Nature in 'Place'

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For:

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This document was prepared as a teaching guide for placemaking academics to engage their students in the topic mentioned in the title. It is part of a 12 module series created through a multi-university collaboration including Curtin University, University of Notre Dame, the University of Technology of Sydney, University of New South Wales, University of Queensland, The University of Adelaide and the University of Melbourne. The module was informed by practitioners through an intensive skillset and gap analysis workshop in Oct 2017.

This module envisioned as a 1-week delivery includes:

- This template including ~10 hours of content as follows

  o A total of ~3 hours of presumed in-class exercises (no more than 1-hour lecture)

  o A total of ~7 hours of personal study time (i.e. readings/short essays/videos to watch)

- The slides/materials used for the lecture.

- List of 'mandatory' reading and recommended readings relevant to the module content.

The document is subdivided into two sections.

1. Section 1: Provides an outline of the aims of the module

2. Section 2: Expands on the specific topic covered by this module and the recommended exercises for tutorial activities.

1 Section 1:

Overview

The Nature in Place module introduces students to concepts and strategies that can be applied to embed nature when conducting placemaking projects. It responds to the gap identified where, regardless of the large benefit of nature to our physical and mental wellbeing, placemaking projects tend to detach from nature.

This module begins by introducing us to the overarching benefits of nature, biophilia and the importance of considering socio-ecological systems in processes aiming to create a strong sense of place. Then, it introduces a model that, working alongside the 5P framework, can help the placemaker facilitate community reflection on their relationship with the natural environment and incorporate biodiversity into their initiatives.

Summary of materials referred to in this Module

The following should be easily accessible through the PlaceAgency web platform, local council and developer websites, or university library databases (journal articles etc). Some are for your reference, and some are needed by students for their activities.

Resources needed for student's independent study outside the classroom.
- Video Resources:

  | What is the importance of Nature in Place? (4:12 min) |
  | Why does placemaking tend to ignore nature and how to bring it into the conversation? (4:49 min) |

- Bush, J., Hernandez-Santin, C., & Hes, D. (2020) Nature in place: Placemaking in the biosphere, In D. Hes and C. Hernandez-Santin *Placemaking fundamentals for the built environment*. Palgrave Macmillan
- Garrard, G. E., Williams, N. S. G., Mata, L., Thomas, J., & Bekessy, S. A. (2017). *Biodiversity Sensitive Urban Design. Conservation Letters*. doi:10.1111/conl.12411

Resources needed for students' in-class activities.
- For Activity 1, Slide deck prepared by lecturer on the ecology of the study area
- For Activity 2, Cards prepared by lecturer on the 'totem' species; specific for the study area

Additional resources that may support a facilitator not familiar with this topic. These directly informed the subtopic summaries.

- Andersson, E., Barthel, S., Borgström, S., Colding, J., Elmqvist, T., Folke, C., & Gren, A. (2014). *Reconnecting cities to the biosphere: stewardship of green infrastructure and urban ecosystem services*. AMBIO, 43(4), 445-453. doi:10.1007/s13280-014-0506-y
- Bush, J. (2017). Cooling cities with green space: policy perspectives. (PhD Thesis), The University of Melbourne, Melbourne.
- Bush, J., & Doyon, A. (2017). Urban green spaces in Australian cities: social inclusion and community participation. Paper presented at the State of Australian Cities Conference, Adelaide, Australia.
- Church, S. P. (2018). From street trees to natural areas: retrofitting cities for human connectedness to nature. *Journal of Environmental Planning and Management*, 61(5-6), 878-903. doi:10.1080/09640568.2018.1428182

