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## Social Media and Experiences of Nature : Towards a Plurality of Senses of Place

Changing Senses of Place

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# 21 Social Media and Experiences of Nature

## Towards a Plurality of Senses of Place

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### 21.1 Introduction

It is widely recognised that social media impacts on how we relate to the world in multiple ways, including our language, perceptions, values and behaviours. Since sense of place is formed through interactions between the material world and people's meanings, emotions, stories and practices (Stedman, 2003b), it has also been influenced by the rise of social media. This chapter focuses on people's experiences of natural places and changes in their sense of place through the use of social media. While several scholars argue that electronic media is leading to a decline in experiences of natural environments, and consequently to a weakening sense of place (see Chapter 19), this chapter focuses on the qualitative changes in sense of place that may result from social media use. Social media contextualises place by introducing new forms of communication about it, from shallow communications such as 'likes' to richer communications including narratives, photos and videos. Although social media has been linked to an 'extinction of experience' caused by increasing indoor time (Soga and Gaston, 2016), it also enables new forms of experience and engagement with natural environments. Social media might facilitate cognitive understandings and affective bonds between people and ecosystems in multiple ways, such as through the construction of self-identities and place identities (Champ *et al.*, 2013), potentially forming a plurality of senses of place. Social media platforms can thus be understood as new arenas for the co-construction of places and values, whereby relational values stemming from social-ecological interactions are negotiated and communicated (Calcagni *et al.*, 2019).

This chapter explores how social media is linked to senses of place and experiences of nature from a social-ecological-technological systems (SETS) perspective. We argue that a shift towards plural senses of place – taking into account dynamic couplings between society, ecology and technology – is essential to deal with the multiple ways in which social media engages people with place. This is illustrated through four empirical cases:

1. the sharing of urban nature images on Instagram;
2. the role of social media in forming public opinion and mobilising people to contest ecosystem management;
3. the use of a tailor-made social media platform for urban forestry governance; and
4. the use of a grassroots-developed social media app to increase urban foraging.

First, we elaborate on how we understand sense of place in the context of social media and experiences of nature.

## 21.2 Sense of Place and Social Media

We draw on understandings of sense of place from SETS and natural resource management literature. This literature emphasises that sense of place is based on meanings with cognitive as well as affective (emotional) components (Masterson *et al.*, 2017), and that individual and social experiences of specific settings are important in forming place-based meanings (Stedman, 2003b). Since social processes are involved in meaning-making, some meanings of place may be shared between different groups. In reality, however, individuals carry diverse meanings of place because of the different ways in which they interact with and within a setting, and this forms multiple senses of place within individuals and across groups. Therefore, we treat sense of place as a plural concept. There is no single sense of place for a specific site; rather, there are many senses of place that different people attribute to it. These senses of place are often constructed in interaction with others, and may be contested.

Social media can contribute to experiences of nature and senses of place in multiple ways. First, content shared on social media, such as texts, pictures, videos and comments, can be associated with specific place names through hashtags or titles. A search for a place name hashtag on global social media platforms (Facebook, Instagram, Twitter, etc.) will swiftly reveal a wide variety of content, highlighting the different perceptions that people attribute to that place. Thus, user-generated content nurtures the ongoing, dynamic, diverse and inclusive negotiation and formation of senses of place.

Second, much shared content on social media is geocoded with location-based data (e.g. via smartphone GPS) or volunteered geographical information (Sui *et al.*, 2013). This geocoding or geotagging facilitates map-based visualisations of senses of place. Many global social media platforms have online map interfaces where people can search specific areas and/or generate ‘heat maps’ of social media posts (e.g. onemilliontweetmap.com, flickr.com/map). This geocoding enables the analysis of assemblages of place-related social media content (Jenkins *et al.*, 2016).

Third, social media may increase the focus on emotional dimensions of sense of place. Many social media platforms are designed to represent affects, such as ‘like/dislike’, ‘love’ (heart symbol), other emojis and selfies with different facial

expressions. Such social media data have been used in emotional mapping, a new subfield within neogeography using social media big data to link place with affect (Ashkezari-Toussi *et al.*, 2019). In this field, researchers have employed novel methods to explore the construction of place, such as by analysing facial expressions in geocoded social media images combined with environmental factors (Kang *et al.*, 2019).

