Ecosophies:
Field/Mesh/Transversality

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Abstract

Ecosophies: Field/Mesh/Transversality is a practice-led design research project undertaken for a Master of Art & Design in the field of Spatial Design. The project explores the ontology of ecology through philosophical notions of mesh, transversality, immanence and transcendental empiricism, developed by thinkers whose work is being increasingly adopted by ecology practitioners. The significance of the project lies in its translation of ecological and ontological notions into the field of design and design practices. It demonstrates how design approaches to physical geographical sites gain significant understanding of design potentials via a mesh ontology or transversality. Through the development of transversality as a methodology, the notions of group and group analysis, from the field of psychoanalysis, are placed into the setting of ecological design process and design locale, revealing an immanent relationality of a site. In the face of ecological crisis, globally and locally, the project addresses a design process that ensures all aspects of site and its wider ecologies are engaged as immanent to the univocity of the design field. Mapping is presented as the key method of a transversal methodology. Through an understanding of transcendental empiricism, mapping is able to reveal virtualities of a site and reveal site as potential. The mappings in the project are explored through three modalities of composition—the plane of reference, plane of concepts and plane of percepts/affects. It is through these three planes of consistency, function and composition that a series of interventions developed during candidature were created and critiqued to refine the process to a final series of elements. This research project presents an ecological approach to design and design thinking—one that considers the site in its entirety and maximises its potential futures in a holistic, ecological manner.

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I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly de ned in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Signed: 

Date: 12/05/2017

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Figure 1. Stay, *Mangere Inlet ground surface.*

Introduction
The Local and Global

This one-year research project, *Ecosophies: Field/Mesh/Transversality*, had its genuine commencement or origins in 2015 when I was completing a practice-led Bachelor (Honour's) research project, *Revealing Ecologies*. The honour's project aimed at designing an urban architectural streetscape, residing within frameworks of ecological entanglement, in inner-urban Auckland. The project's main critical ecologies were drawn from Timothy Morton's ecological entanglement and Felix Guattari's transversality. Ecological entanglement is the web of connections that exist between all living beings. In my current research I reference this with the notion of mesh-ontology. It actions awareness as it emphasises the complex of agencies of species on another—it forces us to take responsibility. Guattari's transversality or transversal thinking implies the complexity of understanding the roles and effects of relations of the ecologies of the social, the individual, and the environmental. I engaged these two *ecosophies*—a term developed by Guattari—to formulate a holistic understanding of site through the exploration of urban, biological, geological, hydrological, social and indigenous ecologies. The project considered the provision of structures and infrastructures—architecture in the broadest sense—for the human and non-human within sustainable practices, such as the generation of energy, urban agriculture and native habitat restoration.

In 2016, when I began this Master's research project, I investigated further the notion of site and had intended to further develop a transversal methodology. Starting the project I faced questions regarding the ecosophies of the previous project but, most importantly, I asked more carefully what exactly is a transversal methodology. In the honour's project I had deployed transversal thinking and subsequently a transversal methodology as a means of connection—crossing borders and boundaries that were previously disconnected. Research into the roots and complexities of transversality revealed ontological implications of differences between immanence and

transcendence. This shifted the project's understanding. In 2015 with the honour's project I had no appreciable understanding of this difference, resulting in a design approach that was essentially transcendent in nature, precisely continuing an anthropocentrism I was aiming to displace. The project thus grew from using transversality as a means of connection of one thing to another, to exploring the very notion of being—how a thing is already a multiplicity of differential connections—and how that implicates ecology and design.

The aim of this research project is to explore the ontology of ecology with regards to design thinking and design processes. The world is facing an ecological crisis, and to reduce the effects and survive we need to rethink our approach to living and design practices. Practices such as urban design, urban planning and landscape design hold tremendous potential and responsibility to implement designs that advantage our environment. Through considerations of Timothy Morton's mesh, Felix Guattari's transversality and Gilles Deleuze's transcendental empiricism, the aim of the project is to develop design thinking and design process that attends to a site in its entirety—including not only the physicality of site, but also the social and trans-individual.

Chapter One is titled 'Contextures' which implies the chapter develops the series of contexts by which the design project and design process are defined. Contextures also implies there is something that moves between the physical and the critical. Hence the chapter outlines five key contexts. The first is the physical territory of the local design project, Mangere Inlet. With a rich history of settlement and industrial development, the site is currently being contested for further upcoming urban development. The second context is that of critical ecologies, namely Morton's mesh, and Guattari's transversality. The mesh is a sprawling network of interconnections holding all beings and their relations. Transversality and transversal thinking are ways for understanding mesh-ontology as interconnections between social, individual and environmental ecologies. I also discuss Deleuze's understanding of immanence and transcendental empiricism as a third contextual frame—one that broaches ontology directly. The fourth context brings these initial three together to define the actual problem-field or problematics of the

project. These are defined in terms of the project's qualities, its quantities, its modalities and its relations. The final context discusses design precedence as exemplars for what has been done globally and what can be done locally.

Chapter Two, 'Transversality', discusses my research methodology, which also defines my design process methods. It discusses how one should approach the design process transversally. The methods and methodology in the chapter focus on design approaches applicable generally and not solely related to the Mangere Inlet. It looks to develop an understanding of the ontological dimensions to design process. A depth exploration of Guattari's psychoanalytic procedures of transversality within a group setting enabled thinking relations between an ecological subject-group of the site within the design process. Engaging the work of James Corner and Gregory Bateson, mapping is presented as a vital method of a transversal methodology. The map holds an ability to reveal potential becomings of site through the transcendental field—virtual and actual. The virtualities and actualities are explored through three modalities of composition, developed through Deleuze and Guattari's notions of a plane of consistency of concepts, a plane of functions of relations and a plane of composition of percepts and affects. It is through these three modalities that mapping is shown to foster connections and reveal relations between beings, presenting potential becomings of site.

Chapter Three, 'Ecologies', presents the extent of the mapping methods in the design research project and how they have fuelled potential becomings and created design compositions of site or virtualities of site. A series of five preliminary design compositions created throughout the year-long project are presented and critiqued prior to presenting the final scheme to be exhibited. The degree to which these compositions embody a mesh ontology and transversal notions is critiqued at each stage and led to a development of design thinking and creating to produce a final minimal design that activates the whole site of Mangere Inlet. The final composition maximises the potential becomings of site through the operations of a transversal group and a mesh ontology.

Future research coming from this project looks to potentially influencing or

developing policy considerations around design process and the Mangere Inlet site. This research project offers valuable insight into how one can approach a physical site through a mesh ontology and transversality to understand the complex milieu of the site that encompasses the physical, social and transcendental. It further offers explanation as to why one should approach the design process transversally—for unveiling of potential becomings and compositions. The construction of a four-lane highway along this Mangere foreshore is madness and exhibits the exact frameworks this project stands against. Current schemes that achieve the destruction of a coastal environment are certainly not considering the present site, its vast network and potentials. The developing of urban planning or design policy to approach a site more considerately through a mesh ontology, transversality or other ecological approach is the next stage of my research.

Figure 2. Stay, *Stormwater trail Mangere Inlet*.

Chapter One
Contextures

Introduction

Ecosophies: Field/ Mesh/ Transversality is a research project situated within the ecological field of the urban. It develops a *transversal* methodology that works for site-sensitive design approaches and their occupancy. Its key engagements with questions of the ecological explore several fields of operation. Firstly, eco-philosopher, Timothy Morton, in his book, *The Ecological Thought*, develops the notion of the *mesh*, a network that extends its reaches to all beings, to whatever *is*. The mesh expresses coexistence, understanding that every being exists and functions in intimacy with another. Secondly, the French psychoanalyst, Felix Guattari, claims that *transversal* thinking is necessary to understand the relations between the environmental, the social and the individual. Working through multiples scales of the mesh, ecological urbanism and transversality allows the project to operate at general, collective and individual scales to explore life—existence or being itself—in all its aspects. The connectivity emphasised in Morton's mesh, in ecological urbanism and in Guattari's transversality reveals nature's inseparability from culture and suggests a path towards more sustainable design practices. It is through this multi-scalar, and multi-field exploration of *being* that a practice model for ecologically intertwined urban environments may arise. However, in its contextual explications this research is underpinned by something more basic or fundamental than either Morton's ontology of *mesh being* or Guattari's notion of transversality. More essential is recognition of the basic concepts of transcendence and immanence as these two notions come to define our ontological horizons for disclosing our world. In this I turn to the work of philosopher, Gilles Deleuze and his notion of transcendental empiricism as a fundamental determinant to how things as they are become knowable.

In this chapter, Contextures, I engage with five key concerns, with the aim of presenting, prior to discussing my actual design interventions, the necessary

contexts within which this design research develops. There are empirical-territorial contexts of physical design locations that have set one type of disclosive horizon for the research. Hence, in Part One—Design Locale, I outline the geography of the Mangere Inlet, physical site for the year's research, along with the rationale for the selection of this site. I then move from a geo-spatial territory of design to a critical terrain, which determines a second disclosive horizon for the research. Here I discuss, predominantly, aspects of the work of Morton and Guattari. A third contextual discussion, 'Ontological Dimensions' broaches the work of Deleuze and an understanding of transcendental empiricism as ontological ground for this research. This section aims at emphasizing why having an ontological dimension to design practice is crucial. The fourth section, 'Contextures' delineates the key problematics that define the problem-field of the design, bringing into confluence the empirical site, the critical terrain, and the ontological dimension. Hence the essential problematics are at once practico-physical fields of design intervention but also critical sites for thinking an ontology of the ecological—ecosophies, to use a term coined by Guattari. The fifth and final context constitutes a series of design precedents, exemplars from extant approaches to design interventions in various geo-contexts of eco-design. These extant approaches come to inform my own approach to the series of problematics in terms of models for appropriation and, equally, warnings with respect to inappropriate frameworks. Chapter Two, Transversality, then goes on to discuss more fully a range of methodological considerations in thinking through design practice and transversal strategies.