- Davern, M., Farrar, A., Kendal, D., & Giles-Corti, B. (2017). *Quality green public open space supporting health, wellbeing and biodiversity: a literature review. Report prepared for the Heart Foundation, SA Health, DEWNR, Office for Rec and Sport, and LGA(SA). Victoria: University of Melbourne. https://www.healthybydesignsa.com.au/wp-content/uploads/2017/03/Green-Spaces-Evidence-Review-FINAL_website.pdf*
- Kendal, D., Lee, K., Ramalho, C., Bowen, K., & Bush, J. (2016). *Benefits of urban green space in the Australian context. A synthesis review for the Clean Air and Urban Landscapes hub of the National Environmental Science Program.* The University of Melbourne https://www.nespurban.edu.au/publications-resources/research-reports/CAULHub_BenefitsUrbanGreeningReport_20160912.pdf
- Kellert, S.R., Heerwagen, J. and Mador, M., 2011. *Biophilic design: the theory, science and practice of bringing buildings to life.* John Wiley & Sons.
- National Trust (UK). (2017). Places that make us. Research report. Retrieved from Swindon, UK: https://www.nationaltrust.org.uk/stories/why-do-places-mean-so-much

Objectives of the Module

- To introduce the importance of the socio-ecological system
- To introduce the benefits of integrating nature into place
- To provide tools through which to improve the ability to integrate nature in the process of placemaking

Module Content

1. Green space benefits
2. Connecting with nature, biophilia and sense of place
3. Stewardship and custodianship
4. Nature in placemaking
5. Case studies
6. Integrating nature in place can be summarised into three principles:
   a. Think in Socio-ecological systems
   b. Be Sensitive to biodiversity
   c. Promote Stewardship of the biosphere

Learning outcomes

Upon completion of this module students will be able to:

- Understand the implication of the natural environment of a sense of place
- Develop a compelling narrative as to why nature, or the non-human, needs to be integrated into placemaking
- Develop an approach with their stakeholders to integrate elements of the natural environment into the placemaking process

Enhanced capabilities

Cognitive Skills (Head)	Affective Skills (Heart)	Practical Skills (Hand)
Understanding of what socio-ecological systems are -a key focus of lecture and activity 1 **Understanding the importance of nature for human wellbeing –** a key focus of the lecture **The relationship between the 5P Framework (People in place) and the framework proposed** – see reading Deollery et al. 2020 and lecture **Identify the value of incorporating nature in placemaking** – lecture and readings **Spatial context and understanding –** might come up with students undergoing site analysis from a 'nature' lens.	**Being a spokesperson for nature** - introduced in activity 2.	**Strategies to facilitate nature in palace discussion** – introduced in activity 1 **Key exercises to integrating the voice of nature in place** – introduced in activity 2. **Strategies for stewardship of the biosphere (place keeping nature)** – introduced in activity 3

Module Overview (10 hours)

Table 1: Module overview. Summary of the activities considered within this module and the time equivalency. In white content that is either delivered in-person or online but requiring some element of students listening/discussing with the group etc. In grey, self-study activities, videos, etc.

	ACTIVITY	TIME	NOTES
A	Readings	2 hrs	Bush, J., Hernandez-Santin, C., & Hes, D. (2020) Nature in place: Placemaking in the biosphere, In D. Hes and C. Hernandez-Santin *Placemaking fundamentals for the built environment*. Palgrave Macmillan Garrard, G. E., Williams, N. S. G., Mata, L., Thomas, J., & Bekessy, S. A. (2017). *Biodiversity Sensitive Urban Design. Conservation Letters*. doi:10.1111/conl.12411
B	Prep before class	1hr	Read the material on case study – prepare 5 dot points on the potential of ecological and natural systems to be designed into the case study, or analyse an existing case study and outline what environment systems have been designed in and which additional ones could be included. Answer: • What are the key ecological and natural systems? • What benefits could the case study have from ecosystem services? • What lived here before it was part of the city? • If you were to be an advocate for one element of nature in this place what would it be?
C	Lecture	1 hr	Slide deck prepared for a one-hour lecture exploring • the benefits of green spaces; • biophilia, connection to nature and its relevance to sense of place; • Stewardship and custodianship; • Strategies to embed nature in place; and • some case studies
D	Tutorial activities	3 hr	• Activity 1 - Think in Socio-ecological systems: Connecting with nature in place: **facilitating** reflections on nature in place – 40 mins • Activity 2 – Be sensitive to biodiversity Designing and implementing habitat and biodiversity: **co-designing** with nature in place – 1 hr • Activity 3 - Adaptive governance for placemaking: **maintaining** nature in place – 1 hour
E	Further design	2 hr	Working towards the final assessment, this time is dedicated to studying and reflection time to expand on the strategies to embedding nature into place. Key strategies should: respond to the needs of more than one species, highlight or support through extended readings the potential of place to support benefits for people.