Finally, the sharing of place-related content on social media is often associated with real-life experiences of nature: ‘Rather than existing in a separate “virtual” sphere, technological developments including the internet, mobile phones and social media are integrated with the everyday “real world” through their “hard” infrastructural supports, capacity to link people and places and through the mediation of social spaces by digital information’ (Marlowe *et al.*, 2017, pp. 85–86). Social media’s capacity to facilitate user-generated content allows people to assign meanings to specific locations. Hence, social media platforms mediate and communicate actual experiences of nature in the real world that can be interpreted as people–place bonds.

Thus, social media facilitates and mediates people–place interactions through affect, cognition and practice, and thereby contributes to the formation of senses of place.

### 21.3 Four Examples from a SETS Perspective

As is generally acknowledged, sense of place is socially constructed within social-ecological interactions. The biophysical and ecological attributes of places matter in this process (Stedman, 2003a). However, we argue that these meanings are not only constructed through the interplay between social and environmental dimensions; the technological context also needs to be considered. Technologies (such as social media) mediate interactions between communities of people and ecosystems. To acknowledge this role of technologies, we use a SETS perspective to present and analyse four cases of sense of place in the context of social media and experiences of nature. A SETS framing (Gulsrud *et al.*, 2018a) stresses that technologies have social, ecological and technological ramifications, but are often only discussed in limited terms – focusing either on their technological and ecological impacts, or their technological and social impacts. The SETS perspective goes beyond this by exploring social-technological, ecological-technological and social-ecological interfaces. This is necessary to uncover the opportunities and challenges associated with technologies in nature–culture relations, including senses of place.

The four cases represent specific people–place–tech systems – that is, systems where different social, ecological and tech contexts interact. Two of our cases focus on global social media: uses of Instagram on a city scale in one case, and uses of (mainly) Twitter and Facebook on a national scale in the other. The two other cases focus on tailor-made social media platforms, one initiated by a public authority, the other, a citizen initiative. We have previously published research related to all four cases, and we refer the reader to the original sources (Table 21.1) for detailed information on the methodologies and results.

**Table 21.1** Overview of SETS domains and social media-facilitated people–place interactions in the four cases

Case	Short name	Social context	Ecological context	Tech context	Facilitated people–place interaction	Reference
Shared urban nature: analyses of Instagram images from Copenhagen, Denmark	Insta case	Instagram community	Urban nature	Global social media platform	Sharing of geocoded images under #sharingcph	Guerrero <i>et al.</i> (2016)
Social media and civic movement, Oostvaardersplassen, the Netherlands	OVP case	Civic mobilisation	Contested nature management	Global social media platforms	Place-based communication across platforms	Mattijssen <i>et al.</i> (2019)
Melbourne Urban Forest Visual, Melbourne, Australia	Melbourne case	Local citizens	Urban tree management	State-initiated online platform	Emailing individual trees and visualising urban tree stock	Gulstrud <i>et al.</i> (2018b)
Byhost urban foraging app, Denmark	Byhost case	Foraging community	Wild urban food	Small grassroots app and website	Facilitating community knowledge exchange about urban foraging	Møller <i>et al.</i> (2019)

### 21.3.1 Insta Case: Shared Instagram Images of Urban Nature in Copenhagen, Denmark

Instagram has become one of the most popular social media platforms for image-sharing, with more than one billion monthly active users (Constine, 2018). Building on a study of images of urban nature shared on Instagram (Guerrero *et al.*, 2016), we reinterpret its findings in the context of sense of place. The focus is on content analyses of Instagram images of urban nature in Copenhagen. The images were harvested through the Instagram API and coded by a team of Copenhagen-based researchers, using an interface developed for the purpose.

Images were harvested under the hashtag #sharingcph in order to analyse the importance of urban nature for ‘sharing Copenhagen’ online. The purpose was also to study social-ecological interlinkages in terms of urban nature as perceived, experienced and communicated by Instagram users. For this purpose, a subsample of harvested images was coded into six categories of perceived urban nature.