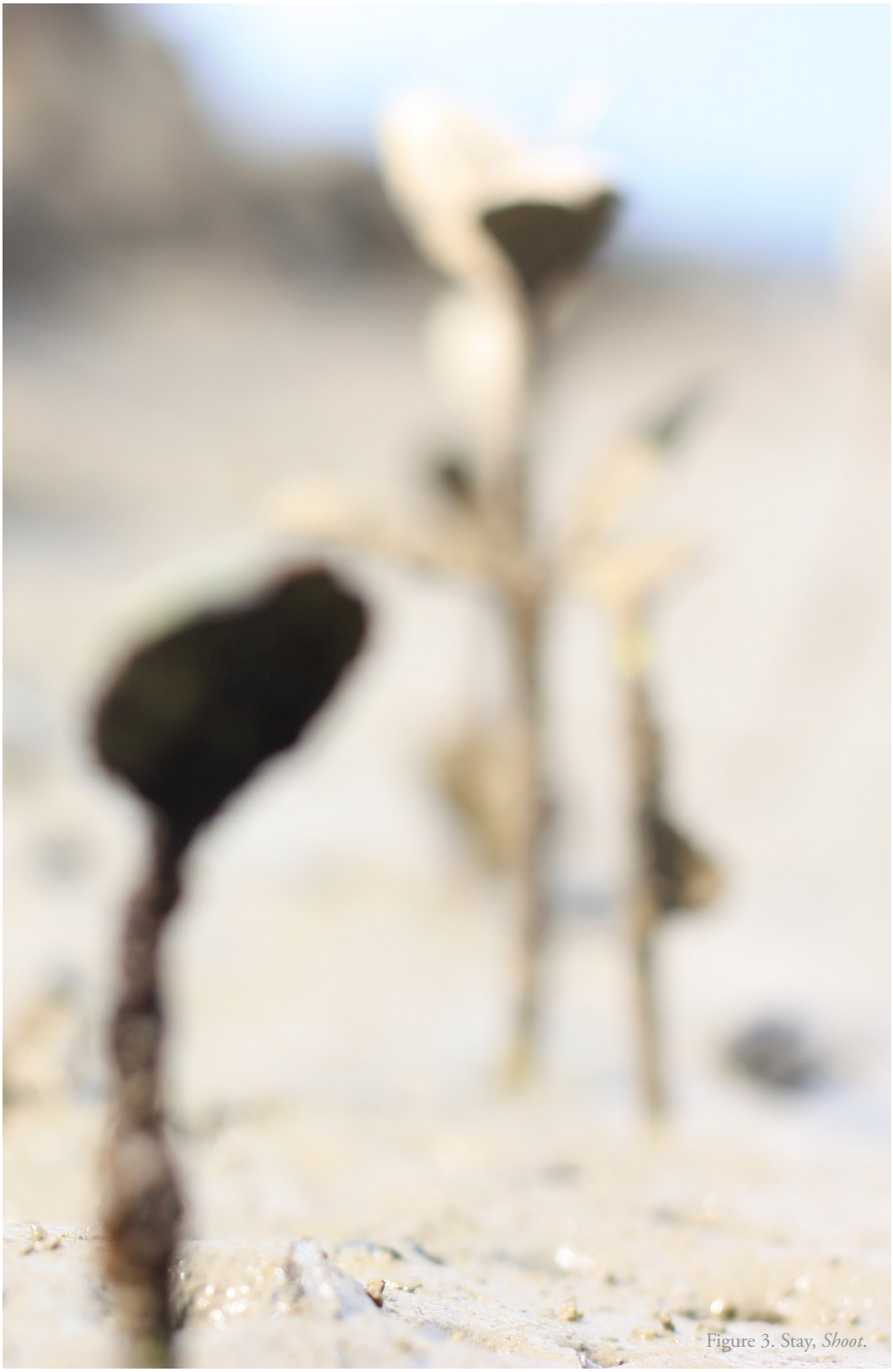

Figure 3. Stay, *Shoot*.

Figure 4. Stay. *Entanglement*.

Part One—Design Locale

Mangere Inlet

The design project required a physical site within which I could explore a complex of environmental and ecological issues. My concerns were especially with climate change and sea level rise. Hence a coastal site was ideal. Though Auckland has a vast coastline. Other determining factors were environmental hazards and sites that require severe treatment in order to rectify long standing destructive practices. The Mangere Inlet is such a site. Not only is it a former heavy-industry site now undergoing transformation, there is also a proposed motorway development along its foreshore. It is a highly contested and vulnerable location, politically sensitive and poorly degraded. It seemed perfect! This coastal site of Mangere Inlet is situated in the northeastern corner of the Manukau Harbour. Because of the area's proximity to the airport, the rail network, the port and the state highways, it is a hub for distribution and logistics. The Mangere Inlet has been under recent discussion and evaluation as the Onehunga to Penrose area bordering the northern foreshore is facing changes.

Human development of the area commences with the arrival of Maori some eight hundred years prior to European occupation. Maori lived with the fertile volcanic soil, abundant marine life, and the Te-To Waka portage—the narrow stretch of land separating the Mangere Inlet and the Tamaki River.[1] In 1840, European occupation led to urban and industrial growth, developing Mangere to the industrial and logistics hub it is today.[2] Due to intensive industrial growth during the twentieth century, waste discharge was continually flowing into the inlet, leading to its environmental degradation.

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1 "Tāmaki tribes, page 2. The canoes of Tāmaki," Te Ara Encyclopedia of New Zealand, accessed February 2, 2017, http://www.teara.govt.nz/en/tamaki-tribes/page-2.

2 Andrew Matthews, Hugh R. Grenfell, Bruce W. Hayward & Mark Horrocks, "Foraminiferal record of sewage outfall impacts on the inner Manukau Harbour, Auckland, New Zealand," *New Zealand Journal of Marine and Freshwater Research* 39:1 (2005): 196, doi: 10.1080/00288330.2005.9517300.

In 1960 oxidation ponds[3] were established due to complaints of smell and blackening of paint on houses from the build up of waste on mudflats.[4] In 2002 waste management was further upgraded to a land-based treatment centre. Even with these improvements, the inlet is still in poor condition. The "State of Auckland Marine Report Card" gave the Manukau Harbour an overall rank of D, on a scale of A-F. Many areas of the Manukau Harbour are ranked fair to good, but certain areas like the Mangere Inlet have tested high for contaminants, with poor water quality and unhealthy ecology.[5]

Auckland Transport and the New Zealand Transport Agency have identified that the Onehunga to Penrose area currently suffers from significant congestion, especially at the approaches to State Highway (SH) 20 and SH1, which hinders freight movements and restricts productivity and economic growth.[6] There were multiple strategies put forward addressing the problem. However, the chosen strategy places a four-lane highway to be constructed along the northern foreshore of the Mangere Inlet. While the project includes environmentally beneficial structures and strategies, such as storm-water treatment through constructed wetlands that provides habitat for birds along the Mangere Inlet foreshore and planting restoration,[7] it does not justify the construction of a four-lane highway along a coastal edge.

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3 "Sewage, water and waste, Waste-water treatment at Māngere," Te Ara Encyclopedia of New Zealand, accessed February 2, 2017, http://www.teara.govt.nz/en/photograph/24465/waste-water-treatment-at-mangere.

4 Shane Kelly, *Environmental Condition and Values of Mangere Inlet, Whau Estuary and Tamaki Estuary,* prepared by Coast and Catchment Ltd for Auckland Regional Council, (Auckland Regional Council Technical Report 2008/031), accessed July 8, 2016, http://www.aucklandcity.govt.nz/council/documents/technicalpublications/TR2008_031%20-%20Conditions%20and%20values%20of%20Mangere%20Inlet,%20Whau%20Estuary%20and%20Tamaki%20Estuary.pdf.

5 "2016 Marine Report Card, Manukau Harbour Reporting Area," Auckland Council, accessed January 7, 2017, http://stateofauckland.aucklandcouncil.govt.nz/marine-report-card/manukau-harbour-reporting-area-2/.

6 "Onehunga-Penrose connections", Auckland Transport, accessed January 7, 2017, https://at.govt.nz/projects-roadworks/east-west-connections/onehunga-penrose-connections/.

7 "East West Link", NZ Transport Agency, accessed January 7, 2017, http://www.nzta.govt.nz/assets/projects/east-west-link/EWL-newsletter-112016.pdf.

At a time when cities globally are looking to reduce vehicle emissions and highway development, Auckland government is seeking to expand vehicle infrastructures. This ignores the phenomenon of induced demand or *induced traffic*, defined as "all the traffic which would be present if an expansion of road capacity occurred, which would not be there without the expansion."[8] Essentially induced traffic implies that where vehicle infrastructure is expanded new drivers will be created with traffic intensity remaining proportionally the same. There is traffic congestion in the Onehunga to Penrose area—something that needs to be addressed but I do not agree with a four-lane highway along the coastline even with a proposed wetland construction, habitat regeneration and other ecological considerations.[9] Therefore, this project, situated in the Mangere Inlet, is developed as a counter-proposal or resistive scheme to the current Auckland Transport proposal. It explores how *passive recreational use* of an existing foreshore is a superior to motorway construction with respect to sustainable ecological development. It enables and promotes an educative framework that is clearly required for a general public to engage more fully in resisting destructive practices of urban planning.

8 Phil Goodwin and Robert B. Noland, "Building new roads really does create extra traffic: A response to Prakash et al.," Applied Economics (2003): 3, accessed February 1, 2017, doi:10.1080/0003684032000089872, https://www.researchgate.net/publication/24075107_Building_new_roads_really_does_create_extra_traffic_A_response_to_Prakash_et_al.

9 While a formal application for the development of the 'East West Link' was made in December 2016 it is anticipated the final decision on the application won't be made until late 2017.

Figure 5. Stay. *Mudflat sprouts*.

Figure 6. Stay. *Contact*.

Part Two—Critical Ecologies

Ecological Mesh

In developing a counter-strategy to the praxis of vehicular infrastructures, it is necessary to understand the contexts of ecological design from the viewpoint of critique. By critique I mean looking at some fundamental conditions of understanding how it is that our existence is related to the existence of the milieu or field of being in which we are immersed. In this sense I emphasise the notions of *field, mesh* and *transversality* as fundamental or critical concepts defining what constitutes our ecological existence and its thinking or philosophy: our ecosophies. The mesh, as described by Morton, is a sprawling network, the interconnections of existence. The mesh is both the backbone and its radial elements on which life exists. Its boundaries cannot be defined quantitatively, and it extends to all 'corners' of the universe inclusive of all. Its *measure* is intensive rather than extensive: it constitutes dispositions and potentials. No being exists in isolation. Every *function* or action occurs in relation to others. Causes are accountable only via their effects. The mesh is ecology: coexistence. Morton explains: "Ecology includes all the ways we imagine how we live together. Ecology is profoundly about coexistence. Existence is always coexistence. No man is an island."[10] Every entity on earth—animal, vegetable, mineral—constitutes and is constituted by the mesh; its relations are its existence. As Morton notes: "If everything is interconnected, there is less of everything. Nothing is complete in itself."[11] The world is process. Morton writes of seeds and pollen—the fruits and seeds of flowers are vital and provide for both animal and human diet. Additionally, bees, which are crucial to the pollination of flowers, use pollen—an excellent source of protein, to feed their offspring. Through the processes of flowers growing and reproducing through bees, food is simultaneously provided for many species and there is a continuation of processes through them. These relations expand qualitatively or intensively from the ecological realm into all aspects of life including inorganic ones not so readily noticed. As Morton explains,

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10 Timothy Morton, *The Ecological Thought* (London: Harvard University Press, 2010), 4.