F	Journal	1 hr	Journal questions
			2.1. What will you need to learn from other disciplines so that you can integrate nature into place, into your practice, so it isn't a consultation but part of what you do and think of? (max 150 words)
			2.2. How will nature have a voice in the place? (max 100 words)
	TOTAL MODULE	**10hrs**	

2 Section 2:

Introduction to Module

In this module, we define nature as "the physical world collectively, including plants, animals, the landscape". We understand that humans are part of nature, however, we focus the discussion on the non-human aspects as they tend to be ignored in placemaking processes.

The chapter (and lecture) provides the theoretical background to argue that nature, such as green spaces, biodiversity and biophysical elements of the environment are not only integral to our sense of place, but also an active participant in creating the emotional connections we seek to support through placemaking. From literature, green spaces are known to provide ample benefits for wellbeing, biodiversity, water quality and urban heat island effect. These are known as 'ecosystem services': regulating, provisioning, supporting and cultural (Kendal et al 2016).

Furthermore, the biophilia theory tells us that we have an innate connection with nature and that this connection is, in many ways, the result of our evolutionary history alongside natural environments. In fact, nature often plays a central role in people's sense of place (National Trust (UK), 2017). Sense of place emerges through our interactions with our biophysical environment (Masterson et al., 2017). It is often the natural elements of place that provide the strongest building blocks for the stories and connections to place.

Thus, we need to take action to bring nature back within our urban areas and value nature for all its contribution to place.

Our model to integrate nature in place can be summarised into three principles:

- Think in Socio-ecological systems
- Be Sensitive to biodiversity
- Promote Stewardship of the biosphere

Note: the video What is the importance of Nature in Place? (4:12 min) provides this summary

2.1　Think in Socio-ecological systems

From a socio-ecological perspective, we know that people, their social and cultural systems, institutions and built environments, are interconnected and interdependent with the natural system that surrounds us. Not only is nature important for our health and mental wellbeing, but as discussed in the previous sections, it often plays a central role in people's sense of place. An emotional connection between self and *place*, or love of place, is predominantly developed through three pathways:

- 1) places belonging to or evoking childhood memories,
- 2) places that are significant to our loved ones through shared stories and experiences, and
- 3) places meaningful to our present life (National Trust (UK), 2017).

During an engagement with the community, a placemaker is, in many ways, a researcher seeking to identify the different elements that make a community 'tick', including the individual, shared and collective values, experiences and memories. Through engagement activities and discussions, the placemaker acts as a facilitator, encouraging the local community to rediscover or reveal the elements of place that they collectively value the most. The engagement questions and activities can powerfully guide the conversation to open up ideas and help expand the thinking towards inclusion of nature and recognising the non-human elements of place.

The placemaker's facilitation skills are critical towards uncovering the holistic perspective of the social-ecological elements meaningful to the community. By incorporating nature-related questions and activities (Box 1) that elicit reminiscences of childhood, the shared experiences with loved ones and hobbies and recent discoveries, the placemaker helps the community reflect on their relationship with nature. As well as finding out about the place's potential for people, this step should explore the potential of the place for habitat and for biodiversity. As part of this step in the placemaking process, the patterns of nature, the site's ecology and biodiversity are also identified. Placemakers can work with the community to find reference books and records that reveal the site's natural and cultural history, the area's flora and fauna.

Exercise 1 – 40 mins

Instructions	Delivery	Time	The objective of the exercise
1.1 get students in their groups to spend 5 minutes thinking about the following nature reflection prompts. • When you were a child, where did you like to spend your time? • Tell me about your memories of when the sun was shining • Tell me about your river (Birch, 2018) • Who (or what) are your non-human neighbours? Share in your group – are there any similarities and differences. Are there any themes you notice?	In-class or online	10 mins	This is a self-reflection exercise before sharing with their group.
1.2 Drawing on the case study work student did in preparation. If there is little information on this in the case study the coordinator will need to present a short session on the ecology of the case study. Place ecology and nature identity discovery, discuss as a group and come up with a summary of: • The plants and animals that thrive in this place? • What lived here before it was part of the city (Ossola & Niemelä, 2018; Parris, 2016)?	In-class or online	15 mins	The aim here is to understand the ecological aspects of the project or case study the students are working on and to think about the ecological history of the place.

1.3 What is the interrelatedness of systems: Part 1: This is a good one to do outside - Get the group to stand up in a clear space, ask everyone to mentally choose two people within the group and start walking until they are standing at an equal distance from both individuals. The group will start moving to correct the distance. Keep exercise until the system stabilises. *Reflection: Everyone represents a different part of a system, systems are in constant movement adapting to the changing situations.* Now tell everyone that one of the people is their knight protecting them from a tiger (the other person) they have to keep the knight between themselves and the lion to survive. *Reflection: what did changing that one rule does to the system? Discuss* Part 2: Ask one participant to crouch, as soon as one-person crouches, those individuals who mentally linked themselves to that person should also crouch – within a very short period of time everyone will be crouching. *Reflection: As everything is interrelated, when one element of the system collapses, those elements most closely related to it will also collapse. Ultimately it reaches a point where the whole system becomes unsustainable... Discuss*	In class	20mins	The aim here is to think about systems – how things are all interrelated and how one simple rule can impact a system and make it seem complicated. Also how changing that rule can have a big impact. The lesson being that it is worth finding the key rules that have a big impact on a system.

2.2   Be Sensitive to biodiversity

A best-practice placemaking process relies on inclusive, participatory approaches to design the placemaking initiative (Kyle, Graefe, Manning, & Bacon, 2004): the community is the 'expert' of the place, and the placemaker's role is to design with the community (Davies & Lafortezza, 2019), rather than imposing their own perspectives by designing for the community. Nguyen and Thanh Dang (2018) contrasted the different approaches to placemaking design. By designing for the community, community members are more passive participants and the designers are applying their expertise to analyse the context and make design decisions. A more active, participatory 'design with' approach relies on a partnership or co-design process in which community and designers work together during different stages of the project. Lastly, a 'design by' the community involves the community is empowered to actively develop the design and make design decisions together.

For placemaking processes that embed nature, the challenge is to apply a design with a participatory approach that includes the non-human participants of the place. In the previous section, we outlined some strategies to identify the place's ecology and nature as part of the first element of placemaking with nature. In this stage, we focus on principles and activities to embed biodiversity sensitive urban design principles (Garrard et al., 2017) into the place's design and implementation (Box 2).

Like humans, biodiversity's basic needs are focused on shelter, food and movement, which together create biodiversity habitat. Good biodiversity habitat includes features such as multiple layers of vegetation (trees, shrubs, grasses and groundcover), a diversity of species and plant forms (including tussocks, dense shrubs and so on) and leaf litter, logs and stones (Parris, 2016). In addition, the connection between habitat patches is important to allow biodiversity to move across the urban landscape (Ossola & Niemelä, 2018). Applying the principles for biodiversity sensitive urban design to the placemaking design and implementation brings the

focus to creating opportunities for nature and humans to flourish together, and minimising threats and disturbance (Garrard et al., 2017).