A quantity and diversity of images of urban nature – related to all six categories – were shared from all over the city, revealing a rich variety of shared places. These places included official green and blue spaces, as well as informal green spaces such as brownfield sites, and vegetation in unexpected places such as grey-dominated urban structures (comprising one-third of all urban nature images). Images showing temporary experiences were also frequently shared, such as natural phenomena including reflections of trees in rainwater puddles, sunsets and sunrises, and clouds and skies. One might argue that Instagram has expanded the dominant policy conceptualisation of urban nature (expressed in Copenhagen’s Urban Nature Strategy) from a focus on protected nature and formal green spaces to a broader and more inclusive conceptualisation reflecting people’s subjective experiences of place. Novel conceptualisations of urban green have thus emerged through a multitude of subjective and contrasting meanings of place, illustrating plural senses of place.

Furthermore, Instagram facilitates senses of place by mediating affective bonds. This happens when images and tags are shared in order to invite emotional responses, when images are communicated with specific meanings, stories or messages in order to invite cognitive responses, and also when behavioural responses are invited through tags and texts such as ‘belonging’, ‘travel back’, ‘never leave’, etc. Thus, Instagram mediates social spaces where meanings and senses of place are co-produced. Further, while a single image of a place’s qualities is ‘frozen’ in space and time, dynamics occur when images are shared, followed and commented on, and when multiple images of the same place reflect different values. However, Instagram and other platforms also reinforce certain qualities and experiences of place – for example, when particular characteristics of a place are reproduced repeatedly due to tourist gazes and ‘photo hunts’ for the most Instagrammable locations.

This case demonstrates how social media provides a platform for sharing experiences of nature by means of images, hashtags and location stamps. These expressions of experience are simultaneously a potential source for other Instagram users to gain

inspiration and awareness about the qualities of one or more places in urban nature. This demonstrates the social-technological-ecological potential of the social media sharing of place.

### 21.3.2 OVP Case: Social Media Facilitation of a Civic Movement, Oostvaardersplassen, the Netherlands

The Oostvaardersplassen is a formally protected 5,600-hectare Dutch nature reserve, consisting of reedy marshes, wild grasslands and water. The area developed spontaneously after the land reclamation of the 1960s, eventually becoming a unique area for many Red List species. Between 1982 and 1992, large herbivores (red deer, horses, cattle) were introduced into the fenced area. While the Oostvaardersplassen's starting point was completely human-made, its management developed into a 'hands-off' strategy, focusing on natural processes in an open landscape maintained by large herbivores. In 2013, the film *New Wilderness* celebrated the Oostvaardersplassen's 'wild' nature. It drew a large audience and was highly appreciated by both critics and the broader public.

Although the idea of creating a 'new wilderness' generated a lot of (inter)national interest and appreciation, it was also contested. The hands-off management resulted in fluctuations in the large herbivores' population size, and this was increasingly criticised. Especially in wintertime, stories and images of starving animals frequently led to varying degrees of public outrage on social media.

Film and social media played a crucial role in connecting people to the area and developing a sense of place. However, in this case, the sense of place was also negative. While the film portrayed a romantic wilderness, social media was mainly used to share images of starving animals and to organise protests against the 'concentration camp for animals', as it was termed in social media posts (Nico de liberaal, 2018). In the second half of 2018, the number of social media posts about the Oostvaardersplassen was almost twice the total number of posts across the five previous years.

Social media not only mediated the construction of meanings of the Oostvaardersplassen, but also played an important role in the mobilisation of criticism. Activists organised through Twitter and Facebook, and this online debate and mobilisation increasingly led to offline protests during which activists threw hay over the fences to feed the animals. These protests attracted a lot of media attention, eventually escalating to the point where managers and politicians were intimidated and threatened. Although many people publicly disapproved of the threats, the hands-off management strategy became so contested that policymakers felt obliged to change it. A first step was to feed the large herbivores in order to prevent starvation. Ultimately, it was decided to change the management of the area and regulate the animal population.

This case demonstrates how social-ecological bonds are enforced in times of crisis, and how this is propagated and enforced by means of technology – leading to a change in the meaning of place, and eventually to a change in practices to accommodate a certain ideal of place.

### 21.3.3 Melbourne Case: Melbourne Urban Forest Visual, Australia

The city of Melbourne, Australia actively takes a SETS approach to urban forestry in order to validate the diverse values of nature and increase residents' sense of well-being by strengthening green place-making. An online digital platform called the Melbourne Urban Forest Visual engages citizens in discussions of ecosystem services. Citizens are invited on the platform to explore the 'big tree data' from the publicly managed urban forest, monitoring the health and predicted lifespans of approximately 70,000 publicly owned trees.

The Urban Forest Visual is an ecological-technological system that situates every municipal tree on an interactive map. Rich, place-specific public data monitors the current tree diversity, tree canopy cover and health performance of Melbourne's urban forest. The platform gives residents a tool to visualise and better understand the diverse values of the urban forest, and the risk of massive tree death if new plantings are not undertaken. Interactions on the platform include the opportunity to track the progress of neighbourhood tree-planting programmes. Significantly, residents are also given the ability to celebrate and mourn transformations of the urban forest. Each publicly owned tree in Melbourne has been given an email address, and residents can share a personal correspondence with the trees, such as wishing them well and asking after about their well-being. Between the Urban Forest Visual website launch in 2013 and 2015, more than 3,000 emails were received (Brown, 2015). The following is an example from one such email or 'love letter' (Burin, 2018): 'Dear Magnificent River Red Gum. I admire you every day as I walk past you on my way to and from work . . . You look substantially older than any of the trees around Princess Park . . . How old might you be? Regards and hope you enjoyed the rain this weekend.'

This place-based digital approach to urban forestry has resulted in the visibility of a plurality of personal attachments to and stewardships of existing and newly planted trees. A swathe of citizens actively contribute critical urban tree data, as well as engaging in urban forest management activities. By means of this direct social-ecological-digital place-based communication tool, the city of Melbourne can now collect information on residents' perceptions of and connections to trees and green spaces that would otherwise be difficult to obtain. These place narratives not only visualise social-ecological bonds, but may also provide opportunities for those bonds to develop by enabling people to express and share their emotions about the trees. The narratives have also supported Melbourne council members' arguments for additional funding for their urban forest strategy, drawing on the power of the diverse socio-cultural understandings associated with the urban forest.

### 21.3.4 Byhøst Case: Urban Foraging App, Denmark

The Byhøst app and web platform are a gateway to knowledge about urban edible plants, including their proliferation across the city's formal and informal green spaces. By entering an online map, Byhøst's users can retrieve and share information about wild edible urban plants. The social media app facilitates a 'view from somewhere'



(Williams, 2014), providing knowledge about place from subjective viewpoints. It facilitates social-technological interaction with a focus on social-ecological processes.

These processes are evident in the ways in which the app helps to categorise and map edible plants, enabling users to plan visits to nature that they might not otherwise have made. When interviewed, foragers describe how spaces that appear at first to be messy and unmanaged develop into highly valued places when one's knowledge about local species is expanded by foraging for and tasting edible plants. This process is described as developing 'plant by plant' into a relational understanding and attachment to meanings of place, as revealed by an interview with an urban forager (Sewón, 2016):

It takes several years [to get to know a place] and I like that a lot, because then it's really my place! You know – all the times you visit and look and find [plants], you become intimate with the place. I appreciate places that people would say is just a piece of junk. A lot of times they look messy, but that doesn't mean that you can't find something good there . . . I think it's very simple – if you get to know something you get a relationship with it.

This example illustrates how the digital platform provides information that expands both access to and knowledge about nature. It thereby both enhances social activities in nature and strengthens bonds between people and nature. Furthermore, edible plants are frequently situated in contested places such as wasteland, brownfield sites and former dumps, which traditionally have negative connotations. Thanks to the app, these natural sites are now framed positively as places for social activities and encounters with a focus on wild food. Hence, the Byhøst app nurtures novel conceptualisations of place that contrast with the city's dominant discourse of place.

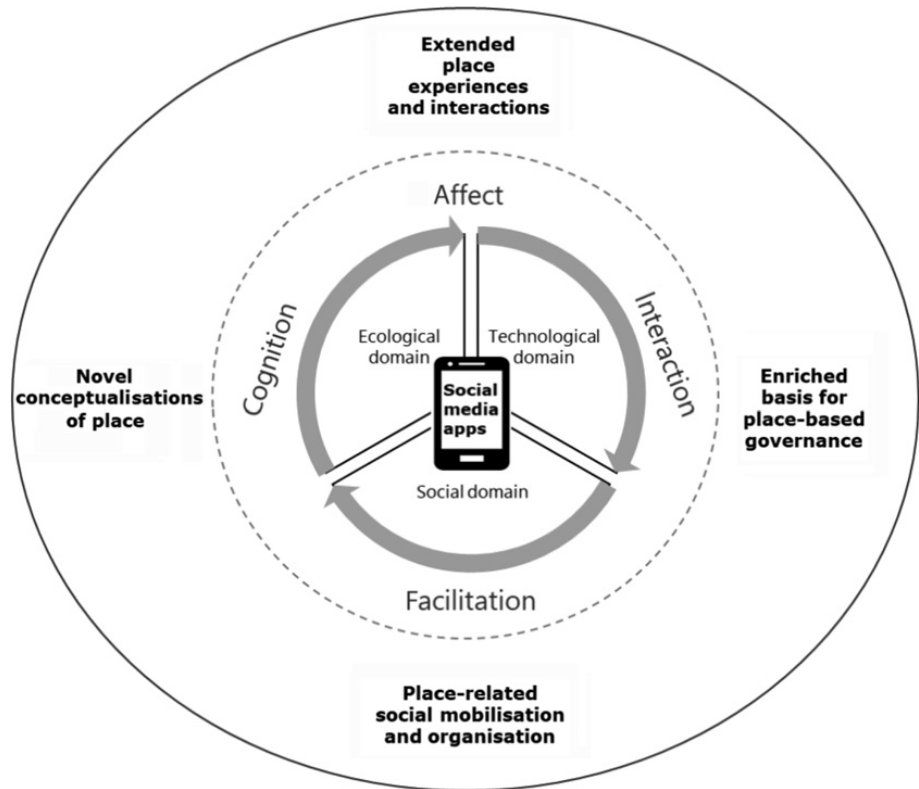
## 21.4 Discussion

Through these four cases, we have identified different ways in which social media facilitates and meditates the construction of senses of place in the context of experiences of nature. We now discuss our case findings and assess their implications for future research using a SETS-inspired people–place–technology–system perspective. We base this discussion on four overarching processes of change in senses of place (Figure 21.1):

1. novel conceptualisations of place;
2. extended place experiences and interactions;
3. place-related social mobilisation and organisation; and
4. an enriched basis for place-based governance.

### 21.4.1 Novel Conceptualisations of Place

As explained above, we see sense of place as a plural concept. Our case studies highlight that sense of place is co-constructed in interactions with others, both offline and online. Like Jenkins *et al.* (2016), we show that studying various forms of online



**Figure 21.1** Summary of changes in sense of place through social media's facilitation of experiences of nature from a SETS perspective.

communication can be a way to interpret how people perceive a location, allowing the (re)construction of a sense of place. Our cases also illustrate that such interactive formations of sense of place have moved online in various ways. This is evident in the Byhøst and Melbourne cases, where dedicated social media apps enable novel conceptualisations of place. In the Byhøst case, contested places such as brownfield sites are now framed positively. Similarly novel meanings of place emerge from our analyses of urban tree posts in Melbourne, which expand policy understandings of place by embedding the urban forest with feelings and meanings. In the OVP case, social media activities created a novel shared conceptualisation of place that was used to challenge the official narrative. Our interpretation of shared Instagram images of urban nature in Copenhagen also demonstrates a range of novel meanings of place.

#### 21.4.2 Extended Place Experiences and Interactions

Activities in the virtual world are interlinked with place-related activities in the physical world in many different ways. The sharing of images of urban nature in the Insta case is embedded in actual encounters with place and real-life experiences of

nature. Some of those who share images on social media would possibly even argue that doing so expands and enriches their encounters with nature through feedback from the online community. In the Melbourne case, the Urban Forest Visual links trees with citizens' emotional love letters, while also providing citizens with knowledge and information about individual trees and the urban forest. Thus, online activities contribute to both affect and cognition in relation to place. In the Byhøst case, the online platform directly focuses on promoting experiences of nature in the physical world. Online knowledge-sharing about places with edible flora is intended to extend and enrich urban foraging as a nature-based recreational activity. Even in the OVP case, a heated online debate resulted in physical encounters with place as activists fed starving animals. These are all examples of how online activities stimulate real-life experiences of place by fostering the expression of emotions, potentially contributing to the co-construction of plural meanings and senses of place.

### 21.4.3 Place-Related Social Mobilisation and Organisation

With billions of users globally, social media unifies and organises place-specific attitudes, values and perceptions across space and time at an unprecedented scale, accelerating global processes where senses of place are dynamic, plural and fluid (Di Masso *et al.*, 2019; Massey, 1997). Social media's capacity for mobilisation and organisation is also evident in the cases described above, where social media mobilises and unifies people around alternative, contrasting and novel senses of place. In the OVP case, the main official narrative was positively framed as rewilding and hands-off management for biodiversity. A brief, intense social media movement challenged and questioned this discourse as a negatively framed 'concentration camp for animals'. Social media has played similarly significant roles in other social movements, such as the place-related Gezi protests in Turkey (Hacıyakupoglu and Zhang, 2015). In the Byhøst and Melbourne cases too, social media apps mobilise and unify like-minded people across space and time to promote urban foraging for wild food and urban forest values as novel conceptualisations of place.

### 21.4.4 An Enriched Basis for Place-Based Governance

Increasingly, social media platforms are utilised to inform public participation and e-governance (Møller and Olafsson, 2018). While social media are not representative of public opinion, they provide subjective and crowdsourced experiences as data for the dominant instrumental interactions between citizens and governance institutions. In this sense, social media can also expand the ways in which people interact with authorities, linking people and places for place-based governance and management (Møller *et al.*, 2019). A digital approach to place-based governance can be seen as a new opportunity to integrate socio-cultural and scientific knowledge for governance use. This is demonstrated in the Melbourne case, where the digital approach engages residents' senses of place and experts' knowledge about tree ecology and climate resilience for urban forestry governance. A similar argument can be made for the Byhøst platform, which

promotes new forms of interaction with (edible) nature by integrating the knowledge of users and advocates of wild food, which in turn has been taken up by the local administration. Hence, these two cases suggest that a social media approach to urban green governance can successfully integrate other place-based knowledge perspectives, thereby actively facilitating pluralistic views and hybrid understandings of place.

However, social media data has well-documented limitations. It is not 100 per cent open, transparent and inclusive of all views and social groups. In principle, all social media reflects political and corporate power. It is designed and controlled by algorithms, and those algorithms are mediated by administrators that function as centralised gatekeepers and shape the discussion in certain directions, with consequences for place-making (Al-Rawi, 2019). This is illustrated in the OVP case, where people with certain opinions were expelled from Facebook activist communities. Nor do all community members necessarily have access to social media platforms, resulting in the ‘digital divide’ (van Dijk and Hacker, 2003). Discourses on social media are not necessarily representative of public opinion, and social media users are not necessarily representative of the broader population. For local authorities, social media thus offers opportunities to learn about meanings of place among some citizens and to engage with diverse stakeholders, but it also requires critical reflections about inclusiveness and the dominant narratives that influence meaning-based senses of place.

## 21.5 Conclusion

As the four cases demonstrate, social media comprises social-technological couplings. From a system perspective, those couplings are integrated parts of people’s experiences of nature that bridge virtual and physical worlds, thereby facilitating and communicating cognitive, affective and behavioural social-ecological interactions. These interactions foster novel individual and co-constructed meanings of place and thus plural senses of place; they can also mobilise people around shared meanings of place that are used to question dominant views. We argue that social media can mediate and proliferate plural meanings of place, leading to new conceptualisations of senses of place. However, we have only touched upon a fraction of all the possible ways that social media might affect senses of place, which also include more critical and disturbing impacts linked to agents of political and corporate power. More research is needed to fully grasp the many linkages between senses of place, social media and experiences of nature. We encourage researchers to use a SETS approach to embrace all these linkages and proliferations, as well as their critical impacts on senses of place.

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