11 Morton, *The Ecological Thought*, 33.

> Ecological science holds that all life forms are interconnected, but what are the philosophical and cultural implications of this interconnectedness? The mesh is even more deeply interwoven than biocentric ideas such as the web of life imply, because it does away with boundaries between living and nonliving forms.[12]

If, as Morton suggests, the mesh at once supports and is constituted by life, entities, processes, relations, and does away with boundaries, then it also stretches to social and cultural structures. In this respect we may now consider those global forces—such as capitalism—that have determined our cultural lifeworlds and our surrounding world. These global forces at once affect and in turn are affected by environmental determinants. For Morton, the ontology of the mesh enables a deep structural engagement with a multiplicity of 'environments' in play: physical, cultural, social, economic, geo-political, and local. In fact, Morton perceives capitalism itself as entirely imbricated in a mesh-ontology, which enables ways to think tactically how to work with and against its forces. He notes:

> Capitalism has brought all life forms together, if only in the negative. The ground under our feet is being changed forever, along with the water and air. So along with the political radicalisms that seek to create new forms of collectivity out of the crisis of climate disruption, there must also be a rigorous and remorseless theoretical radicalism that opens our minds to where we are, about the fact that we're here… First, in a world where we truly cared for what we now call the environment, there would be no need to point it out as such. We would be it in the most radical sense.[13]

The environment as we know it now is precisely that. We have made it a separate entity or notion, something we work on rather than work in. Environment is our existential *thereness*—not something we are able to enter and leave behind. For Morton this *is* the mesh. It is an interdisciplinary

12 Timothy Morton, "The Mesh," in *Environmental Criticism for the Twenty-First Century*, ed. Stephanie LeMenager et al. (New York: Routledge, 2011), 22.

13 Morton, *The Ecological Thought*, 104.

model. Ecological consideration draws from a multitude of disciplines: the hard sciences—physics, chemistry, biology, with their foundations in mathematics—no doubt but also the human sciences, which include political economy, history, sociology, anthropology and philosophy. There are, as well, the technical sciences: engineering, architecture, design planning and also medicine. We will need to consider these methodologically and ontologically. Morton's notion of mesh does not compartmentalize this range of interdisciplinary fields nor does it place a conventional hierarchy on them, with the physical sciences at the top and the human sciences at the bottom. It offers a new perspective on *being*, one that thinks the global ecological crisis from the immediacy of the local. Testing mesh thinking in design practice becomes a matter for speculation. Can the mesh think an ecological future with a transformative morphology of capitalism, towards perhaps an eco-capitalism or eco-socialism? Within the orbit of this design research project, the mesh will be explored as problematising engagements of subjectivity (the subject and the subjugated) as that which construes the transversality of design's particulars: particle-and-partial assemblages of various modalities of the being of beings as constitutive of ecological urbanism.

Transversality—The Three Ecologies

In order to develop a stronger understanding of mesh-ontology, it is helpful to consider other critical ecological thinking that similarly challenges conventional ways in which eco-methods are thought. One that is particularly helpful comes from Felix Guattari's understanding of the 'three ecologies': that of individuated mind, that of socio-cultural structures and that of the physicality of living beings. Guattari argues that nature and culture are inextricably intertwined. In order to understand the relations between these we need to think 'transversally': "More than ever today, nature has become inseparable from culture; and if we are to understand the interactions between ecosystems, the mechanosphere, and the social and individual universes of reference, we have to learn to think 'transversally'."[14] Transversal thinking allows us to remove disciplinary or

14 Felix Guattari, *The Three Ecologies*, trans. Chris Turner, New Formations 8 (1989), 135, accessed May 9, 2016, http://banmarchive.org.uk/collections/newformations/08_131.pdf.

concept boundaries and traverse across a multiplicity of seemingly separate notions simultaneously to reveal connections. Guattari's *ecosophy*, developed as transversality or transversal thinking, constitutes a focus on subjectivity, socio-cultural and environmental relations.

Arne Naess, the Norwegian philosopher who founded deep ecology, suggests: "By an ecosophy I mean a philosophy of ecological harmony or equilibrium."[15] Naess, as with Guattari's perspective on subjectivity, develops an understanding of inter-relational networks that commence, foundationally, from an ontology of immanence—grounding notions of field or milieu— rather than commencing from a point-of-view of transcendence: how one get from this bounded condition to that bounded condition—from mind to matter, from individual to the social, from the objective to the subjective, from the organic to the inorganic. For Naess, ecosophy removes single-entity ideals and looks to "intrinsic relation between two things A and B … The total-field model dissolves not only the human-in-environment concept, but every compact thing-in-milieu concept."[16] Both Guattari and Naess agree that in order to reduce the damage and degradation to our environment, a change in our understanding of being, self-identity and *living* itself is needed.

However, a fundamental difference between Naess and Guattari with respect to ecosophy is that Naess's eco-criticism discusses ecology for the most part as a discourse concerning a web-of-life. Whereas Guattari extends his discussions to the relationality of all ecologies, understanding that in order to change society's views and actions towards the environment, action is needed not only in the physical environmental realm of organic beings but also in the socio-cultural and individual realms of ecological determinations. John Tinnell in discussing Guattari's ecosophy, notes:

> The challenge of Guattari's ecosophy is not to regulate the forces of the world into some idealised, harmonious balance, but

15 Arne Naess, "The Shallow and the Deep, Long-Range Ecology Movement: A summary," in *The Deep Ecology Movement: An Introductory Anthology*, ed. Alan Drengson, et al. (California: North Atlantic Books, 1995), 8.

16 Naess, "The Shallow and the Deep, Long-Range Ecology Movement," 3.

> rather to engender institutional and ontological conditions that encourage people to encounter the world as a series of open and ongoing syntheses between partial objects (as opposed to regarding phenomena as objects-in-themselves, complete and isolatable).[17]

Guattari's transversal thinking implies that every entity—material or immaterial—is processual. Guattari sees the earth as a series of syntheses or processes. So when Tinnell refers to partial objects, he means that each *object* is connected to and comes-to-recognition only through its relations or processes. These 'entities' are not simply individual or singular such that one encounters this being—or thing—and then asks how is it related to others. This is key to understanding Guattari's transversal thinking—objects, beings or entities—organic or inorganic, living or non-living—can no longer be viewed as singular; they come to appearance as parts of chains, as processual series.

Transversal change is essentially one that happens across the three ecologies. This implicates a self-as-eco-mind, a becoming of a transversal self. Green roofs, better recycling and hybrid cars may aid the fight against the increasingly apparent effects of global warming. However, that is not what transversal thinking and Guattari's ecosophy is asking for:

> … the proper aim of ecosophy (and a properly transversal eco-humanities) is not to produce more energy-efficient light bulb or a hybrid car, but to reconfigure subjectivity and to remake academic and/or social practices altogether. … We need to rethink traditional notions of selfhood and, at the same time, invent practices designed to facilitate an ontology consummate to contemporary ecological concerns, as well as the emergent relational modes proliferating with the expansion of global capitalism and digital media.[18]

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17 John Tinnell, "Transversalising the Ecological Turn: Four Components of Felix Guattari's Ecosophical Perspective," *The Fibreculture Journal: Digital Media + Networks + Transdisciplinary critique 18* (2011): 39, accessed May 9, 2016, http://eighteen.fibreculturejournal.org/2011/10/09/fcj-121-transversalising-the-ecological-turn-four-components-of-felix-guattari's-ecosophical-perspective/.

18 Tinnell, "Transversalising the Ecological Turn," 38.

Readjustments of social and cultural practices are key to surviving the ecological crisis. The transversal self is a new mode of practice for what can be now thought of as trans-individuals—selves considered as partial ecological connectivities, multiplicities that complicate a individual/collective binary. Where does such change begin? Capitalism is perhaps a name we now need to give to mesh-ontology, to transversal ecosophies precisely in order to invent counter-capitalisms of all kinds. Without a doubt capitalism is a name we give to global powers that have construed or determined all ecologies in Guattari's sense: the social, mental and physical-environmental. Guattari suggests: "It has become de-localized, deterritorialized, both in extension—by extending its grasp over the whole social, economic, and cultural life of the planet—and in 'intension'—by infiltrating the most unconscious levels of subjectivity."[19] The dimensions to capitalism necessarily need to include institutional sites of the media, all forms of governmentality and authority, and advancements in technology. As Guattari explains: "It is the fatalistic passivity with which those issues are confronted by individuals and responsible authorities"[20] that can be accredited to the degradation of our relationships to the three ecologies. Without counter or resistive action from such institutional forces, there is no impetus to shift the fundamental systemic order. In fact, Guattari is suggesting opposition to the institutional itself through an awakening of the transversal self. Transversal *thinking* of a transversal self is the necessary impetus to change towards sustainable practices in social and mental ecologies that, in turn, affect environmental ecologies leading to ecological living practices. But what is transversal thinking? What is its ground? To discuss this I need to consider the ontological dimension to human existence, how this thinking self is a self who for the most part pre-hends its world conceptually. How do concepts happen? Are they apart from the world—ideas—or are they embedded in and essentially beings—realities?

19 Guattari, *The Three Ecologies,* 138.

20 Guattari, *The Three Ecologies*, 134.

Figure 7. Stay. *Bubbling surface*.

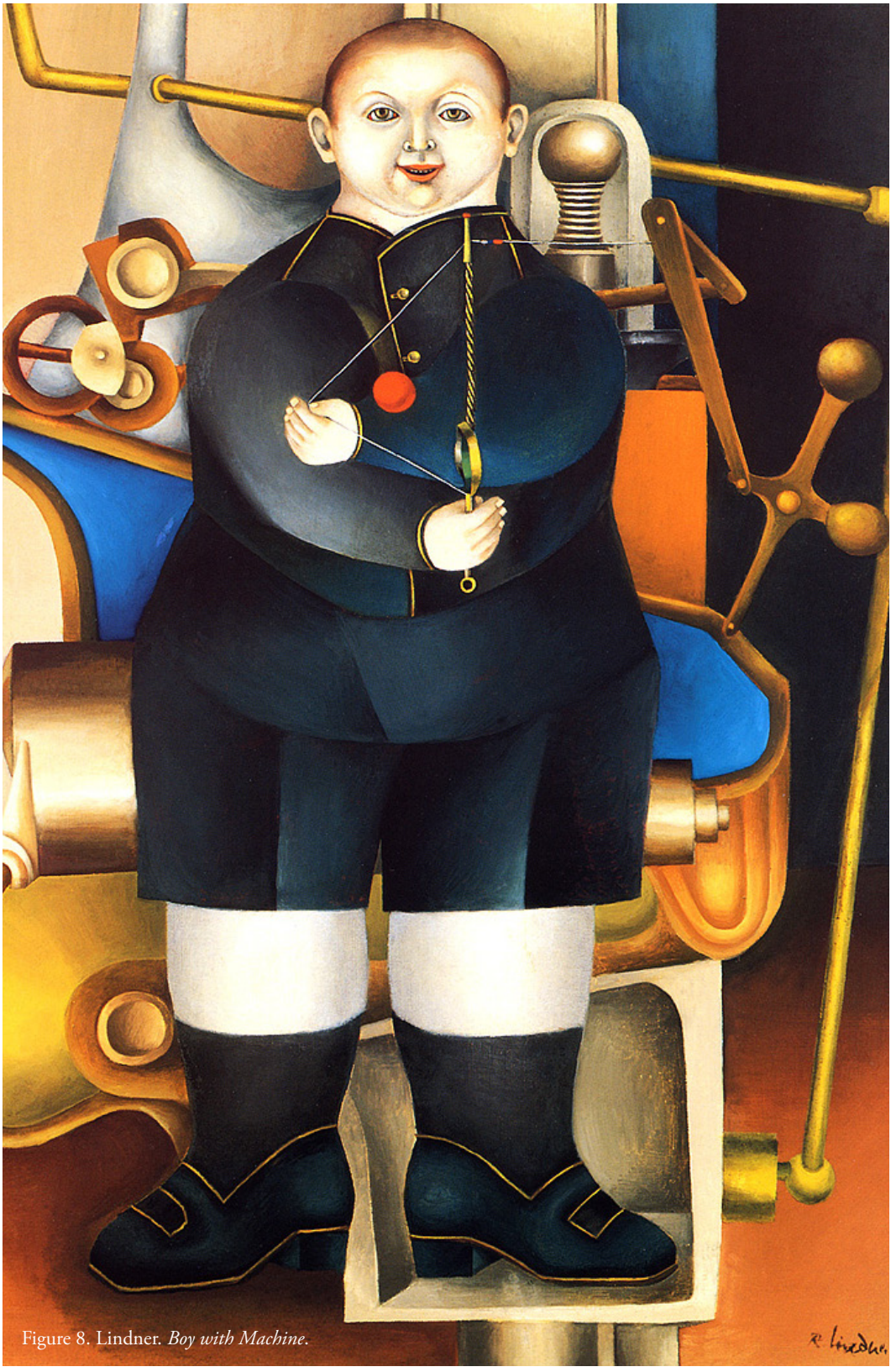

Figure 8. Lindner. *Boy with Machine*.

