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# Indigenous design knowledge and placemaking in the climate diaspora

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**ABSTRACT:** Climate change forced displacement and resettlement is becoming a pressing topic as the impacts of sea level rise, drought, and severe tropical storms increasingly impact communities' livelihoods. As communities and entire nations are forced to resettle, how will basic social and cultural structures be maintained? The transportation of resilient socio-cultural patterns becomes essential for maintaining the health and well-being of a community. Thus, the investigation of the dialectic relationship between culture and the built- environment is essential in the Anthropocene.

Through a multi-sited case study of the Republic of the Marshall Islands, this paper demonstrates the use of Indigenous Knowledge within the production of the built environment to negotiate the relationships between the social world, the natural world, and the colonial world. Three communities were studied spanning rural, peri-urban, and urban environments in order to demonstrate the application of Indigenous Knowledge across space and time in the production of the built-environment. Participant observation, unstructured interviews, mental mapping exercises, site documentation, and aerial mapping were among the methods used for data collection in order to triangulate evidence.

A framework of six systems of Indigenous Design Knowledge were uncovered; each have aided the Marshallese in the production of culturally-supportive environments in the face of colonization, urbanization, and the imposition of U.S. imperialism. While further investigation in the cultural production of space in the Marshallese Diaspora is required, it is argued that this framework of Marshallese Design Knowledge should be employed in the planning, design, and management of any future resettlement proposal to assist communities in the maintenance of healthy socio-cultural patterns through the cultural production of the built-environment. Furthermore, the methods and approach taken in this study demonstrate a useful framework for investigating the dialectic relationship between culture and the built- environment for other climate diasporas.

**KEYWORDS:** Indigenous knowledge, climate change, climate diaspora, design framework, deep-culture, urban planning, architecture

## INTRODUCTION

The projected impact of global climate change on community resilience places a significant proportion of the world's population in a precarious position; from sea level rise to receding glaciers and drought, the continued habitation on ancestral homes is at risk for communities across the world. The continuity of the Marshallese way of life is threatened by sea level rise, and many argue the nation is entering a climate migration (Burkett 2011; Heslin 2019). In the long-evolution of Marshallese culture, migration has been a resilience mechanism in face of climatic events; this has been a practice for many small island populations in need of refuge (Spennemann 2005). In a way, migration becomes a natural adaptive response.

Migration from the RMI to the United States has increased steadily since the Compact of Free Association between the two countries was signed following the departure of the United Nations Trust Territory of the Pacific (Hezel 1995). One might argue that current migration of Marshallese into the United States demonstrates an extension of these traditional forms of resilience to climatic events. The following literature helps to frame the application of the main findings from the research study as a way forward for assisting urban planners, urban

designers, and architects develop inclusive policies that allow for Marshallese communities to create their own sense of place and mitigate culture loss through resettlement.

### 1.0 Socially and Culturally Supportive Environments

Settlement without economic or social support is extremely difficult. Social capital becomes vital for the new immigrant. Indigenous knowledge could prove useful in ensuring the wellbeing of Indigenous communities facing environmental forced displacement. My previous research in post-disaster settlements of Haiti demonstrated the use of local knowledge, embedded in Haitian culture, in the development of social capital within self-settled post-disaster settlements (Miller 2014). Alexander et al. (1977) demonstrate the intricate connection between socio-cultural patterns and the design and construction of space that is both culturally supportive and supportive of social behavior. Alexander (2004) argues that the pattern language created through these socio-spatial behaviors assists in the development of wholeness. In addition, Lawrence and Low (1990), Low (2016), and Gehl (2011) demonstrate design patterns in the support of social and cultural behaviors and the benefits of these socio-spatial design patterns in enhancing social support systems for a community's wellbeing.

Within resettlement models, three primary models are discussed at length in the literature: Impoverishment risks and reconstruction (IRR); Involuntary Resettlement and Sustainable Livelihoods (IRSL); and Inherent Complexity (IC). In IRR, Cernea (1998) outlines eight risks faced by people subjected to displacement: landlessness, joblessness, homelessness, marginalization, social disarticulation, food insecurity, increased morbidity, and loss of access to common property resources. In the IRSL model, McDowell (2002) emphasizes the importance of socio-cultural components inherent in community disarticulation – the socio-cultural spatial patterns of self-organization, social interaction, and reciprocity – and the significance of social capital. Lastly, the IC model calls for open-ended participatory processes within resettlement programs that account for the inherent complexity of a resettlement program and the livelihoods of re-settlers. While it is unlikely that the everyday cultural patterns of a pre-displacement populations will be recovered, enabling participatory processes in planning and development efforts can mitigate shock and culture loss (Downing and Garcia-Downing 2009). This paper emphasizes the role of Indigenous Knowledge in the creation of placemaking and place attachment for resettled communities. Through these processes spatial production, social and cultural capital are developed within re-settled communities.

### 1.1 Placemaking

Place is the centering of individual and shared meaning among a community (Relph 1976). It is where individuals and groups find meaning in their environment and the act of placemaking assists cultural and social capital (Lewicka 2013). The production of the city generates economic, cultural, social, and symbolic capital within a complex social and political dynamics (Bourdieu 1990). Placemaking is mediated within the social field, constructed through cultural, social, and political factors. The meaning imbued to space by a group of people are reflected by the negotiation between culture and the place-specific social practice (Low and Smith 2006; Massey 2005). The social relations among and between community groups and the everyday practices are shaped by institutions and socio-poetical structures (Sandoval and Maldonado 2012). The shift in the demographic landscape of a community begins to alter these structures and power relations, issues arise across groups, especially in relation to racialized space.

The structural power dynamics of the city play a significant role in the placemaking processes of immigrant communities. As everyday practice counters institutionally structured fields of power, the act of deterritorializing and reterritorializing space within immigrant creations of place, character, and identity shift the discourse of institutionalized planning codes (Dovey, Woodcock, and Wood 2009). Rios and Watkins (2015) demonstrate that placemaking is a translocal process of territorializing the 'circuits' of place as an assemblage; they demonstrate the temporality of place-identity and placemaking within receiving communities and the need to challenge the normative and binary assumptions about land use and spatial practice. Regarding 'character', Davison (2013) speaks to its role in the place-making of the Latino community in Fruitvale, California. 'Character' is produced only as a surface construction of

identity within the aesthetic of redevelopment rather than an embedded design pattern in the construction of socio-culturally supportive space. As Dovey et al. (2009) state, 'character' is not deep rooted. In negotiating the transnational field of social practice, Indigenous placemaking raises an important question: What is the translocal placemaking of indigenous urban communities within the politics of space and settler colonialism?

## 1.2 Indigenous Placemaking

For Indigenous communities, the boundaries of place vary from those of Ameri-European concepts of land and property; the sense of place tied to the land is complex, shaped through an intricate relationship between people and place (Nejad and Walker 2018; McGaw, Pieris, and Potter 2011; Potter 2012). Placemaking in the context of Indigenous communities is complex, and even more so for those displaced. When western planning and architecture is implemented on Indigenous lands, the fluid nature of land tenure is erased by the legibility of boundaries that demarcate power (Scott 1998). The plan or map is a territorial force that colonizes space (Lozanovska 2002). These dynamics follow displaced Indigenous communities as they are re-settled. In the Republic of the Marshall Islands, the United States imposed their dominance on the landscape of the Marshall Islands by constructing Majuro and Kwajalein as model American towns (Hirshberg 2015). The United States created a sense of place based on the U.S. military industrial complex at the expense of Marshallese place-identities. Through the Compact of Free Association this settler dominance of Marshallese is carried onward through the current Marshallese migration into the United States. The relations of power and privilege are reinforced through these everyday acts and the western construction of the built-environment (Nejad and Walker 2018).

IK develops design processes that negotiate between settler and the aboriginal community. The IK is used to position itself in relation to natural systems and the social world as well as between the colonizer and the social world (Sheehan 2011). This means that within the context of settler colonialism, IK does not necessarily prioritize the natural environment but rather the survival of indigenous ways of life. In the Marshall Islands, the shift of land use from subsistence livelihoods to its real estate values demonstrates an active decision re negotiation of the value of land and the value of the natural environment. Of course, this position would not exist without the impacts of urban development through settler colonialism of US imperialism. Thus, demonstrating the evolution of IK from negotiating the relationship between social livelihood and natural environments to social livelihood and colonialism.

The formation of the Indigenous habitus is an important component in the application of Indigenous Knowledge to the creation of place-identity and place-attachment within the built-environment. IK acts as the cultural guideline for the adaptation of physical form and negotiates the power structure imposed upon by western planning regulations to benefit the continuity of cultural patterns (Potter 2012). Furthermore, IK negotiates between the social world, the natural world, and the built world (Sheehan 2011). From individual to individual and group to group the outcome may be different, but the deep-cultural pattern<sup>1</sup> is representative of IKs power to assist in cultural maintenance.

## 1.3 Place Attachment

An important component of placemaking, place-attachment supports the wellbeing of a community (Mazumdar et al. 2000). The cultural and social capital derived through place-attachment provide a community a sense of place and support their wellbeing (Lewicka 2005). Indigenous knowledge plays a vital role in an Indigenous community's ability to create their own sense of place. The maintenance of cultural practices such as strong social ties and family co-residence improve community wellbeing through migration, and social capital plays a significant component to community wellbeing (Rogers 1996).

Cultural and physical elements of place support identity and develop place-attachment. Mazumdar et al. (2000) identify the character of architecture to be an important component in establishing place-attachment within enclaves. The character of a space as well as that of a

building also support place attachment. For example, an immigrant community may identify the landscape, both natural and cultural, of a receiving community with the homeland. Additionally, the ability of a community to participate in the control of space further supports their ability to make a place their own. Where immigrants can make social and cultural connections that confirm cultural identity place-attachment occurs (Main and Sandoval 2014). Thus, communities remake places through everyday practice, altering the dynamic nature of a place assemblage (Rios and Watkins 2015). This identity is grounded in both social and environmental experience, grounded in the dialectic relationship of people and environment. Architecture and spatial patterns within urban design or adaptation expresses collective identity. The question remains, how many generations will place-attachment and place-identity mitigate culture loss through processes of assimilation?

Gupta and Ferguson argue that the third generation is often defined as the generation in which assimilation has completed its course. However, Lozanovska (2008) argues that architecture and architectural design withhold the capacity to assist communities resist assimilation. Using the concept of 'taste' Lozanovska demonstrates the importance of analyzing architecture through complex systems or assemblages rather than binaries. The migrant house is an embodiment of everyday practice, a manifestation of aesthetic judgement and taste; the house provides a sense of agency and projects identity into the social and cultural field of practice (Lozanovska 2008). Again, the notions of distinction, character, and symbolic capital arise as important components within immigrant spatial identities.

## 2.0 METHODS

The research asked how a culturally supportive environment is produced within the context of settler colonialism, United State imperialism, and global pressures; this inquiry tested the existence of deep-cultural patterns within the dialectic relationship between culture and the environment. Employing a multi-sited case study, the research was conducted on three different villages in the RMI, consisting of Djarrit-Uliga-Delap, Majuro, an urban center; Laura, Majuro, a peri-urban village; and Namdrik Atoll, a remote atoll. The selection was based on the different contexts, demonstrating theoretical replication (Yin 2009). The research design consists of data collection through ethnographic field study of selected villages, buildings and site surveys, and archival research on each village selected, consisting of historical development, family lineage, and unstructured interviews. A deep-time perspective of the Marshallese culture-environment relationship was developed through a review of historic ethnographies, the archaeological record and archival data concerning historic change to the built-environment and human settlement. The goal was to uncover the changes within the Indigenous construction of the built-environment and its spatial arrangements, material use, building design, and the integration of resource use within the habitation zone known as the *weto*<sup>ii</sup>. The *weto* introduces one to the system of habitation that represents the cultural habitus.

Sampling consisted of two phases, the first phase was the primary field research collected on *wetos* and the second phase was a validation survey that tested emergent patterns across a larger population on Namdrik and Majuro. Following cultural protocols, Government officials, traditional chiefs, land owners, and community leaders assisted in gaining access to each site, introduced me to potential participants, and governed the scope of research. Self-selected sampling was employed for the selection of *wetos* at each site. A family needed to both understand the purpose of the research and agree to participate as well as agree with the extent of the data collection, which consisted of me participating in daily life on the *weto* for an extended time. The primary modes of data collection were participant observation, interviews, habitation surveys, and participatory mapping. The goal of the observations was to develop an understanding of the minutiae of daily life in regards to habitation. Interviews and participatory mapping exercises explored the changes through time in the production of the built-environment based on participants life experiences. Building and site surveys consisting of measured drawings of buildings and aerial imagery were analysed for spatial relationships using spatial analysis tools in ArcGIS and through Space Syntax using convex analysis. Qualitative research software was used to code and analyse the qualitative data, and ArcGIS, DepthmapX, 'R', and JASS were used for spatial analysis. Through the process of reviewing

historical ethnographies, archaeological records, field notes, continued communication with the communities, and reflexive practice, the generative patterns that governed the production of the built-environment in relation to the *weto* emerged.

### 3.0 FINDINGS

Through the analysis of everyday socio-cultural practices in the production of space, the research uncovered six interconnected deep-cultural patterns that are based on the intersection of family, identity, and land.

These patterns are 1.) Land as wealth and 2.) Land as Identity, both of which are embedded within the *weto*, which represents the land tenure system through matrilineal inheritance of the Marshallese; 3.) *Ippan Doon* or togetherness, which manifests in the clustering of housing; 4.) *Juon Kijeek* or One Fire One Family, which represents the interconnection of family through the sharing of resources and knowledge; 5.) *Emlapwoj*, which represents the multi-generational family living arrangement; 6.) Process built housing, which represents the iterative process in developing effective design solutions that support everyday life. The patterns represent persistent socio-cultural spaces established through everyday behaviour, the continuity of spatial integration and 'genotype' (Hanson 1998) across rural and urban settlement, and the recreation of Indigenous processes amidst modern urbanization; all of which demonstrate cultural agency. While this paper focuses more on the application and implication of these findings for immigrant communities rather than on the demonstration of each pattern, Table 1 provides a brief overview of the manifestations of each knowledge system in relation to the three sites.

**Table 1:** Everyday manifestation of the six deep cultural patterns (IK systems) in each site.

D.C.P.	Manifestation Namdrik	Manifestation Laura	Manifestation Majuro (DUD)
Land as Wealth	Cultivation for sustenance; cultivation of cash crops	Cultivation of taro; land leasing; cultivation of cash crops	Cultivation of bananas; land leasing; access to the city
Land as Identity	Traditional land tenure and presence of cemetery.	Traditional land tenure and presence of cemetery.	Traditional land tenure and presence of cemetery.
<i>Ippan Doon</i>	Clustering of houses along the lagoon at the widest part of the island.	Clustering of houses along the lagoon.	Clustering of houses to maintain family cohesion.
<i>Juon Kijeek</i>	Extended family shares meals from the central cookhouse.	Family shares meals from a family cookhouse. Western kitchen is introduced.	Family shares meals from a family cookhouse. Kitchen has largely replaced the cookhouse.
<i>Emlapwoj</i>	Alap's house is the central structure of the <i>weto</i> housing the grandparents and grandchildren.	The extended family lives under one roof. Parents occupy individual bedrooms while children share main room.	Alap's house is the central to the <i>weto</i> , housing the extended family. Similar arrangement to manifestation in Laura.
Process built housing	Community building process ( <i>kumit</i> ) is used in construction.	Community building process ( <i>kumit</i> ) is used in the construction of a USDA house.	Community building process ( <i>kumit</i> ) is used in the roof replacement of a house.

These patterns demonstrate the production of supportive environments through the practice of Indigenous Knowledge. While colonization and globalization have had major impacts on the built-form of the Marshall Islands and the Marshallese cultural evolution, I argue that these

everyday cultural spaces demonstrate deep cultural patterns that aid in the reproduction of the Marshallese place-identity, and that the active creation of these spaces and spatial organization represents Indigenous Knowledge. Marshallese create new spaces and adapt to existing western developments through Indigenous design knowledge in the production of culturally supportive built-environments. The presence of deep-cultural patterns and the application of IK in the creation of Marshallese space within the settler-colonial context is particularly relevant for migrant communities. Arguably, the Marshallese diaspora is a continuation of the settler colonial experience of Marshallese communities, directed by the imperial control of the United States.

#### 4.0. APPLICATION

Indigenous knowledge aids in the construction of the Indigenous habitus, that is the deeply buried schemes that constitute a culture, transforming collective heritage into an individual and collective subconscious. As Bourdieu (1977) argues, the house symbolizes the epitome of the habitus, which demonstrates the significance of the built-environment in the construction of the habitus and the maintenance of culture. In the case of the Marshallese, the cultural construction of the indigenous habitus is often in opposition to outside influence. The six deep-cultural patterns present generative schemes within the dynamic system of the Marshallese habitus. As external and internal relationships evolve, these deep schemes provide constants. The reproduction of these cultural spaces demonstrates agency of the deep-cultural patterns and the adaptability of indigenous knowledge to pressures. “Land as Identity” speaks directly to the Marshallese Habitus. A councilman from Djarrit reflects on how his identity is formed through his relationship with the *weto* and the knowledge he gained through his ancestral lands. He stated:

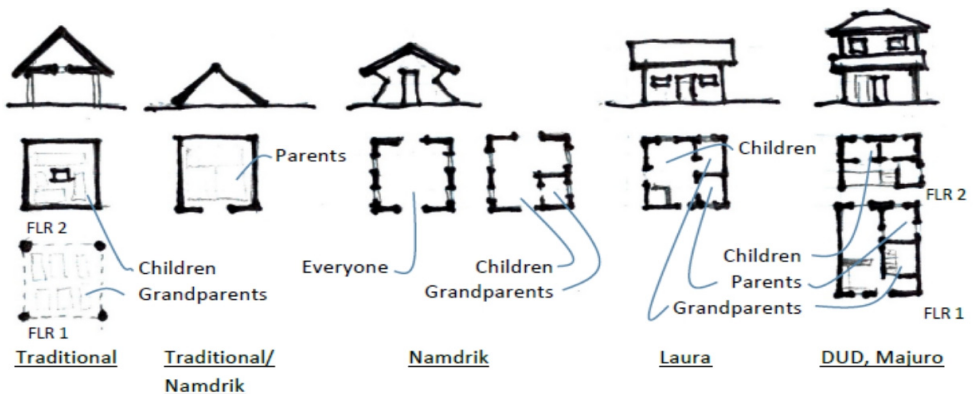
In fact there are other [places] way better than where I live, I know. But, I always came back home. Came back to my roots. When I go to school [in the USA] it made me, I didn't find myself. What's important. I have everything on this soil.

These six deep-cultural patterns contribute to an Indigenous Design Framework for Marshallese placemaking. While not a complete representation of all Marshallese placemaking patterns, it is conjectured that the application of this framework within immigrant communities will assist the formation of cultural capital, mitigate culture-loss and help to establish place-identity and place-attachment. Policies that support these processes will need to: 1) leverage the cultural capital apparent in adaptive strategies within the built environment and 2) ensure the ability of a culture to participate in the production of the built environment. For example, the *Emlapwoj* deterritorializes the structure of the western tract house and reterritorializes the segmentation of space as a microcosm of the village model - a settlement pattern of the extended family in which partnered couples live in sleeping huts while their children live with the grandparents in the larger main house. Figure 1 uses diagrams to express the evolution of this process. The Marshallese reconstruction of space supports everyday culture and has been observed within Marshallese communities in the United States.

Within the design of policy and planning for resettlement programs, the following areas need to be addressed in light of the findings. In resettlement planning, land tenure will need to follow existing land holdings with equal diversity and complexity of resources. Whether these are real-estate values or natural resources. Policies have to allow for the *Emlapwoj* to thrive, for example limitations need to be removed from the number of individuals in a household and restrictions lifted on requirements for permanent addresses of inhabitants who frequently move among family housing (a frequent issue cited in the Springdale, Arkansas school district discussed in interviews with the Marshallese community in northwest Arkansas). In a resettlement housing program, families could be provided the option to pool their housing allowances in order to afford a large house rather than smaller individual homes. The opportunity for self-built housing needs to be provided along with the opportunity to participate in a communal building process. A clear understanding of the implications of construction material choice on cultural processes needs to be established together with the community. Housing should provide the option for indoor kitchens and outdoor cookhouses as to not assimilate Marshallese household behavior to Ameri-European constructs. In combination,

housing arrangements should be based on both land holdings and family groups to replicate resource sharing among groups. Guidelines such as these are a start to the collaborative planning for resettlement. It is in the creation of architecture from the bottom-up, that is to say – the local that we can bring to both respect Indigenous or endogenous design knowledge and decolonize the production of space. I argue that the Indigenous knowledge is far more important to the lives of the communities than the global/ western knowledge.

While it is idyllic to consider the application of these knowledge systems in the maintenance of culture through colonization, transnationalism, and climate migration, practices that counter the good of the community must be kept in mind. Wilson (2003) argue that Indigenous peoples use their relationship with the land as a method to resist colonial development. However, these negotiations often recreate the hegemonic social order. In the Marshalls, I would argue that some Marshallese land owners negotiate their relationship between the land and understanding of capitalism to leverage their position of power; they negotiate Indigenous ways of knowing and responsibility to the land with the desires of western development to utilize the land. Resource extraction or the pure exchange value of the land overshadow communal benefits of resource use and lead toward new forms of neo-colonialism. Thus, rather than seeing the land as a static traditional connotation of for example subsistence production – the land is used as a tool within the capitalist modes of production to benefit the position of the Marshallese land owner within the hegemonic order.



**Figure 1:** Diagram to demonstrate the evolution of the *Emlapwoj* from the traditional formation to the urban formation.

## CONCLUSION

The displacement of the Marshallese to the United States through economic push-pull factors and climate forced displacement demonstrates the extension of the neo-colonial hand through a transnational and borderless state of existence. Marshallese placemaking remains at odds with settler-colonialism, and the Marshallese diaspora is defined by a loss of place and a loss of the symbiotic relationship between place and self. Lozanovska (2002, 141) expresses that to exist in a diaspora is to exist in, “a kind of eternal homelessness or placelessness, paradoxically singled by ongoing home building and construction of settlements.” Tying these sentiments to the larger discourse of climate refugees, the climate diaspora suggests a desperate existence for communities across the globe who will have lost their identity associated with place and their ancestral homes. This makes the reality of indigenous placemaking ever more complex as displacement, borderlessness, and homelessness become realities to the continuity of the Marshallese cultural identity and that of Indigenous peoples globally.

Through shared experiences, histories, stories, symbols, place-names, landmarks, etc. in the built-environment enhances a collective sense of meaning; this sense of place identity reinforces a collective attachment of place through these interconnected memories, identities,



and sensory stimuli (Untaru 2002). Through these modes Marshallese communities re-create everyday cultural patterns within western forms of architecture and urban development while also constructing new meanings around heritage, such as the case of Americatown in Uliga, Majuro, RMI. In Springdale, Arkansas, a hidden aesthetic allows Marshallese to hide in plain sight and keep rule breaking hidden behind the facade of a suburban duplex; the only distinguishable cue is the pile of shoes on the front porch stoop (Miller 2017). This notion of hidden aesthetic allows the Marshallese community to avoid risk associated with the surveillance of the municipal government; this process ties to Lozanvska's (2008) resisting assimilation.

Social capital becomes embodied in place for better or worse, and the implications of place – especially in a settler colonial context – implicate one social group's dominance over another. The symbolic capital of Indigenous placemaking as statements of identity and presence may provide opportunities to dismantle dominance. The 'character' or 'distinction' of these placemaking practices should be considered carefully. Davison (2013) argues that 'Character' is produced only as a surface construction of identity within the aesthetic of redevelopment rather than an embedded design pattern in the construction of socio-culturally supportive spaces; it is maintaining the power structures rather than being inclusive of Latino place-identity. Additionally, Dovey (2010, 7) argues that symbolic capital is seen more as a form of distinction rather than a form of capital, yet within the symbolic resistance of much Indigenous placemaking, such as the construction of hale on Mona Kea (see (Callis 2018)), it is clear that the symbolic capital is strengthened through both cultural and social practice, becoming a powerful gesture of identity in place – even if only temporarily. One must avoid undermining the symbolic capital represented by the character of place-making acts of Indigenous Peoples. The risk here is the oversimplification of placemaking practices.

Indigenous peoples are commonly left out of decision-making processes, I wonder if this will continue as many of the communities most impacted by climate-change forced displacement and resettlement are indigenous. This is especially true within discussions of urban development as opposed to rural (Behrendt 2009). Indigenous identities are often construed to being connected to nature rather than the physical form of the human made city; thus, Indigenous people are left outside of contemporary power in the city (McGaw, Pieris, and Potter 2011). To reiterate McGaw, "How do we decolonize the settler-colonial city?" (McGaw, Pieris, and Potter 2011, 307). As McGaw argues and my studies in the Marshalls demonstrate, the binary of settler-colonial and Indigenous place in the city is not binary, it is a complex interplay of negotiations. As I argue, these negotiations take place through the use of Indigenous Design Knowledge in the adaptation to and creation of culturally supportive spatial patterns.

To conclude, I argue that more grounded studies of communities facing climate forced displacement and resettlement are needed to better inform inclusive urban policies. Understanding how Marshallese placemaking happens within the diaspora, or any other group facing climate forced displacement will assist urban planners and policies makers to create more inclusive environments. Placemaking is everyone's job.

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## ENDNOTES

<sup>i</sup> A deep-cultural pattern is a habit or ritual that has persisted through the long-evolution of the culture-environment relationship that manifests in built-form and in support of everyday culture. Deep cultural patterns are generative in nature, and various physical manifestations may share the same deep cultural pattern" (Miller 2018: 92).

<sup>ii</sup> The *weto* is based on matrilineal inheritance, the traditional land tenure system in the Marshall Islands. It is a transect of the islet of an atoll that provides land from the ocean to the lagoon. The *weto* provides for the division of land based on resource allocation to each family, allowing each family access to the lagoon resources, land resources, freshwater, and the ocean resources.