

## Natural Capital and Natural Asset Management in the Hospitality Industry

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*There has been some recent interest in the role that natural capital can play in the transition to a more sustainable hospitality industry. However, little work has been published in the academic literature on the role of natural capital in the hospitality industry and how it can be assessed, and this represents a gap in that literature. With this in mind, this short exploratory paper outlines the origins and definition of natural capital, looks at some of the ways in which the hospitality industry benefits from natural capital, explores the relationship between natural capital and natural asset management, and provides an illustrative cameo case study of how one of the leading companies in the hospitality industry, namely Marriott international, has addressed natural capital in their most recent environmental, social and governance report. The paper concludes that there is, as yet, very limited universal recognition of natural capital as an element of sustainability strategy in the hospitality industry. Indeed, even where it is in evidence, natural capital is still viewed within the idiom of economic growth and the continuing expansion of the hospitality industry. The paper suggests, however, that the adoption and adaptation of asset management practices may provide a more realistic way of assessing and measuring the current and evolving value and condition of natural capital.*

**Keywords:** *hospitality industry, tourism, natural capital, natural asset management, Marriott International*

### Introduction

There has been some recent interest in the role that natural capital might play in facilitating the transition to a more sustainable hospitality industry. Legrand (2021), for example, argued that ‘nature and its ecosystem services are at the center of the hospitality business proposition: from food and beverage offers to guests’ enjoyment of natural landscape at a destination.’ However, little work has been published on the role of natural capital in the hospitality industry and this represents a gap in the hospitality academic literature. With this in mind, this short explanatory paper examines available secondary sources, including the academic literature as well as industry reports. The methodology deployed here is a qualitative evidence synthesis, which Grant and Booth (2009) see as ‘method for integrating or comparing the findings from qualitative studies’ that ‘looks for themes or constructs that lie in or across individual qualitative studies.’ The sources of information were varied, coming from a number of academic databases, and Google was used with relevant search strings to locate additional material,

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including industry reports, consultancy blogs, and policy documents from international agencies.

The article has seven sections. This introduction is followed by a short literature review, which includes the original outline of the origins and definitions of natural capital, and some new material which explores two of the main natural capital research themes, namely valuing natural capital and the role of natural capital in sustainable development, and provides a summary of attempts to theorise natural capital. Then some of the ways in which the hospitality industry benefits from natural capital are discussed, and the relationship between natural capital and natural asset management is reviewed. A cameo case is then provided, featuring Marriott International - one of the leading companies in the hospitality industry – focusing on how the company has addressed natural capital in their most recent environmental, social and governance report. A discussion section identifies, and briefly examines, some key emergent issues, and the final section offers some brief conclusions and possible future research agendas.

## **Literature Review**

Missemer (2018) suggested that the origins of the use of the term ‘natural capital’ can be traced back to the nineteenth century, but that only in the 1990s did it become widely used by ecological economists. Its increasingly widespread use reflects the recognition that the environment plays a fundamental role in underpinning economic activity and human well-being. For the UK’s Natural Capital Committee (2015), the concept of natural capital can simply be defined as ‘the elements of the natural environment that provide valuable goods and services to people such as clean air, clean water, food and recreation.’ That said, Fletcher et al. (2019) claimed that ‘the definition of natural capital remains ambiguous’, but that increasingly the concept is used to ‘emphasise the monetary value of natural resources.’

While academic research on the role of natural capital to date is fragmented and lacks a coherent structure, two interlinked themes, namely valuing natural capital and the role of natural capital in sustainable development merit attention here. Azqueta and Sotelsek (2007) suggested that while economic analysis provided several methods to value changes in environmental assets, there was an increasing demand to move into valuing natural capital, namely natural resource stocks, land and ecosystems. In looking to explain this increasing demand, Azqueta and Sotelsek (2007) argued that not only does sustainability require that proper account be taken of capital depreciation and the need to value natural capital changes, but also that the stock of natural capital in a given territory be valued in order to identify the main components of social wealth or to help to adequately plan changes in land use.

Islam et al. (2018) focussed on the importance of natural capital for sustainable development and concluded that incorporating monetary valuations of natural capital into sustainability decision making will allow direct comparisons between natural capital and other types of capital assets, and thus the measurement

of the productive base of the economy. Costanza (2020) emphasised the importance of natural capital for sustaining human life on earth, and argued that valuing natural capital is about assessing its contribution, in complex interaction with built, human, and social capital, towards the goal of sustainable wellbeing of the whole system of humans and the rest of nature, and it is built on the recognition that sustainable wellbeing cannot be achieved without the wellbeing of the rest of nature. Bateman and Mace (2020) acknowledged that the concept of natural capital was gaining traction as recognition grows of the central role of the natural environment in sustaining economic and social wellbeing, and welcomed early indications that a natural capital approach to decision making was being accepted within government policy processes and the private sector.

Turning to attempts to theorise natural capital, while Oliver (2018) outlined a number of benefits from the conceptualisation of natural capital, he did not offer any conceptual frameworks. Fenichel and Abbott (2014) suggested that treating natural resources as capital in economic theory goes back at least 200 years to classical economists but that the paucity of estimates of the value of natural capital that are grounded in economic capital theory suggests that in practice the treatment of nature as capital remains largely metaphorical, and that failing to close the gap between theory and practice may demote natural capital from its current status as a powerful metaphor to an empty buzzword. More positively Fenichel and Abbott (2014) looked to provide a theoretically motivated approach for recovering natural capital prices that expands beyond idealized management to encompass current, likely inefficient, management institutions. More specifically, Jones and Wynn (2019) claimed that the development of theoretical work on natural capital was fertile territory for future research.

### **Natural Capital and Hospitality**

The hospitality industry uses, and draws heavily on, natural capital in a number of ways. Tourism, which feeds many elements in the hospitality industry, is often based around destinations which look to exploit the natural environment in a wide range of locations, and the perceived quality of the tourist experience often depends on the quality of such environments. More specifically, the tourism industry exploits a variety of beach locations, and in Europe, for example, the Lonely Planet (2022) advises ‘no matter your taste in beach, Europe obliges. From the wild, wind-lashed shores of the Atlantic coast to mountain-fringed Arctic bays where whales raise their tails, and the sunlit, snuggled-away coves of Italy and Greece.’

Cruising looks to blend elements of tourism, hospitality and entertainment and many cruise packages offer trips to what are often perceived to be exotic destinations and unique natural environments. Under the banner ‘Galapagos Islands: Be Awed by Nature’, Hurtigruten Expeditions (2022), for example, market the opportunity to ‘explore the islands, forged in fire that changed our understanding of the natural world’, to ‘amble alongside giant tortoises and marvel at the magnificent waved albatross’, and to ‘follow in the footsteps of Charles

Darwin', in 'a truly otherworldly adventure.' Further these cruises offer the opportunity to 'explore the vast archipelago on our small expedition ship with our expert Galapagos guides. They'll lead you on excursions and activities including kayaking, nature walks, snorkelling, and wildlife watching, as well as lead lectures and talks on wildlife and current conservation efforts' (Hurtigruten Expeditions 2022).

Royal Caribbean (2022) offer the opportunity to combine some of its Alaska cruise packages with inland tours 'before or after your cruise.' Here Alaska is described as 'one of the most breathtaking natural landscapes on earth', where tourists can find 'ancient glacial valleys, majestic river canyons and misty emerald forests', and can journey to 'Denali National Park for a glimpse of roaming brown bears and moose.' These tours have local adventure guides, who are able to provide local perspectives on the landscapes and wildlife, and guests are accommodated in 'lodges and hotels', which allow 'easy access' to the 'great outdoors' (Royal Caribbean 2022).

Inland areas in many countries offer a wide range of tourism destinations, which generate a variety of opportunities for the hospitality industry. In the Lake District in northern England, for example, tourism is the main source of income for the economy, and some 20 million tourists visit the area annually. The range of hospitality facilities includes conference venues, luxury hotels and spas, boutique bed and breakfast establishments, and large numbers of restaurants and public houses. In marketing the area's conference facilities, Cumbria Tourism's (2022) message is 'bring your meeting or conference to this beautiful part of the country and delight your delegates by taking advantage of the breathtaking scenery of the Lake District.' In promoting '6 pubs and cafes with fantastic views of the Lake District', the Great British Life (2021) encourages visitors to various pubs to 'sit outside and you'll have gorgeous views of the surrounding fells', to 'pull up a chair on the terrace where you will be able to look upon glorious panoramas of some of the Lake District's most spectacular scenery', and to 'enjoy the panoramic views across Windermere.'

The Sustainable Hospitality Alliance (2021) catalogued a variety of ways in which hotels can manage their impacts on biodiversity by adopting more responsible procurement practices and by focusing on longevity, circularity and resource efficiency. At the same time, the Sustainable Hospitality Alliance claimed that a variety of products used in the building and operation of hotels can have detrimental impacts on wildlife that hotels need to address. Here the Sustainable Hospitality Alliance suggest that reducing single use plastics can lessen the impact of plastics on marine life and purchasing sustainably certified products, such as timber, paper, palm oil, and seafood, can help to stop the overexploitation of natural habitats.

More generally, a clearer focus on natural capital can help mitigate climate change and enhance biodiversity, and can be a potentially important element in engaging with international sustainability frameworks. Legrand (2021), for example, argued that 'nature is not only a capital component available to businesses, but a source of solutions to mitigate and adapt to climate change and protect biodiversity while ensuring the well-being of staff and guests alike.' In a

similar vein, zu Hohenlohe (2021) claimed that healthy ecosystems are essential to the hospitality industry's food and drinks offer, that 'without healthy ecosystems, 'all food production is in peril', and that the hospitality industry is 'in a unique position to have a positive impact on the restoration and preservation of so many of the world's ecosystems and natural environments, which have the additional value of being potential carbon sequestration areas.' More specifically, Legrand (2021) argued 'considering the value of nature to the hospitality industry and the threat of biodiversity collapse, recording and accounting for natural capital and integrating the outcome into the decision-making processes while setting regeneration targets is crucial.'

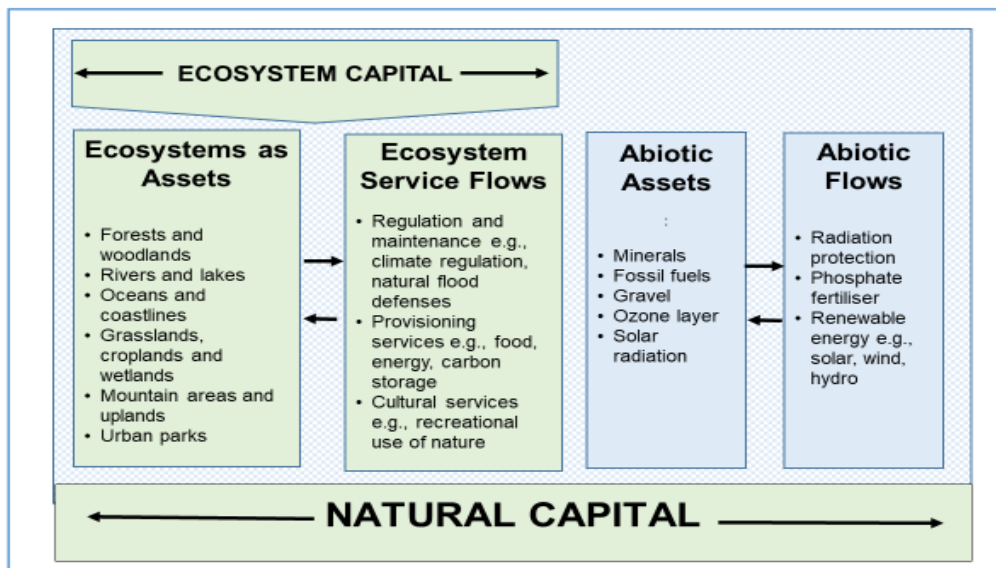
### **Natural Capital and Natural Asset Management**

The Sustainable Hospitality Alliance (2021) suggests that 'as an industry, hospitality also relies heavily on the natural world around us; for materials to build our properties, food and beverages to serve to our guests and a local environment to entice people to visit.' More specifically, natural capital is considered by some authors as comprising a range of natural assets. For example, the World Forum on Natural Capital (2017) defines natural capital as 'the world's stocks of natural assets which include geology, soil, air, water and all living things' and argues that natural assets provide a wide range of services, often referred to as ecosystem services, which ultimately underpin human life and economic activity. The European Commission (2019) make a distinction between ecosystem capital and abiotic resources as the main components of natural capital (Figure 1), but note 'in reality, there is no clear-cut boundary between biotic and abiotic components', but 'this distinction helps to identify and classify different types of natural capital, which is important in the context of developing a natural capital accounting approach.' Dong et al. (2019), in their study of international tourism in Hainan Province, China, put this in a wider development context, suggesting that natural capital flows start to draw on the natural asset inventory when demand exceeds availability. They note that 'natural capital includes natural capital flow and natural capital stock [i.e., assets]. When natural capital flow cannot meet the needs of regional development, it begins to consume natural capital stock. Therefore, the assessment of the current utilization status of natural capital flows and stocks is not only the basis for regional ecological construction evaluation, but also an important indicator of the effectiveness of regional sustainable development strategies.'

Natural capital accounting can be seen as 'a tool to measure the changes in the stock of natural capital at a variety of scales and to integrate the value of ecosystem services into accounting and reporting systems' (European Commission n.d.). It facilitates the creation of a register of natural assets and a range of associated services, which can allow integration of natural capital into socio-economic information systems and decision-making. The objective is to enable governments, businesses and individuals to appropriately value natural capital ecosystems and assets, and take responsibility for maintaining and monitoring

their status, including their extent, structure and condition. While forests, lakes and grasslands are some of the more obvious ecosystems assets, natural capital also includes ‘ecosystem service flows’, encompassing, for example, climate regulation, natural flood defences, carbon storage, and the pollination of crops by insects, which are equally vital to human life on earth. As such, the protection of natural capital is vital to continuing human and economic wellbeing, and poorly managed natural capital is a social and economic, as well as an ecological, liability.

**Figure 1.** *Natural Capital Assets and Service Flows (based on: European Commission 2019)*



In the context of the hospitality industry, the ‘Network Natural Capital Accounting’ project was run in Germany from 2018-2020 by the Global Nature Fund (2020), and looked to promote the application of natural capital valuations, to help hotels and restaurants to identify dependencies and effects of, or on, natural capital. Some of the recent literature has focussed on the challenges involved in measuring natural capital and has explored how natural capital can be analysed and reported as an asset owned by the public at large, public authorities or private sector operators. Yenidogan et al. (2016) argued that one of the key challenges in triple bottom line accounting in sustainability reporting within the hospitality industry is the difficulties involved in measuring natural capital. The question also arises as to how best to store and report on this data. Jones and Wynn (2019) suggested that asset management systems, often a module within financial management software, could be used with some adaptation to hold data on natural capital, resilience and other sustainability measures. There are already examples of this in the public sector where authorities must hold information on natural capital under public authority control. For example, the British Columbia Ministry of Municipal Affairs and Housing (2019) observed that

‘asset management processes have traditionally been applied only to engineered infrastructure. However, there is growing evidence that by considering natural assets within asset management processes, local governments can decrease capital, operations, and maintenance costs, increase levels of service, enhance their ability to adapt to climate change, and reduce the community’s unfunded liabilities – all while protecting or enhancing the multitude of other benefits that natural asset bring to communities.’

### **Cameo Case Study (Case Example): Marriott International**

In this section, a simple cameo case of Marriott International is discussed to provide a corporate dimension to the hospitality industry’s perception and adoption of the natural capital concept. Marriott International is a US multinational company that operates, franchises and licenses hotels, timeshares and residential properties. The company, founded in 1927 by J. Willard Marriott and Alice Marriott, is the world’s largest hotel chain by number of rooms. Just over 2,000 properties within the overall portfolio are operated by Marriott, but the majority of them are operated by other companies via a variety of franchise agreements. There are 30 Marriott International brands including Ritz-Carlton, the J.W. Marriott Hotels, St. Regis Hotels and Resorts, Four Points by Sheraton, and Le Meridien. 70% of the company’s properties are located in the US or Canada, with a further 20% being in Europe or the Asia Pacific region.

Marriott has been reporting on their initiatives for managing natural capital since 2015 (Marriott International 2015), and the company’s 2021 Environmental and Social Governance report (Marriott International 2021) states that the company ‘believes protecting and enhancing the ecosystems where our properties are located supports the sustainability and increases the resiliency of the communities where we do business, so that they remain vibrant destinations.’ Additionally, the company notes that to ‘accelerate leading-edge practices that protect natural capital and increase resiliency’ is one of its key priorities for 2022-25 (Marriott International 2021). Marriott maintained that it would continue to focus on ‘environmental challenges from deforestation to bycatch to reef degradation and more’ and that it had ‘invested in scalable, replicable projects to support the world’s natural capital resources.’ As an illustration of its concern for natural capital, Marriott initiated a ‘Good Travel’ programme for the Asia Pacific region, which affords ‘guests the opportunity to create a positive impact in local communities’ as regards environmental protection, community engagement, and maritime conservation’ (Marriott International 2021).

The company identified both its contribution to ‘Life on Land’, and to ‘Life Below Water’ (Marriott International 2021). As regards the former, the company emphasised the importance of ‘understanding the vital role trees play in the fight against climate change’, and noted that the company ‘continued to invest in reforestation efforts across the globe’. For example, the company’s Juma REDD+ project aims to curb deforestation and associated greenhouse gases in a 7,000 square kilometre reserve in north western Brazil and provides education, medical care, social empowerment, and a monthly stipend for local residents who

voluntarily commit to protect the rainforest. The company also recognises that mangroves play a critical role in protecting coastlines from severe storms and providing livelihoods to coastal communities, and that mangrove forests are important for conserving biodiversity, storing carbon, and serving as nurseries of the sea. The company reported on its work in planting mangrove trees along the coastline of Momi Bay in Fiji, and in mangrove clean-up programmes in Doha.

In terms of 'Life Below Water' the company acknowledged the significance of coral reef ecosystems as the 'rainforests of the ocean', in protecting shorelines from damage and erosion, and in acting as breeding grounds and shelter for a wide range of marine organisms, which support local tourism economies. This included the introduction of an innovation at Ritz-Carlton in Okinawa, where guests were invited 'to participate in coral planting and education from interacting with the Onna Village Fisheries Cooperative to making seedlings in the Onna Fishing Port.' Marriott properties also host year-round programs to protect nesting sites across the Caribbean and Latin America, and undertook projects to address the overexploitation of crabs in Thailand, and to protect sea turtles off the coast of Peru. Marriott hotels have successfully operated on-site sea turtle rescue programs, and in 2020, hotels across the region successfully released approximately 85,000 baby turtles.

The company also recognised that 'the spread of sargassum algae across Latin America and the Caribbean has led to devastating impacts on the hospitality and tourism industries and the environment'. Marriott are partnering with the Ocean Foundation, a community foundation, to support a sargassum mitigation project, which aims to convert sargassum seaweed into organic compost, which can be used by local farmers, and is designed to remove the seaweed from the beaches and sequester and store carbon in the soil. To mitigate these impacts, Marriott partnered with The Ocean Foundation to support the Insetting Carbon Through Sargassum Mitigation Pilot Project. The project aims to convert sargassum seaweed into organic compost, which can be used by local farmers. The concept is designed to remove the seaweed from the beaches and sequester and store carbon in the soil, which can generate extra income for the farmers. Following the success of this pilot project, Marriott will support The Ocean Foundation in its aim 'to expand the project to additional locations around the Caribbean region.'

## **Discussion**

The Marriott cameo case provides some useful insights into how one major hospitality company has employed the concept of natural capital to inform its Environmental and Social Governance report. This highlights some deeper issues that merit further consideration. Firstly, generalisations cannot be made about the significance of natural capital within Marriott International because the case study provides a number of specific illustrations of the company's approach to natural capital, but they should be seen as just that - examples, rather than universal practice. They may well have been carefully selected to show the company's commitment to the concept of natural capital and sustainable development in the



hospitality industry. There is no clear evidence within Marriott International's Environmental and Social Governance report to suggest that the company's approach to sustainability is comprehensively underpinned by a wholesale commitment to natural capital. This would in theory involve Marriott adopting natural capital principles with all its suppliers in its extended supply chain, and this at present seems a long way off, although such an approach is being adopted by some operators in other industry sectors, such as textiles and clothing.

Secondly, the Marriott cameo case study is drawn from the company's Environmental and Social Governance report and is essentially descriptive with no real strategic analysis or measurement of the importance of natural capital to inform the report. For example, materiality - which looks to identify the societal and environmental issues that present risks or opportunities to a company while taking into consideration the issues of most concern to external stakeholders - does not feature in discussion of Marriott International's focus on natural capital. Such material issues are not identified nor is their impact assessed. Here, the increased costs of looking to protect natural capital on which many tourism and hospitality companies depend, would be a major issue for investors, for the company itself, and for customers. At the same time, the Environmental and Social Governance report provides no treatment of how what may be competing positions on natural capital between stakeholders might have been reconciled, or how Marriott International went about the independent verification of its claims about natural capital.

Thirdly, the issues noted above underline the relevance and value of treating natural capital as a series of defined assets that can be measured and monitored. At present, this approach is largely confined to the public sector, from municipal authorities up to international agencies, but is of increasing relevance to industries such as hospitality that rely on natural capital assets, either in their local environment or within their own premises. This aspect of asset management is likely to attract increasing attention in future years which will drive further conceptual development and raise new data and systems management requirements.

Fourthly, there are more fundamental and complex issues about natural capital and its relationship to sustainability and economic growth. While a focus on natural capital is generally seen to be compatible with a transition to a more sustainable economy and society, in the hospitality industry, protection of natural capital is often seen as a way of justifying continuing growth. Allied to this is the practice of what Schendler and Toffell (2013, webpage) described as 'operational greening', in which companies fail to 'recognise the primacy of climate change.' While the issue of climate change is a global issue, driven by many sectors of the economy, the size and geographical reach of the hospitality industry means it can potentially exert a powerful influence on many of the production and consumption drivers of climate change.

## Conclusions

This paper offers an exploratory review of the role of natural capital in the hospitality industry. The paper has looked at some of the ways in which the hospitality industry benefits from natural capital, and discussed the concept and application of asset management in this context. Through examination of a cameo case study, some key emergent issues were identified. Above all perhaps, two conclusions can be drawn. First, natural capital is still linked to continued expansion of the industry, which is seen by some critics to be the antithesis of sustainability. Second, applying asset management practices to the assessment and measurement of natural capital may provide a way of analysing and reporting its real value and condition. However, Oliver (2018) pointed out that natural capital is fundamentally different to other forms of capital and requires a different treatment if people are to be convinced to adopt pro-environmental behaviour. Ultimately, any evaluation of the potential of natural capital's contribution to greater sustainability in the hospitality industry must embrace such criticisms, and must be reflected in the development of new natural asset management frameworks and practices.

The authors recognise that the paper has a number of limitations, not least in that it is based on secondary sources, drawn in the main from the Internet. Nevertheless, the authors believe that as an exploratory review of natural capital and natural asset management in the hospitality industry, it captures some of the key issues of relevance today and provides a platform for future research. This might profitably involve primary research on whether, and how, a range of stakeholders are putting pressure on companies within the hospitality industry to introduce the natural capital concept in their sustainability strategies. The adaptation of asset management systems and frameworks to accommodate natural capital could provide new perspectives for initiating such change in the hospitality sector. Researchers may also wish to explore if, and how, customers' perceptions of the sustainability credentials of companies, as reflected in their commitments to natural capital, influence customers' patronage behaviour. Elsewhere in the supply chain, there are also interesting opportunities to examine if, and how, a wide range of suppliers are embracing natural capital in their sustainability strategies and developing relationships with the major corporate players within the hospitality industry.

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