Part Three—Ontological Dimensions

Relationality

If Guattari especially emphasises an ecology of mind and a transversality of a self as essential in rethinking how the ecological happens, I need to ask what is this *mind* and its relation to things. For the most part, within a tradition of Western thinking, mind is transcendent to the materiality of a world of things. For Guattari this is not the case. Rather, mind, the social and the environmental are immanent to the radical transversality of their mutuality as existence. To help understand this further, I turn to the long-time colleague of Guattari, Gilles Deleuze, in order to define what a philosophy of immanence looks like, and how a mind is anything but a transcendent relation to the beings that are in the world. In doing this, I will be engaging in the ontological dimensions to this research project: how the entities that I am working with, along with this self who is working, do exist as relations to one another. Their ontological ground is disclosive of such relationality.

The Plane of immanence

French philosopher, Gilles Deleuze, along with Guattari, wrote of a 'plane of immanence' in their book *Anti-Oedipus: Capitalism and Schizophrenia Vol I*. The plane of immanence is a fundamental concept in ontology—ontology being concerned with the nature of being, with existence as such. The concept of the plane of immanence explicates relationality. Bento Prado Jr., a late professor of philosophy at the University of Sao Paulo, suggests that the plane of immanence can most directly be defined as "a diagram, [Deleuze] has also previously defined it as both horizon and as ground. That is, the plane of immanence is essentially a field in which concepts are produced, circulate and collide with one another."[21] The *field* of immanence is the relationality of the world. It is where concepts, relations, perceptions and affections exist. Prado Jr. further notes that it is a field "wherein concepts are constructed and circulate, [and] is not, however, thinkable by itself. It can only be defined and mapped with reference to the concepts which

21 Bento Prado Jnr, "The Plane of Immanence and Life" in *Introduction to the Philosophy of Gilles Deleuze* ed. Jean Khalfa, (London: Continuum, 2003), 10.

populate it."[22] Considering two entities, the plane of immanence entails the relationality of these two entities, the relationships and concepts that could arise regarding the two of them. However, it is important to note that these considerations must begin with the relationality and not with the entities. The plane is considered a primordial notion and it is concepts that are realised or produced from the plane, not relationality.

Deleuze and Guattari explain this notion of the plane of immanence in regards to capitalism and schizophrenia through the conceptual field of *machinic assemblages* in *Anti-Oedipus*. They invent machines that are the acting planes-of-immanence. It is through process and production of flows through the machine, or series of machines, that *reality* is produced. The 'desiring machine' that is discussed throughout their book exhibits desire as:

> … a set of *passive syntheses* that engineer partial objects, flows, and bodies, and that function as units of production. The real is the end product, the result of passive syntheses of desire as autoproduction of the unconscious. … Desire and its object are one and the same thing: the machine, as a machine of a machine. Desire is a machine, and the object of desire is another machine connected to it. Hence the product is something removed or deducted from the process of producing.[23]

The partial objects, flows, and bodies that are functioning as units of production in the desiring machines are all considered machines themselves or machinic assemblages. They all unite: bodies of consciousness to the objects they desire, to process the flows that pass between them. In turn, a real product is produced, or deducted as Deleuze and Guattari state—as the flow doesn't cease to exist once a final product is produced—that henceforth has immanent relationality to the desiring machine, also considered a plane-of-immanence. Relationality of all beings and components is further noted in the technical and social machines where every entity is a piece in the chain:

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22 Prado Jnr, "The Plane of Immanence and Life" 10-11.

23 Gilles Deleuze and Felix Guattari, *Anti-Oedipus: Capitalism and Schizophrenia* (London: Continuum, 2004), 28.

> The technical machine already implies an acting, a transmitting, or even a driving element that is nonhuman, and that extends a man's strength and allows for a certain disengagement from it. The social machine, in contrast has men for its parts, even if we view them *with* their machines and integrate them, internalise them in an institutional model at every stage of action, transmission, and motricity. Hence the social machine fashions a memory without which there would be no synergy of man and his (technical) machines.[24]

Through these machines there is an undeniable, relentless and all pervasive connectivity. We here visualise components of the world as parts of a machine. When asked if 'machine' was simply a metaphor or analogy when used in *Anti-Oedipus*, Deleuze insisted these machines are not metaphors but literal. Technical machines are extensions to humans—where the human is now partial, always to be completed technically. Yet as social machines, we are products of the flows of social machines: without them there would be no communication, no operation, no society. The social machine as plane-of-immanence envelopes us and enables us to function as collective.

Shifting Transcendence

Approaching transversality and a transversal methodology from a radically immanent standpoint—rather than a transcendent one—requires a Deleuzian change in thought on relationality within the world and how a given subject operates within this. Fredrika Spindler comments on Deleuze's own approach to transcendence and being: "The subject, as consciousness, is a concept highly operative as such, but that nevertheless is created from a plane-of-immanence rather than constituting it."[25] Christian Kerslake notes: "Ontologically, we might say that in a philosophy of immanence, thought is shown to be fully expressive of being; there is no moment of 'transcendence'

24 Deleuze and Guattari, *Anti-Oedipus*, 154-155.

25 "Gilles Deleuze: A Philosophy of Immanence," Fredrika Spindler, accessed March 25, 2016, http://sh.diva-portal.org/smash/get/diva2:406664/FULLTEXT01.pdf.

of being to thought."[26] That is to say, inasmuch as thinking, or conceptualizing happens, its pre-hending of a world, of beings that are, is essentially occasioned by the existential relationality of those being to this thinking being. There is no world of ideas that then must be copied as a real world of things.

Exploring radical immanence becomes the design processing of modification of beings that open the scope and credibility to which a change of perspective of self could instill positive social-cultural and physical-environmental change. Then our relationality to the world is the very nature of our existence. The name given to a Deleuzian ontology of radical immanence is transcendental empiricism. Why is the transcendental not essentially transcendent? How can the transcendental—pertaining to pre-hending conceptuality—be at the same time empirical? Clearly, Morton's mesh and Guattari's transversality engage a transcendental field of relationality, yet do so from an essentially empirical encountering. We need to see how this can happen.

Transcendental empiricism

Deleuze developed his notion of the transcendental in his encounter with the German philosopher, Immanuel Kant, who developed the philosophical understanding of *transcendental idealism* in his *Critique of Pure Reason*. Indeed, the transcendental was Kant's great 'discovery'. He took the transcendent subject-object relationship—that thought transcends from the *cogito* to material objects (from *res cogito* to *res extensa* in Descartes terms) and introduced a radical twist. Kant stated "I entitle *transcendental* all knowledge which is occupied not so much with objects as with the mode of our knowledge of objects in so far as this mode of knowledge is to be possible a *priori*."[27] Kant declares that you cannot know an object in itself, only an experience of this object. His transcendental idealism states that the experience of the world can be understood as an absolute subject

26 "The Vertigo of Philosophy: Deleuze and the Problem of Immanence," Christian Kerslake, accessed March 25, 2016, http://www.generation-online.org/p/fpdeleuze8.htm.

27 Immanuel Kant, *Critique of Pure Reason*, trans. Norman Kemp Smith (New York: Palgrave Macmillan, 2003), 59.

relationship, rather than a subject-object relationship. It is through our senses and faculties (our mind) that we experience and understand objects in the world. However, we never know them in themselves, only our mind's representation of them to ourselves: representing representations or appearances:

> All our intuition is nothing but the representation of appearance; that the things which we intuit are not in themselves what we intuit them as being. … What objects may be in themselves, and apart from all this receptivity of our sensibility, remains completely unknown to us. We know nothing but our mode of perceiving them.[28]

For Kant, transcendence shifts from 'subject-object'—essential Cartesian—to the comprehending of the *experience* of an object. It is within the faculties of the mind, sensibility, understanding and imagination that acts of *synthesis* allow us to comprehend and where the transcendental relationships exists. Synthesis, as Kant states, is "in its most general sense … the act of putting different representations together, and of grasping what is manifold in them in one [act of] knowledge."[29] Synthesis is the tool, or a concept of understanding, that allows the representation of an object to be known to us.

The *a priori*—what comes before experience—constituting the transcendental field is what Deleuze retains from Kantian idealism. His question concerns how the receptivity of the beings that are in sensibility do not sever us from experiental encounter with things themselves at all, but rather the transcendental field is primarily opened by a genuine empiricism—by beings that are in their possible disclosures, pre-hended transcendentally before becoming things subjectively known. Hence, Deleuze acknowledges Kant's transcendental idealism and adapts this to create his own transcendental *empiricism*. Similar to Kant, Deleuze's transcendental empiricism states that one can engage with the empirical world, "knowledge possible only *a posteriori*, that is, through experience"[30], but in difference to Kant, only through the *virtual*. James Williams explains and gives example

28 Kant, *Critique of Pure Reason*, 82.

29 Kant, *Critique of Pure Reason*, 111.

30 Kant, *Critique of Pure Reason*, 43.

of Deleuze's notion of existence through what is virtual and what is actual. Deleuze defines reality in terms of:

> … [the] virtual and the actual. For example, a coconut is both an actual coconut and the intensities or pure becomings it expresses in the encounter with the sensations of individuals (to become hard, to become grainy, to become hairy, to quench, to nourish). In the actual coconut, there is something of all the other things that can become hard or grainy – that something is their virtual side, the common intensities they express. Importantly, Deleuze deduces the structure of the relations that hold between the virtual and actual side of real things. This structure describes reality as a dynamic relation between the virtual and the actual.[31]

The virtual has a multiplicity of differentiations as to what it can be depending on the encounters any given subject has with it. Thus so far, Deleuze's transcendental empiricism shows similarities with Kant's transcendental idealism but the key to Deleuze's transcendental empiricism is that the actual exists in a virtual plane-of-immanence. The virtual is the very material of experience and engagement that enables the experience to be possible—the potentialities that every being is in its prehending as that which is to unfold in its actualising. We recognize the operations of *transcendence* and *immanence* in Deleuze's work. They are not a binary defined by negation but intensive polarities by what matter and memory, durations and transversal selves exist. I will engage further with the work of Deleuze and Guattari on immanence and the notion of a plane-of-immanence when discussing my design methods in Chapter Two of this exegesis.

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31 James Williams, *Gilles Deleuze's Difference and Repetition: A Critical Introduction and Guide* (Edinburgh: Edinburgh University Press, 2013), accessed April 14, 2016, http://AUT.eblib.com.au/patron/FullRecord.aspx?p=1126583.

Figure 9. Stay. *Stacked.*

Figure 10. Stay. *Stormwater drain, Mangere Inlet.*

Part Four—Contextures

Confluences

We seem to have drifted quite a distance from Mangere Inlet, to arrive at a discussion concerning ontology and ontological difference: difference between transcendental and empirical fields and how one thinks that difference as immanence. In this section I aim to bring together discussion from the initial three contextual frames in order to pose the very problematics to be considered as constituents of this design research project. This brings into confluence the physical environmental conditions of Mangere Inlet, the key critical ecological concerns of field, mesh and transversality, and the deep structural ontological concerns with transcendental empiricism. Hence, the problematics are practical-physical operational concerns, approached or understood in terms of transversal relationalities whose immanence is at once transcendental and empirical: opening to understandings of virtuality and actuality as both real constitutents to the being/becoming of beings. There are four fields or milieu of concern that are explored through eco-design processes that each implicate climate-change catastrophes: local effects of sea-level rise; global dimension to sea-level rise; potentialities for design-led action—changing externalities; and potentialities for adaptations—changing internalities. We can consider these four problematics to be addressing four essential categories of beings themselves: the first explores qualities or qualifications; the second, quantity or quantification; the third modality or modifications, and the fourth relation or relationality. Essentially these four will be engages transversally and as mesh-structuration.

Water at our feet: qualification of the design problematic

The Mangere Inlet is a threatened eco-system. It has been threatened since European industrial occupation and is further threatened by Anthropocene climate change, especially with respect to sea-level rise. The Inlet is further threatened by massive vehicular infrastructure in contexts of transition of the region from brownfield industrial to new residential and recreational zones. The genuine focus of the design research is sea-level rise: how design considered transversally approaches a local site in terms of the qualities

of existence of the entities that are relationally affected. Sea-level rise irrevocably changes all other design parameters: species survival—including the human—habitations in general, functions and potentials for on-going relationalities. Hoe do design processes engage sea-level rise as definitive qualification of design potential?

Rising sea levels: quantification of the design problematic

Climate change is massive and global. No single measure will shift its effects. No global consensus to effective change will now alter a significant and ongoing process of rising sea levels. What is the quantification of this problematic? Global temperatures are rising and projected to be continually increasing. Consequently, sea level rise should be a forefront concern for any shoreline communities and developments. As reported by the Ministry for the Environment,

> From 1880 to 2012, global average temperatures [have risen] by 0.85C. … The ocean is absorbing 90 percent of the heat added to the climate system. This warming is causing an expansion of ocean water which, in combination with water from the melting of land-based ice, is causing sea levels to rise. Sea levels in New Zealand rose by 17 centimetres last century and on average 1.7 mm per year over the last 40 years.[32]

It is predicted and future planning should consider that by the end of the century sea levels will rise somewhere between 0.8 and 2 metres.[33] Rising sea levels bring uncertainty to coastal communities. As saltwater reaches further inland it can cause erosion, an increased frequency and duration of coastal flooding, higher tides and waves, contamination of freshwater aquifers, and loss of habitat for birds, plants and fish.[34] Some coastal countries may experience higher sea level rises than others, but it is undoubtedly an

32 "Adapting to sea level rise," Ministry for the Environment, last modified January 19, 2016, http://www.mfe.govt.nz/climate-change/adapting-climate-change/adapting-sea-level-rise.

33 "Sea Level Rise," National Geographic, accessed June 29, 2016, http://ocean.nationalgeographic.com/ocean/critical-issues-sea-level-rise/.

34 "Sea Level Rise."

environmental issue that will affect all. With higher sea levels swallowing land, some communities will consequently become refugees and, in extreme scenarios, entire cities or countries will be displaced and perhaps also the extinction of certain species. As an example, a total meltdown of the Greenland ice sheet will result in a sea-level rise of 7 metres, which is enough to submerge London.[35] Rising sea levels are one of many ecological crises facing the globe. Mangere Inlet, the coastal site chosen in this project, and even New Zealand, a coastal country needs to consider and plan for sea level rises. In this respect, any design proposal for this site will not be one that aims to counter sea-level rise, or ignore its consequences. Rather, given the quantification of the problematic, any design process will aim at working with all of the forces that sea level rise brings.

Action: modification to the problematic

There are different ways communities and cities can deal with the effects of rising seas. In low populated areas and remote locations, development can be moved away from the shore. Shorelines can then be modified to accept and combat rising sea levels and storm surges. However, this is not currently a feasible option for densely populated areas and cities. In this case, adaptive infrastructures are arguably the best choice to combat rising sea levels. Floodwalls, barriers and other infrastructures are being developed. Some are already in place in certain coastal cities.[36] Floodwalls and barriers operate as defense mechanisms against storm surges and rising sea levels. They work to provide resistance and prevent damage. These types of protection systems do not operate within mesh ontology or the transversal self. The transversal self understands that rising sea levels are an effect of global warming and know that humans have brought this upon themselves. It is not that humans should now be open to destructive forces unleashed by techno-industrial development. Placing importance on developing these types of infrastructures is necessary, but it is not addressing the problem. It addresses almost exclusively the technocratic and engineering instrumentalism that enabled Anthropocene climate change to take hold, only delaying the

35 "Sea Level Rise."

36 Kristina Hill and Jonathan Barnett, "Design for Rising Sea Levels," *Harvard Design Magazine*, Fall 2007/Winter 2008, accessed June 29, 2016, http://www.harvarddesignmagazine.org/issues/27/design-for-rising-sea-levels.

inevitable.

Another combative method is coastal wetland ecosystems, which have proven valuable in assisting in flood control and rising water levels. They act as flood storage, storm surge buffering, erosion control, water quality maintenance and provide fish and wildlife habitats.[37] Wetlands have the ability to act as a natural 'sponge'. They absorb rain, groundwater, surface water, and floods waters, and slowly release them. At the same time, wetlands reduce pollution and cleanse the water by storing and filtering urban runoff, retaining certain nutrients and sediments carried by water. Also the added benefits of a wetland, in the case of floods or storm surges, is that they stabilise shorelines through planting roots. Lastly, as much as wetlands have been seen as nothing but a nuisance in the past—known as swamps and bogs—we have indeed begun to realise the importance of these ecosystems. They are some of the most productive and diverse ecosystems on earth.[38] While coastal wetlands arguably operate within a processual ecological mode enhancing the urban and natural environments, unlike infrastructures such as floor barriers, neither of these solutions are entirely a product of transversal thinking. Coastal wetlands are effective within ecological urbanism. Implemented to help cities, they offer symbiotic relations between bio-diverse and urban-infrastructural environments. But can design's agencies achieve more that this in approaches to environmental and ecological modification? Transversal approaches work on the very agency of a self—modifying how a self actualizes itself as much as it modifies bio-diversity and social structures. How can my eco-design do this?

Adaption & Adaptation: relations of the problematic

Methods such as the coastal wetlands, green roofs, water collection and storage areas are examples of ecological urbanism in rethinking public space and architecture. Typical as they are as eco-design exemplars, they present *transcendent* understandings governed by instrumentalism and cause-and-effect rationalities. They are not wrong inasmuch as they offer effective

37 "Conserving Coastal Wetlands for Sea Level Rise Adaptation," Digital Coast: Office for Coastal Management, accessed June 29, 2016, https://coast.noaa.gov/applyit/wetlands/understand.html.

38 "Conserving Coastal Wetlands for Sea Level Rise Adaptation."

solutions but they do not open to the grounding problematic of climate-change crisis. Yes, there is merit to be granted to water plazas and green roofs. They are valuable to our cities, protecting them from large surges of water, and they also encourage relationships with water. But how would a thinking grounded in transcendental empiricism open this problematic differently to the empirico-rationalities of typical cause-and-effect approaches to design problem solving?

We are in a time where action must be taken: "Around the world, 90 percent of the cities have been built on the coast or on a river."[39] No longer can sea level rise be dismissed as irrelevant. By the end of the century, if not earlier, we will face water at our door. This is the time to be planning and putting structures in place for our future. As designers, there is a responsibility to consider the abilities and longevity of our designs. It is therefore imperative that consideration surrounding future sea level change will be included in the design stages of the project. This is not exactly a blank slate we need to be working with. There are many current design practices and design precedents that can be informative as to how design approaches should proceed. In the final section to this chapter on design contexts I examine five extant projects that suggest appropriate and inappropriate directions to be taken.

39 Tracy Metz and Maartje van den Heuvel, *Sweet & Salt: Water and the Dutch*, (Netherlands: NAi Publishers, 2012), 195.

Figure 11. Stay. *Mangere mudflats.*

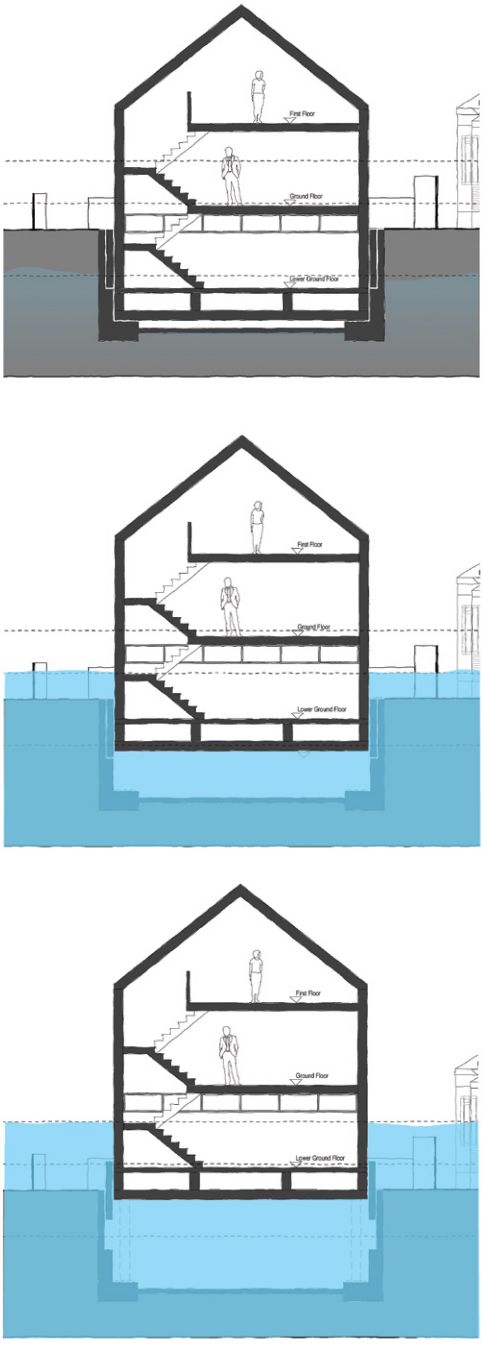

Figure 12. Baca Architects, *Amphibious House.*

Part Five—Design Precedence

Globally there are many different approaches taken by designers in addressing the complexities of ecological design. I am addressing five such approaches, each of which has informed aspects of my own design practice during the course of the year, and leading to my final design project submitted for examination, in which aspects from a number of these schemes can be encountered, albeit in significantly modified form. One project comes from the United Kingdom, one from the United States, one from Denmark and two from China. It is, perhaps, significant that we are able to witness in contemporary China significant efforts to address ecological crisis while yet that country is becoming the largest economy on the planet and the largest producer of atmospheric carbon, responsible for climate change.

Amphibious House U.K.
Baca Architects in the United Kingdom have designed and built an amphibious house. The house is located in a designated flood zone within a conservation area. Rather than building flood defenses the architects understood that humans must be in symbiosis with natural forces. The house, which has a waterproofed concrete foundation surrounding the lower ground floor, sits inside an independent excavated wet dock. When flooding occurs, and the river rises, it will fill the base of the wet dock lifting the house. Able to rise and fall with the water level, the house is guided by four posts that can be extended to handle future water level rise. Perhaps we can recognize in this approach something of an affective self whose ecology is transversal, and an architecture whose agency aims at being non-resistive in certain respects.

Chicago Riverwalk USA
The Chicago River has played a pivotal role in the development of its surrounding city. The river was vital to the industrial and residential growth of the city, and this subsequently led to its pollution, which caused thousands of deaths from waterborne diseases. As a solution, a famous *reversal* of the river flow occurred. The Chicago Riverwalk project is an attempt to recover the river for the ecological, cultural and economic benefit

of the city. The Riverwalk was designed to enrich and diversify life along the river for the benefit of the city. Creating such spaces allows a community to be more involved with its surrounding environment in an enjoyable and positive manner. The Chicago Riverwalk is important for being a multifunctional site composed of six locales:

- The Marina Plaza, hosts restaurants and outdoor seating
- The Cove, space for water activities, kayak rentals and docking for human-powered crafts
- The River Theatre, dynamic space with sculptural staircase linking the city street and Riverwalk
- The Jetty, a mixture of piers and floating wetland gardens
- The Water Plaza, area for families and children with water features for fun and educational purposes
- The Boardwalk, accessible marina edge walkway spanning and linking the different areas

As a series of architectural programmes, the Chicago Riverwalk works to revive and protect the river as well as connect previously disconnected sites, originally segmented due to infrastructure and inaccessibility. By providing pathways on land and water, linked by multi-functional spaces, a reconnection has happened that reintroduced the Chicago River to its surrounding inhabitants. Originally under utilised and disregarded, this repurposing of the river and its urban banks has reminded locals of its importance to their growth and survival.

It is the large-scale activation this project offers that enables it as a design precedent. This project worked to transform an environment from industrial to sociocultural understandings. In doing so, the spatial sequencing and programmatics enable transformative possibilities for how a self becomes-urban, inhabits its locale and understands connections. Working transversally to expose and improve links between the political, the socio-cultural and the individual, the project opens to a sustainable ecological urbanism, shifting an urban stance towards a sustainable city in a multiplicity of encounters and agencies between the human and the aquatic. For me, the Chicago Riverwalk happens transversally.

Figure 13. Chicago Department of Transportation, *Chicago Riverwalk*.

LEMVIG Skatepark Denmark

The Lemvig Skate + Park concept, designed by studio EFFEKT, has created a multi-functional space. The skatepark was once an empty lot on the city's harbour-front, which has been transformed into a space for enjoyment, recreation and leisure. It is a prime example of urban recycling where a disused space has been repurposed for the enjoyment and benefit of the local. Many urban harbours become detached from the majority of their city's population through exclusive maritime-industrial activity. However, through repurposing of the site as a social gathering space, EFFEKT believed it could start a revolution for revitalisation of the harbour and turn it into a hub of activity and vibrant life. After it was created the skatepark brought people from all over the region together to enjoy the seaside park and, with its success, this is surely only the beginning of shore development in the area. The integrated skate and urban park features a route for skaters, areas of exercise, picnic areas, a basketball court, children's playground, and spaces for cooking and floral features. It caters to a broad range of activities that appeal to the gatherings of families, youth, couples and individuals. The park combines an extensive range of activities, overlaying them all in one space. The Lemvig skatepark works greatly towards an ecological urbanism. It is an excellent example of repurposing a disused site for public activity and enjoyment. As a design precedent, the well-designed combination of multiple activities in one locale catering to a diverse range of individuals and groups shows the success and potential of any site with similar characteristics to be transformed into a recreational zone. In the context of the Mangere Inlet and its use as a design precedent, it offers strategic design thinking that is versatile and opens to significant potentialities.

Floating Gardens of Yongning Park China

From the landscape architecture firm, Turenscape, the Floating Gardens are an important example for any waterside community or city dealing with flood control and storm water management. Taizhou City wanted to upgrade its riverside park site, which was at the time simply an embankment of concrete, as part of the local flood control policy. To improve local and tourist experience while also providing alternative flood control and storm water management, Turenscape designed a park composed of two layers: a natural matrix and a human matrix. The 21-hectare park along the

Figure 14. EFFEKT, *LEMVIG Skatepark*.

Figure 15. Turenscape. *Floating Gardens Yongning River Park.*

Yongning River has had wetlands and local native vegetation reintroduced for the recovery of ecosystems and flood control as well as a path network, story-boxes and a designed tree matrix for users. The redesign of the area demonstrates an ecological approach to flood control and storm management while also appealing to and educating locals and tourists on other natural flood control solutions. The Floating Gardens works as an exceptional example of a 'natural'—though design instrumental—approach to flood control and storm water management for waterside communities. It has provided a platform for restoration, enjoyment, recreation and education. The sites fabric has shifted dramatically, placing the city within an ecological urbanism.

Introduction and integration of a natural matrix composed of wetlands and native vegetation, alongside an already established human matrix, is an example of mesh design thinking strategies. To place the ecological as a working component of society evokes a mesh ontology: understanding and working with bio-diverse elements in rehabilitation and recovery measures. The introduction of native plantings and wetlands—which are some of the most productive ecosystems—has been an enormous triumph for ecological urbanism. The natural matrix is not only a system for flood control but also water quality, habitat regeneration and has become an attraction for locals and tourists. The integrated combination of the natural and human—keeping in mind that humans are 'natural'—is an excellent example of an active mesh thinking indicating that introducing the ecological into the urban has not only positive outcomes for environmental ecologies but also for social and trans-individual ecologies. The project educates local residents and visitors about potentials for environments benefiting life itself. This design is seen as a great activator for social change and a transversal self.

The Red Ribbon, Tanghe River Park, Qinhuangdao City China
The Red Ribbon river park was also designed by Turenscape. The site had a good ecological base as it was covered with diverse native vegetation that housed an abundance of species. However, the site was inaccessible and unusable. Turenscape designed a minimal intervention that still protected and cherished the landscape but offered functionality and recreation. A 500-metre long red ribbon was designed into the site and integrates a

boardwalk, seating and lighting, with five pavilions along the path allowing for gathering, focal points and environmental education. The Red Ribbon offers accessibility and connection to the locals and their environment. The design also does as little as possible to endanger or affect the natural ecosystem and, in turn by making it an attractive walkway within the community, creates socio-cultural protection. Respecting the landscape with minimal intervention, Turenscape worked within the mesh, acknowledging the importance and value of pre-existing vegetation. Those who encounter this can experience and live alongside a naturally developing environment, understanding that we too are occupying the earth along with a vast number of beings and need to be aware of the effects of our actions. As a precedent, the Red Ribbon shows that minimal interventions can be intensively maximal. Allowing for the site to continue developing naturally without interventional control or management, as tends to happen with regular city parks, lawns and backyards, expresses a sense of living with rather than managing existence. It invokes the notions that the human is simply one species among a world of others, and our actions have consequences. It is a living-with, an immanently related mesh living.

This chapter has aimed at providing a comprehensive series of design contexts such that the scope of the project and the milieu of the site are well understood. In what follows in Chapter Two, I will be discussing fully my design approach, not where things will happen in particular contexts but how I will proceed in my design thinking and understanding of my site.

Figure 16. Turenscape, *Red Ribbon Park*.

Chapter Two
Transversality

Introduction

Chapter One has provided a comprehensive account of the design contexts by which this research project has progressed. These contexts have introduced not only the site, and some design exemplars that will guide the design development. The contexts have also introduced the critical approaches taken to design thinking and ecological determinations. In particular, these contexts have introduced especially the thinking of Deleuze and Guattari as pivotal to a thinking ecosophie. Chapter Two engages the question of research methods, which is to say, design methods that follow an ecosophical thinking. It is here necessary to extend an engagement with the work of Deleuze and Guattari, especially concerning a further understanding of the notion of immanence and the plane-of-immanence. How does one design with a plane-of-immanence? How does this become a methodological approach? I also introduce the work of landscape theorist and practitioner, James Corner, whose methodological understandings of mapping are essential in understanding how transversality becomes an ontology of the map.

Of special significance here is the thinking of Gregory Bateson. Bateson's work from the 1960s on an ecology of mind and the ontology of mapping was important for Deleuze and Guattari's collaborative writing and well as for Guattari's own understanding of the three ecologies. Mapping techniques are foundational to the project's research. Corner writes of mapping as having power to uncover virtualities of site. Deleuze and Guattari also comment on mapping's ability to render a site accessible in seeking out connections. The deploying of mapping as methodical technique within my own project, to understand site and foster new connections, has brought about three different modes of mapping in the project which resonate with Deleuze and Guattari's development of three planes of immanence: a plane of concepts, a plane of reference and a plane of percepts/affects.

As compositional methods, these modalities of mapping are explored and provide an approach and thinking for a genuine ecosophy.

Transversality is my design methodology. Hence, this chapter has three key discussions. The first asks how do I structure a field or milieu transversally such that design can proceed methodically. For the most part design processes or design theories are implicitly transcendent in their structuring. What is it to structure an immanent milieu? But design is not an analytical tool not essentially a synthetic tool. Though analysis and synthesis are paramount for design, its processes are essentially compositional. How does one compose on a plane of immanence? What does this even mean? Hence, a second section concerns a movement from structuring of a milieu—analytics and synthesis as immanent processes—to composing within a milieu: How do I compose transversally? Yet, given that we are able to articulate how we structure transversally and then compose transversally, what are the elements of composition themselves? What do we actually work with? Hence there is a third question: what are the modalities of composition. Is composition itself monological, analogical, univocal or a multiplicity? These three questions essentially are explored via aspects of the work of Guattari, along with some of the collaborative thinking of Deleuze and Guattari.

Figure 17. Stay, *Composition*.

Figure 18. Stay, *Mudscape*.

Part One—How Do I Structure Transversally?

Transversality

Felix Guattari developed the concept of transversality through his work as a psychoanalyst at the *Clinique de La Borde* in France. Here Guattari was faced with the treatment of a group of patients rather than a standard psychoanalytic dyad of analyst and analysand. Guattari's approach was to invent radical techniques for *transference* within a group—techniques he termed 'transversal'.[40] He engaged in a transversal analysis across the dynamics of the group. In addition, Guattari also introduced the institutional object. He suggested:

> [The institution] was not simply a 'backdrop' against which classical dual analyses might be undertaken …The analyst had to come to terms with the effects of the setting on how s/he would normally proceed. Indeed, the analyst was called upon to translate and reevaluate technical and conceptual notions in relation to the frameworks and demands of the institutional object.[41]

Therefore a transversal analysis of a *group* includes the elements, practices and constraints of the establishment that surround it. In the setting of psychoanalysis, transversal analysis involves the hospital, the bureaucracies, doctors, administrators and nurses and their effects on patients. The institution is deterritorialized through transversal analysis.

The formation or origin of the *group* is also of importance to Guattari. There are two frameworks by which the group is thought: subject-group and subjugated-group. The subjugated group is one bound by an institution, subjugated to something from the outside that determines it. As Gary

40 Transference in psychoanalysis is the unconscious redirection of feelings and emotions from one person to another. It is form of projection as the analysand projects feelings about someone or something significant from their past onto the analyst.

41 Felix Guattari, *The Three Ecologies*, trans. Ian Pindar and Paul Sutton (London: The Athlone Press, 2000): 109-110, accessed September 15, 2016, https://monoskop.org/images/4/44/Guattari_Felix_The_Three_Ecologies.pdf.

Genosko notes: "The subjugated group's unity lies, then, outside itself; the nurses appearing each day to administer medications unite the individuals on a ward."[42] The group is entirely subjugated to the demands of the institute and its predetermined outcomes; it cannot overcome the framework. Its institutional relation is essentially one of transcendence. On the other hand, the subject group:

> … is a kind of group in fusion that has liquidated its seriality and come together in 'the flash of a common praxis', in mutual reciprocity rather than mutual Otherness, but still united in the first instance in virtue of a common object.[43]

The subject group is not determined by the frameworks of an institution—it forms together by means of a commonality. Its unity or univocity is constituted in immanence. Elements and partial objects fuse together in an open, non-predetermined manner, much like that of a *rhizome*. Its fluidity, and non-linear nature maximises the potentials of relations in the subject group. The question remains, though, how a radical psychoanalytic treatment might have relevance to design practice. I have already mentioned Deleuze and Guattari's *Anti Oedipus*, with its terminology of desiring machines and machinic assemblages. I suggest this text on schizoanalysis may fruitfully be read as a design-and-construction manual for the building of social and individuated structures, essentially ecological structures. Guattari's understanding of transversality takes us to a granulated engagement with assemblages, now considered in terms of two kinds: transcendent subjugations and immanent subjects. My aim is to adopt such processual thinking as method in design.

Deleuze and Guattari's rhizomes, discussed in *A Thousand Plateaus*, are another concept by which to explore transversality and the subject group's structure or counter-structure. To consider a tree, it has roots spreading into the ground, a trunk that grows up and branches that extend into the

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42 Gary Genosko, "The Life and Work of Félix Guattari: From Transversality to Ecosophy," in *The Three Ecologies*, trans. Ian Pindar and Paul Sutton. (London: Athlone Press, 2000), 126.

43 Genosko, "The Life and Work of Félix Guattari," 128.

sky. With *arborescence*, there are structures determined by hierarchy and categories. Rhizomes, on the other hand, such as ginger or potatoes take root, but it is not a refined root structure. They keep spreading, connecting and reconnecting in a complex network with no beginning or end; there is always an excess of connectivity. There are six characteristics to rhizomes: principles of *connection, heterogeneity, multiplicity, a signifying rupture, cartography* and *decalcomania*.[44] Principles of connection and heterogeneity suggest that any point can connect to any other.

Applying rhizomatic structuring to subject-groupings enables an open, connective network that is maximising potential outcomes and relations of the group, as no pre-determined or fixed structure or hierarchy needs to be followed or needs to eventuate. The principle of multiplicity states that "[a] multiplicity has neither subject nor object, only determinations, magnitudes, and dimensions that cannot increase in number without the multiplicity changing in nature."[45] For example, rising temperature results in an increasingly hot *atmosphere* understood as the multiplicity of temperature changes in nature. An a-signifying rupture means that a flow can be broken at a certain point, but it will continue on an old line or a new one. The principles of cartography and decalcomania infer that the rhizome is similar to a map, open, adaptable and accessible at any point. Rhizomes and their principles show themselves to be an immanent field and process. To use rhizomatics, or transversality as design method enables us to deterritorialize the *institution* and other socio-political structures and rethink these practices towards a sustainable future. Every design process goes by way of institutional framings. In Chapter Three, engaging the actual design processes for this project, I will be encountering such institutional forces, rethinking them in counter-agency as immanent rather than transcendent. Identifying the two groups—subject and subjugated—is important to define this project's processes of operation. Working transversally, it is crucial to work within a subject group whose outcomes are not predetermined by a totality. Rather, the elements and partial objects happen rhizomatically. In bringing together the elements of the project, it needs to be done in such a

44 Gilles Deleuze and Felix Guattari, *A thousand plateaus: capitalism and schizophrenia*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 2005).

45 Deleuze and Guattari, A thousand plateaus, 9.

way as to maximise the potentials and not limit them within a panoply of institutional frameworks—for example, urban planning, governmental, and educational.

A transversal ecology

To refer back to transversality's group psychoanalysis involving the institution, *who* is the group and *what* is the institution of ecology? Ecological science is very much anthropocentrically driven. The environment, for the most part, is determined from the point of view of transcendent structures, especially those grounded in the mathematical sciences. To deterritorialize institutional parameters we need to look at the very core of ecology's ontology. Thus to look to transversality in ecology, and the institutions of ecology, one has to explore the most fundamental notions of ontology—meaning that an engagement with the institution is an engagement with subjectivity.

Guattari's exploration of transversality and the three ecologies—social, individual, and environmental—links the ecological crisis to the socio-cultural crisis. These are defined by understandings of subjectivity. Guattari's ecosophical perspective stems from the work of Gregory Bateson, who was also concerned with the implications that understandings of subjectivity had on the environment. Bateson emphasises that one cannot separate the mind from the ecologies within which it exists:

> This identity between the unit of mind and the unit of evolutionary survival is of very great importance, not only theoretical, but also ethical. It means, you see, that I now localize something which I am calling "Mind" immanent in the large biological system—the ecosystem. Or, if I draw the system boundaries at a different level, then mind is immanent in the total evolutionary structure. If this identity between mental and evolutionary units is broadly right, then we face a number of shifts in our thinking.[46]

Bateson's thinking shifts an understanding of mind, the 'I think' as such.

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46 Gregory Bateson, *Steps to an ecology of mind*, (New Jersey: Jason Aronson Inc., 1987), 467.

It moves from habituating as subjective interiority to occurring *outside* immanent to a field or milieu, interconnected to social systems and environmental ecologies. The purpose of this shift in the thinking of self is to action a change in practices.

Part Two—How Do I Compose Transversally?

The ecological group

Design processes compose matter and assemble functions. Is there a particular way in which matter and functions are brought into relations in transversal design processes? Matter, materials, never appears singularly; matter comes in contextures, in series or in swarms. Equally, functions happen in collective processes. We need to think an ontology of the collective here, an ontology of the group. For us this is an ecological group.

(i) What is the *group* of the project?

The subject-group involved in transversal relations is no less abstract than is the case for a subjective institutional engagement. The subject group here is the contingent array of things encounterable as *environmental*, that includes the differing ecologies of site that have been explored: the urban, biological, hydrological, geological, indigenous and social. They present themselves in an array of maps. For the most part these environmental things are constituted—mapped—as subjugated groups, governed systematically in arborescent structures by institutional externalities whose predominant ontology is that of transcendence. The resistant counter-measure here is to radically think these as subject groupings whose being and processes throughout the design are rhizomatic in function and outcome. That is to say, there are no transcendent frameworks ruling over the ecologies. Their relations and design outcomes will happen as they arise from various explorations and mappings. The ecologies and elements involved in the design process will come together in a way that maximises the potential becomings of the site design.

(ii) What role do *I* hold in the analysis of the group?

In thinking of the group and analyst as part of the transversal relations that rhizome-like spread, connect and reconnect, what role do I hold in the analysis of the group? How am I engaging transversality in the methodological process—is my task to dissolve the demands of the institution on the environment, the research and design through an immanently transversal exploration into the role of the urban within the natural environment? Does the array of ecologies from the urban to the biological include the *mind* of which I am a part, or am I, the analyst, an immanent plane that overarches the ecologies and is equally present and concerned with all? Within a subject group, the analyst cannot be the one 'engineering' the opening of transversal relations. As with dyadic analyses, the analyst takes up the position of the *one who does not know* and does not seek to know the analysand (here the group). That is to say, agency is not epistemological but dispositional. This means that a designer is attuned to affective—qualitative—rather than objective—quantitative—outcomes. And outcomes are recognized as modulations/modifications and relations rather than as totalized entities.

(iii) What is transversality in the context of ecology?

To discuss a transversal methodology and these transversal relations or methods, what is it that is being transferred—what is the *unconscious* of ecology? As unconscious, it is not knowable except as an effect of transference: what could be termed eco-philia—love of ecology, essential ground of all relating. As Morton notes: "Ecology is profoundly about coexistence. Existence is always coexistence. No man is an island."[47] Any discourse between species, environments or ecosystems is the effect or lack of effect of another. The primordial state of ecology is interconnection. It is a plane of immanence within which none of its beings exists prior to their relations—they are born from their connections. Utilising transversality as a mode of analysis for an ecological subject group, the underlying unconscious being transferred between the analyst and the group must be considered to be *relation*. It is through this discourse of open continuous relations that potential becomings of the site will be maximised.

47 Morton, *The Ecological Thought*, 4.

Mappings

The communicability of this project is based on mapping and the ability it has to inform project conceptions and future realities. But what is it that a map actually documents? Bateson discusses what manifests on a map:

> What is it in the territory that gets onto the map? We know the territory does not get onto the map. That is the central point about which we here are all agreed. Now, if the territory were uniform, nothing would get onto the map except its boundaries, which are the points at which it ceases to be uniform against some larger matrix. What gets onto the map, in fact, is difference, be it a difference in altitude, a difference in vegetation, a difference in population structure, difference in surface, or what-ever. Differences are the things that get onto a map.[48]

Therefore a map is that which shows intensities of difference. Differences enable us to read a map—singular contour lines have no meaning, it is only the differences between pairs or a series or the collective of contour lines that allow a reading of a site's terrain. Yet, what are the differences that make it from territory to map? Bateson discusses an infinite number of differences: "Of this infinitude, we select a very limited number, which become information. In fact, what we mean by information—the elementary unit of information—is *a difference which makes a difference*."[49] There is then a process of differential selection, the difference that makes a difference. Here in this project, there are elements composing the subject-group that, in turn, composes a design. These elements *are* the differences depicted on maps—intensive stratifications of potentials for modification. A wide range of differences—from the urban, geological, social and other ecologies—constitute the very possibility of site inscription itself.

The mappings within the project are arguably more powerful than the site they present. They are more than a *representation*; they are a practice of potentiality, exploration and discovery. They depict in-formation that can be seen but also information beyond an individual scope—other organisms,

48 Bateson, *Steps to an ecology of mind*, 458.

49 Bateson, *Steps to an ecology of mind*, 460.

patterns, interrelationships, past, present, and future unfoldings. Concerning mapmaking, Deleuze and Guattari note from *A Thousand Plateaus*: "[It is] entirely orientated toward an experimentation in contact with the real."[50] In this sense, mapping does not constitute a transcending-representing but rather a transcendental empiricism. Making and encountering the map is an experiential process that expresses the real. There is a multiplicity of virtualities for every map that realises a manifold of actual site conditions, present and becoming.

Mapping virtualities

Mapping is an invaluable method for informing and actualizing new programs into sites. It reveals interrelationships and design projections. Corner's focus has been on "developing innovative approaches towards landscape, architectural design and urbanism."[51] He has worked extensively with mapping and its possibilities. Mapping not only presents information but it is also a mechanism for activity and action. In 'The Agency of Mapping', Corner discusses the power and ability mapping holds:

> Mappings discover new worlds within past and present ones; they inaugurate new grounds upon the hidden traces of a living context. The capacity to reformulate what already exists is the important step. And what already exists is more than just the physical attributes of terrain (topography, rivers, roads, buildings) but includes also the various hidden forces that underlie the workings of a given place. These include natural processes, such as wind and sun; historical events and local stories; economic and legislative conditions; even political interests, regulatory mechanisms and programmatic structures. Through rendering visible multiple and sometimes disparate field conditions, mapping allows for an understanding of terrain as only the surface expression of a complex and dynamic imbroglio of social and natural processes. In visualizing these interrelationships and interactions, mapping itself participates in any

50 Deleuze and Guattari, *A thousand plateaus*, 12.

51 Almanac, "James Corner: Landscape Architecture Chair," Almanac 47 (2000), accessed February 4, 2017, http://www.upenn.edu/almanac/v47/n04/corner.html.

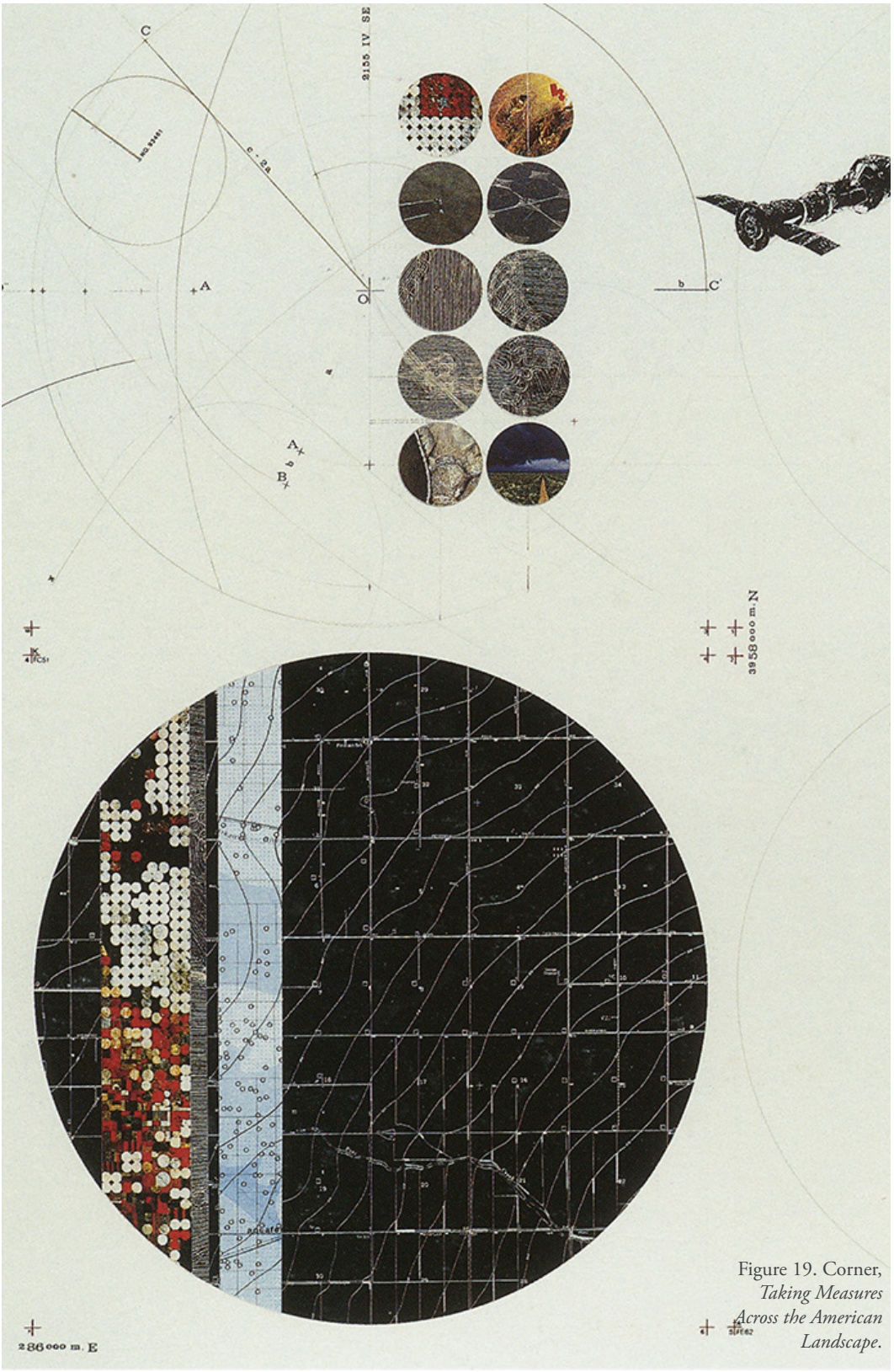


Figure 19. Corner, *Taking Measures Across the American Landscape*.

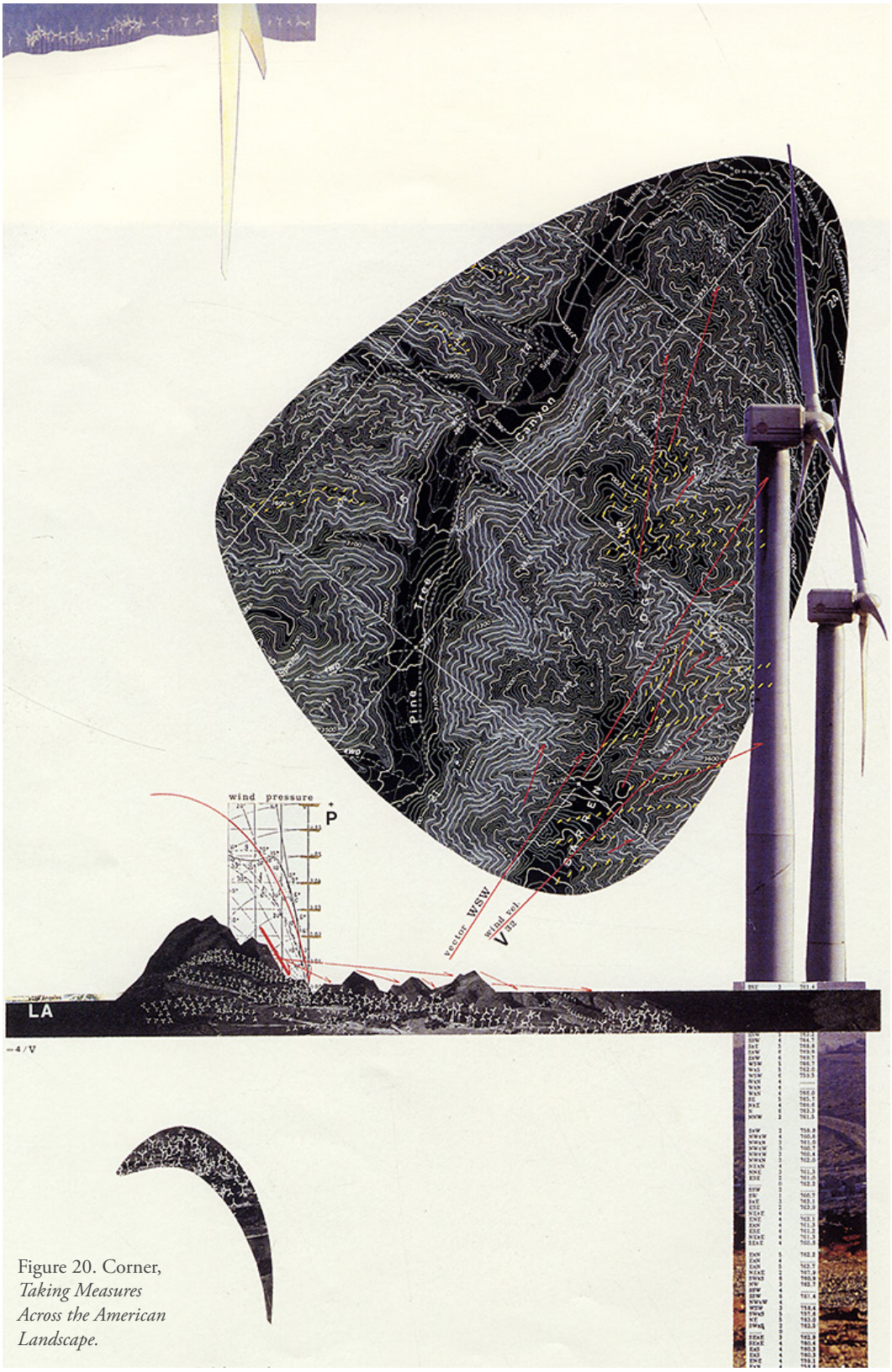


Figure 20. Corner, *Taking Measures Across the American Landscape.*

future unfoldings.[52]

Corner writes about rendering visible disparate field conditions through mapping as a means for connection, understanding and revealing interrelationships. Mappings are more than mere artefacts. They are an activity fabricating the virtual and the actual through rendering relationships. