officinale* (dandelion), *Armoracia rusticana* (horseradish), *Smyrnium olusatrum* (Alexanders), *Artemisia vulgaris* (Mugwort) and *Rumex acetosa* (sorrel). The recipes described are also largely traditional recipes found in wild food guides, cookery books and historic texts, such as the use of wild fruits and berries in desserts, nettles to make soup, and mushrooms in savoury dishes. However, there is also evidence of some species which are not widespread or easily identified without expert knowledge and may have been reported as a direct result of encountering them through field courses. These include *Allium ursinum, Hippophae rhamnoides, Beta maritima, Salicornia europaea, Suaeda maritima, Atriplex portulacoides and Smyrnium olusatrum*. Aside from *Allium ursinum*, these specialist habitat species occur in coastal, marine, and estuarine habitats and are therefore unlikely to be foraged by people without local knowledge of their locations and expert identification skills. Their

inclusion in the list of plants reported by people attending coastal foraging courses suggests the influence of these courses and of an awareness among these participants of food trends that use wild food plants in particular ways rather than a general and widespread knowledge of them.

As well as specialist plants cited, the uses reported by participants in Table 2.2 reflect a combination of old and new applications which are represented in the practices and public educational activities of professional foragers today (Łuczaj *et al*., 2021). Traditional recipes such as the use of wild fruits and berries in desserts, nettles to make soup, and mushrooms in savoury dishes sit alongside newer applications, for example, in the use of a broader range of aromatic species (e.g., *Rosa* spp. and *Foeniculum vulgare*) to flavour alcohols and vinegars, which were formerly the reserve of traditional berry-based beverages (e.g. sloe gin, elder based syrups and champagnes). A wider range of wild leaves in salads is also observed (e.g., *Atriplex portulacoides*, *Suaeda maritima*), as well as recipes for *Allium ursinum,* and the multiple uses of seaweeds in domestic dishes.

To understand how participants' knowledge of wild edible plants compares to other studies of recreational foragers, the top 10 plant species are compared with the top 10 species ranked in Fenton (2008) and Lee's (2012) studies. Both surveys ranked species reported in order of frequency of mention. Their samples were drawn from the north-west (Fenton, 2008) and

south-west of England (Lee, 2012) and compared with the present survey in the south-east (Table 2.3).

Table 2.3 Popular recreationally foraged plants

A comparison of the most popularly foraged plants by recreational forgers in Kent (2018) compared with Fenton (2008) and Lee's (2012) surveys.

Common name	**Botanical name**	**Present study (2023)**	**Lee (2012)**	**Fenton (2008)**
Wild garlic/ramsons	*Allium ursinum*	1	9	6
Nettles	*Urtica dioica*	2	9	4
Blackberries	*Rubus* spp.	3	1	2
Sloe	*Prunus spinosa*	4	6	5
Elderflower Elderberries	*Sambucus nigra*	5	2 5	1
Samphire	*Salicornia europaea*	6		
Wild fennel	*Foeniculum vulgare*	7		
Rose	*Rosa* spp.	8		
Sea buckthorn	*Hippophaë rhamnoides*	9		
Damsons/bullace	*Prunus domestica*	10	9	3
Hawthorn	*Crataegus* spp.	17		7
Hazel	*Corylus avellana*		7	8
Common sorrel	*Rumex acetosa*	19		9
Crab apples	*Malus sylvestris*			10
Sweet chestnut	*Castanea sativa L.*	16	4	

Wild mints	*Mentha* spp.		10	

The comparison in Table 2.3 reveals five plants in the top 10 across the three studies: *Allium ursinum* (Wild garlic), *Urtica dioica* (Nettle), *Rubus fruticosus* (Blackberry), *Prunus spinosa* (Sloe*), Sambucus nigra* (Elderflower/elderberry) and *Prunus domestica* (Damsons) while a second group of plants (wild fruits and nuts) are also mentioned in all studies. These species are common, locally abundant species found in British woodlands, countryside, and hedgerows, and along the margins of agricultural land and urban, industrial wastelands, parks, and municipal greenspaces. The position of *Allium ursinum* across these surveys illustrates its rise in popularity as a foraged food plant in the contemporary foraging movement. Over the 10 years between Fenton's (2008) study and this research there has been a proliferation of media about wild garlic and how to use it, featured on celebrity chef television programmes and in articles in the food and drink sections of magazines suggesting a strong connection between gastronomic media coverage and increased visibility of it in knowledge-making platforms. It is also ranked number one in the professional and commercial forager repertoires illustrated in Tables 2.4 and 2.5 and is one of the most popular foraged foods in Britain and in other parts of northern Europe currently (Landor-Yamagata *et al.*, 2018; Teixidor-Toneu *et al.*, 2023). In addition, three species which ranked in the top 10 of the present study were not present for Fenton (2008) and Lee (2012): *Salicornia europaea, Foeniculum*

vulgare, Suaeda maritima are species that are abundant along the east Kent coast and taught in the foraging field courses, reflecting the significance of local knowledge that is acquired through this form of knowledge transmission.

2.5.2.2 Professional forager knowledge

Professional foragers have become key influencers in the British foraging movement actively generating and transmitting foraging knowledge through their public facing activities (Townsend, 2020; Łuczaj *et al*., 2021). A survey of the most gathered wild foods by members of the professional Association of Foragers reported 102 species used for personal and teaching purposes representing the knowledge and practices of this community. Table 2.4 shows the most used species. Like the recreational foragers surveyed through the coastal foraging courses in Kent, (Table 2.2) their list includes marine algae and fungi.

Table 2.4 Professional forager knowledge

Species most commonly foraged by professional foragers. Source: Łuczaj *et al*., (2021: 7).

Scientific Name	**English Name**	**Used in courses (n=36)**	**Used personally (n=36)**
Allium ursinum L.	Wild Garlic, ramsons	24	24
Sambucus nigra L.	Elder	24	24
Urtica dioica L.	Nettle	24	24

Heracleum sphondylium L.	Common hogweed	13	13
Rubus subgenus *Rubus*	Blackberry	12	13
Beta vulgaris L.	Sea beet	11	11
Taraxacum spp.	Dandelion	11	11
Cantharellus spp.	Chanterelle		
Allium triquetrum L.	Three cornered garlic	10	10
Palmaria palmata (L.) F. Weber & D. Mohr	Dulse	10	10
Crataegus spp.	Hawthorn	9	9
Stellaria media L.	Chickweed	9	9
Rosa spp. (R. canina L.)	Rose	9	8
Alliaria petiolata L.	Garlic mustard	7	7
Fungi	Mushrooms in general	7	7
Malus spp.	Wild apple	7	7
Algae	Algae in general	6	6
Smyrnium olusatrum L.	Alexanders	6	6
Boletus edulis	Bolete	6	4
Galium aparine L.	Cleavers	5	5
Elaeagnus rhamnoides (L.) A. Nelson	Sea buckthorn	5	5
Hydnum repandum	Hedgehog mushroom	5	5
Laminaria digitata (Hudson) J.V. Lamouroux and other Laminariales	Kelp	5	5
Rumex acetosa L. and R. acetosella L.	Sorrel	5	5
Sonchus spp., *S. oleraceus L.*	Sow thistle	5	5
Agaricus spp.	Field mushroom	4	4
Tripolium pannonicum (Jacq.) Dobrocz.	Sea aster	4	4

Himanthalia elongata (L.) S.F. Gray	Thong weed	4	4
Porphyra linearis Greville and P. umbilicalis Kützing	Laver	4	4
Prunus spinosa L.	Blackthorn	4	4

The top five most foraged species are: *Allium ursinum* (Wild garlic), *Sambucus nigra*, (Elder), *Urtica dioica* (Nettle), *Heracleum sphondylium* (Common hogweed) and *Rubus* spp. (Blackberry). These are also among the top five species for recreational foragers identified in Tables 2.2 and 2.3, apart from *Heracleum sphondylium*. This plant is a common, native wild plant in Britain that closely resembles other highly poisonous members in the *Apiaceae* family, such as *Heracleum mantegazzianum* (Giant Hogweed) and *Conium maculatum* (Hemlock). It is therefore likely that only experienced foragers with expert identification skills gather this species, and it was not found in any of the recreational forager surveys discussed here. Like *Allium ursinum*, *Heracleum sphondylium* may represent the introduction of a recent food plant to British foraging as a result of globalised access to wild food plant traditions, as both plants have an established history of use in European traditions but not in Britain historically. The species reported in the top 5 for professional (Table 2.4) and top 10 for recreational forager surveys (Table 2.3) significantly overlap and are among some of the most recognisable species found throughout Britain.

In Kent 111 species foraged by professional foragers were recorded. These species were compared with the 102 species reported by Łuczaj, *et al*., (2021) and found to be identical except for the addition of a few localised species in Kent including: *Suaeda maritima, Atriplex portulacoides, Allium vineale* and several varieties of *Viola* spp. and *Rosa* spp. These species occur within a 5-mile radius of the local foragers' residences and gathered from a range of locations including open fields, coastal cliffs, seashore, woodlands, town cemeteries and parks, roadside verges, country parks and nature reserves; this variation reflects the significance of the local ecological contexts to foraging practices.

Table 2.5 Local professional practice

Top 10 most popular foraged wild food plants in Kent for personal and teaching purposes.

Botanical name	**Common name**	**Parts used**	**Uses**
Beta vulgaris	Sea beet	lf	Vegetable
Allium ursinum	Wild garlic	lf	Salads, sauces, pickled, wild garlic oil
Hippophaë rhamnoides	Sea buckthorn	fr	Liqueur, dessert sauce; vodka cocktail ; juice; chutney
Stellaria media	Chickweed	lf	Salads
Algae	Seaweeds in general	lf	Hors-d'oeuvre (crisped in oven), flavour salt, seasoning, flavour butter, bread
Salicornia europaea	Marsh samphire	lf	Vegetable

Rosa spp.	Rose	fl	Syrup, alcohol flavouring, flower garnish, flavour sugar, cream, scones, and ice-creams
Smyrnium olusatrum	Alexanders	St, fr	Vegetable, seasoning (fr)
Foeniculum vulgare.	Fennel	Lf, fr	Salad, seasoning, drink flavouring
Alliaria petiolata	Garlic mustard	lf	vegetable

Lf = leaf; fr = fruit/seed; fl = flower; st = stem

The top 10 most commonly gathered species in Kent shown in Table 2.5 differ in ranking order from those reported by professional foragers described in Table 2.4, reflecting the variance in practices linked to the ecology of the region and local knowledge of these environments. This is evident in the most popular food plants used personally and for teaching purposes listed in Table 2.5 which are predominantly coastal species. They are also of gastronomic interest as native, coastal plants and seaweeds. They are thus popular wild foods to learn and teach about through guided foraging courses, reflected in their prevalence among the species reported by recreational users in Table 2.2. The results of this local inventory of species gathered by professional foragers highlights the importance of place to knowledge-generation and practices, and the importance of field studies that capture the diversity and innovation of local knowledge and practices rather than simply relying on textual records (Leonti, 2011). A species widely collected in this area for example, is the *Rosa rugosa* species, an ornamental and scented rose native to eastern Asia which has spread along the coastal

dunes and sandy soils inhabiting the edges of urban areas. The petals of this species are used in a variety of recipes as shown in Table 2.5. Traditionally, it is *Rosa canina*, (commonly named: wild rose, bramble rose, dog rose, or briar rose), whose fruits (hips) have been used to make syrups that are widely accepted to be an excellent source of vitamin C, promoted by government ministries, for example, during World War II (*Hedgerow Harvest*, 1943). This is the species most often cited in the foraging literature and assumed to be the *Rosa* species used, but locally, due to its abundance, *Rosa rugosa* is more popular, and used as an aromatic plant rather than for its fruit syrups.

Moving on to commercial practices, usually treated as quite separate from recreational foraging practices, I identify which species are in demand from chefs of *haute cuisine* and the extent to which these plants vary or overlap with those foraged by recreational and professional foragers.

2.5.2.3 Commercial forager knowledge

Since the first economic assessment of the commercial trade of wild resources in England (Morgan, 1996) several studies of commercial foraging have taken place. With each study there has been an increase in the number of plant species reported for use commercially as food plants: Morgan (1996) reported 5 species; Murray and Simcox (2003) reported 36 species, Jones (2016) reported 95 species and the current study identified 155 species

foraged commercially in Kent. Table 2.6 lists the top 10 species traded over a two-year period (2015 and 2016) using two forms of value: the 10 species with the highest revenue in sales and the 10 species with the highest volumes sold in the same period.

Table 2.6 Commercially foraged plants

Commercially harvested 'top 10' wild foods in 2015 and 2016

Highest revenue 2015	**Highest volume 2015**
Beta vulgaris (Sea Beet)	*Malus sylvestris* (Crab Apples)
Hippophaë rhamnoides (Sea Buckthorn Juice)	*Beta vulgaris* (Sea Beet) (Large)
Aster tripolium (Sea Aster)	*Salicornia europaea* (Marsh Samphire)
Nasturtium officinale (Wild Watercress Flowers)	*Vaccinium myrtillus* (Bilberries) (Frozen)
Atriplex portulacoides (Sea Purslane) (Dried)	*Brassica nigra* (Black Mustard Leaf)
Crambe maritima (Sea Kale)	*Prunus cerasifera* (Cherry Plums – Yellow)
Brassica oleracea (Wild Cabbage Broccoli)	*Smyrnium olusatrum* (Alexanders Tops)
Crithmum maritimum (Rock Samphire) (Dried)	*Crithmum maritimum* (Pickled Rock Samphire)
Oxalis acetosella (Wood Sorrel Flowers)	*Prunus domestica* subsp. *insititia* (Wild Damsons - Salt Pickled)
Boletus edulis (Stone Mushroom)	*Beta vulgaris* (Sea Beet)
Highest revenue 2016	**Highest volume 2016**
Beta vulgaris (Sea Beet)	*Beta vulgaris* (Sea Beet)
Aster tripolium (Sea Aster)	*Aster tripolium* (Sea Aster)

Hippophaë rhamnoides (Sea Buckthorn Juice)	*Nasturtium officinale* (Wild Watercress)
Nasturtium officinale (Wild Watercress)	*Malus sylvestris* (Crab Apples)
Sedum spp. (Stone Crop)	*Allium ursinum* (Lacto Fermented Ramsons)
Atriplex portulacoides (Sea Purslane)	*Atriplex portulacoides* (Sea Purslane)
Nasturtium officinale (Wild Watercress Tops)	*Brassica oleracea* (Wild Cabbage)
Pseudotsuga menziesii (Douglas Fir Needles)	*Sorbus aucuparia* (Rowan Berries)
Oxalis acetosella (Wood Sorrel)	*Salicornia europaea* (Marsh Samphire)
Disphyma crassifolium (Purple Dew Plant)	*Pseudotsuga menziesii* (Douglas Fir Needles)

These plants are among the highest value products being sold directly to London restaurants in 2015 and 2016 representing a sample of over 155 different species collected commercially. This practice has the highest number of species recorded by any group found in this and in any study recording the knowledge of contemporary foragers to date.

While all but two of the species in Table 2.6 (*Pseudotsuga menziesii and Disphyma crassifolium)* are plants also reported by recreational and professional foragers, there are differences that distinguish this practice from those so far reported. Variation is evident in the presence of two species sold for their flowers rather than their edible leaves, (*Oxalis acetosella* and *Nasturtium officinale* flowers), the presence of wild food 'products' (e.g. pickled *Crithmum maritimum*, lacto-fermented *Allium ursinum*, and the juice

of *Hippophaë rhamnoides*) which contrast with the raw products used by recreational and professional foragers, and finally in the inclusion of ornamental, cultivated species as 'wild' (*Disphyma crassifolium* and *Pseudotsuga menziesii).* Overlaps with recreational and professional practices are evident in the uses of native coastal species (e.g. *Beta vulgaris, Crithmum maritimum, Salicornia europaea* and *Atriplex portulacoides)* as well as the more common hedgerow fruits and woodland berries (e.g., *Malus sylvestris*, *Sorbus aucuparia*, *Prunus* spp. *Vaccinnium* spp.). While these latter wild food plants are also gathered recreationally and for teaching purposes their status as *gourmet* foods seen here in gastronomic trends could be indicative of the symbolic values of wild food plants in this context, as an expression of a 'sense of place' and authenticity in local and regional cuisines.

The association between place-based, 'authentic' products can be seen in food media[16] written for high-end gastronomy markets expressed through aesthetic value. In an article on the StarChef platform, the qualities of the coastal plants, *Crithmum maritimum*, *Salicornia europaea*, *Sedum* spp., and *Atriplex portulacoides* were reviewed and described as:

16 StarChefs is an online platform and resource for the food and beverage industry. Its contributors are 'the country's top up-and-coming chefs, pastry chefs, bartenders, sommeliers, and artisans'. https://www.starchefs.com/about. Accessed 13/04/2018

> "oceanic greens and herbs, a group of ancient succulents that grow on the British coasts … whether used as an elegant garnish, a pop of salty flavour, or as a textural element, the widespread use of sea herbs and lettuces shows that the ocean's bounty is more than fresh fish. It's the (sea's) oyster of vegetable flavour." (Sachs, 2012).

These aesthetic elements include sensory (taste and texture) as well as place-based qualities (authentic through ancient qualities) and are, I suggest, drivers of a greater diversity of species being foraged, and which are dependent on the expertise of foragers to meet demand from their clients. *Disphyma crassifolium*, for example, is native to the Cape Province, South Africa, but is naturalised along the southern and eastern coasts of England since the 1930's (Preston and Sell, 1988). As a member of the *Aizoaceae* family, it has a history of use as an indigenous medicinal plant in its native South Africa, and in Australia where it also grows (Kalicharan *et al.*, 2023), but has no known local tradition as a food plant. As a coastal succulent, it provides a novel and fashionable food plant, with similarities in texture and flavour to other native succulents such as *Salicornia europaea* and *Crithmum maritimum*. Likewise, *Pseudotsuga menziesii*, introduced to Britain from North America as a timber species is now also popular with chefs as an alternative to the herb rosemary, as it can be dried and ground into a seasoning, or its branches can be used as sprigs, to infuse meat and fish (Campbell, 2020). What is notable about these species is how they serve as substitutes for familiar species, and how their use in gastronomy is dependent on foragers'

knowledge and expertise in making them 'accessible' to chefs, creating another flow of knowledge from commercial foraging into gastronomy.

2.6 Discussion

2.6.1 Socio-ecological resilience

Across all surveys of recreational, professional, and commercial foraging most of the species recorded are common plants found in urban, peri-urban, and rural habitats. These include recognisable plants such as urban and arable weeds (nettles, dandelions, sorrels, Mugwort), hedgerow foods (blackberries, damsons, chestnuts, sloes, elder, hawthorn, wild rose) and field species (e.g., field mushrooms). Some of these, for example, sea beet, wild cabbage, wild apples, plums and elderflower have been part of the food practices of affluent Britons from the early Roman period (Van der Veen, 2008), suggesting they are not only culturally salient, but ecologically resilient plants (Turner, 1988). Furthermore, a number of the commercially foraged species identified in Table 2.6 have historical commercial value. Coastal species, such as, *Crithmum maritimum* (rock samphire), *Beta vulgaris* (sea beet), *Brassica oleracea* (wild cabbage) and *Crambe maritima* (sea kale), have been sought after vegetables, evident in historic literary sources. Vaughn (1899) for example describes the shipment of sea kale from coastal towns in southern England to Covent Garden, observing the trade had been in existence for "more than a century", while the reference to the trade in rock samphire, in Shakespeare's *King Lear*, also indicates an historic

commercial value. The substitution of marsh samphire, *Salicornia europaea*, for rock samphire is described as a "poor man's alternative" in F*ood for Free* (Mabey, 1972) referring to its prior gourmand status. More recently, Day (1965: 3) observed how, during the development of the Kent to London railway in the 19th century, railway workers would sell sea cabbage to local greengrocers, "marketing them as Cliff Greens". These same coastal plants are popular today in gastronomy and even replicate some of the same market routes which took wild plants from rural, coastal regions in southern England, to urban centres like London. Their resilience to social and ecological pressures, I suggest, demonstrates the potential for continued sustainable use.

2.6.2 Symbolic value

The symbolic values (Jones, 2016) created by commercial foragers through exchange with their chef clients is evident in the way in which certain species are marketed. For example, coastal plants are sold as 'sea vegetables' which, I suggest, taps into the aesthetics demanded by chefs for authentic, place-based cuisine. It resonates too with the approach to marketing of 'cliff greens' observed by Day (1965: op. cit) creating symbolic value and economic value through a sense of place. A commercial picker explained to me that when their company decided to include the plant 'Alexanders' into their 'sea vegetables' selection, demand for the plant 'took off' (Simmons, Nov 2018, pers. com). However, it is not, as I have shown, only traditional species that

are part of wild food gastronomy; commercial foragers are also providing non-native, domesticated plants to chefs based on sensory and aesthetic similarities with known species. This, I suggest, is a unique aspect of foraging that differentiates from gastronomic trends based upon local, regional cuisine, such as found through the *Slow Food Movement*, because it is also about novelty, innovation and visual aesthetics. This is illustrated by Łuczaj *et al.*, (2021: 3) who observe how professional foragers sometimes display wild foods on social media, not for their 'taste' but because "they look beautiful in photos". The aesthetic value of wild plants may therefore be driving a greater diversity of practices and species being foraged commercially and professionally.

2.6.3 Innovation through transmission

The knowledge and practices of professional foragers in this study indicates *circa* 100 edible wild plants which are shared by the wider network of professional foragers (Łuczaj *et al.*, 2021) who also teach these plants through their guided foraging courses and media activities (Townsend, 2020) acting as transmitters of this knowledge. Both commercial and professional foragers are innovating with new species broadening knowledge of wild food plants through their respective practices. For example, species such *Heracleum sphondylium* which does not have a tradition of use in Britain, or non-native flora such as the local uses for *Rosa rugosa*, (Table 2.5) are part of modern, professional forager repertoires. Whilst most of the commercially

foraged species are native or naturalised plants, there are also species belonging to the cultivated category of plants, such as *Disphyma crassifolium* (Purple Dew Plant) and *Pseudotsuga menziesii* (Douglas Fir). This mix of ''wild and 'non-wild illustrates how the knowledge of commercial foragers, and interests of chefs and their customers are involved in contemporary process of knowledge-making about plants available in British landscapes, impacting on species selection and use. Wild garlic for instance, ranks number one in recreational, professional, and commercial forager reports, yet it does not feature in the historical literatures promoting wild edibles in Britain. Evelyn (1699) referred to people 'from the continent' eating it but discouraged its use on account of its strong flavour. In the 19th century, in Johnson's (1862) *The Useful Plants of Great Britain*, he advocates for its removal from pasture lands on account of it spoiling the flavour of milk when eaten by cows. Vaughn's (1899) review of wild plant foods since the Middle Ages does not mention it. Its first modern mention in the foraging literature is from Mabey, who provides a recipe for it from "an Italian chef in the Chilterns" (1972: 112), revealing how the changing food tastes of a more eclectic consumer palate and the borrowing of traditions from other foodways, is continuing the knowledge traditions of earlier writers (e.g. Evelyn, 1699; Johnson, 1862) who drew on their own travels to write about non-traditional wild food plants as well as familiar ones. In this regard it is evident that new plants as well as new applications of traditional and native plants, are entering into the knowledge systems of foragers through practices

based on local and non-local food traditions (Łuczaj *et al.*, 2021) rather than through textual transmission alone, leading to greater innovation (Leonti, 2011). Through these cultures of foraging, I suggest that perceptions of edibility and utility are shifting in response to a dynamic interplay between cultural and ecological dynamics where foragers and plants are both innovators and conservators of wild food plant traditions.