Exercise 2 – 1 hr

Instructions	Delivery	Time	The objective of the exercise

2.1 Designing and implementing habitat and biodiversity: co-designing with nature in place
In each group get each group member to act as spokesperson for a different element of nature – a plant, animal, insect, or bird. Explore how the principles for biodiversity sensitive urban design can be applied in the place's design using the following prompts. First, get the student to think quietly about the following prompts (10 mins)
  1. Codesigning with nature: what aspects of habitat and biodiversity will you design in for this place
  2. For the natural element you have chosen: Where does it live? What's the form of its habitat? What landscape features does it need?
  3. How does it find food, a partner? How far does it travel in a single day? How long does it take?
  4. How is it affected by noise, light and roads? How sensitive is it to the impacts of urbanisation – litter, water pollution, soil disturbance, removal of leaf litter, sealed and impervious surfaces?
  5. What does it eat? How does it reproduce? What other species or habitat elements does it rely on? What relies on it?
  6. What do people think of it? Are they afraid of it?
 	
For the 20 minutes get the group to come up with 10 things they would design into the place to support the natural elements their group members have chosen. Is there any ecological system which supports more than one element?
 	
One person of the group present to the class
	In-class or online	1hr	This gets students to both 'own' an aspect of nature, to understand how to be an advocate for that and how to design for it.

2.3 Promote Stewardship of the biosphere

Following the design and implementation of a place intervention, the placemaker's role turns to supporting and empowering the community to be able to contribute to the ongoing maintenance and management of the place over the long term. Often the places created in placemaking projects are located in public spaces, and there may be a range of public institutions, government bodies and stakeholders engaged in their ongoing management. Therefore, to ensure the ongoing success of the place intervention, it is necessary to coordinate with the range of stakeholders, to ensure the place's objectives, elements, structures and functions are managed and supported in sympathetic and appropriate ways that support the system to flourish.

When nature is an integral element of the place intervention, the complexity of ongoing management – and nurturing – of the place's biodiversity and habitat potentially increases the range of stakeholders involved, as well as the diversity of management actions. As discussed earlier, social-ecological systems are complex and

dynamic, and therefore adaptive governance is required to address complexity, uncertainty and change (Green et al., 2016). Adaptive governance treats management interventions as ongoing experiments that should be monitored and evaluated so that results can be used to alter or improve management (Green et al., 2016). Adaptive governance also recognises that a diverse range of stakeholders, with intersecting interests, responsibilities and knowledge bases, is involved in urban social-ecological systems management (Folke et al., 2005). Mumaw (2017) found that "learning by doing, supported by rewarding results, validation, community involvement, and accessible resources" contributes to deepening participants' connections with place, and developing their knowledge and competencies. This stage of nature-placemaking requires both maintaining and managing the place, as well as the relationships with key stakeholders who are also associated with the place. Therefore, a key role for placemakers is to support participants to build and maintain a range of skills that can adaptively contribute and respond to the place's management and governance.

The key elements of adaptive governance that should be integrated into placemaking's ongoing maintenance and management of place (Folke et al., 2005; Green et al., 2016) explored through exercise 3

Exercise 3 (30-40 mins)

Instructions	Delivery	Time	The objective of the exercise
Adaptive governance for placemaking: maintaining nature in place. In shifting from a design and implementation phase to an ongoing maintenance and management phase, placemakers' roles turn to build the communities' skills, agency and confidence: 1. As a group summarise the place's ecological processes and cycles; 2. Determine for each process what are the knowledge and skills needed to support the place's habitat and biodiversity; 3. Make a list or mind map of the stakeholders that influence the social-ecological system of this place and can impact its functions; 4. Make a plan for how you could maintain communication, enthusiasm and active, collaborative relationships with the placemaking community participants and other stakeholders; 5. This about activities that would need to happen to support the natural elements of the place, e.g. would you need small groups, would this need to be lead or supported, how would you identify and assign key group roles (facilitating or chairing meetings, taking meeting notes, maintaining and communicating with group membership, organising activities, liaising with other stakeholders and government agencies).	In-class or online	30 minutes	The aim of this activity is to think through the fact that a place's ecological systems need to be nurtured and cared for and thinking through how you would do that.

Imagine. Inspire. Connect. Create.