2.6.4 Foraging for recreation

Among recreational foraging, the analysis identified a group of common plants reported across the three surveys of recreational foragers in England (Table 2.3), suggesting that many common species continue to be foraged by people who might be considered as 'continuity' foragers, or people with a long-standing practice of foraging seasonally as part of recreation activities and traditions. However, in contrast to the species reported in Fenton (2008) and Lee's (2012) studies, the results of the 2018 survey of participants of foraging courses revealed a wider diversity of species, such as the lesser--known coastal species in Table 2.2 (e.g. sea blite, sea purslane, sea buckthorn), as well as seaweeds, mushrooms, and highly popular wild foods (e.g. wild garlic). These species overlap with those reported by commercial foragers (Table 2.6) and professional foragers (Table 2.4 and Table 2.5). Their presence among the present recreational sample suggests the influence of food and lifestyle media and professional foragers' activities rather than long-standing practice among them. Further, these participants identified

themselves as 'foodies', who also enjoyed 'the outdoors'. Through their engagement with wild food professionals, I suggest that this group of people are learning about new plants and applications and can be considered as 'neo-foragers,' or closer to the 'lifestyle' foragers identified by Grivins (2021). They represent, I suggest, a newly emerging group of recreational foragers hitherto unstudied.

2.7 Conclusion

This chapter has explored the practices and knowledge-making of foragers according to the categorisations that define foraging as either 'recreational' or 'commercial.' It reveals a more fluid relationship between these categories than is normatively inferred and identifies variations in practices that exist among recreational, small-scale consumption, commercial, market-scale sales, and entrepreneurial knowledge-making offers. It has also situated this knowledge within a socio-cultural tradition which can be traced through written records, published for an affluent, educated sector of British society. The wild edible plants described in this literature appear to be species that also played an important role in subsistence practices for rural, less affluent populations and as part of rural economies, for example, among working communities along the coasts; this knowledge has been creatively applied in cookery through the ages, incorporating observation, experimentation, and influences from European food traditions. Contemporary knowledge transmission is, I suggest, continuing this practice of recycling knowledge of

wild edible plants, while generating new knowledge and practices facilitated by changing ecologies and social trends. These trends challenge the normative framings of foraging as a recreational or commercial practice through different foraging pathways, such as the rise of a professional forager group, and engagement in foraging as a new form of green consumption by people who attend foraging courses. Commercial foraging, while carried out for economic gain and to meet gastronomic market demand also generates symbolic values and, in this regard, I suggest that commercial foragers are uniquely positioned to influence 'sustainable gastronomies' (Pieroni, 2016), through their relationships with chefs. Commercial foragers also share both species and some practices (educating chefs) with professional foragers and cater to some of the same wild food consumers that are visible in foraging field courses and in the wider categorisation of 'recreational' foragers, further softening the bounded practices that have separated commercial from recreational practices.

We have seen how commercial foragers respond to gastronomic demand through their practices and how, similarly, the emergence of a group of 'professional foragers' are responding to a range of consumer interests in wild foods and are instrumental in producing and reproducing knowledge in this field. Whilst commercial foragers interact with the gastronomic end of the food value chain, professional foragers mediate somewhere in between recreational practices and artisanal enterprise. Their

entrepreneurship has created a space for more people to learn about wild foods and to experience the 'lifestyle of foraging' (Grivins, 2021) and to connect to nature (Townsend, 2020). Within this space there are people who may not necessarily forage regularly or for more than a few common plants (Lee, 2012) but their involvement with foraging as self-identified foodies is an important area to engage in the context of foraging's relationship to foodie markets, sustainable gastronomy, and human-nature relationships more broadly. Their position in the foraging movement is the subject of the next chapter.

Chapter 3: Experience foraging

3.1 Introduction

The preceding chapter identified a group of recreational foragers participating in foraging courses who, as self-professed *foodies*, are implicated in criticisms of foraging as an unsustainable practice by mainstream media and conservation groups (Bawden, 2015; de Bruxelles, 2016; Usborne, 2016). Such narratives associate gastronomic trends for wild foods spurred by demand from the foodie sector, with the commercialisation of foraging and exploitation of nature. Implicit in these criticisms is the idea that consumers of wild food 'fashions' have an exploitative and commodified relationship to wild natural resources. In this chapter I explore the foraging field course and people attending these events. To date, very little has been written about this group of consumers and their place in the forging movement. Here I add to the foraging scholarship through analysis of their experiences. I argue that contrary to the stereotypes expressed by mainstream media, these relationships to foraging and wild food complicate the view of what connection to nature looks like, challenging conservation's accepted wisdoms of how people should interact with nature (McLain *et al.*, 2014). I suggest that foraging courses can be regarded as a form of nature experience overlooked by research and policy, but which share many of the dimensions of 'new Experiences of Nature' that scholars highlight as

important for strengthening human connections to nature for conservation purposes (Clayton *et al.*, 2017).

3.2 Materials and methods

In this chapter I use an 'ethnography of the particular' (Abu-Lughod, 1991) to examine how foraging field courses offer a particular space for people to connect to nature. Fieldwork was undertaken in Kent from October 2017-December 2018. I worked with 5 of the 6 local forager-teachers in the area. Three of these individuals were registered members of the professional Association of Foragers, and one of them, 'Elle', I was apprenticed to for the 2017-2018 season. I participated in one season of Elle's foraging courses attended by about 250 people over the course of the season. During the first quarter of the season, I ran an online survey (Appendix 2) of people who had attended an event to gain a preliminary profile of participants that included questions on where they had come from, their age and educational backgrounds, and their motivations for attending a course. 69 respondents completed the survey, and the results were triangulated with ethnographic data collected through participant-observation on foraging field courses. Interviews were also conducted with natural resource managers, conservation officers and public authorities responsible for the management of protected areas and urban green spaces in east Kent. Interviews with these stakeholders focused on their attitudes towards foraging and foragers operating in the region and perceptions of the environmental impacts of

foraging in landscapes reserved for biodiversity conservation. Where relevant to the themes elicited by participants of foraging courses, the views of conservation managers in the region are also reported to highlight the contested view on foraging in the area. I apply Clayton *et al.*'s (2017) framework to this analysis to demonstrate its value as a 'nature experience' that provides urban residents with meaningful ways to relate and connect.

The structure of this chapter is as follows: firstly, I discuss the rise in popularity of the foraging field course and how it is treated in current scholarship. I suggest it occupies a marginal yet contested position among scholars. The tensions echo media coverage that makes an association between the fashionable elements of foraging and unsustainable practices, and yet, within the broader field of scholarship studies propose that foraging holds much potential in offering sustainable alternatives to current problems. Following this section, I trace developments in Conservation and Public Policy research which have pushed the concept of 'human-nature connections' (HNC) to a place of prominence within biodiversity conservation discourse (Folke *et al.,* 2011; Ives *et al.,* 2017). I observe the shift in conservation science and policy research towards recognising the need to include a greater diversity of human-nature relationships into decision making in order to achieve sustainability objectives; within this shift, there is a recognition that the diversity of ways in which people relate to nature are shaped by the socio-cultural contexts in which nature is experienced. In

this regard, foraging field courses and participation in them are culturally situated social practices that resonate with Clayton *et al*.'s (2017) concept of 'new Experiences of Nature' (EoN). I discuss the model developed by Clayton and colleagues before I turn to the ethnography of the foraging field course and its participants using this framework as an analytic framing of these experiences.

3.2.1 Foraging field courses

Foraging courses are run in a variety of settings ranging from the more 'wilderness' areas of woodland, coasts and nature reserves to public parks, car parks, churchyards, and the edges of urban centres such as along a river or canal or industrial wasteland. Unlike guidebooks and internet forums, this form of learning takes place *in situ*, in a variety of spaces and formats, from short, guided walks to longer events that include a meal made up of wild foods. Courses offer people an immersive experience in nature and an opportunity to learn about the foraging lifestyle through demonstration by a professional forager. These courses have become increasingly popular in the UK and draw significant interest from members of the public who can pay high prices[17] to attend these seasonal events.

[17] Prices in the UK vary according to the length and nature of the course. Events that are 1 -2-hour walks can cost up to £10 per person, community 'talks' are usually free, while 5–8-hour forays can cost between £150 - £190 per person.

The popularity of foraging field courses is evident in online searches for 'foraging workshops - UK', which results in thousands of hits, ranging from specialist species workshops such as 'fungi workshops' or 'seaweed courses' to more general seasonally based courses. Despite the high online profile and proliferation of these courses there is limited knowledge about the specific roles they play in human-nature and human-human relationships. Field courses have been mentioned in the context of new ways of learning about wild foods and the motivations driving participation by members of the public; for example, by people interested in 'food independence, survival or a healthy lifestyle' (Łuczaj *et al.,* 2012: 84). They are recognised for their value in reproducing 'intangible cultural heritage traditions' in regions where gathering wild plants used to be part of agricultural and pastoral identities (Grasser *et al.,* 2012), and more generally, as sustaining cultural connections in societies no longer dependent on wild foods for subsistence (Reyes-García *et al.*, 2015).

An exception in this literature is de Jong and Varley's (2018) study that examines the experiences of foraging course leaders and attendees in England and Scotland. This study analysed the content of participants' blogs in order to understand how participants made sense of foraging after the experience. It concluded that attendees' understanding of foraging was not to see it as a solution to unsustainable food systems, but rather, as a response to 'perceived human/non-human disconnections' (de Jong and Varley, 2018:

698). This suggested that attendees were aware of discourses surrounding human-nature connectivity and that participation in foraging courses prompted their personal reflections on this. Nevertheless, the authors caution against taking this to mean that environmental behaviour change is a quantifiable outcome. They observe for instance, that the nostalgia narratives employed by course leaders which offer attendees a 'way in' draw on the particular subjectivities represented by 'westernised and romanticised constructions of past ways of living, childhood and the environment' (2018: 697). Thus, while accepting that 'for some' the foraging course offered a reflective space for thinking through their everyday practices vis-a-vis the 'environment', they note the particular cultural and 'classed consumerism' of foraging tourism in the UK. These associations with foraging's epicurean heritage (Mabey, 2006) have been vociferously challenged through a public media debate emphasising the connection with ecological communities that foraging serves rather than the middle-class connotations suggested by Mabey and others (Irving, 2006). The link between foraging and fashionable wild food is also made in relation to the impacts of tourism workshops on traditional ethnoecological systems (Pieroni, 2016). A tourism focus on the 'magic' truffle, is problematised vis-à-vis 'sustainable gastronomy' which, the author argues, would be better facilitated by a focus on '*sense of place*' so that consumers become aware of the environmental and social pressures surrounding the truffle and its community of gatherers (Pieroni, 2016: 10, *original emphasis*).

Alongside these tensions, foraging scholarship has increasingly demonstrated its diverse potential to contribute to sustainability agendas, and with that has come more empirical work on foraging practices. For example: as contributing to alternative sustainable food systems, Molina *et al.*, (2014) examined traditionally gathered 'weeds' in Spain; to address food waste Nyman (2019) analysed the practices of a network of 'gleaners' in London; to promote food sovereignty and food security Parada *et al*. (2011) and Nolan and Pieroni (2014) reviewed the revival of local food customs in Catalonia and southern Europe respectively; to encourage ecological stewardship, Grivins, (2021) analysed the practices of professional foragers in Latvia, and to facilitate deeper connections between people and nature Simmonds (2021) explored the practices of recreational foragers in London and the creation of human-nonhuman relationships. These studies have contributed to establishing the motivations and practices of professional and recreational foragers but apart from de Jong and Varley's study (2018), the experience of participants of foraging courses remains unexplored.

Foraging as a 'connective' activity is perhaps the most prominent of themes to be explored and written about in recent literature. Connecting to nature is cited as a key motivation to forage in English studies that have explored professional and recreational foragers' motivations (Fenton, 2008; Lee, 2012; Hawkes, 2019) and is the tagline of the Association of Foragers - '*Restore vital*

connection'. Connecting people to nature through foraging is also identified as a key motivator for professional foragers (Townsend, 2020). This theme resonates strongly with sustainability science's calls for (re)-connecting humanity with nature (Pyle, 2003), discussed below.

3.2.2 Repurposing the 'Human-nature connection' (HNC) discourse for sustainability purposes.

Theories of HNC span many humanities and social science disciplines. Environmental social science as a broad, interdisciplinary field has largely adopted the concept of HNC from the work by Kellert and Wilson (1993) who proposed that humans are intrinsically motivated to seek connections with other forms of life due to our interdependent and co-evolutionary histories with nature. As a consequence of this biophilia hypothesis a related set of theories have proposed that, as the social world has developed further and further away from the natural one, so too have humans become increasingly alienated from nature. Pyle (1993) describes this phenomenon as the 'extinction of experience' and since, the concept has expanded, particularly in relation to how increasing urbanisation of societies is leading to ever greater reductions in opportunities for nature contact among urban populations (Pyle, 2003; Miller, 2005; Soga and Gaston, 2016). The importance of HNC to human and planetary wellbeing has gained momentum within sustainability and health sciences particularly (Ives *et al.*, 2017) becoming established within public health policies (McHale *et al.*,

2020), with a growing body of evidence reporting on the benefits to human wellbeing of increased exposure to and activity in nature (Mitchell and Popham, 2008; Hartig *et al.*, 2014). In tandem, environmental policies increasingly subscribe to this view of protecting nature through fostering deeper human-nature connections. Environmental policy, like we see in the UK, now mesh the twin aims of human health and biodiversity conservation into this broader HNC paradigm.

In the UK, the government's statutory advisory agency for the natural environment, Natural England, (NE) published its 5-year plan in 2020, signalling a major shift away from 'conservation' to 'nature recovery'. At the heart of the 'Building Partnerships for Nature's Recovery' strategy, is [a] 'greater connection between people and planet' (Natural England 2020:3). The importance of nature-connected citizens to natural resource management, biodiversity conservation, public health, and economic development of the UK is emphasized in all four of NE's strategic programmes which form the action plans identified to deliver on 'Nature's Recovery.' Although embedded in all programmes, 'Connecting People to Nature' is also a separate programme within this strategy, focused on '[scaling up] our work in connecting the public to Nature' (ibid., p.20). This programme places particular emphasis on improving access to nature to deliver on this ambition. Initiatives include, for example, green social prescribing, urban green infrastructure design, Nature Friendly Schools, and

greater public access to coastal areas through development of a national trail around England's coastline. Access to nature is thus emphasised in these programmes as a fundamental prerequisite to connecting to nature, however, despite the strong message of these national ambitions, '[to] engage everyone in the fight against the climate and biodiversity crises, [by] fostering deep connections with Nature' (ibid., p. 20) activities like foraging are not recognised by these policy developments. As noted in the introduction to this chapter (p.86), attitudes to what is perceived as a commercialisation of foraging through foodie trends, fail to acknowledge the positive dimensions of foraging which are articulated in wider foraging literatures and practices, and, instead, emphasise how these practices are antithetical to the sustainable resource use.

This view is, I suggest, in keeping with traditional conservation approaches which often maintain a separation between human and biodiversity values underpinned by the notion of 'protectionism' (Butler 2016) and aligned with 'fortress-style' models of conservation (Robbins, 2007). Recent approaches in sustainability science have begun to challenge this thinking however, through biocultural approaches to sustainability that recognise the interconnectedness of human societies, particularly their cultural sphere, and the natural and biophysical environment in which we exist (Elands *et al*., 2019; Hanspach *et al.* 2019). The practical and conceptual scope this approach offers is also demonstrated by Chan *et al.* 's (2016) work on socio-cultural

values and relationships with nature. In what they term "relational values", defined as deriving from relationships and practices that hold personal, social, symbolic, and material meanings at the interpersonal level, and also, "articulated by policies and social norms" (2016: 1462), the social and cultural spheres of human-environment interactions are given space. It is within this critical terrain that Clayton *et al.*'s (2017) concept of 'new Experiences of Nature' (EoN) resonates with the ideas that relationships and nature experiences are socially and culturally mediated and embedded. Countering Pyle (1993), they argue that EoN are not extinct but rather are being transformed by social and cultural change. It is in the interests of conservation, they claim, to embrace these changes instead of extending efforts to recreate past ways of experiencing nature. They observe that the use of technology, for example, is transforming the ways in which we connect to nature and requires our attention rather than being dismissed as "inauthentic" (Clayton *et al.* 2017: 648). They propose a new conceptualisation of EoN that challenges the dominant approach within conservation of what these experiences should be. Central to their argument is the significance of the social contexts of these experiences which are often neglected in research that tends to focus on individual experience and relationships. They emphasise how the experience itself is culturally constructed and therefore shapes the meanings people attribute to the experience; for example, they argue, that zoos, parks, or gardens may or may not be considered as 'nature' depending on the particular social groups or

societies' perspectives. They argue therefore, that because nature experiences are imbued with socio-cultural meaning, the implications for how people respond to these events will also be shaped by these conditions. Their typology of the different characteristics of these new nature experiences resonates, I suggest, with many elements of the foraging course and illuminates the many ways in which participants connect with nature through the experience of foraging.

3.2.3 'New' nature relationships: experiences of nature

In outlining the five different dimensions of experience and their characteristics, represented as a continuum of experiences the authors discuss each of the dimensions in relation to their conservation outcomes, i.e., their potential to affect behaviour which may or may not conflict with conservation goals. These include: 'Observing v. interacting', such as the observations by a bird watcher compared with someone who is directly engaged by feeding the bird; 'consumptive v. appreciative', where consumptive may be regarded as actively modifying nature as a 'resource' while appreciative experiences are predicated on simply appreciating nature without seeing it as a resource to exploit; 'self-directed v. other-directed' contrasts experiences that are independently sought by an individual versus those that are determined by others, such as an educational school programme; 'separate v. integrated' refers to experiences that are part of an individual's daily routine compared with an experience in which an

individual has to depart from their routine to make a special effort to experience nature; 'solitary v. shared' compares a solitary experience to one shared with others; and 'positive v. negative', refers to the emotional responses elicited during an experience. In the following section I consider the foraging field course as an 'Experience of Nature', using four dimensions of their framework - 'Interactive', 'Consumptive', 'Integrated', and 'Shared' - to demonstrate how the foraging course can be viewed as one of the new EoN proposed by Clayton *et al.* (2017), and how through this experience, consumers' relations to nature are manifested. While the field courses discussed here are not directly purposed for sustainability education, I suggest that these shared, interactive learning experiences are a means for people who already spend time with nature to enrich these relationships further and, for people less connected to nature, the field course offers opportunities for experiencing nature in direct, novel and socially valued ways.

3.3 Ethnography of EoN

3.3.1 Foraging in east Kent

When I met Elle, a forager-teacher registered with the Association of Foragers, she had been running courses along a stretch of the east Kent coast for over 10 years. Attracting an average of 18 participants to each event, she attributed part of her success to advertising through a well-known online retailer of novelty gifts and experiences. Like all professional foragers, Elle

also advertises through her social media profile on Instagram, personal website and through word of mouth, but the addition of the online retail platform had considerably boosted her profile and course subscriptions she had told me. Elle's courses run on weekends from March to December and are repeated twice or more in a month depending on demand and on the species in season. For example, wild garlic has a short season in March so forays occur only once in this month while shellfish forays might occur as many as 4 or 5 times in the year as the harvest season is more prolonged. Her forays are divided into two parts: a guided field excursion to forage for wild plants, seaweeds and shellfish, and a meal prepared by Elle and her team consisting of a variety of wild food dishes and drinks served al fresco style on the beach, in her town house, and, on a few occasions, as a car-boot picnic on the side of the road adjacent to the sea. Elle had a background in art and had moved to France in the early 1990's to set up a rural cafe with friends from art school. It was there, she told me, that she had learned about wild foods, 'our French neighbours brought us food from le terroir – vervain to make tea, figs, and elderflowers.' But earlier than that, she told me, her father had been a 'real foodie' educating her on wild foods 'that taste good' as they had travelled through Europe in her childhood. Her love of food and creating 'something from nothing' (Elle, pers.com, April 2018) had found her back in Kent at the start of the 00's, running foraging courses as a 'forager-educator' and catering to a more foodie customer.

Most participants on her courses came from London and some from surrounding towns in the region. During the season I participated in these, there were also a few international visitors: a family group of four came from Paris, France, and another family group of four came from the Netherlands, one individual, from Australia, was travelling through the UK, taking a year out from work. The survey results (Appendix 2) show that participants' ages ranged from 6 years old (the youngest child accompanying parents) to 65 years with the largest proportion of people within the 45-64 age range (60%), followed by 35-44 age group (20%). 40% of participants were educated to degree level and 30% had a postgraduate level degree. As urban residents, mostly working professionals, the foraging course was a weekend excursion accessible from their places of residence, within two hours from London, and for some, not more than a 40-minute drive from nearby towns. Almost all participants came in groups, mostly as couples, but also in small groups of friends. The only children accompanying parents were the family who lived in Paris, who were from California and temporarily working in France. They had read an article about Elle in the style magazine, Living Interiors, and had decided to spend a week in London to make the trip to Kent.

3.3.2 Interacting v. observing.

'Spring Coast and Meadow foray'

By way of introduction, Elle had explained that the patch of bright green aromatic plants in front of us had been introduced to the area by the Romans, 'when they

invaded Kent,' and were among her favourite plants to work with. She had cut and peeled some stems and passed them round for the group to taste. As people handled the plant, smelling it, tasting it, and chatting, there were questions about how to cook it, and how to know what you were looking for. Elle had suggested pickling the flower heads, or cooking the stems 'like celery, like the romans did.' When she added that she had been experimenting with the ground seeds which had an aromatic flavour and which could be added to bread, biscuits or scone mix, there were murmurs of interest from the group. Regarding the stems of this plant, Elle continued with her instructions as people listened and watched and collected a few seeds from the papery flower heads, 'it is a skill, selecting the soft stems not the fibrous ones. Just like choosing the right plant specimen to forage is a skill – not the leaves that have been nibbled by something, not the fibrous part. You need to be intelligent about it,' she said. Having identified, harvested, and tasted this plant we followed Elle to where a patch of yellow primroses was spreading along the eastern side of the meadow. Someone mentioned that on the TV show, Masterchef, chefs used forceps to place primrose flowers on the food as a garnish, and a discussion started up about using edible flowers for decoration. We did not pick any of the flowers though because a member of the group said they thought these were a protected species. After some deliberation, there appeared to be an unspoken consensus to leave them. Paul who had brought the subject up pointed out that you can use primroses 'from your garden.'

In Clayton *et al.*'s (2017) typology interactive experiences in contrast to experiences in which participants are simply 'an observer', are valorised; observing that in contrast to 'mere observation', experiences in which participants are actively engaged and interacting with nature, are more likely 'to be engaging more emotions and creating a more lasting memory' (2017: 647). The format of the field course described in the above vignette provides multi-sensory and direct encounters with wild foods by walking, identifying, picking, and eating/tasting the plants. This interaction is a reason that participants reported as a motivation for attending a foraging course (see Table 3.1); it suggests that participants are seeking an interactive experience that involves learning, recreating, and consuming in nature. Question 2 of the survey (Appendix 2) provided a series of statements participants were asked to rate in order of importance. The highest scores indicate that active involvement rather than a passive engagement, such as simply 'observation', is a significant motivator for attending.

Table 3.1 Motivation for attending foraging field course.

Participant survey (n=69) of reasons for attending a foraging course. East Kent, 2017-2018.

Reasons for attending	**Not Important (%)**	**Important (%)**
Learn about wild plants that are edible	6	84
To try the taste of wild plant foods	7	80
To connect with the natural environment	10	78

To experience something new	13	69
To learn how to cook with wild plants	18	66
To socialise in a natural environment	22	50
To connect to our past cultural heritage	28	44
To increase knowledge of wild plant foods for potential times of emergency/crisis	44	31

Not Important (%) /Important (%) indicates percentage of survey responses answering Not important/Important.

While Clayton *et al.* (2017) assign merit to this more active type of experience, they note that interactive experiences are also more likely to cause concern from a conservation perspective. This was certainly the case in the study area, where conservation managers expressed concerns about the impacts of people foraging on or near to nature reserves. The disturbance of nesting birds, trampling of fragile species underfoot, and depleting the food of wildlife were some of the impacts mentioned during interviews with conservation practitioners and managers in the area. Their roles in managing protected areas and nature reserves involved keeping human activity away from areas reserved for wildlife, enforcing a separation between people and nature. In contrast, participants' did not necessarily distinguish nature as separate from themselves although they did identify material concerns impacting the environment, as these participants explained:

> *"We enjoy cooking, and we were keen to have a consumable gift rather than an object as we are trying to reduce the amount of stuff in our lives. I'm a landscape architect and am mindful about environmental changes. We both enjoy reading*

about the food industry and natural history. We grow herbs and edible flowers in our garden, and we wanted the course to educate us about the world of wild food."

"I am interested in environmental conservation and locally sourced food generally, so foraging closely aligns with my ideals in terms of living in closer harmony with the environment."

Wanting to learn about wild foods is articulated here through the activities and behaviours individuals enact as broader lifestyle choices and preferences such as gardening, cooking, and outdoor activities. This interactive experience with wild foods reflected their choices and identities in relation to nature, which in this context, was articulated as a direct and interactive relationship to food produced from the 'wild.'

During an early summer foray, while the group enjoyed a picnic lunch on the beach following several hours of foraging for samphire, sea aster and sea blite among the marshes, I made my way around the group, offering to refill drinks. A retired couple, in their late 60's were discussing a fungi foraging course that they had attended on Hampstead Heath (London) close to where they lived, recalling how they had been walking the heath for years, but it was not until they had been on the forging course that they had become aware of 'fungi everywhere'. I stopped to listen as the woman remarked how wild food seemed to be coming back into fashion, popularised by chefs. 'I think people are just sick of all this supermarket food' she said, 'been on the shelves for days.' A man agreed, saying that he thought people were more aware of the effects of 'industry on food and its impact on health,' adding, 'people want something else'.

The woman agreed, 'that's why it's good to come here and pick food you know is fresh.' There was a murmur of agreement among the group. Simon, sitting opposite, added that he had been introduced to samphire in a restaurant he'd worked at in London, 'but this is something else, seeing it in the wild like this.' Laughing, he went on, 'I always thought I'd want to be a hunter in another kind of society, but maybe now I think a forager would be good.' Everyone laughed and there was a pause in the conversation, before Bill who was attending with his two daughters, for his 60th birthday, volunteered, 'when I retire, I'd like to buy a narrow boat and go down the canals and learn about foods for free', (referring to Richard Mabey's 1972 classic foraging guide, Food for Free). His daughters burst out laughing when he said, 'foods for free' and one of them affectionately patted his shoulder. Earlier in the day, one of Bill's daughters had asked me what ethnobotany was, and in response to my explanation, exclaimed, 'it must be disappointing to learn that most (English) people's knowledge of plants comes from a supermarket bag!'

The comment by Bill's daughter was flippant, but the sentiments it expressed and those of the other participants in this conversation resonate with foraging studies that have highlighted how this consumer interest in 'wild' cuisines as healthier alternatives to industrial food systems has become established among urban, educated professionals (Carvalho and Morales, 2010; Whitney *et al.,* 2012). The idea that wild foods are fresher and more healthful has a longer legacy observed, for example, by Forbes (1976) in her study of foraging in Greece in which she noted that the symbolic value of

wild foods as 'cleaner' and 'purer' than cultivated vegetables was a view held by both rural and urban people. These properties of food, including how it is produced and distributed are qualities that have been linked to the food judgements of foodies who place additional value on foods that are 'fresh, local, seasonal, traditional, small-scale and artisanal' (de Solier, 2013: 21). Wild foods fulfil these criteria and more, as they offer a more immediate route to nature. In sharp contrast then to 'supermarket food,' the act of foraging provided participants with a direct meaningful experience; for people like Bill this interaction prompted reflections on his future that involved closer, and perhaps, romanticised ties to nature, while for others, it stimulated thinking about their own behaviours and relationships towards the environment as the following vignette demonstrates:

Two people were talking about wild harvesting and its harmful effect on plants. Brenden, a keen mushroom collector was saying that he had been back to an area where he frequently finds boletus, to find them all gone. 'People are getting there before me'. Charlotte, in her early 20's, had joined him standing by the water watching the tide slowly begin to swell and submerge the rocks. As we reflected on the idea that once you tell someone [about a patch or species] then everyone is going to go there and harvest, causing a potential over-harvesting of species, Charlotte remarked on the unlikelihood of this happening due to the time it takes to harvest. Brenden agreed: "I can spend a whole day looking for mushrooms and only find one, but then sometimes, in a few hours, lots." He agreed with Charlotte that with society being time poor, it is unlikely that the countryside will be overrun with people

collecting wild plants or fungi. 'Yet,' he added, 'commercial mushroom harvesting has been banned by National trusts and other forests. It's like egg collecting, I used to collect eggs as a child, then everyone was doing it, but no harm, we were just children and you got to know your trees too'. Charlotte replied saying 'a lot of conservation started like that, with egg collecting. Bill Oddie for example started that way.'

This exchange struck me as being one of the few explicit discussions I heard during the foraging courses about the sustainability of foraging, and it raises some interesting points about how people have interacted with nature in ways that have been considered harmful, yet these interactive encounters have resulted in transformations in their relationships and behaviours. The example mentioned above, of the childhood activities of the conservationist, Bill Oddie, had also been recounted to me by a senior conservation officer during an interview. It had been a passing observation in the context of the discussion we were having about foraging as a fashion or serious pursuit. He had been resolute in his opinion that foraging was the same as previous collecting activities by 'nature enthusiasts and OCD-types' and Bill Oddie's egg collecting had been mentioned. Then, and in the conversation with Brendan, I thought about how a particular relationship to nature - an embodied, interactive experience - might lead to environmental consciousness, and knowledge about a wider ecology, than our current approach to public engagement with conservation offers. Learning by

'doing', or 'experiential learning', has been discussed as an alternative approach to sustainability education that could promote environmental sustainability through transformative learning encounters in nature (Beckwith *et al.,* 2016). While foraging field courses are not promoted as part of a sustainability education, the courses provide direct contact with nature where participants are *doing, sensing, and socialising*. Consuming wild foods is part of this interaction, as they are eaten as a wild food meal and tasted during the course; participants also usually collected a small amount to take home to cook and experiment with.

3.3.3 Consumptive v. appreciative

The following section takes up Clayton *et al.*'s (2017) second dimension of experience, 'Consumptive *v* appreciative' and explores the contested attitudes to consuming wild food. From the perspective of conservation practitioners, consumptive practices are bound up with moral questions over its legitimacy as a human 'food'. Connecting to nature through such practices is dismissed through a concern for the wildlife they protect. For the participants here, consuming wild foods was a way of reaffirming social and personal values and in this, their affiliations with the natural world.

The perception of foraging as a fashionable 'foodie' activity as an unnecessary and therefore wilfully exploitative practice in modern times was a view held by many natural resource managers and conservation

officers locally. This attitude contrasts with cultural valuations of foraging propounded by the two founding leaders of the British foraging movement who were arguably as much motivated by the wild, as with the products that could be made from these species. Richard Mabey's classic, *Food for Free* (1973) and Roger Phillips' *Wild Food* (1983) are celebrated cultural texts (Moran 2014) that are also testament to the cultural roots of this movement in Britain, but media coverage of the foraging revival has been mixed, and sensational straplines accusing foragers of destructive and irresponsible behaviour towards nature has not helped (Jones 2016).

In an interview with the head of a prominent national plant conservation organisation the contested domain of 'wild food' was evident:

We were discussing the problem of Sea buckthorn (Hippophae rhamnoides), a native species that is spreading rapidly across the dunes of the reserve causing enormous efforts by the reserve team, to get it under control. Its abundance along the dunes both within and without the reserve, makes it a popular foraging spot for locals and foragers' courses, and despite concerted attempts over the last few years to remove it, large stands still dominate the area. In response to my question that foragers might be included in managing its spread, and permitted to collect the berries, Tim, the CEO of the organisation, did not agree. He explained the position of the organisation: "When we see people collecting these berries, we say this is a nature reserve, one of the few areas which is protected for wildlife. 'We're only collecting

berries' [they say]. Yeah, but this is food for field mice, wood mice and a raft of birds. Are you really dependent on these berries? The truth is they're not dependent on any of these things."

This view dismisses wild foods as a 'valid' food for human consumption questioning the moral basis for people's actions by pitting these against the needs of wildlife. This perception of people profiteering from nature to 'augment their dishes' was voiced by several of the conservation organisations I interviewed and fails to recognise the significant social value that foraging field courses offer. The experience of participants, in contrast, suggests that consumption of wild foods expresses values and relationships to people and nature which might be better framed as 'relational' (Chan *et al.*, 2016). Evidence of long-standing relationships with nature, for example, was often present in participants' recollections during the course. Many people shared personal stories of being engaged in outdoor activities when they were children, recalling shared experiences with family members or friends suggesting deeper nature connections than critics of foodies would recognise. The following vignette highlights some of these relations:

I walked back over the rocks to the shore alongside a couple in their late-50's. They had been telling me how much they love the coast and spend summer holidays in Dorset. The tide was coming in and the foray officially over. 'We're keen beach people' Laura tells me. Anthony, her husband, grew up in a seaside town just a few

kilometres from here. They live in a commuter belt town on the western outskirts of London and both their children are now at university. Anthony told me that when he was growing up his family would regularly forage for mussels and cockles. 'As kids we were always down there' he says, pointing to the sea. Although he hasn't foraged locally since moving away, he says there is a place, 'a bay in Dorset, where we go with the kids, even now, where you can find great shellfish.' Anthony works in the investment business and observes how he was seeing a trend towards environmentally sustainable investments. It's 'big' he says.

Anthony's recollections of foraging as a child were common to many participants, although most who shared stories of foraging in their youth described only collecting blackberries and other familiar foods such as plums, apples and wild cherries that are abundant and common in urban and rural habitats across England. For Anthony and many others on the course, gathering wild foods might only be an occasional practice, but it was something that had been a part of their identities growing up, and one way of connecting to nature in meaningful and material ways. An appreciation for wild food, and nature more generally is manifested through the acts of consumption described by participants and enacted during the wild food meals. In this context, 'consumptive' experiences such as this, are situated within the sociocultural contexts that produce them, which in some cases, are long-term attachments that are revisited as adults through these experiences.

3.3.4 Separate v. integrated.

The effects of urbanisation on peoples' wellbeing and on biodiversity has led to an awareness of the need to design urban spaces that facilitate *daily* contact with nature (Beatley and Newman 2013). This is discussed by Clayton *et al.* (2017) who suggest that experiences that are integrated into *daily* life have a greater chance of influencing people's routines and pro-environmental habits, although they also note that separate nature experiences may produce "profound cognitive impacts … leading people to a new perspective" (2017: 647). The people who attended the foraging courses as a weekend excursion, making the trip from London and surrounding towns might be considered to fall into the latter category, where the foraging course provided a 'separate' experience, however, it was evident that they regularly participated in and actively sought nature experiences during their leisure time. While these experiences may not be carried out daily, they are integral to their urban lifestyles. Moreover, the foraging course often serves to extend this experience into their everyday lives (de Jong and Varley, 2018). Miller (2005) addresses issues of urban design necessary for greater human-nature interaction as a relation of 'time': "*As the pace of life accelerates and time becomes commoditized, the rhythms of the human enterprise grow more and more distinct from those of the natural world*" (2005: 431). Here I suggest an extension of this concept of time to include 'rhythm', highlighting how such rhythms allow us to understand these experiences within their sociocultural contexts, and

as part of time. In doing so, the distinction between 'separate' and 'integrated' nature experiences becomes less stark and opens up possibilities to see even separate events as continuing relationships between people and the natures they experience. Making time for nature in the working lives of participants, particularly for the younger working professionals with limited access to green space near their homes, was an important priority. The examples below illustrate how nature is prioritised as leisure time:

Stephanie, in her early 30's, had bought this experience for her boyfriend's birthday. They are physiotherapists working at a London hospital, and were making a weekend of it, camping at a nearby campsite. They had cycled from the train station and had a cycle route planned for the following day. 'What prompted you to find this gift for your boyfriend?' I had asked. Stephanie had been looking for an experience gift for her boyfriend, she told me, and knowing how much he likes the outdoors, 'he grew up near his uncle who has a farm in Oregon,' when she saw the event advertised online, she knew it was for them. 'Our flat in London has no greenspace' she explained, 'so we try to get away when we can.'

Rosa and Paul, a couple in their late 20's had travelled from north London. Rosa is Swedish and told me she foraged as a child 'for mushrooms & berries'. She added, 'the locations of the mushrooms are kept top secret, and everyone tries to get you to say where you find them!' Her boyfriend bought her the experience as well as an experience as a zookeeper at a nearby Wildlife Park for the following day. They told

me they are keen walkers and spend their free time 'in the outdoors' as much as possible.

Whilst this contact with nature is not part of *daily* life for participants living and working in cities, it might be considered as forming part of the broader 'rhythms' of their working lives in which recreational time is punctuated by wider time frames linked to the social and economic contexts in which people live. It was also the case that participants used the wild foods they gathered during the course to create meals and products on their return home, thus bringing nature 'in' to the domestic and social spaces of urban living, softening the boundaries between 'separate v. integrative' experiences further.

3.3.5 Solitary v. shared.

The fourth and final dimension of Clayton *et al.*'s (2017) framework discussed is the 'solitary *v* shared' dimension of nature experiences. The social and cultural dimensions of these experiences are largely overlooked in HNC research which has tended towards a focus on individual benefits from HNC (Ives *et al.* 2017) to the neglect of other forms of relationships (Chan *et al.* 2016). Here, a 'shared' experience is considered to hold greater potential to lead to positive biodiversity outcomes than a solitary one. The following vignette illustrates how the foraging course offers people a socially shared experience; people learn about wild species through the guidance of

a foraging instructor, and, as I demonstrate, through exchange between each other. These exchanges suggest that connecting to nature through the foraging and consumption of wild food plants is also a means of expressing social relationships and identities that are entwined in relationships with nature, in material and non-material ways.

As we walked in small groups, singly and in pairs, people offered information about recipes and plants they had collected. It was the first week in June, and the foray was organised around the town, at a large cemetery on its periphery and in a smaller park in the town centre. Although this was not the season for berries, May was telling a couple who walked beside me how she had made sea buckthorn berry and plum jam following an autumn foray with Elle in October. May, a local resident, had attended a previous foray with Elle. Someone had asked her if she had foraged before, (a common 'opening' question among group participants) and she was telling them about the autumn event, which, she said, is 'highly recommended.' She said she had looked online for a recipe for sea buckthorn jam, and it had been hard to find but eventually she found one on a blog written by two sisters, 'from Russia, I think.' She added, 'it turned out really well – a brilliant orange colour, the plums were from my garden.' We reached the park and Elle stopped by a great Ash tree producing a jar of ash key pickle for tasting. Someone asked for the recipe and Elle promised to write it down for them before the end of the day. Neil, a man in his late 20's said there were lots of Ash trees near his allotment in London and this was 'definitely something I will try'. Frieda took out her phone and snapped some pictures of the tree, 'so I can

identify it later'. We moved on to a Bay tree, planted at the back of one of the flower beds and people started picking the leaves, 'this [plant] need little introduction' Elle observed, but continued with a description of it and its uses to 'flavour soups and stews'. Rosie, originally from Northern Cyprus, was picking the leaf buds. 'These you can use too' she volunteers, 'you can pickle them'. She tells us she has a recipe for pickling them and suddenly people are exchanging numbers with her so she can send them her recipe. Anna and Mark, who are part of a cooking club and were observing Rosie's picking technique closely, produced a small plastic container which they started to fill with buds. 'I can send you the recipe now?' says Rosie, 'on WhatsApp'. Mark gave her the 'thumbs up', 'great' he says, then turns to me, 'we're cooking for friends next weekend, and we're always keen to impress them with something new'. At the end of the day, people were saying their goodbyes and Anna was thanking Elle: "We had a brilliant time meeting everyone, being out in the lovely sea air, sharing a great learning experience and with a wonderful meal at the end." Elle beamed at her, then pulled out her notepad and pen and began jotting down the ash-key recipe.

These kinds of exchanges happened whilst walking from place to place, prompted by encounters with both familiar and new plant species. For cooking enthusiasts, it was a chance to offer some creative ideas to others and for people who had never foraged before it was an opportunity to learn or to be inspired. What was evident from these exchanges was how cooking with wild foods connected people to their wider social and familial networks

extending the social value beyond the course and its individual participants. Rosie's pickles for instance would be served at extended family meals. May's sea buckthorn berry and plum jam was produced 'for Christmas presents', and new dishes were made to share with friends over a weekend.

The importance of facilitating shared cultural experiences is highlighted by Clayton *et al.* (2017) as a means by which positive environmental values and attitudes may be transmitted among social groups thereby contributing to change and shared (environmental) identities. As foodies, the participants on the foraging course share an identity expressed through their shared interests in learning about wild foods, foraging lifestyles, and the application of this in their own cooking. The degree to which this shared identity affects behaviour in the way in which it is meant through the EoN concept, is uncertain. de Jong and Varley (2018) caution against taking participation in such events to represent an intention to environmental action, in fact, highlighting how foraging tourism is more centred upon nature connectedness than sustainability practices *per se*. Moreover, as Johnston and Bauman (2009: 3) note, the landscape of contemporary foodie politics has changed from its origins in the 1960's and 1970's when it was an explicitly counter-cultural, 'counter-cuisine', to a contemporary priority for the 'aesthetic and sensual' qualities of food. The shift is not entirely removed from food politics however, as they observe of contemporary foodie discourse, "*Good food is frequently constructed to meet both aesthetic and moral*

criteria and is frequently understood as both politically palatable and delicious." (Johnston and Bauman, 2009: 3). While there is no shared or explicit politics in the experiences described, foodies here share experiences and values which might be understood as 'convivial shared experiences' understood as part of the 'relational' values sphere (Chan *et al.*, 2016: 1464). This is particularly evident in the 'gifting' of these experiences by friends and family members to participants on the course. The survey revealed that 40% of participants had been gifted the experience by a friend or family member, bought via the online gift store or from the forager's website (See Q. 1, Appendix 2). If the survey response to the question 'Did you receive the experience as a gift?' indicated that it was a gift, a further question prompted participants to answer, 'Why do you think it was chosen for you?' From the responses, it is evident that a small number of participants had received the course for its novelty value: *"Looking for something unusual as a gift"*; *"They knew a new adventure would suit us."* But for most gift recipients, its value was expressed as a relational one, i.e. as representing relationships between the giver and the recipient which reflected how nature matters to them:

> *"My children know that I have had an interest in foraging, mainly foraging for fungi. This was a retirement / 60th gift with the idea of giving me another interest to develop".*

> *"My boyfriend gave me the event for an anniversary gift. He knows how much I like learning about the foods that are available to us in the wild. Foraging is also a favourite past time of mine e.g., Blackberries, elderberries, nettle etc."*

In delineating the realm of 'relational value' in contrast to intrinsic and instrumental valuations of nature, Chan and colleagues (2016: 1464) note that its application in environmental management and policy should begin with a consideration of 'the kinds of relationships people already have with nature'. For example, what people consider as a 'good life' holds potential for more meaningful engagement between environmental policy, environmental problems, and people's place within this. These values, and the particular cultural constructions of 'a good life' among the foodies described here are present in a number of ways: as memories of time spent in nature during childhood and youth, as anticipated future meals and gifts for friends and family, and in the pleasure of receiving the experience as a gift, reinforcing social ties and expressions of social identity. Hall (2013: 228) notes how foraging invokes feelings of nostalgia in immigrants to New Zealand, who remember the activities as 'something they grew up with'. Hall (2013) observes that while foraging connects people to cultural memories, people also see it as an opportunity to meet other 'like-minded' people, in a time where the traditions of recreational gathering in family groups have diminished. In this chapter, foraging as an experience appears not only to foster HNC but also human-to-human connections, becoming a 'deeply relational practice' (Poe *et al.*, 2014: 231).

3.4 Conclusion

The experiences of participants described in this chapter provide a more complex view of the stereotypical affluent, urban foodie, pursuing wild food fashions at the expense of nature. In this chapter, I explored their motivations and experiences during participation in foraging field courses. Their experiences suggest that these are individuals who are seeking ways of maintaining or enhancing nature connections through foraging courses and their interests in food. Their narratives and experiences indicate a broadly environmentally aware group of consumers, who seek greener forms of consumption and recreation resonant with the "eudemonic value system[18]" described by Chan *et al.* (2016), and that resonate with contemporary profiles of foodies (Johnston and Bauman, 2009; de Solier, 2013). The social context provided through the foraging course is, I argue, a space for a particular cultural interaction with nature (Elands *et al.* 2019) informed by shifting social trends and change such as environmentalism, food cultures and novelty nature-based experiences. In Clayton *et al.*'s (2017) paper, they emphasise that *new* experiences of nature are arising in the context of societal changes. In this context, they observe how technology is transforming the ways in which we connect to nature. Rather than viewing these 'technology-

18 Jax et al. (2013: 262) describe the different types of values of non-human nature in their discussion of the ethical implications of valuing nature from an 'ecosystem services' approach. They define 'eudaimonistic' values in environmental management as all those processes and elements (of nature) that contribute to notions of a 'good life', including but not limited to aesthetic and leisure activities such as swimming in lakes, climbing mountains, walking in forests. 'Eudaimonia' was referred to by Greek philosophers to denote the concept of 'good life'.

based interactions' as a barrier to an 'authentic' nature experience, they argue for scholars and practitioners of conservation to consider its role in shaping people's current relationships. Foraging is, I would suggest, very much part of these new transformations - knowledge about wild foods is facilitated by the rapid spread of information via the internet, while social media profiles are essential platforms for professional foragers' work (Townsend 2020). During field courses we see how social media facilitates knowledge exchange among participants via WhatsApp and snapped photos for Instagram accounts. It was also the case for Elle's business that the marketing of the course through an online retailer attracted many participants and facilitated the gifting of experience, demonstrating the role of technology in facilitating access to nature through the creation of courses and subscribers who participate in these events. Foraging field courses offer people direct, consumptive, interactive and shared experiences of nature that are socially meaningful, and which resonate with urban lifestyles. For the foodies explored in this chapter, learning, recreating, and consuming nature express a particular form of nature connection which has not previously been examined. These relations to wild food and foraging, I suggest, challenge the stereotypes associated with foodie consumers of wild foods and the implications that this is associated with unsustainable, commercial activity. In fact, far from a commercialised relationship to nature, the experiences suggest that these relationships are socially meaningful and relationally engaged with regard to nature.

The tensions inherent in foraging as a food trend, treated as distinct from a recreational practice, implicate gastronomic consumerism in unsustainable practices. These concerns with gastronomic trends for wild foods have periodically surfaced in Britain (cf., Rotheroe, 1998) yet remain at the level of discourse, absent from empirical study of these actors. While this ethnography of participants of foraging field courses makes a contribution towards understanding how foodie trends intersect with foraging from a consumer perspective, the following chapter addresses the impact of commercial foraging on wild food plants directly, through a risk assessment analysis.

Chapter 4: A rapid risk assessment of commercially foraged plants

4.1 Introduction

The demand for wild food products (WFPs) as a result of gastronomic and lifestyle trends in countries in the Global North has triggered concern from public authorities over the potentially destructive impacts of this activity (Butler 2016). Assessments of impacts on foraged WFPs are rare yet it is common practice in most urban and managed environments for there to be some form of regulations prohibiting or discouraging foraging (Shackleton *et al.*, 2017). In Kent, such concerns have resulted in sanctions on commercial foragers, with the first civil sanction against a forager in Britain successfully upheld in 2017[19]. During my research I learned that foragers feared the case would set a precedent in Kent, which could severely restrict foraging in the future, and professional foragers leading foraging courses were already encountering resistance from local authorities to their activities. The Kent case was based on application of the precautionary principle (Cooney, 2004) in the absence of scientific evidence demonstrating destructive practice had taken place, and it is this lack of evidence surrounding the sustainability of foraging that is the focus of this chapter. Without evidence on the ecological

19 Forager v. Natural England. Stop Notice S28P(6) Civil sanction served by Natural England under The Regulatory Enforcement and Sanctions (RES) Act 2008, The Environmental Civil Sanctions (England) Order 2010 and the Environmental Civil Sanctions (Miscellaneous Amendments) Regulations 2010.

impact on foraged WFPs, the local authorities are quick to denounce foraging on any scale beyond occasional recreational picking, although even this posed issues on some nature reserves, (discussed in Chapter Five). Foragers, on the other hand, argue that their activities cause no harm, reporting that they continue to harvest plants from the same locations over many years with no discernible effect. This chapter addresses the issue of evidence using a threat assessment methodology to assess the risks to commercially harvested wild plant foods in Kent and provides an overview of the knowledge of commercial harvesting in Britain which shows that although information is limited the demand and economic value for wild foods is increasing. It aims to be a first step towards building the evidence base for sustainable harvesting of foraged food plants.

4.2 Wild food plants in a global context

4.2.1 Values of wild food plants

Globally, wild plants face significant threats from habitat loss, land transformations and factors such as climate change yet remain under-assessed for conservation purposes (Gallagher *et al.*, 2023). It is estimated that 21%-26% of wild plant species have been assessed (Bachman *et al.*, 2018) falling far short of the Global Strategy for Plant Conservation's (2011-2020) target to have an assessment of the conservation status of all known plant species, 'as far as possible', to guide conservation action' (Convention on Biological Diversity, 2010). Within this context, the global importance of

WFPs has recently been highlighted in the *State of the World's Plants and Fungi* report which estimates that there are at least 7,039 edible plant species globally of which 30% appear on the International Union for the Conservation of Nature (IUCN) Red List of Threatened Species, and 11% are threatened with extinction (Antonelli *et al.*, 2020). Many of these plants are seen as having an integral role to play in future-proofing global food security due to their genetic diversity, resilience to pathogens and adaptations to local environmental conditions, making them more resilient than modern food crops (Maxted *et al.*, 2007). WFPs also make up the largest proportion of wild foods consumed by people around the world contributing significantly to caloric and nutritional diversity (Bélanger *et al.*, 2019). In countries in Africa, Asia, and Latin America for example, 77% of households collect wild foods for subsistence purposes, and it is WFPs that contribute the highest percentage of type of wild food collected and consumed (Hickey *et al.* 2016). In addition to their importance as food, WFPs are valued for cultural reasons. Urban foraging for example, is widespread in both developing and developed world contexts and is practised by people from a diversity of socio-economic and cultural backgrounds and for a range of purposes including, medicinal, nutritional, recreational, economic, spiritual, and cultural (Shackleton *et al.* 2017). In Europe it is estimated that between 20%-26% of European households collect wild foods for recreation, livelihood, and cultural heritage purposes alone and the majority of these are WFPs (Schulp *et al.*, 2014; Lovrić *et al.*, 2021). Despite the ubiquity of WFP

use and their diverse socio-ecological values to communities around the world, this group of plants are overlooked in national reports that do not recognise the significance of these 'peripheral' plants to both provisioning and cultural ecosystem services (Bélanger *et al.*, 2019). Consequently, the factors that threaten WFPs in the wild, including how WFPs are impacted by harvesting regimes are not well known, and few WFPs are included in conservation programmes as a result (Borelli *et al.*, 2020). In addition to the gaps in knowledge for this category of wild plants, assessing the sustainability of harvest is complex due to a range of factors, including, species-specific attributes, the socio-ecological contexts of their use, and in the different definitions of sustainability adopted by assessment methodologies.

4.2.2 Sustainability assessments: definitions, challenges, methods

Methodologies for assessing harvesting impacts broadly follow two pathways: experimental and population studies designed to assess sustainable harvesting by calculating the rates of harvest in relation to rates of renewal/regeneration of species, and risk assessments, which are knowledge-based methods that calculate the levels of risk associated with harvesting pressure on individual species. The former methodologies were developed through the paradigm of the non-timber forest products (NTFP) approach to sustainable forest management in the 1980's to support sustainable policy for NTFPs (Peters *et al.*, 1989), while threat assessment

methods broadly follow the Non-Detriment Findings assessment framework of CITES and are widely used in assessing the sustainable collection of Medicinal and Aromatic Plants (MAPs). The next section examines these methodologies and their relevance for sustainable foraging assessments.

4.2.3 Ecological impact assessments

From a purely ecological perspective, a sustainable harvesting system is defined as one in which "fruits, nuts, latexes, gums and other plant products can be harvested indefinitely from a limited area [of forest] with negligible impact on the structure and function of the plant populations being exploited" (Peters, 1994: 82). Peters' (1994) ecological definition of sustainable wild plant extraction details six steps required to manage sustainable harvesting, from selection and identification of species through to yield assessments, harvest assessments and regeneration surveys. At its simplest, the idea is that as biological resources are renewable, if the rate of harvest is less than the rate of renewal, then wild harvested species and their populations should persist in the long term (Ticktin, 2015). These population studies are recommended to be performed over at least a five-year period to allow for the lag between harvest pressure and impacts, and associated adjustments to levels of harvesting. Ecological sustainability assessments have been carried out for important NTFPs in tropical and sub-tropical regions, but in non-tropical, post-industrial contexts studies on WPFs are limited. Egli *et al.*'s (2006) assessment of fungi harvesting in Switzerland over

a ten-year period and Rock *et al.*'s (2004) study of wild leeks in the USA are notable examples. In Europe, Molina *et al.* (2012) conducted a one-year study on *Asparagus acutifolius* (Wild Asparagus) in central Spain to determine response to harvesting over one year, and Molina *et al.* (2014) conducted a natural yield assessment of 15 species of traditionally harvested wild vegetables over a 2–3-year period. They used yield and occurrence data to assess their potential sustainable exploitation. While the studies from Molina *et al.* (2012; 2014) are the only studies to undertake quantitative assessments of foraged food plants, the plants selected have a widespread occurrence and high abundance in the region and therefore already unlikely to be threatened by harvesting pressure. For robust evidence on the harvest impact on foraged food plants, longer-term studies (Peters, 1994) on a wider group of harvested plants, beyond their 'traditional' use in home cooking would be required.

A meta review of studies on NTFP harvesting assessments concluded that roughly two-thirds of studies found that NTFP extraction was sustainable and less than one-fifth of studies found it unsustainable (Stanley *et al.*, 2012). This does suggest that in the majority of cases plants are resilient to harvest pressure provided the rate of harvesting does not exceed their rates of renewal. In determining what is included as a sustainable harvest however, sustainable extraction must take into account the effects at broader ecosystem scales, such as the effects on the surrounding vegetation,

pollinators, nutrient cycles and other species dependent on the resource (Ticktin, 2004). Additionally, as Shackleton *et al.* (2015) note, extraction of resources takes place within broader socio-ecological systems and are more complex than the simple linear flows of biological resources to resource users. The range of socio-economic, political and cultural factors affecting the resilience to harvest of individual species is recognised as being as important to sustainability assessments as ecological and biological factors, and methods have been developed that account for these broader dimensions of sustainability (Cunningham, 2001; Ticktin, 2004; Ticktin, 2015). Cunningham's (2001) ethnobotanical guide to sustainable management of wild resources, for example, advocates for participatory approaches to sustainable harvesting and includes an accounting of socio-political factors surrounding harvesting systems. Ticktin's (2004) review of ecological impact studies identified the importance of social factors such as how people manage wild resources, and assessments of wild harvested MAPs include socio-economic information (e.g. numbers of resource users, volume and market demand) (Jenkins *et al.* 2018). These methods have been incorporated into knowledge-based frameworks, such as threat assessments, designed to assess a wider number of plants based on risk attributes that include both socio-economic and ecological data.

4.2.4 Threat assessments

Threat assessment methodologies establish levels of risk or threat wild harvesting presents to species and have become important tools for conservation and planning purposes and are frequently applied to assessments of the trade in Medicinal and Aromatic plants (MAPs) (Lamrani-Alaoui and Hassikou, 2018). Criteria are applied based on a set of ecological, biological and socio-economic factors to assess potential risk to individual species or populations and are designed to be performed relatively rapidly using published information of harvested species. They act as a first step towards longer-term sustainability assessments through identifying species at risk or potentially at risk, so they can be targeted for monitoring, ecological impact assessments and conservation management. Variations of this methodology have been applied in studies on domestically and internationally traded species (e.g. van Andel and Havinga, 2008; Posthouwer *et al.*, 2016; Lamrani-Alaoui and Hassikou, 2018). The framework selected to carry out a risk assessment of commercially foraged plants in Kent is Schippmann *et al.*'s (2002) framework for assessing harvest impact on MAPs, developed for the FairWild Foundation certification scheme. It combines biological attributes of resilience (e.g., life form) with socio-economic characteristics (e.g. plant part harvested), with the features of rarity described by Rabinowitz (1981). He identified three attributes that make a species more vulnerable to harvest: (i) a species with a narrow geographic range, (ii) a species that is habitat specific, and (iii) a species that

occurs in small population sizes. These attributes together with social and economic factors pertaining to commercial wild harvesting have been developed into a rapid risk analysis methodology designed to be performed in roughly a single day per species, dependent on the information available (Appendix 5). There is a robust and established set of published data for the British flora held by the Botanical Society for Britain and Ireland (BSBI), and detailed records at county level, such as contained in the Rare Plant Registers and local Botanical Records, which, combined with the empirical data on commercial foraging collected during fieldwork, provided sufficient information to carry out a risk assessment using this methodology.

4.2.5 Commercially wild harvested food plants in Britain

The scattered, hidden and unregulated nature of the harvest of edible wild plants has been observed as a limitation to understanding the parameters of sustainable wild harvesting in England (Murray and Simcox 2003). There have been no sustainability studies on wild harvested foods in Britain to date, except for a sustainability assessment of wild edible fungi in Scotland (Dyke and Newton, 1999). The study acknowledged that demand for wild foods such as fungi was "rapidly increasing [] stimulated by television programmes and books encouraging the use of wild fungi in cookery" (1999: 77), and noted by Rotheroe (1998) who also observed a growing trend for wild collected fungi. While there is no data for the total annual value of the wild edible plant trade in the UK, an increasing number of enterprises are

trading in wild plant products and an increasing number of species are entering the markets. Morgan (1996) estimated the total annual value of vascular plants was £2.3million, £0.5 for fungi and £88,000 for marine algae; overall he valued the trade in wildlife for consumption as worth over £600,000 million annually (1996: 79). In 2002, a report on the commercial values and uses of wild living resources quoted an annual turnover of £0.5 million for a single wild food company in Scotland, suggesting that the demand for speciality wild foods had significantly expanded since Morgan's research six years previously (Sanderson and Prendergast 2002). The following year, another review resulting in the same number of wild species (n=36) reported, observed the steady increase in commercial enterprises:

> "While many individuals gather wild fruits and vegetables as a traditional pastime to supplement purchased food, a number of small companies have turned harvesting of wild foods into a commercial activity." (Murray and Simcox, 2003: 94).

In Kent, the annual turnover of one small commercial foraging business in 2016 was £600,000 (Companies House, 2017) suggesting the viability of this trade as a livelihood option. This company had started in 2003, selling a few wild edible species (wild fungi and wild garlic) to local farmer's markets in Kent (Drennan, pers.com., 2018) and now harvests, processes and markets over 200 edible species of plant, with a particular demand from London markets (Jones, 2016). As noted in Chapter Two, a total of 155 local species were recorded for this company indicating a considerable increase in the use

of a wider number of species. In 2021, a consumer survey for the high-end supermarket retailer, Waitrose, reported on a shift in consumer trends noting an emergent interest towards valuing healthy, locally sourced foods and in nostalgic practices such as using traditional recipes for pickling and preserving foods (Waitrose Food & Drink Report, 2021). In their 'Upward trends' section, they also observed an 89% increase in social media reports on foraging from the year before and an increase in foraging among their client base was observed (Bailey, 2021: 3). This is also echoed by reports on high-end diners' taking up foraging and fermenting following in the influence of the 'Nordic factor' (O' Loughlin, 2019).

These reports suggest that demand for foraged products have increased and interest in the practice has grown. It is this perceived intensification around the use of wild plant foods, coupled with a lack of knowledge about the scale and extent of foraging that has raised concerns from authorities. Due to these gaps in knowledge of which species may be at risk from over collection, a risk assessment of commercially wild harvested food plants is a first step in assessing these risks, and an important contribution to baseline evidence on sustainable commercial foraging.

4.3 Materials and methods

4.3.1 FairWild Risk matrix

The methodology selected is the FairWild rapid risk analysis tool, (Appendix 5) developed by Leaman and Schippmann (2021). Species-specific biological factors, such as distribution, regeneration, reproduction, habitat specificity, are combined with social factors such as the scale of trade, conservation status, parts of plant harvested. Each species is assessed using three levels of risk (low, medium, high) and assigned scores as follows: Low= 1; medium = 2; high = 3. The scores of all individual factors are then combined to give a total score between 9 (minimum) and 27 (maximum). This score is then used to assign an overall risk rating, as follows: 9-14 = Low Risk; 15-21 = Medium Risk; and 22-27 = High Risk. A species which is globally or nationally assessed as Critically Endangered (CR) or Endangered (EN) is automatically assigned as high risk and does not undergo the same steps of assessment as species assessed in the other red list categories.

4.3.2 Selection criteria

To assess the risks of WFPs to collection pressure, two groups of plants were selected for assessment. Firstly, all threatened species identified from the cross-tabulation analysis (Table 4.5) were selected; this includes commercially foraged species that are also on the England Red List (IUCN classification of plant species in England, Stroh *et al.* 2014) and the Kent Rare Plant Register, (RPR) detailed in Appendix 6. RPR's are generated at county

level and classified according to the Botanical Society for Britain and Ireland rare plant criteria[20]. A second group of plants was also generated using a random selection of 20% of commercially foraged plants in order that a wider selection of species foraged commercially be assessed (i.e. species not currently identified as threatened but known to be commercially foraged) (Table 4.8). Data for commercially foraged wild food plants were extracted from the Kent ethnobotanical inventory. Threatened species identified in the first dataset were then reviewed against the individual species accounts in the Kent Rare Plant Register (RPR) and a short list of plants selected against a set of risk criteria (Table 4.1) . In total, using both datasets, 40 out of 155 species were assessed using the FairWild (2021) risk assessment matrix resulting in just over 25% of commercially harvested WFPs in Kent being undergoing a rapid risk assessment.

4.3.3 Threatened plants.

The criteria for inclusion in a RPR are that a plant is locally rare or scarce and Red Listed. This means that some species contained in the register may not be rare or scarce in the county and may even be common or abundant but are included in the register because they have been IUCN assessed. Within the Red List categories, the risk classification of 'Least Concern' (LC) means

20 Definitions of rare/scarce status as follows: Locally Rare: occurring in 1-3 Sites only (in a vice-county); Locally Scarce: occurring in 4-10 Sites (in a vice-county). For full list of criteria see 'County Rare Plant Register Guidelines 2017' available online at: https://bsbi.org/. Last accessed 13/10/2023.

that a species has been assessed as 'not threatened' (Stroh *et al.*, 2014: 11). This means that some plants that are neither threatened nor rare are included in the RPR. To adjust for these criteria, a set of inclusion/exclusion criteria were made in Table 4.1 so that only locally identified threatened species were assessed.

Table 4.1 Selection criteria for threatened species

Inclusion criteria	**Exclusion criteria**
Listed in Rare Plant Register as locally rare or scarce	Listed in Rare Plant Register as neither rare nor scarce
Listed in Rare Plant Register as common but populations declining	Listed in Rare Plant Register with populations increasing or stable
Red Listed species in categories CR; EN; VU; NT	Red Listed species in category LC and neither rare nor scarce locally
Locally commercially foraged species	Commercially foraged species outside of Kent
Commercially foraged species identified as threatened locally but not recorded in Rare Plant Register as rare or scarce	

The individual species accounts in the RPR provide detailed information of a plant's rarity/scarcity status, current distribution trends, historic records, and where available, their uses historically as economically useful plants. A review of each of the species' accounts in the RPR facilitated a short list selection against the inclusion/exclusion criteria provided in Table 4.1.

4.3.4 Non-threatened plants

Using the RAND function in Excel, 31 species (20%) of commercially foraged plants were randomly identified from the ethnobotanical inventory and

listed in Table 4.8. If a species was already identified through the selection process for threatened plants (Table 4.5), the next species on the list was selected.

4.3.5 Adjustments and use of the matrix

For both datasets, adjustments were made to the risk matrix in relation to the scale and extent of use category, and the geographical distribution category.

4.3.6 Assessing scale and trend of use.

The FairWild methodology is designed to capture information for both international and domestic markets, and relies on some data, for example, the scale of trade to come from official import/export records for the countries of origin. The criteria in this category assess both level of demand/trade and 'conflicting uses', indicating that some species may be harvested for multiple uses, placing extra pressure on the resource. In this research, WFPs foraged in Britain, are destined for domestic markets, and these are usually unregulated, informal exchanges, with foragers selling directly to restaurants or in food markets. Official trade data on the scale and extent of trade in foraged WFPs are therefore unavailable. To assess for this category therefore, the number of records for each plant or plant part sold, as listed in the commercial company sales records, was counted as a use report (UR) to act as a proxy for the extent of demand that is met locally (Table 4.2). Use reports were recorded for each species selected for

assessment and the highest number of use reports divided by three. This resulted in the following risk level scores: 1-85 UR = low risk; 86-171 UR = medium risk; 172-257 UR = high risk. In addition, where species are subject to Biodiversity Action Plans or listed as Schedule 8 plants, they were assigned a score of '3' to indicate 'conflicting uses' which in this case, is between the values of plants for conservation and for human consumption (Table 4.2). This may not add additional ecological pressure to a species, but social pressure.

Table 4.2 Adapted criteria for scale and extent of use.

Scale and trend of use and trade (FairWild)	**Score**	**Adapted for Kent study; use reports (UR) & conservation importance**
Several conflicting uses; trade high or increasing; shortages	3	UR = 172-257. Schedule 8 plants; Biodiversity Action Plans
Several uses; trade medium or slowly increasing	2	UR = 86-171
Single use; trade low or decreasing; no shortage	1	UR = 1-85

4.3.4.2 Geographical distribution

The scale for geographical distribution of species was adapted to reflect the local trade of WFPs in Kent and implications for conservation in Britain (Table 4.3). The geographical distribution parameters are therefore adjusted to include distribution data for Britain with the IUCN categories for threatened plants taken from the England Red List (Stroh *et al.*, 2014). Where species are distributed throughout Britain their value is assigned the number 1; species in category 2 are species occurring in 1 - 2 countries but not all 4

(Scotland, England, Wales, Ireland); species in category 3 are species restricted to county level distribution. Distribution data and habitat specificity were obtained from *The Plant Atlas* (Stroh *et al.*, 2020).

Table 4.3 Adapted criteria for geographical distribution.

Risk level	**Score**	**FairWild criteria**	**Adapted for Kent**
Low Risk	1	Distribution is internationally widespread, species occurs on >1 continent	Widespread throughout Britain
Medium Risk	2	Distribution is regionally restricted, often to one continent	Occurring in 1-2 countries in Britain
High Risk	3	Distribution is locally very restricted, i.e. few countries or even endemic to one country	Occurring in 1 or more counties only

4.3.4.3 Treatment of missing data

Where data is deficient for specific factors a score of '2' is assigned following the protocol set out by Leaman and Schippmann (2021:4, Appendix 5), which states: "In the case where data on a factor are unavailable, the precautionary principle will be used and the factor scored as "2" indicating that it is "unknown" in the respective cell of the matrix." Information on species' biological attributes were obtained from the RPR, Plant Atlas (Stroh *et al.*, 2020) and England Red List of Vascular Plants (Stroh *et al.*, 2014).

4.4 Results

4.4.1 Threatened plants in Kent.

A frequency count shows 506 species in Kent are on the England Red List (Table 4.4) categorised from 'least concern' (LC) to 'extinct in the wild' (EW). A Cross-tabulation analysed the number of Kent foraged species that are categorised as rare in Kent and Red Listed for England. This resulted in 15 foraged species which can be classified as rare or threatened (Table 4.5).

Table 4.4 Number of Kent flora on England Red List Categories.

England Red List					
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	n	1175	69.1	69.1	69
	DD	19	1.1	1.1	70
	LC	485	28.5	28.5	99
	NT	12	7	7	99
	VU	7	4	4	100
	EN	1	1	1	100
	EW	1	1	1	100
	Total	**1700**	**100**	**100**	

DD - Data Deficient; LC- Least concern; NT - Near Threatened; VU - Vulnerable; EN - Endangered; EW - Extinct in the Wild

Table 4.5 Cross-tabulation of commercially foraged species in Kent, species on the Rare Plant Register and on the England Red List.

Kent foraged + rare * England Red List Crosstabulation									
Count									
		EU Red List							Total
		n	DD	LC	NT	VU	EN	EW	
	No	1170	18	476	12	7	1	1	1685

Kent foraged + rare	Yes	5	1	9	0	0	0	0	15
Total		1175	19	485	12	7	1	1	1700

DD - Data Deficient; LC- Least concern; NT - Near Threatened; VU - Vulnerable; EN - Endangered; EW - Extinct in the Wild.

Of the 15 species identified in the cross-tabulation nine species were short listed (Table 4.6) using the inclusion/exclusion criteria in Table 4. 1 and information provided in the Rare Plant Register. Two species that are neither rare nor scarce nor showing a decline in their populations met the inclusion criteria based on local stakeholder information, they are: *Brassica oleracea var. oleracea* (Wild cabbage) and *Inula crithmoides* (Golden Samphire). Wild cabbage has well established populations along the Kent coast and is not regarded as threatened (Kitchener *et al.*, 2023:13). However, it is harvested commercially from a Protected Area (PA) in Kent and, in 2017, the local authority responsible for the PA was planning a prosecution of the company collecting it. Wild cabbage is also an axiophyte, (indicator of habitat that is considered important for conservation) and is therefore ecologically significant for conservation purposes. Golden Samphire is listed as LC, and there is no information available in the Rare Plant Register for Kent. It was identified by local botanical experts I interviewed as bordering on scarce and identified as at risk from collection pressure (Lockton and Bennet, pers.com., 2017) and was consequently included. These nine species were assessed

using the risk analysis methodology, and a level of risk assigned to each (Table 4. 7).

Table 4.6 Short list of threatened plants

Scientific name	Common name	Commercially foraged in Kent	Red List Status	Kent rare plant register	Other priorities	Shortlist
Brassica oleracea	Wild cabbage	✓	LC	Not rare or Scarce	Under surveillance by landowners	✓
Calluna vulgaris	Heather		LC	Not rare or scarce		x
Chamaemelum nobile	Chamomile	✓	VU	Rare	UK Biodiversity Action Plan	✓
Cichorium intybus	Chicory	✓	VU	Not Rare or Scarce; pop. Dec.		✓
Daucus carota spp. gummifer	Wild carrot	✓	LC	Scarce		✓
Fragaria vesca	Wild strawberry	x	NT	Not rare or scarce		x
Hippophae rhamnoides	Sea buckthorn	✓	LC	Not rare or scarce;		x
Inula crithmoides	Golden samphire	✓	LC	No information	Identified at risk by county recorders	✓
Juniperus communis	Juniper	✓	NT	Not rare or scarce; pop. Dec	UK Biodiversity Action Plan	✓
Lepidium latifolium	Dittander	✓	LC	Not rare or scarce; increasing		x
Mentha arvensis	Wild mint	✓	NT	Not rare or scarce		x
Myrica gale	Bog-myrtle	✓	NT	Very rare		✓
Sium latifolium	Greater water-parsnip	✓	EN	Not rare or scarce	UK Biodiversity Act Plan	✓
Umbilicus rupestris	Pennywort	✓	LC	Not rare or scarce		x
Oxalis acetosella	Wood sorrel	✓	NT	Not rare/scarce pop. Dec		✓

Table 4.7 A rapid risk assessment of threatened plants in Kent using FairWild risk assessment matrix (2021)

a	**b**	**c**	**d**	***e***		***f***		***g***		***h***		***i***		***j***		***k***		***l***		***m***		*Sub-total*	*Risk category*
Brassica oleracea var. *oleracea* Wild cabbage	leaves, seed pods				1		1		1		1		1		2		2		2		2	14	Low
Chamaemelum nobile Chamomile	flowers, stem				3		3		3		1		2		2		2		2		2	20	Med
Cichorium intybus Chicory	leaves, root				3		2		1		3		1		2		1		1		2	16	Med

Daucus carota subsp. *Gummifer* Wild Sea carrot	leaves, flowers				1		1		1		1		1		2		3		2		2	14	Low
Inula crithmoides Golden samphire	leaves, stems				1		1		1		1		2		2		3		2		2	15	Med
Juniperus communis Juniper	branches				3		3		2		3		1		3		2		3		2	22	High
Myrica gale Bog-myrtle	leaves, flowers				3		3		1		1		1		3		2		2		3	19	Med
Sium latifolium water parsnip	leaves, stems		3																			0	High

Oxalis acetosella wood sorrel	leaves, flowers				3		2		2		1		1		1		1		2		2	15	Med

[a] Scientific plant name; [b] Collected plant part; [c] IUCN global threat category, [d] National Conservation Status assessment; [e] Conservation Status; [f] Threat Causes; [g] Scale & trend of use; [h] Plant part collected; [I] Geographic Distribution; [j] Local population size; [k] Habitat Specificity; [l] Regeneration; [m] Reproduction

Table 4.8 Wild Food Plants selected at random for rapid risk assessment

Foraged wild food plants in Kent	
Abies grandis (Pine)	*Cardamine hirsuta* (Hairy bittercress)
Hippophae rhamnoides (Sea buckthorn)	*Melilotus albus* (Melilot)
Angelica sylvestris (Wild angelica)	*Lamium album* (Dead nettle)
Medicago sativa (Alfalfa)	*Silene vulgaris* (Bladder campion)
Leontodon hispidus (Hawkbit)	*Borago officinalis* (Borage)
Nasturtium officinale (Wild watercress)	*Foeniculum vulgare* (Fennel)
Typha latifolia (Bulrushes)	*Sambucus nigra* (Elderflower/berry)
Robinia pseudoacacia (Acacia)	*Achillea millefolium* (Yarrow)
Prunus avium (Wild cherry)	*Ballota nigra* (Horehound)
Silene dioica (Red campion)	*Sorbus aucuparia* (Rowan)
Raphanus raphanistrum spp. *maritimus* (Sea radish)	*Heracleum sphondylium* (Hogweed)
Chenopodium album (Fat hen)	*Castanea sativa* (Sweet chestnuts)
Lepidium latifolium (Dittander)	*Atriplex portulacoides* (Sea purslane)
Poterium sanguisorba spp. *sanguisorba* (Salad Burnett)	*Allium ursinum* (Wild garlic/ramsons)
Salicornia europaea (Marsh samphire)	*Reseda lutea* (Wild mignonette)
	Crambe maritima (Sea kale)

Table 4.9 A rapid risk assessment of non-threatened wild food plants

a	b	c	d	***e***		***f***		***g***		***h***		***i***		***j***		***k***		***l***		***m***		*Sub-total*	*Risk category*
Abies grandis Pine	leaves				0		1		1		1		1		2		1		1		2	10	*Low*
Hippophae rhamnoides Sea buckthorn	Branch berries				1		1		3		1		2		1		1		1		2	13	*Low*
Angelica sylvestris Wild angelica	seeds, leaves				1		1		1		1		1		2		1		2		2	12	*Low*
Medicago sativa Alfalfa	flower stem				0		1		1		1		2		2		1		2		2	12	*Low*
Leontodon hispidus Hawkbit	leaves				1		1		1		1		1		2		1		2		2	12	*Low*
Nasturtium officinale Wild watercress	leaves, stems, flower				1		1		2		1		1		2		3		2		2	15	*Med*

Typha latifolia Bulrushes	stem, seeds				1		1		1		3		1		2		2		2		1	14	*Low*
Robinia pseudoacacia Acacia	flower				0		1		1		1		2		2		1		1		1	10	*Low*
Prunus avium Wild cherry	flower bark				1		1		1		3		1		2		1		1		2	13	*Low*
Silene dioica Red campion	flowers				1		1		1		1		1		2		2		2		2	13	*Low*
Raphanus raphanistrum subsp. Maritimus Sea radish	leaves, seed pods				1		1		1		1		2		2		3		1		2	14	*Low*
Chenopodium album Fat hen/wild orache	seeds, leaves, tops				1		2		1		1		1		2		1		1		2	12	*Low*
Lepidium latifolium Dittander	leaves, stem, flowers				1		1		1		1		2		2		2		2		2	14	*Low*

Poterium sanguisorba subsp. Sanguisorba Salad Burnett	leaves				0		2		1		1		2		2		2		2		2	14	*Low*
Salicornia europaea Marsh samphire	Stems				1		1		2		3		1		2		2		1		1	14	*Low*
Cardamine hirsuta Hairy bittercress	leaves				1		1		1		1		1		2		1		2		2	12	*Low*
Melilotus albus Melilot	leaves, flowers, seeds				0		1		3		1		2		2		1		2		2	14	*Low*
Lamium album Dead nettle	leaves				1		1		1		1		1		2		1		1		2	11	*Low*
Silene vulgaris Bladder campion	flowers				1		2		1		1		1		2		1		2		2	13	*Low*

Borago officinalis Borage	flowers				0		1		1		1		1		2		1		2		2	11	*Low*
Foeniculum vulgare Fennel	leaves, flowers, seeds				1		1		3		1		2		2		1		1		2	14	*Low*
Sambucus nigra Elderflower /berry	flowers, berries				1		1		3		1		1		2		1		1		2	13	*Low*
Achillea millefolium Yarrow	leaves, flowers				1		1		2		1		1		2		1		1		2	12	*Low*
Ballota nigra Horehound	stems				1		1		1		1		1		2		2		2		2	13	*Low*
Sorbus aucuparia Rowan	berries				1		1		1		1		1		1		2		2		2	12	*Low*
Heracleum sphondyliu m Hogweed	stems, seeds				1		1		3		1		1		2		1		1		2	13	*Low*
Castanea sativa	nut				1		1		1		1		1		1		1		1		2	10	*Low*

Sweet chestnuts																						
Atriplex portulacoides Sea purslane	leaves				1		1		2		1		1		2		2		2		2	14	*Low*
Allium ursinum Wild garlic/ramsons	leaves, flowers				1		1		2		1		1		1		2		2		1	12	*Low*
Reseda lutea Mignonette	leaves, flowers				1		1		1		1		2		2		1		2		2	13	*Low*
Crambe maritima Sea kale	leaves, seed pods				1		2		2		1		2		2		3		2		1	16	*Med*

[a] Scientific plant name; [b] Collected plant part; [c] IUCN global threat category, [d] National Conservation Status assessment; [e] Conservation Status; [f] Threat Causes; [g] Scale & trend of use; [h] Plant part collected; [I] Geographic Distribution; [j] Local population size; [k] Habitat Specificity; [l] Regeneration; [m] Reproduction

Table 4.10 WFPs identified in each risk category

Risk Category	**Total species**	**Percentage of assessed WFPs (n=40)**
High risk	2	5%
Medium risk	7	12%
Low risk	31	27%

4.4.2 Risk assessments

The rapid risk analysis shows how some plant species are more vulnerable to commercial foraging activities due to a range of biological and ecological factors. Commercial harvesting may place these plants at greater risk from additional harvest pressure where demand for a particular species increases their collection, although the specific risks from harvesting appear to be overall far less than other threats associated with habitat loss and land-use change.

High risk species: Two species scored as 'high risk' in this analysis. Greater Water parsnip is 'Endangered' in England and Great Britain (Stroh *et al.*, 2014) and is therefore automatically assigned to the 'high risk' category following the methodological guidance (Appendix 5). It was not listed in the sales database of the commercial company, but present in a list of species recorded in a master's dissertation (Jones, 2016), and there is therefore uncertainty over its commercial collection. The plant is verging on scarce in Kent and has seen a significant decline in populations across England and Great Britain and is at high risk of becoming extinct in the wild (Kitchener *et*

al., 2023). Its natural habitat is on the edges of lakes and rivers but due to changes in land use in Britain it is now confined to drainage ditches and marshland. A survey of its abundance and distribution in a protected area in Kent (Williams *et al.*, 2000), showed that ditch management had a major impact on its survival, with the percentage of plants under Environment Agency management at 3% compared with 95% of the population found in private (unmanaged) ditches (Kitchener *et al.*, 2023). Current threats would therefore appear to be from factors not associated with harvest, but rather, changing land use, however, without robust identification of this species as a commercially harvested one, the risk remains high. The second plant in this category is Juniper. Juniper is harvested by cutting whole branches with berries and is a popular foraged product with a medium UR (89) putting it into the medium risk category for scale and extent of trade. Both the common Juniper and a subspecies (*Juniperus communis* spp. *communis)* are declining in England due to habitat loss, and in Kent, it is the subspecies that is scarce and Near Threatened. While it is unlikely that this subspecies is the plant harvested commercially, since it occurs in remote and inaccessible clifftop communities, the multiple and sustained pressures on Juniper indicate that it is at higher risk if harvested in significant volumes.

Medium risk species: In this category, Chamomile is the only plant nearing the upper threshold of medium risk. It's UR score of 61 is at the lower end of the scale for trade but indicates there is a steady, medium demand for it. In Kent

its rarity is due to threats from 'eutrophication, drainage and cessation of grazing on village greens and lowland acid grasslands' (Kitchener *et al.*, 2023:16) and is categorised as 'Vulnerable' in England. At the local level, it is recorded as growing in the wild in only three sites in Kent although it may be found in other locations that have been missed by recorders (Kitchener, pers. com., 2018). Identification of this species as the species harvested commercially is uncertain, and it may be the case that substitutes from the same plant family are used if it is in scarce supply. However, without exact species identification, Chamomile is certainly vulnerable to commercial harvesting in Kent.

Bog-myrtle is the next highest scored plant in this category. It is known mainly for use in cosmetics, as an aromatic plant rather than a food plant (Murray and Simcox, 2003), and has a low UR of 12, indicating low demand. As a plant of heathland and moorland, its population is restricted to one nature reserve in Kent, which is closely monitored by staff and volunteers making it unlikely that a commercial activity would go unnoticed. This suggests that it may be harvested elsewhere in England, using the wider network of harvesters the commercial company use to supply species abundant elsewhere (Fenton, 2008). The remaining species in this category are Chicory, Golden samphire and Wood sorrel and are on the threshold of low/medium risk. Chicory is not a species of concern locally. It was grown as a fodder crop in England, but this use has declined causing its distribution

to subsequently decline reflected in national records. In Kent it is still occasionally grown as a fodder crop, and it is this that is likely foraged; it has a very low UR of 9 but because it is the root that is harvested it scores '3' for this factor. A lack of data on population size means it is given a score of '2' and this brings it into the medium level of risk. Golden samphire also has a relatively low UR of 45, although this is nearing the threshold of medium use, but no information was found for it in the Rare Plant Register for Kent. Consequently, the score of '2' was assigned for most of its assessment criteria and this may be the reason for its overall assessment as 'medium risk'. However, with no information in the records but flagged by local experts as a species that is becoming rare, it is vulnerable from additional harvesting pressure. The plant Wood sorrel has a lower-end UR of 74 but remains a popular wild food plant among recreational foragers too, its population is declining significantly across Britain, and the causes remain unclear (Kitchener *et al.*, 2023). Due to its declining trend and popularity as a foraged food it could be at higher risk from harvesting pressure and should therefore be monitored.

Two further species scored as medium risk (Table 4.7) as a result of species-specific factors and conservation concern - wild watercress has been assessed as LC in the England Red List (Stroh *et al.*, 2020) but it has a UR of 127 indicating a medium scale trade; it is restricted to freshwater habitats therefore assigned a score of 3 in this category putting it just into the medium

risk category. Watercress is widely available as a salad crop and is therefore unlikely to face high collection pressure in the wild and currently is not a species under any specific threat status. Similarly, the plant Sea kale is also classified as LC and has a medium UR of 94. In Kent, it occurs on shingle and boulder beaches, forming dense populations in some areas. Although the species itself is not threatened, one of the largest populations of Sea Kale in east Kent occurs within and alongside a Special Conservation Area and Site of Special Scientific Interest and is a location of commercial harvesting Consequently, its status as a 'high value' conservation species (Leyshore pers. comm., 2017) has drawn concern to its harvest, and assigned a score of '3' in the category of 'conflicting uses' (see Table 4.2). Historic records indicate that it has been a popular wild plant food, supplied to high-end culinary markets, since at least the 17th century and there is no evidence that it has declined in Kent. In fact, its populations remain stable since botanical records began in Kent (BSBI, n.d.). While no ecological threat factors are suggested here, it is from a conservation management perspective, a species 'at risk' from commercial harvesting.

Low risk species: Just over 27% of all plants assessed scored in the low-risk category, and are mostly common, fast growing perennial plants adapted to a broad range of habitats making them resilient plants. However, two species identified as low threat, (Table 4.7) are noteworthy: wild cabbage and wild carrot. For wild carrot, it is a subspecies of wild carrot that is scarce in Kent

but is extremely difficult to distinguish from the common wild carrot, whose populations are intermingled. Foragers may be harvesting the subspecies unknowingly making this a challenge for sustainable harvesting. The expertise of harvesters is therefore important in identifying which species is harvested. Wild cabbage, the second low risk plant in the threatened plant dataset was selected on account of the conservation concern in Kent over its harvest. Like sea kale, the populations have remained stable along the Kent coast since the earliest botanical records began (Kitchener *et al.* 2023). It is also a plant that features in historical records as having been harvested as a subsistence and commercial wild plant food (Day, 1965). Due to its location in cliff-edge maritime communities, it is generally found within protected areas, including Sites of Special Scientific Interest. These sites and the vegetation within them are protected due to their biodiversity significance and this makes these species controversial as commercially harvested plants. The risks present of harvesting wild cabbage, as for Sea Kale, are therefore more social than ecological, with conflict over their use value, between conservation and forager communities remaining high.

4.4.3 Sustainability assessment of threatened plants

All the species selected occur in a diversity of habitats in Kent, including woodland, saltmarsh, shingle and coastal habitats, open grasslands, agricultural land, freshwater systems and in amenity planting schemes in urban greenspaces. Apart from a few species that occur predominantly

within Protected Areas, due to the habitats they occupy (Wild cabbage; Sea Kale) only two species (Juniper and Chamomile) are subject to Biodiversity Action Plans due to their individual vulnerability and threat status. Most species foraged grow in accessible areas and are widespread and abundant. These results suggest that overall, the risks to the Kent flora from foraging remain low. When analysed more closely, in most cases, the risks to medium and high-risk category plants are because of habitat loss, changes in land use and land management regimes which may be inadvertently putting species at risk through strategies designed to manage the wider ecosystems in which they occur (e.g. Greater Water Parsnip; Chamomile). In these cases, harvesting may limit their capacity for renewal even further and therefore should be considered for monitoring (Table 4.11) where demand is medium or high (e.g. for Juniper, Wood Sorrel and Chamomile). However, for three of these plants (water parsnip, juniper and chamomile) information is needed to verify it is these species that are harvested rather than substitutes or close relatives. The following species are identified as priority foraged species that require further assessment and/or monitoring:

Table 4.11 Priority WFPs for monitoring and further assessment

Species	Risk Category	Actions required
Chamomile	Medium	Species identification
Greater water parsnip	High	Species identification
Juniper	High	Species identification Monitor harvest activity
Wood sorrel	Medium	Monitor harvest activity

4.5 Discussion

The aim of this chapter was to assess the degree to which commercially foraged food plants in Kent are threatened by commercial harvesting pressure. The risk analysis suggests that overall, the risk of unsustainable foraging of Kent flora is low, although for a few plants that are already vulnerable in the wild they may be further threatened if commercial foraging is carried out at a significant scale, especially on populations that are already declining. The extent to which individual foragers are aware of the conservation status of species is unclear but is an issue that has been reported elsewhere. Schunko *et al.*'s (2021) study of urban foraging in Vienna for example identified negative ecological impacts on a few popular species foraged by inexperienced foragers, highlighting the importance of access to knowledge about species under threat. The issue of species identification also presents a challenge in the risk assessments of specific plants. Foragers use local and common names of species which do not necessarily distinguish botanically defined species or subspecies within a particular genus. This could lead to misidentification of threatened and non-threatened species, or

the inadvertent harvesting of a vulnerable species. Clearly, local botanical expertise in identifying which species are harvested is essential to inform risk assessments and to guiding conservation of species. Equally, conservation practitioners and authorities need to understand foragers' taxonomy if they are to effectively engage foragers (Teixidor-Toneu *et al.* 2023). Accumulated local ecological knowledge is a key component for people's capacity to manage and conserve environments (Pilgrim *et al.*, 2008). While botanical recording in Kent, for the Botanical Society of Britain and Ireland has been ongoing since 2010, updated annually and mapped to extant botanical data and current field surveys, foragers spend time in these landscapes throughout the year and many have detailed knowledge of local environmental conditions and plant communities that scientific recorders do not. This was the case for example for one species harvested commercially in Kent which has been recorded in only three sites in Kent, and nearing extinction locally. However, when put to the chief county recorder, that this species was being harvested commercially, they indicated that it was likely other populations existed on sites they had not accessed. This knowledge, held by foragers could usefully enhance existing conservation data for that species in Kent. Gaps in knowledge of species, such as population size and distribution, which are not recorded in the botanical records for Kent, could also be addressed through collaboration with foragers contributing to better information and knowledge of plants and their communities. However, the opportunities for knowledge sharing between foragers and authorities in

Britain are currently limited, partly due to the invisibility of commercial trade that operates in an informal, cash economy, and partly because of institutionalised cultural attitudes that exist in relation to commercial foraging which are discussed in the following chapter.

The "innate conservatism" of agencies' responses to resource extraction globally can be a major barrier to the creation of sustainable harvest systems (Shackleton *et al.*, 2015: 261), and to knowledge-based management systems which depend on sharing knowledge about resources and resource use. While knowledge sharing and collaboration is therefore an essential prerequisite for sustainability assessments of foraged food plants it is also a politically sensitive issue involving whose knowledge counts, and what constitutes appropriate 'evidence.'

Qualitative studies exploring the concept of 'sustainable foraging' from foragers' perspectives have emphasised how foraging is practised responsibly, offering the potential for sustainable development, through the increased appreciation for nature, and greater connections between humans and WFPs that foraging promotes (Landor-Yamagata *et al.*, 2018; Łuczaj *et al.*, 2021; Schunko *et al.*, 2021; Teixidor-Toneu *et al.*, 2023). This is not to suggest that foraging is always benign. Overharvesting of popular species has been observed (Schunko *et al.*, 2021), and concerns over specialised coastal species, popular among chefs have been reported (Łuczaj *et al.*, 2021).

A study in Berlin, which documented the uses, status, and conservation status of 125 taxa identified two species foragers reported as having disappeared from foraging locations, although it was not known to what extent this was because of other factors (Landor-Yamagata *et al.*, 2018). Research also points to the 'ethical' decisions foragers take regarding foraging; these 'internal moral calculations' act as mechanisms for ensuring species are not overharvested (Charnley *et al.*, 2018), and builds on broader scholarship that links foraging to active stewardship and biodiversity promotion (Emery, 2001; Landor-Yamagata *et al.*, 2018; McLain *et al.*, 2017). This body of research demonstrates that while there may be threats in specific circumstances, generally foragers employ environmentally responsible strategies and techniques, based on a detailed knowledge and care for the environment. The challenge of integrating forager knowledge and practice with environmental management systems in Britain, may require a sea change towards how nature and natural resources are valued and shared by different stakeholders before the mechanisms that are needed to establish resource assessments can be decided.

Risk assessments depend on knowledge and resource accounting systems to support target species. Within the context of NTFPs and MAPs where wild resource extraction is a recognised livelihood activity (Shackleton *et al.*,, 2015), or an important export commodity for countries (e.g. Lange, 2002; Ghimire *et al.*, 2016), there are policy and political mechanisms to support

sustainable resource assessments in these regions. For example, MAP research is supported by initiatives linked to the Global Strategy for Plant Conservation (Schippmann *et al*., 2002: 8) and include specialist groups such as the IUCN ISSC-MAP Medicinal Plant Specialist Group (2007) and IUCN Species Survival Commission Medicinal Plant Specialist Group (2007). Such political support for monitoring and regulating WFP harvesting does not exist in England and is weakly developed elsewhere in Europe, inhibiting development of sustainable systems for this kind of resource extraction (Schunko *et al.*, 2019). Regulation systems however can risk alienating foragers who value the unregulated and open access nature of these resources (Sardeshpande and Shackleton, 2023), but a lack of management also runs the risk of unsustainable resource use if resource users are disinvested in managing open access resources (Ostrom, 2008). Adaptive co-management has been suggested in NTFP research on commercialisation and sustainable harvest (Wynberg and Van Niekerk, 2015) and proposed in Britain during the early 00's just as wild harvested products were beginning to increase in popularity (Murray and Simcox, 2003). In their review of the economic value of wild harvested resources, Murray and Simcox (2003) stressed that guidelines, adaptive management, and regulatory controls are essential to reduce 'environmental conflicts' as the commercialisation of natural resources intensified. Integral to this, they suggested, that 'responsible resource users are in a good position to help in formulating these controls ' (Murray and Simcox, 2003:90). Foragers in Kent have

expressed their desire to work with authorities but have yet to be successful in these aims as the following chapter discusses, suggesting that co-management is only a hypothetical possibility at present.

A recent study that applied a transdisciplinary approach to assessing the sustainability of foraging in Norway (Teixidor-Toneu *et al.*, 2023) offers an example of how forager and expert knowledge can be combined to produce sustainability assessments of foraged food plants. Combining scientific evidence with foragers' knowledge, the definition of sustainable foraging was broadened to one in which all elements of sustainability are recognised, proposing a way forward for co-governance of these resources. While this study is an important development addressing both social and ecological dimensions to sustainable foraging, it is set within a legal system that protects foraging rights on public and private land. In Britain, foraging is not a 'given right' and property and land rights are prohibitive. This makes the challenges of assessing the sustainability of foraging particularly difficult, and establishing a system of regulation, even more so.

4.6 Conclusion

Sustainable foraging remains ill-defined, and perhaps contested, due to the differing interpretations that move between social and ecological frames, with some defining sustainability from the perspective of impacts on society to others focussed on the impacts on plants themselves (Teixidor-Toneu *et*

al., 2023). In Britain, commercial foraging is not only perceived as an ecological threat to biodiversity conservation but is also culturally perceived as antithetical to nature appreciation, representing social threats to the integrity of natural habitats. As foraging continues to be popular as a lifestyle choice and in gastronomic practices it is important that all aspects of its sustainability are better understood. Commercialisation of WFPs does not necessarily run counter to biodiversity conservation (Wynberg and Van Niekerk, 2015), rather, it is the politics of foraging that might present the most significant social barriers to sustainable foraging strategies. The next chapter explores this issue in more depth, and suggests that in this context, a more culturally appropriate approach to sustainable foraging may lie within a voluntary code of conduct.

Chapter Five: The politics of foraging

5.1 Introduction

This final chapter addresses the conflicts that manifested locally through efforts by authorities to impose restrictions on foragers, and which were resisted by foragers in different ways. It led to a situation where any dialogue between these actors was stifled. The inability for dialogue precludes the possibilities for collaborative engagements that could progress a sustainable model of foraging in Britain, which acknowledges the benefits and values of foraging to people and conservation that have been noted by research (e.g. McLain *et al.*, 2017; Shackleton *et al.*, 2017; Landor-Yamagata *et al.*, 2018). As a result of this situation, in Kent, I drafted a foraging code (Appendix 7), intended as a mechanism towards engaging more fruitful conversations between those who forage and those who manage foraging landscapes. However, as this analysis demonstrates, the barriers to implementation of a voluntary code are significant, and enmeshed in contested views over what constitutes ethical relationships with nature and human's conduct in it.

> "Society seems to have mixed feelings about foragers and intolerance seems to be growing. The same newspaper that carries an "Aliens Ate My Fungi" story and criticises foraging as a trend, will also publish articles encouraging you to take the whole family foraging and recipes for making your own hedgerow jam." (Wilde, 2017)

These mixed messages described above, by one of the founding members of the Association of Foragers, are characteristic of attitudes to foraging in

Britain where foraging is celebrated as a quintessentially British tradition, (Mabey, 1996) while foragers can also be seen as destructive agents in nature when their practices go beyond the occasional gathering of culturally salient species (Horton, 2023). This polarised approach to foraging is represented by the 'recreational-commercial' categorisation of practices, reproduced through English law, which makes the harvesting of any wild species for commercial sale a criminal offence (The Wildlife and Countryside Act 1981) while 'recreational' gathering is a cultural practice. These categories reflect a social and legal history of land ownership and land management in Britain and are inscribed in the earliest English laws and Acts of Enclosure concerning customary rights, property and private law (Lee and Garikipati, 2011). As such, these categories are already politicised, as Lee and Garikipati show, but in the last 10 years or so, as foraging has become more visible, these descriptors have been galvanised by conservation actors and public authorities concerned with the exploitation of foraged resources. While it might be a rational response to curtail the activities of commercial foraging where no regulation exists,, restrictions are increasingly extending to professional and recreational foragers as well.

5.2 Materials and methods

In Brosius's (1999: 286) review of anthropology's engagement with 'environmentalism', he notes that, 'an immense institutional apparatus is descending on the environment'. This 'apparatus', I suggest, includes

statutory and non-statutory environmental governance and public bodies, which are not only powerful through the discourses they produce, but also in the forms of human-nature interactions they increasingly prescribe; in these approaches, as I demonstrate, foraging is not considered a legitimate form of human-nature interaction. The detail of these conflicts is presented through an ethnographic account of local foraging politics drawing on theories from political ecology.

Following post-structuralist perspectives within political ecology, which examine how agency manifests through 'discursive power and governmentality' strategies (Svarstad *et al.*, 2018: 356), I explore how institutional discourses seek to de-legitimise foraging in the name of conservation, and ethical human-nature conduct. Using ethnographic vignettes and observation with managers of protected areas, landowners, commercial and professional foragers, I demonstrate how authorities attempted to discipline foragers through moral discourses and disciplinary actions. I include analysis of the narratives employed in the legal proceedings against a commercial forager, and of a local parish council's attempt to restrict professional foragers' access to common land, and illustrate the contrasting approaches of foragers with regard to human-nature relationships. Forager agency here is conceptualised as a 'subtle form of power' following the work by Cortes-Vazquez (2014) on neo-rural migrants in Spain. In this study he demonstrates that power does not reside

solely in hegemonic 'state' structures but is distributed and exerted by neo-rurals through 'embodied forms of cultural capital, as a form of lifestyle' (Cortes-Vazquez, 2014: 498). By maintaining their practices in the face of institutional power, foragers enact their own forms of agency, selecting to remain outside of the 'environmental subjects' (Agrawal, 2005) that government would have them become.

5.3 Background

In the summer of 2017, I met with Ben, the local representative for the northeast Kent Coast Marine Partnership, to gain his perspective on coastal foraging. A local seaweed forager had given me his contact details after they had got in touch with them over a seaweed harvesting license. Ben was keen to meet and tell me of his aims to develop a Foraging Code as part of efforts to monitor coastal foraging. He explained that both commercial and recreational foraging in the area had increased so significantly that the current surveillance and monitoring strategies were insufficient to the task. He was concerned about overexploitation of marine fauna and algae and the damage to the fragile chalk reefs harvesting could have (marine molluscs, particularly oysters and limpets as well as seaweeds attach to the chalk beds, which are soft, risking damage when species are removed). Ben explained that because of development along the coast, these chalk reefs were disappearing quickly. He believed working with foragers was preferable to outright prohibition. Jurisdiction and legislation on harvesting were patchy

and inconsistent, and he felt a code of conduct was a good solution to plug the gap where regulation and resources to monitor these activities lagged. A similar sentiment had been shared with me by the policy team at Plantlife, where a position statement on foraging plants and fungi was being prepared through the work of the PLink group in 2016-2017. Their draft policy statement entitled 'Enjoy Responsible Foraging' emphasised the need for a balance between encouraging a foraging relationship with nature and caution on the detrimental impacts collecting could have. They were also keen to develop these guidelines in the form of a code; however, these priorities were soon de-escalated, as the more immediate policy challenges arising from Brexit, began to be felt (Hawley, personal communications, 2018).

These intentions towards the codification of foraging practices struck me initially as antithetical to foragers I had met, who talked about personal ethics and freedoms and who valued nature relationships unmediated by regulatory or state sanctioned regimes, a position observed in other foraging contexts (Sardeshpande and Shackleton, 2023). As fieldwork progressed, and I observed the attitudes and efforts of land managers, conservation officers and local authorities to restrict or prohibit foraging I questioned if the desired effects of a code could be achieved, particularly where authorities adopted inflexible, moral positions, towards foraging in general.

5.3.1 A moral case

Unsustainable wild harvesting of any wildlife for commercial purposes is largely problematised in terms of scale, whereby, the threats to populations, species, or habitats are attributed to the size of the operations (Ticktin, 2004). In the case discussed below, environmental concerns for commercial harvesting were more often voiced as moral claims that foragers exploit nature in their pursuit of fashions for wild edible plants, and in doing so, show disregard for the laws on private landownership, the work of conservation, and for nature in general.

In the spring of 2018, I attended the Annual General Meeting of the Kent Botanical Recording Group[21] where I met Steven, the manager of the largest coastal protected area in Kent, protected by 12 conservation designations[22], including a Site of Special Scientific Interest (SSSI) and a Special Protection Area (Natura 2000 site)[23]. This was the site where, two years previously, a commercial foraging company had been found harvesting the shingle plant *Crambe maritima* (sea kale) and were later prosecuted through the civil court

21 A group of amateur and professional botanists affiliated with the Botanical Society of Britain & Ireland. Formed in 2010, the group record the vascular plants of Kent through field excursions through the county, providing a general county survey that is fed into the BSBI database and local Kent and Medway Biological records centre.
22 For listings of designated sites see: https://designatedsites.naturalengland.org.uk/
23 The site was notified as an SSSI under section 28C of the Wildlife and Countryside Act 1981 in 2006 due to its diverse and nationally important biological, geological and habitat features. Under the EU Habitats Directive, the site was further designated as a Special Protection Area and Ramsar site in 2016 for its important bird species.

for 'causing intentional or reckless damage to flora of special interest'[24] . The Stop Notice required them to stop all activities relating to harvesting sea kale. Steven recounted the story to me with great enthusiasm explaining that when a member of the public had rung his office and reported seeing three men harvesting the sea kale, he had gone to the site immediately. He told me that the men had 'around 80kgs' of sea kale in bags. The police had been called and the men cautioned, but before they drove off Steven had made them empty the bags of sea kale: '*I made them dump the lot! The whole 80kgs I made them empty onto the ground.* That really made them go ballistic!' He laughed, looking pleased with himself. He had wanted to teach them a lesson, he told me, and others who may get similar ideas. He described the episode as a 'what if' scenario: 'what if everyone started doing it?' Steven said that he didn't mind individuals picking a few leaves, but he did mind commercial foraging. I asked what the difference meant to him: 'Is it the impact on plant populations? Or the habitat?' I asked. He shook his head, 'It's about scale. They got greedy,' and, he added, 'about permissions'.

Months later, I attended the appeal hearing of the court case against this commercial company, and learned that the company in question had repeatedly made attempts to communicate with the authority managing the

24 Forager v. Natural England. Stop Notice S28P(6) Civil sanction served by Natural England under The Regulatory Enforcement and Sanctions (RES) Act 2008, The Environmental Civil Sanctions (England) Order 2010 and the Environmental Civil Sanctions (Miscellaneous Amendments) Regulations 2010.

site, even proposing a 'working arrangement' in which they would set up experimental sites to assess the harvesting impact on the plant and habitat in question in exchange for harvesting rights. These attempts had been repeatedly ignored, causing the judge to remark to the Prosecution: 'This attitude of the landowners[25], it has perplexed and puzzled me all through this case.'[26]

In the case of Forager Ltd. v. Natural England, the question of permissions sought and refused, contested and denied, was central to the company's subsequent appeal following the original decision. At the first hearing the Tribunal had ruled in favour of the Stop Notice. However, since no scientific evidence on the impact of harvesting sea kale could be identified during the hearing, the case rested on the legal frameworks protecting the shingle habitat - this habitat is protected[27] because it is one of the largest expanses of shingle habitat in Europe - and the manner in which the company had carried out their activities, (without permission, and knowingly so) given as the grounds for adopting a precautionary approach, using the 'precautionary principle' (Cooney, 2004). The foraging company had appealed this decision, on several grounds, including that the decision was

25The site is owned by the local authority.
26 In the conditions of the Stop Notice served, it is stated that the company must seek the permission of the landowner. The company argued that this is invalid since though they may seek permission they cannot obtain it. The judge acknowledged this as a point of law he would have to look into further. On grounds of logic.
27 Special area of Conservation: https://sac.jncc.gov.uk/site/UK0013059

unreasonable (there was no threat from their activities they claimed) and unlawful (drawing on ancient rights to roam and to use the land). However, it was on the technical matter concerning the omission from the Stop Notice to provide the steps the company should take to comply with the Notice, that an appeal had been granted by the judge. Following this decision by the Upper Tribunal, Natural England proposed the following steps to compliance:

> "EITHER by obtaining owner/occupier status for the relevant area OR in co-operation with an owner/occupier of the relevant area, gain consent from Natural England for the harvesting of sea kale leaves in respect of that area" (Pt. 12, Upper Tribunal Decision)

The company responded with a proposal for permission to set up an experimental study site where they would harvest one area leaving an adjacent area as a control by which to measure and observe the impacts. They proposed to do this with the collaboration of Natural England scientists, and included several specifications, such as the number of harvesters, time periods, and quantities. The proposal was sent to the landowner, in this case the local council, in accordance with the requirements of seeking landowner permission. In the words of the company's director, it demonstrated their willingness to work within 'accountable frameworks' such as with Natural England and other stakeholders of the site. The proposal also put forward the company's views on foraging and conservation, including evidence of the lack of harm their activities caused:

> "We feel it is really important to challenge the fortress conservation model which sees conservation as a matter of curtailing human activities in parcelled off areas of designated conservation land. We harvested there for ten years, between 2004 and 2014 and there is no difference between where we picked and where we didn't. Natural England have tried to argue that some dire consequence might occur if we harvest – but really, if there was any basis for this argument the site would show obvious signs of this happening after ten years". (Pt.30 Upper Tribunal)

The proposal was rejected by the council, who stated that they had no intention of permitting wild harvesting on any council owned land at any time. The Tribunal were also advised that before any permission from landowners could be given, according to the legal responsibilities of the state (in this case Natural England), an assessment of the impacts of the proposed activity would have had to be carried out. Natural England's counsel argued during the hearing that it could not assess the impact of the activity since the impact was likely to cause significant harm. The point was upheld by the Tribunal and the appeal failed. In the judge's final statements summarising the decision to uphold the steps to the Notice put forward by Natural England, he reiterated the need to protect and maintain the site's biological integrity, and the risks posed by the company if permissions had been granted. However, the decision also emphasised the questionable intentions and character of the company Director and his motivations vis-à-vis commercial harvesting. Addressing the company's proposal to establish a 'working arrangement' through an experimental study, the judge concluded:

> "This attitude is consistent with Mr. [anon]'s-strong sense of entitlement as evinced by his views of agriculture and "foraging", his self-serving views justify what he does and privileges his views above the opinion of others and his actions above the law. He has asserted that his company is a social enterprise which has a new way of thinking about conservation. The normal practice of the company is to gather material from land belonging to others and sell it. In short, a business model based on trespass and theft." (Pt.50, Upper Tribunal).

In England, legislation, including byelaws regarding public access and land rights can be complex and confusing to navigate, but, in this case, the laws governing protected areas are straightforward. Permission is required to harvest species from a SSSI, and permission had not been sought until after sanctions had been imposed. The question of seeking permission, however, was a moot point in this case since permission was never going to be granted. As Steven had said '*Foragers are never going to get a landowner's permission to harvest on a SSSI*'. While this response can be seen as simply following the legal and environmental protections for the site, it was the fundamental opposition to foraging, using moral judgments that precluded the possibility for collaboration that exposed some inherent contradictions in policy approaches to natural resource uses.

At the time this case was going through the civil courts, a joint application by the energy company EDF and the Environment Agency to recycle shingle from the SSSI for the purpose of flood defence, for a period of 12 years, was

going through the permissions process. Despite the industrial nature of the operation, which would involve a fleet of off-road vehicles, extracting and transporting up to 60,000m^3 of shingle annually across the reserve, with significant environmental impact on the SSSI, permission had been granted[28]. The apparent injustice in the two cases had not escaped the notice of the company Director who had tried to use this case in their appeal to question why the precautionary principle had not been applied to this activity, but, due to a legal technicality, it had not been permitted as evidence.

On the tube ride back from the hearing I asked the director what he would do. He replied that there were plenty of other sites they would use to continue harvesting sea kale. I refrained from asking if these were also under conservation management and we continued our de-brief over what had been said.

The mechanisms of discipline, or 'technologies of government' (Foucault, 1991; Agrawal 2005), are, in this case, the civil court and Stop Notice which were applied along with a moral narrative acting to 'discipline' the forager and to broadcast a wider message to the public about ethical (environmental) citizenship. While this had an immediate and material effect on the company

[28] Kent County Council Application SH11381

in question, who saw a number of clients decline to continue business with them (Irving, 2018, pers. Comm), it also created a heightened sense of risk among other local foragers who were wary of getting noticed through the increasing public surveillance this case had produced. In the next example, foragers respond to a situation by reflecting on the importance of knowledge for sustainable practices while expert knowledge, claimed through the discourse of 'conservation management' is used to assert authority and legitimate a species destruction.

5.3.2 An issue of scale

'Pick what you can eat' Elle said as she led the group of 10 out onto the seabed. It was a cold, damp Saturday afternoon in January, and Elle and her friend Norm, another experienced forager, were leading the foray and I was going along to help. It was a private foray foraging for oysters and mussels, for a group of women who had booked the event as part of a 50th birthday weekend. They were staying in a nearby coastal town in Air B&B accommodation and had also booked to have a 'wild supper' after the foray. They had never foraged before and had chosen this foray 'because it was something different'. As we walked in zig zag fashion, navigating the best route over the rocky channels, tide still receding, Elle stopped to point out oysters half buried in the rock bed. She had picked one off a rock holding it across her hand to show the group the minimum size they should pick. After a few minutes of searching, excitement erupted as someone found an oyster, picked it from the mud, and holding it up to show her friends, shouted excitedly 'My first one!' Her friends clapped and

cheered. 'Far too small. A baby,' Elle had said, going over to look, 'Put it back'. The woman had asked why she couldn't keep it and Elle had simply said, 'it's too small'. For a couple of hours, the group spread out across the seabed, in twos and threes, returning to a midpoint to share their finds with Elle or Norm, who would cast an eye over the finds, commenting on the size or colour and giving tips on how to spot unhealthy ones. Norm had bought a small knife and demonstrated how to 'shuck' the oyster, opening a few for people to try. Elle brought a small bucket for the oysters, and some of the group had brought bags. When the tide turned and started flowing over our boots we walked back to the shore in the twilight. The party was in high spirits; it had been a successful foray and they had enjoyed the adventure. It was once back at the house preparing food that the scale of harvest became evident. Bags of oysters of varying sizes lay strewn across the kitchen floor. There must have been more than 100. Elle picked one out of a bag, 'Look, there are 3 oysters here – 2 small ones attached to a larger one.' She shook her head, horrified, by the scale, 'how could this have happened?' The meal started with oysters. A total of ten were eaten.

The episode had unsettled me, and Elle: an unnecessary and excessive number of oysters had been harvested and most had to be thrown away before they became unsafe to eat. Elle discussed the episode with me the following day, and concluded that, this case was linked to a 'lack of knowledge', where the people had been more interested in the 'adventure', than learning to forage. She reflected that she would have to be 'stricter' and

more aware of the group. 'I'll have to lay it on the line more and educate them a bit more' she said.

A few months after this event I attended a multi-agency meeting for the North Kent Marine and Coastal Protected Areas, a consortium of conservation and statutory bodies working in partnership to manage the coastal and marine protected areas in east Kent. I learned that the oysters we had harvested (*Cassostrea gigas,* Pacific oyster) were under a strict conservation management regime on account of their spread and growth in the wild. This oyster had been introduced to the UK from Canada in the mid 60's to be farmed for its seed. When they were first introduced the waters of the UK were too cold for them to breed (McKnight and Chudleigh, 2015) but after 1965 wild populations had been establishing themselves, particularly on the chalk reefs around Kent, and in other areas of the coast stretching from southern England to Ireland's east coast (Herbert *et al.* 2016). Now they were a major conservation problem, as they were outcompeting the native species, *Ostrea edulis*, and creating hazardous oyster reefs all around the coast.

Ben, who wanted to get his idea for a foraging code agreed by the group, had asked me to present my work on foraging. After my presentation Natalie, the head of Marine Science at Natural England, wanted to know how much educational foragers charged for their forays and if they harvested the

oysters from these chalk reefs. A discussion followed with members of the group wanting to know what educational foragers taught: '*Do they educate them (members of the public) on sustainability? Are they selling oysters? Do they tell the public that they cannot harvest on these sites?*' Recalling my experience of the birthday event, I evaded direct answers, but during the tea break I chatted to Natalie about how they were managing the populations of pacific oysters on this stretch of coast. I was interested to know if they would be open to a collaboration with foragers. Her response to this was to explain that it was not possible for foragers to harvest from these sites due to the fragility of the chalk. '*I can show you some data now*' she had said, and we sat down again. Natalie pulled up an excel file onto her screen. A spreadsheet with rows of columns with the names of bays in the area appeared. I could see numbers under each column. She pointed to a figure in the 'Total' field which stated 221,000. '*Since we started removal from the reefs, we have destroyed 221,000 oysters*' she said. '*And with very low impact on the chalk beds*.' 'How do you destroy them?' I had asked. *'Our volunteers hammer them or remove the upper shell*'. I asked what they did with the discarded oysters? '*We leave them there, let nature do its work.*'

The views of the representatives at the meeting left no room for discussion on possible collaborations with foragers, despite how labour intensive this culling was and relied upon volunteers who had to be trained. After the meeting Ben called me and agreed that there had been little appetite for a

code for foraging. He was disappointed but explained that they were facing significant social and ecological challenges, from managing invasive species on the brink of population explosions, to the increase in recreational users on the coast, and that their resources were already under considerable strain. Against this backdrop, foragers are seen as yet another problem rather than a solution. Ben explained the position of the group: 'They feel very strongly that reserves are for wildlife not people. They feel that there are so few places left just for nature."

In Vaccaro *et al.*'s (2013) analysis of conservation ideology, they point to the 'exclusionary territorial public policies' that it creates (Vaccaro *et al.*, 2013: 256), and the questions this raises in terms of access rights: "Is the enjoyment of conservation spaces a basic right of all citizens and consequently, should access to protected areas be granted democratically?" (Vaccaro *et al.*, 2013: 259). So far, as we have seen from the attitude of conservation and environmental authorities to foraging in nature protected areas, the answer to these questions is almost unanimously 'no' to any kind of foraging, commercial or recreational; foragers are not considered to have legitimate grounds to 'use' nature and are disciplined through discursive and regulatory mechanisms. Political-ecologists have highlighted these institutional arrangements as part of neo-liberal marketisation of the environment (Buscher *et al.* 2012), with some arguing that the designation of sites under conservation represent new forms of 'enclosure' (Cortes-

Vazquez and Apostolopoulou 2019). Yet it is not only nature protected areas that have seen authorities clamp down on foraging. This final vignette describes how a small parish council attempted to prohibit educational foraging in a public green space. Their attempts to assert authority over the forager through the bureaucracies of parish council business thwarted efforts to enter into a dialogue with local foragers, and the potential for a meaningful exchange.

5.3.3 Nature's bureaucrats

An 'ancient' meadow

Honeywell Freedown is a 13.7-acre public open space set on an elevated area of chalk grassland situated in a small coastal parish, north of the port town of Dover. The site was purchased by the parish council in 1999, from a private estate to 'ensure its future as an amenity for the benefit of the public and wildlife' (Parish Council website). It has been designated a Site of Nature Conservation Interest (SNCI), which is a local authority designation reflecting its importance for wildlife, in this case, wildflowers and butterflies. The land is managed by a working group comprising parish councillors and local volunteers. Its history as a World War 1 aerodrome, and its strategic war time position overlooking the English Channel, is enshrined by 2 memorials to the World Wars, which occupy the site. Prior to its use for military purposes, it was part of a farm, owned by a private estate, and there is also evidence of it being quarried for chalk. Since 2000 when the parish council

bought the land, the aim has been to restore the site to chalk grassland whilst also improving it 'for the benefit of people and wildlife'.

For Elle's educational forays, the site provides the first stop on the spring course which combines coast and meadowland foraging. Groups are led up the hill and onto the grassy plateau in search of a few common plants including alexanders, nettles, wild marjoram, three-cornered leeks and wild primroses. It is not an especially diverse site in terms of the wild edible plants available, but it is aesthetically useful and practical. From its elevated position, overlooking the English Channel, the coast of France is visible on a clear day. It is with this view in the distance that Elle recounts the invasion of the Romans connecting the historical event to the patch of Alexanders growing nearby. Looking immediately down from the meadow the dramatic cliffs fall to the beach acting as signposts to the next foraging destination – the rocky shoreline covered in seaweeds.

A polite notice

Two days after the spring foray, Elle had rung me up in a state of indignation. She had received an email from the parish council asking her to reconsider her activities at Honeywell. A member of the council had found two of her information cards on the site. These cards contain a picture and brief description of a plant along with some of their nutritional properties and uses. She was unsure how to proceed or I explain to them what I am about. I only teach people, I'm not selling.' A recent forager to the area had started to sell wild harvested asparagus at a local Saturday

market, which persuaded Elle, she explained, to engage with the council. She did not want them to think she was selling this produce. She decided that she would suggest a meeting, begin a dialogue with the council and show them the value of educational foraging. 'I bring people to the site from all over the world' she had mused. And besides, she wanted to ask them why they had cut down the only patch of nettles on the site…and wood chipped over the weedy paths that were full of edible greens…From her perspective this showed a 'lack of intelligence' [about the value of wild plants]. She was invited to a parish council meeting the next week, and I agreed to accompany her. We agreed that the meeting would be an opportunity to exchange views and knowledge about the site and its value as an educational foraging space with the council.

A polite meeting

The parish council's office is a narrow, white building on the main road that runs parallel to the seafront. Its front has a bay window with information posters and nautical paraphernalia adorning it, so it has the look of a small seaside town museum. We were greeted by Chrissy the clerk and directed to two chairs at one end of a long table set back from the window. I smiled at the gentleman to my left, who was wearing a long-sleeved checked shirt and army green trousers. He smiled back. The lady directly to our right did not make eye contact with us. Next to her, a tall white-haired woman with glasses sat, she was the Chair. She did not introduce herself. She gave us a forced smile. An elderly man who was hard of hearing sat to the left of the other gentleman, who turned out to be Freddie, a retired ecologist who carried out

the botanical surveys for the site and also ran guided walks; he did not make eye contact either. The atmosphere was strained since no one was introducing themselves. Two more people arrived, local volunteers. The clerk handed round the agenda for the meeting, which was four pages long and printed on green paper with the council logo. The Chair explained that there were a few matters to be discussed before we should explain ourselves, nodding in our direction. Elle interjected and asked about her information cards, did they have them? It would be great if she could have them. The clerk exchanged a glance with the Chair, then got up and walked over to a wall lined with shelves and stacked with coloured box files. She produced the cards from a file and returned them to Elle who said, 'thanks a million' and beamed at her.

In due course the agenda arrived at point 4: 'The Forager. To meet representatives from the group and share information about the site' it read. The chair began by saying that they had received reports of people picking plants on the site. Eddie interrupted and said, 'This all started because councillor Scott found a sign sticking out of a patch of three-cornered leek. It concerned us slightly. Actually, a lot. We wanted to ask what is going on because we're very concerned. It is a sensitive site. We are encouraging chalk species back to this land and we are discouraging the nasty invasive plants like Ivy, Ash, etc. What we don't want is people marauding and collecting in order to augment their dishes. It has made us nervous. What we want is assurance that this is not going on.'

After this speech, the Chair reiterated the point that they were seeking assurance that Elle was not picking plants on the site. She looked sternly at her, waiting for a response. Elle began by asking if they could explain why the only patch of nettles on the site had been cut down? One of the volunteers spoke up, saying that they shouldn't have been cut down because of their value for wildlife. The other volunteer nodded in agreement. They started to speak but the Chair swiftly silenced them, 'Yes, thank you Matthew, we will discuss this later' she said. There was a silence, before the Chair resumed her questioning, 'and do you pick plants from the site?' she stared at Elle again. When Elle finally spoke, it was not to explain the educational value of her activities or the numbers of people who are drawn to the site through her events. She did not explain what she does or how these events are organised, instead, she began in a slow, monotone: 'We could not be more ecologically minded'. She could reassure them she went on; she was trying to connect people to this special landscape. No damage was being done. The Chair insisted to know then if it was the case she picked there? 'No', said Elle. 'We stop and look at them, [plants] smell them, and we drink cordial and sip violet tea.' The cold stare from the Chair suggested she was not convinced. At this point I interrupted, introducing myself. My credentials (a student in the Durrell Institute of Conservation and Ecology) appeared to assuage Freddie's anxieties, he nodded approvingly, said now that he understood where I was from, he felt more reassured. But the narrative of the intruder-forager was once again resumed. Eddie said that they had been alarmed by finding 'this rather blatant sign on three-cornered leek', and, he continued, about the 'fashion' for foraged plants that has been promoted by the 'TV chefs and cooking programmes'. He is against this

fashion. 'Chefs can go into the woodland and get the plants for nothing' he said. He blamed the TV programmes. He said how hard they were working to restore the site to its 'natural state'. I could see the Chair trying to 'shoosh' him. She interrupted, turning to us, 'Well thank you for coming. What we wanted was your assurance that you are not picking, and you have given us this. We want the public to enjoy the place and educational talks are fine. If you can inform Chrissy of when you intend to use the site, there will be no problem'. Elle nodded agreement and Chrissy wrote something down. 'Chrissy will let you out', the Chair said, and shuffled her papers. I looked at my watch – 7.20pm – it had lasted barely 20 mins even though the meeting was scheduled for 2 hours. Chrissy had already opened the door and was standing outside on the road. As we exited the building, she said 'I could talk to you for hours' and, smiling sweetly, shut the door.

At the pub afterwards Elle was fuming. 'Who do they think I am, I'm not going to ring them up to make an appointment with nature! I'm a forager, not a fucking bureaucrat!' She was angry that they had discounted her knowledge and had shown no real intention to learn about her work. Like the commercial company Director in the civil case, she planned to continue business as usual, thinking of alternative places to go, or being more careful about being caught. These decisions were based on her confidence that foraging on the site did no harm and echo other studies which have described forager tactics in response to institutional authority as a form of 'resistance' (Robbins *et al*. 2008), or as a 'moral calculation' used to determine

access to foraging spaces (Charnley *et al*., 2018). Further, by lying to the council that she was not picking plants, Elle was ensuring a strategy to bypass these local structures of power (Cortes-Vazquez, 2014) and thus exerting her own agency in this struggle over access.

5.4 Discussion

McLain *et al.* (2014) describe the negative perspectives of conservation practitioners and park authorities towards foragers as seeing these activities as 'out of place' in greenspaces managed for public recreation which has some resonance with the case studies presented here. However, I would argue that a broader philosophical question this ethnography raises is about where and in what spaces does foraging belong? McLain *et al.* (2014: 237) consider ways in which urban planners could re-evaluate their perspectives from the policy rhetoric of green space planning which identifies 'community participation and community engagement' objectives. As a place-specific practice issue, such considerations might effectively produce collaborative arrangements between foragers and park managers, however, it does not address the philosophical issue of foraging's wider place and practice. The draft code, Appendix 7, is therefore intentionally generic (covering wild plants, algae, fungi and marine animals as well as the range of habitats where they occur). This generalist approach recognises foraging is a diverse practice undertaken by a wide range of people and for a variety of reasons and aims to capture this diversity. As a product of academic

research, that has not yet been applied in the field, it reflects the legal, social and political factors that impact foraging in Britain, and particularly, in England. As such, it represents the material realities of foraging in England, rather than the relational dimensions of foraging represented in, for example, the views of different types of foragers.

5.4.1 Codes and their uses

The production of codes of conduct in nature-based settings has developed in the context of tourism and concerns for its environmental impacts, with one of the earliest visitor codes being the English Countryside Code, first published in 1951 by the National Parks Commission. Codes arise from a concern for the impact that human activity is having on a particular species, habitat, or landscape because of increased demand for these activities, and where there is an absence of legislation governing them. Research on whale watching codes of conduct for example, have responded to the exponential growth in this activity since the 90's, the lack of regulation governing whale watching tourism, and a lack of research on its impacts on the wildlife (Garrod and Fennell 2004). Codes of conduct can both 'plug the regulatory gap' and incorporate the importance of social, economic, or spiritual human-nature relationships (Holmes, 2016). Codes of conduct aimed at fostering responsible behaviours among people interacting with a variety of wildlife or 'wilderness' areas can also include guidance in relation to local and indigenous communities in these areas (Mason 1997) or, in the case of the

Countryside Code, explicit messages about respecting rural 'working' landscapes (Parker, 2006). They are therefore useful instruments for guiding peoples' behaviour and informing people about a range of issues. In all cases, they are a means of addressing public behaviours, and as discussed at the start of this chapter, might carry limited traction among some foragers.

5.4.2 Knowledge and ethics

Lee and Garikipati's (2011) analysis of the evolution of foraging and British law explain how in the ebb and flow of common law foraging occupied a marginal position and remained largely unevaluated except when it impinged on private landowners' ambitions or practised for commerce:

> "Local, permissive systems for foraging have endured until disrupted by social or economic pressures or political intervention, after which new negotiated systems have eventually emerged" (Lee and Garikipati, 2011: 420).

The increasing sense of a biodiversity and environmental crisis coupled with changing trends in public attitudes to nature, such as the desire to connect in direct and novel ways, presents an opportunity for a new 'negotiated system' in which foraging might be included in the solutions to these problems, rather than seen as contributing to them. However, as we have seen through this ethnography, in Kent the possibilities for reaching a collaborative arrangement that would see foraging as a valued socio-environmental practice, and foragers as important actors in this, is limited.

One approach towards this development is in the co-production of a voluntary code for foraging, however, significant challenges exist in regard to the way in which present environmental governance regimes approach knowledge in relation to the human-nature interactions and beliefs about the appropriate (ethical) use of nature.

In contrast, foragers also adopt ethical positions which differ from these discourses leading to a politics that has been called, an 'ethicised nature': "In contemporary Britain, nature seems also to have become laden with moral authority and ethical potency" (Dow and Boydell, 2017: 3). The significance of this Western framing of nature they argue, is to do with its ability to "act as an ultimate reference point and boundary-marker" despite its elasticity, conceptually and practically. They suggest that despite the diverse and multiple meanings that nature holds even within specific local contexts, its 'moral force', has become stronger, rather than weaker. This 'moral force' is I suggest, illustrated by the various ways in authorities and foragers maintain their positions, in the face of increasing pressures and disciplinary actions. It also manifests in the subtler ways, such as in the way in which knowledge is used to enforce sanctions by authorities, or resist them, by foragers.

An issue for policy on sustainable wild harvesting, particularly in the case of wild plants with food values, is the lack of evidence on the impact of

harvesting (Jenkins *et al.* 2018). When I reached out to the managers of Kent's nature reserve partnerships at the beginning of my research, it was suggested to me that research into the level and effects of collecting would be invaluable. Indeed, it was regularly put to me, in conversations with these actors, that evidence of the impact of harvesting on species was needed. By implication, this attitude inferred that in knowing these impacts, effective solutions may be found. In the case of the commercial sea kale harvesting however Natural England chose to forego the opportunity to enter into collaboration with the foraging company to conduct a scientific study on wild harvesting impacts, instead relying on the *precautionary principle* to uphold the decision. The precautionary principle was created as a means of mitigating and protecting biodiversity in the absence of scientific evidence but where the likelihood of harm is considered to be high (Cooney 2004). However, it is not without issues. Its application in establishing CITES[29] trade bans for example has been cautioned where it is used as a 'blunt instrument', without adequate understanding of the response of harvesters and the impacts of these bans (Challender *et al.* 2019: 200). Challender *et al.*'s (2019) review suggests instead, a more appropriate first step would be to set up conservation programmes in partnership with harvesters. In Kent, as we have seen, this was dismissed, and the deployment of the precautionary

29 CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora) is an international agreement between governments to ensure that international trade in specimens of wild animals and plants does not threaten the survival of the species. Trade bans are imposed temporarily (suspension) or permanently until a country can demonstrate it is compliant with the terms of the Convention.

principle had instead the effect of obstructing an impact assessment of a species of high biocultural importance[30]. It illustrates the conservatism of authorities towards foraging but also a self-defeating strategy, enforcing a boundary between nature and people while wanting to preserve nature through wider public participation and engagement; meanwhile foragers are already engaged and active participants in nature. Despite the strain on resources that had been described by Tim and the Conservation Consortium managing the marine and coastal reserves in Kent, they did not consider foragers as an aid to resourcing issues, but rather as an additional pressure on their already time and resource-constrained system.

The moral objections using on scientific knowledge claims also, I suggest, expose another set of factors that operate within this moral realm, and which are inextricably implicated in conservation as a neoliberal project (Buscher *et al.*, 2012; Cortes-Vazques and Apostolopoulou, 2019).

5.4.3 Neoliberal nature governance

The views articulated by authorities and conservation actors about the exploitation that foragers carry out by capitalising on a resource 'for free', expose a significant but overlooked dimension in this conflict - the

30 Johnson (1862:22) describes its use as a culinary vegetable going back to records from 'the old herbalists'. Sanyal and Decocq (2015:780) reference its cultural history and nutritional composition, its resilience to drought, and its potential as a 'halotolerant' wild crop relative.

implication that in exploiting nature, foragers are exploiting conservation. We learned for example, how the invasive pacific oysters are managed through the labour-intensive work of volunteers who have to be trained, and of the extensive efforts of local volunteers and retired councillors to restore a neglected meadow. In these narratives foragers are perceived as exploiting 'free resources' while disregarding the work done by these actors. In the words of the manager of the largest wild plant reserve in the region, *"people think its [nature] a free resource but there is a cost to maintaining populations. Unregulated foraging means that people are reaping the benefit of that value but with no feedback to conservation"* (North Kent Reserve manager). The moral position adopted by conservation is reinforced through this notion of work, and landscapes such as protected areas become, in effect, political sites of productivity through contested ideas of land use vis-à-vis forager and conservation aims. In Escobar's (1999) review of nature regimes, he describes the effects of a 'capitalist nature regime' where, through the processes of capitalist production, both labour and nature are implicated in becoming commodified: "*resulting in the production of what has been called a second nature, namely, the ensemble of social institutions which regulate the exchange of commodities…Nature became a universal means of production"* (1999: 6-7). This is a significant but overlooked objection in the narratives against foragers with implications for finding collaborative ways forward.

5.4.4 A stake in the commons

A related assumption of the 'free riding' argument is that because these resources are freely obtained, they will be heavily exploited through over harvesting. This thinking has been articulated in the well-known essay *The tragedy of the commons*, (Hardin, 1968) which postulated that individuals' self-interest leads to inevitable overexploitation and resource degradation as common resources are appropriated with no consideration for the consequences to either the long-term stability of the resource itself, or the needs of others to share that resource. Ostrom's (2008) critique of Hardin's rational-actor approach identified two problems (tragedies) within this argument; firstly overuse, which must eventually lead to exhaustion of the finite resource, and secondly, the entrapment in this system because users are not able to organise, create rules and institutions to manage the resources. As a result, free riding is predicted in most efforts to self-organize and govern a resource as a community of users. Because of these predictions and because, as Ostrom acknowledges, many open-access resources have resulted in tragic levels of overuse, scholars and policy officials have relied upon Hardin's analysis to justify the need for centralized control of all common-pool resources. But Ostrom suggests that the more useful questions would be to examine under what conditions it is correct and when its predictions are wrong. Whilst Hardin's argument is supported by evidence in situations where there are large groups of users with no communication among them, Ostrom notes that there is also considerable evidence that users

can and have overcome these issues based on the premise that where there is: "the capacity to communicate with one another, individuals can come to agreements and keep the harvest very close to an optimal level" (2008:2). In the case of the civil case against the commercial foraging company, the potential for an agreement between foragers and the managers of the site was offered by the company's director. His proposal for an experimental study on the impacts of harvesting opened the possibility for an agreement between harvesters and landowners, and thus capacity for communication among different stakeholders. The refusal to enter into this initiative by the landowners and authorities potentially therefore results in the second 'tragedy' Ostrom refers to – the 'entrapment' in a system in which one set of resource users have no stake in organising or managing the resources, with the risk that overexploitation may occur. Ostrom's 'polycentric' model of governance (Ostrom and Cox, 2010) offers possibilities for how a foraging code could be an effective co-governing instrument in two ways. Firstly, institutional arrangements (the legislations concerning access to nature) could be reevaluated as a basis upon which effective and sustainable resource use may be achieved, and secondly, the emphasis on communication among resource users, which supports self-governance within overarching structures of governance would be ensured through co-production of an agreed code. Although there is a lack of will at present from environmental authorities and conservation groups to enter into conversations with foragers, there is recognition that foraging is increasing

and adding to the list of issues that reserve managers have to address. At the same time, many foragers are now represented through the *Association of Foragers* (AoF), providing a pathway for deliberation between foragers and the structures governing nature spaces.

Against this backdrop it is important to consider in contrast to authority views, that foragers maintain that foraging is sustainable, not only because in the main the plants they forage are resilient, abundant and common plants, but also, through their recognition of the vital roles they play in support of human life and livelihoods. This definition of 'sustainable foraging' fruitfully expands the meaning from 'ecological' to social and economic and could be operationalised through deliberation between foragers and decision makers (Teixidor-Toneu *et al.*, 2023). Further, at an individualised level of practice, research has distinguished a variety of mechanisms foragers use to access resources, based on 'ethical principles' and 'moral calculations' which form the basis of a 'self-regulating mechanism of access' (Charnley *et al.*, 2018: 746). From permissions obtained through relationships built with landowners, to illicit or surreptitious harvesting, the authors observed how these access strategies operate in tandem with a 'variety of moral judgements [that] also guided foragers' decisions on what to take, harvest methods, and where to harvest' (2018: 740).These findings echo similar findings of this study of foragers in east Kent, who, for example, harvest abundant and weedy species, or species

with a long history of human use (e.g. sea kale), intentionally dispersing seeds from flowering plants and trees, and consciously practicing both individual and collective forms of 'responsible' foraging. Developing a code of foraging through stakeholder engagement would thus also elaborate alternative biodiversity conservation practices.

5.5 Conclusion

This ethnography highlights two interrelated concepts – a moral discourse on what is an appropriate 'use' of nature and a related argument that 'nature' should be preserved for the intrinsic, non-material values it offers (Hayhow *et al.*, 2019). This latter point is the position adopted by conservation authorities in Kent who view foragers as a risk to 'nature'; in contrast, foragers do not perceive that their interactions are threatening nature, and also claim to be motivated by an appreciation for its value to society, as do conservationists. While the conflicts that manifest appear at first to be struggles for control over and rights to resources, in effect, I suggest that they represent an ethical conflict about nature and the place of culture in it. This 'ethicised nature' (Dow and Boydell, 2017) poses a significant challenge to finding common ground between environmental authorities and foragers in order to work productively.

Chapter 6: Conclusion

In this thesis I have examined foraging as an emergent social trend with implications for sustainable resource use, conservation and sustainability more broadly. Foraging is both socially and ecologically consequential as it involves direct interaction with the natural environment through picking wild plants and consuming them, but also an experience and site of learning. Here, I summarise my argument, bringing together the key findings and implications of each chapter and discuss how my work contributes to foraging scholarship and the broader fields of study in the sustainability sciences. I suggest that foraging be looked on as a biocultural practice with contributions to make in terms of addressing sustainability challenges through attention to the close interlinkages between cultures and the biophysical environments that constitute foraging (Hanspach *et al.*, 2019). Biocultural approaches are gaining ground in the sustainability sciences, including attention to the biocultural importance of practices in modern, urban societies (Cocks and Wiersum, 2006). This thesis demonstrates that foraging is not only a significant expression of the cultural value of nature but also a practice with material imprint. Both constituents significantly enrich our understandings of how nature as culture is currently produced (Braun and Castree, 1998).

By approaching this study through an interdisciplinary perspective, using ethnobotanical and ethnographic methods, my research has highlighted the

plurality of values, diversity of practices and diversity of people who make up the current foraging movement as well as those opponents of foraging who together constitute the field. The ethnography was set in a particular coastal landscape and focussed predominantly on foraging for coastal species. This thesis adds to the knowledge of socio-ecological values and practices involving coastal wild plants, which has received little attention to date (cf. Forbes, 1976; Pereira *et al.*, 2022), with research more weighted towards urban contexts and common species (Shackleton *et al.*, 2017). Through this analysis I have shown their movement through the value chain, from recreational gathering through to high-end gastronomy. In situating these values along a continuum of practices that are current and historical the thesis contributes to scholarship in foraging, food studies and sustainability sciences that may inform strategies for their continued sustainable use and value to society.

6.1 Foraging practices

I began this thesis by examining foraging from the perspective of current and historical knowledge traditions and how they materialise in current practices. Chapter Two distinguished between recreational, professional and commercial practices using these categories to explore the associations between them, drawing on ethnobotanical inventories to identify species and their uses within each forager group. I situated foraging in a socio-historical context through a review of the literary traditions on wild food

writing, from the 17th century to present day, finding a persistence in use of many of the plants that are popular today. Tracing the transmission of wild food knowledge through these literatures, I identified two traditions of use reported in the records: a quotidian use of wild food plants among rural people which served as supplement or substitute to cultivated foods, and an 'epicurean' use of wild food plants, among affluent, educated classes. As discussed in Chapter Two, Section 2.2 (p.45), this latter interest in wild food plants features more prominently within the literatures, with only passing references made to the practices of poorer, rural folk, while a third tradition - of commercial trade in a few selected plants -, is also present, but much less emphasised. All these traditions of use manifest broadly in current foraging practices with foragers utilising many of the same species that have been passed down through the written records for recreational and commercial purposes. This aligns with Leonti's (2011) analysis of how recorded ethnobotanical knowledge in literate societies changed the way in which knowledge is culturally transmitted, leading to more rapid transmission, but also recycling of knowledge. The results in Chapter Two support this hypothesis, finding that *circa* 50-100 plants, recorded in history are known and used by all groups of foragers today, making these culturally (and ecologically) salient species (Turner, 1988). It further concluded that professional foragers' knowledge and uses (Section 2.5.2, p. 72,) reflect the local ecological contexts in which species are foraged, supporting the argument that biological and cultural environments influence each other

(Maffi, 2005). A key finding of this analysis also revealed innovation in terms of new species (domestic, ornamental, and unfamiliar edibles) being utilised as well as new practices being applied to traditionally used species. This is evident in the species and their uses freelisted by participants on foraging field courses (Appendix 3) as well as the professional and commercial forager inventories (Table 2.5, p.71; Table 2.6, p.74). These inventories revealed that the ways of preparing and using these species has diversified reflecting a more gastronomic and creative influence on wild food use than was present in earlier forager surveys (Fenton, 2008; Lee, 2012) or in economic assessments (Murray and Simcox, 2003). These innovations highlight two areas of significance: the key role of professional and commercial foragers in generating and transmitting knowledge today, drawing on a wider repertoire of knowledge and species than local traditions (Łuczaj *et al.* 2021), and the involvement of a more diverse public evident in participants of foraging courses. I suggest that within this group a subset of recreational gatherers, oriented towards foodie trends have been identified, that have only partially been represented in research to date. Their involvement in the current foraging movement has therefore been important to document and describe, providing a focus for Chapter Three.

An original contribution of this chapter to foraging and sustainable food studies scholarship is in the analysis of commercial foraging knowledge, the species utilised and their relationship to gastronomy. An under researched

dimension in foraging research is the aesthetic role of wild food plants, although this has recently been noted as significant to influencers in the foraging movement (Luzaj *et al.*,2021). Section 2.5 (pp. 75-77) elaborated on the aesthetic values driving demand at the high-end of the food market, observing how these values are not based purely on place-based, 'authentic' foods, but also on the sensory and symbolic qualities of plants which rely on commercial forager expertise in making these lesser-known species accessible to chefs. It found that commercial foragers harvest the highest diversity of species, which include both native, wild species and non-native domesticates (Table 2.6, p. 75). The aesthetic drivers of wild food plant harvesting identified in this chapter provides scope for understanding the selection of plants foraged today and some of the factors shaping the supply and demand in wild food plant markets. A better understanding of how chefs and consumers value these plants could inform our knowledge of how such trends might predict demand for certain plants or types of plants. It could also provide the basis for development of 'sustainable gastronomy' (Pieroni, 2016).

6.2 Foraging as an experience

In Chapter Three I focussed on a subset of recreational foragers identified in Chapter Two - course attendees of foraging courses who identify as foodies and outdoor enthusiasts. I explored these participants' experiences through an ethnographic account based on participant-observation of foraging

courses in east Kent. As discussed at the beginning of Chapter Three, there is a strong moral narrative in the mainstream media that implicates 'foodies' in unsustainable practices, linked to the perception that they are part of the commercialised foraging sector. During participation in these courses, I observed participants engaging in foraging as a meaningful experience that challenged the stereotypes circulating in the media. The structure of these courses resonated with nature experiences described by Clayton *et al.,* (2017) in the context of modern life and its associated transformations in human-nature relationships. The framework they propose to understand these 'new experiences of nature' are intended to extend conservation's approach to and understanding of acceptable nature experiences. I used this framework as an analytic lens to consider whether foraging field courses align with this hypothesis, using four of the categories they propose. These categories contrast two forms of nature-based experiences to show how a wider range of experiences could be included in conservation-based frameworks. I revealed how foraging courses align with the experience categories including, interacting v. observing; consumptive v. appreciative; separate v. integrated; and solitary v. shared. In framing the foraging course in this way, I considered its significance to conservation and the wider sustainability discourses which advocate increasingly for greater human-nature connectivity (Ives *et al.*, 2017) to counter its loss in modern societies (Pyle, 2003; Miller 2005; Soga and Gaston 2016). Using ethnographic data from conversations with participants in the field, and their responses to the open-

ended qualitative survey questions I showed how the format of the foraging course provides a shared, interactive experience through learning and consuming wild foods. I also demonstrated that for these urban participants, experiences such as foraging courses are an integral part of their leisure time, providing a form of weekend recreation that should, I suggest, be considered a part of, rather than apart from, their modern lifestyles. This resonates with Cocks and Wiersum's (2006: 734) observation that "People no longer need to live geographically close to the natural environment for it to embody spiritual, social and cultural values for them" supporting the notion of foraging as a biocultural practice. Key insights from this analysis are, I argue, that foodie participants hold multiple relational values towards nature (Chan *et al.* 2016) and connect with nature through the medium of wild foods. Evidence of long-standing nature relationships was often present in participants' recollections during the course. Relational values were evident, for example, in childhood memories of foraging for specific wild food plants, in the gifting of wild food products to friends and relatives, and in connecting particular places and practices (e.g. egg collecting) to their own journeys of discovery. Learning to forage through a weekend course provided a 'way in' (de Jong and Varley, 2018) and a means of sharing the experience with friends or family. Documenting this collective experience is, I suggest, significant to 'Human-Nature Connectivity' research which has tended to describe experiences at an individual level only (Ives *et al.*,2017). It also pays scant attention to 'material connections,' which are important in

understanding how these shape patterns of resource consumption and environmental behaviour (Ives *et al.*, 2017:8).

While participation in foraging courses requires an economic transaction through the course fee, and travel from places of residence, this commercial dimension did not translate to a commercialised relationship to nature; the experiences participants reported suggested positive and affirming relationships to nature, and for some, a novel way to experience nature through the medium of wild foods. Nostalgia for a past (ancient) way of life has been observed as a way for forager educators to connect people on their courses to present foraging practices (de Jong and Varley, 2018) and has also been observed as connecting people to cultural identities (Hall, 2013). While some nostalgia was present in the narratives of participants (e.g. through reminiscing about childhood foraging), rarely was nature romanticised; rather, participants talked about their present and near futures, such as what wild food plants they were going to cook for friends the following weekend, or how they wanted to take up foraging in retirement. They were also aware of wider environmental and sustainability issues, which surfaced during the course. This engagement corresponds to the concept of 'sustainability' as defined by Brundtland (1987), emphasising the importance of present actions and future outcomes. In food scholarship, research shows that ethical and aesthetic preferences often exist alongside one another among 'foodie' consumers, and particularly, among consumers of higher socioeconomic

status (Huddart *et al.*, 2019). The findings in this chapter suggest that these participants may align with these interests, displaying strong positive affiliations towards nature, and an awareness of the effects of industrial food systems on food production and human health, as well as wider environmental issues. Their place in the wild food sector of the food market is therefore relevant to overall sustainable consumption practices. While the sample in this study is small, it could be replicated in other foraging course contexts to determine the extent to which aesthetic and ethical consumption practices work together and impact environmental behaviours.

Further, by re-framing the foraging course as a form of new nature experience that resonates with 'modern' human-nature relationships I illustrate the diversity of ways connecting to nature happens, in this case, through foraging courses. Each dimension analysed revealed multiple relational values at play. This extends current knowledge on relational values of specific social groups in contemporary Britain and could inform future iterations of environmental policies such as, for example, the UK government's 'Building Partnerships for Nature's Recovery' (Natural England, 2020) in which 'Connecting People to Nature' is centre stage.

6.3 Foraging as risk

The aim of Chapter Four was to assess the extent to which commercially foraged food plants in Kent are threatened from commercial harvesting

pressure. Methodologies designed to assess the ecological impacts of harvesting pressure on wild plants have developed knowledge-based frameworks, such as threat assessments, designed to rapidly assess a wider number of species against socio-economic, ecological and biological criteria. I applied the rapid risk assessment methodology developed by the IUCN-SSC Medicinal Plant Specialist Group and the FairWild Executive Group (Schippmann *et al.*, 2002) to assess the degree of susceptibility or resilience to harvesting of commercially foraged species in Kent. Using data from the ethnobotanical inventories compiled for this research and mapped to the BSBI Kent species index and England Red List of threatened plants (Stroh *et al.*, 2014), I generated two data sets of species that are currently threatened and commercially harvested (Table 4.7, p. 146), and a random selection of non-threatened, commercially harvested species (Table 4.9, p.148). Using the risk matrix and adjusting for domestic trade, all species were assessed and assigned risk scores from low, medium to high. The risk analysis found that overall, the ecological risks of commercial foraging to Kent flora is presently low, with the greatest risks to threatened plants attributed to land-use change, biodiversity loss, and habitat specificity. Four plants in Table 4.7 (p. 146) were identified as potentially vulnerable to harvesting if commercial foraging is carried out at increased levels, especially on populations that are already declining. However, the identification of three of these species is uncertain, since several varieties or sub species exist for these taxa, and it was not possible to confirm their botanical identities. Verification that these

threatened species are the same species commercially harvested is I suggest therefore needed to effectively ascertain risk levels. Two species in the second dataset (Table which were rated medium risk is due to their habitat specificity which places them on the Red List and therefor pushes them into the medium risk category as shown in Table 4.9. Key findings of this analysis pertain to uncertainties around species identification as the main limiting factor in assessing risk to specific threatened plants, along with limited scientific data on reasons for population declines, or a lack of knowledge of where possible populations of rare plants might have been unaccounted for through scientific recording. These barriers to effective risk assessment illustrate the importance of access to a range of knowledges to support sustainable resource use assessments (Peters, 1994), including forager knowledge to support conservation goals. It also highlights the importance of accessing knowledge to ensure sustainable practices. The extent to which individual foragers are aware of the conservation status of species is unclear but is an issue that has been reported elsewhere (Schunko *et al.*, 2021). Foragers are reported as having high levels of ecological knowledge (Shackleton *et al.* 2017) and their involvement is thus essential in contributing to better information and knowledge of local floras and their resilience and vulnerability characteristics.

In Chapter Four I addressed a core evidence gap in sustainable wild harvesting research, and in foraging scholarship: the ecological impacts of

foraging, finding that presently these risks on a plant-by-plant basis are low. Notwithstanding gaps in knowledge, I demonstrated how a threat assessment methodology of foraged plants in a local setting, can address local sustainability issues from a conservation biology perspective. The knowledge and practices held by commercial foragers could usefully enhance existing conservation data for the species in question through knowledge sharing protocols, and equally, conservation knowledge could usefully inform forager strategies. Teixidor-Toneu *et al.*, (2023) have offered an example of how transdisciplinary approaches combining scientific (academic) knowledge with foragers' knowledge, can lead to co-defined definitions and assessments of 'sustainable foraging'. However, their model is set within a legal system that protects foraging rights on public and private land and did not include these legal entities in their knowledge framework. In Britain, where foraging is not a 'given right' and property and land ownership are prohibitive I believe this complicates the terrain considerably in terms of knowledge sharing and co-production.

Gastronomic foraging has received only cursory mention in the literatures (Łuczaj *et al.*, 2012; Pieroni, 2016; Łuczaj *et al.*, 2021) yet it is, I argue, significant. Where foraging becomes a contested space for thinking through human impacts on nature, it is most often over commercial foraging to supply demand from the gastronomic sector. A key contribution of my work in this regard has been the baseline risk assessment of commercially foraged

plants in Kent, using a rapid threat assessment methodology. The factors that threaten wild food plants in the wild, including how they are impacted by harvesting regimes are not well known, and few wild food plants are included in conservation programmes as a result (Borelli *et al.*, 2020). The baseline risk assessment contributes to the evidence base for sustainable wild food plant harvesting and in addition, I propose that forager expertise could enhance the conservation of threatened plants through incorporating their knowledge in scientific assessments. This biocultural approach to conservation, including forager expertise of local ecological systems could assist in producing a more complete conservation knowledge of particular species. It could advance knowledge in relation to "ecological wellbeing" which is difficult to define but when "grounded in a place" and in relation to the people utilising the resources in that place, is more achievable (Caillon *et al.* 2017: 2)

The threat assessment I selected demonstrates its methodological potential for use as a rapid sustainability assessment (Posthouwer *et al*., 2016) tool for foraged food plants in post-industrial domestic trade contexts. As this methodology relies on scientific and local knowledge it is applicable to a wide range of contexts where research on urban and peri-urban foraging has already established academic and forager knowledge. It also progresses the global evidence on sustainable extraction assessments of wild food plants which are frequently overlooked in national reports (Bélanger *et al.*, 2019). I concluded that while commercialisation of WFPs does not necessarily run

counter to biodiversity conservation, effective co-governance or adaptive management is key to sustainable resource use.

6.4 Foraging politics

In Chapter Five I explored the social and political barriers to collaboration at a local level, examining the conflicts between foragers and authorities in Kent, using a political-ecology approach. Through ethnography I highlighted the discursive and material ways in which this conflict manifests (Svarstad *et al.*, 2018). I explored the narratives of conservation and public authorities, including the legal and institutional discourses involved in the civil case against a commercial forager to illustrate the ways in which these discourses are used to assert moral authority over foragers. I revealed that from a local conservation perspective, protected area managers and environmental governing bodies viewed foraging in these areas as antithetical to biodiversity conservation, believing that wildlife should be preserved for its intrinsic value (Hayhow *et al.*2019) and should not be 'used' for people's personal satisfaction. I suggested that these views were also expressed as judgements on the moral character of foragers themselves, who were referred to as having dubious ethics (Section 5.3.1, p. 172). In other cases, as I demonstrated in the vignette involving a professional forager and local parish council these judgements mirrored the narratives in the media that attribute the increase in foraging to the fashions of gastronomy, giving rise to fears of foragers 'marauding and collecting for their dishes' (Section

5.3.3, p. 186). For the parish councillors, this had created high levels of concern which, in this case, appeared out of proportion to the activities in question. In considering why such reactions are prompted, I suggested it is due to the underlying ethical positions towards nature and human's place within it, that explain their positions. A common ethic in conservation is the desire to 'save nature' for its own sake, where biodiversity is seen as "good in itself', irrespective of context (O Connor and Kenter, 2019: 1252). In Kent, this ethical standpoint was evident in the narratives and actions of conservation practitioners who were resolute in keeping foragers from foraging on conservation protected areas; to uphold this position, several discursive and disciplinary strategies were highlighted through the ethnography. For example, sustainability discourses were used to support the consortium's response to oyster foraging (Section 5.3.2. p182), in which oysters were represented as 'data' in their work, and in reference to them as foraged foods, the discourse turned to 'education', "*Do they educate them (members of the public) on sustainability?*" These references to scientific discourse function, I suggest, as a form of epistemic power (Alcoff, 2013) which, while questionable, for example, in the actions of upholding a Stop Notice against commercial foraging whilst permitting industry-scale development on the same Site of Special Scientific Interest (p. 177), have the backing of government and the wider environmental lobby. As illustrated in the responses from foragers, these discursive strategies were sometimes countered by foragers, through their own epistemological assertions, for

example, as showing 'a lack of intelligence' to managing wildlife (Section 5.3 p. 186), and in the commercial foragers' assertion of their own measures of sustainable use (Section 5.3.1, p.176). Disciplinary mechanisms were also enacted through the institutional apparatus of the Tribunal's Stop Notice, and the local parish council's claim that permission was required for educational forays (Section 5.3.3, p187). The chapter demonstrated how these material acts of power were confronted by material resistance from foragers who continued their activities, albeit with a more watchful eye out for authoritative surveillance bringing into light the 'subtle forms of power' that are often overlooked in political-ecology scholarship but no less significant (Cortes-Vazquez, 2014).

Given this polarised view of foraging locally, I concluded that collaboration between foragers and authorities was unlikely to be realised without some mechanism to deliberate. This resulted in my drafting of a Code of foraging, as an outcome of these findings (Appendix 7). Voluntary codes have the potential to take into account different voices and experiences (Holmes, 2016), and are sensitive to the cultural landscapes they cover (Parker, 2006). The code could therefore be an effective tool for engaging foragers and other stakeholders in delineating guidance for sustainable foraging in Britain. It could also act as a heuristic for co-defining 'sustainable foraging' (Teixidor-Toneu *et al.*, 2023) bringing together foragers, landowners, conservation scientists and practitioners. In this chapter I demonstrated that there is a

certain precarity regarding the more visible forms of foraging in Britain today – professional-educational foraging, and commercial foraging - and I revealed that it is not only media discourses that present foraging as a threat to biodiversity conservation, but practitioners, landowners, and land managers who are proactively engaged. Without cooperation between these actors and the foraging communities, the risk is, I suggest, that these forms of foraging will become increasingly restricted through tighter controls and mechanisms authorities have at their disposal.

The production of this code recognises foraging is a diverse practice undertaken by a wide range of people and for a variety of reasons and aims to capture this diversity. Whilst produced with wild food foragers in mind, the use of wild plants for crafting is also gaining popularity with parallels to food foraging in terms of an increasing practice among non-experts and overlaps with many of the species foraged for food (Bamford *et al.*, 2023). In consultation with a group of expert dyers, who were introduced to me by the Plantlife Policy Director, the code is already being operationalised as a deliberative mechanism with this group, bringing into its purview a wider community of wild plant users. While locally there appears little appetite for collaboration, this development is a promising start in beginning a process of deliberation.

6.5 Foraging futures

Cutting across the chapters of this thesis and key to human-plant futures, is the significance of knowledge. Experienced foragers hold significant ecological and species-specific knowledge (Shackelton *et al.*, 2017) which is reproduced and generated through the eclecticism that is characteristic of contemporary foraging practices. These processes of knowledge making and transmission are, I suggest, re-embedding wild food plant knowledge into contemporary society at a time when ecological knowledge in modern societies is declining (Pilgrim *et al.*, 2008). As a consequence, foraging is making an important contribution to the creation of embodied opportunities to experience and connect with nature. As well as reviving traditions through these processes, innovations in wild food plant uses are presenting opportunities for strengthening resilience in communities (Magnani, 2016) and for setting new research agendas for the benefit of society (Leonti, 2011). Through different transmission pathways – transferred orally (through foraging field courses), and vertically through foraging publications and in the form of social media - foraging knowledge is, increasingly, a new site of 'wildlife value,' that is only beginning to be understood (Murray and Simcox, 2003). This knowledge has potential to transform the ways in which we relate to and manage nature, and by extension, ourselves.

To the extent that foraging might be considered a threat to nature, I suggest that this is only so when nature is treated as external to culture, and activities

like foraging are perceived as acts of cultural transgression against a 'natural' nature. In this case it is well to heed the words of William Cronon, in his articulation of the trouble with 'wilderness': "To think ourselves capable of causing "the end of nature" is an act of great hubris, for it means forgetting the wildness that dwells everywhere within and around us" (Cronon, 1996. 25).

Wild food plants have an extraordinary role in society, as sources of physical sustenance and symbolic nourishment, growing everywhere and all around. These material and symbolic values manifest in bioculturally diverse ways, the world over. Yet plants are also autonomous subjects, with their own vitality and histories which have developed in tandem with, and independently of, social life. Recognising their autonomy as well as their value to people is essential to their/our futures. The intimacy between people and plants that foraging engenders may yet provide the route to sustained co-existence.

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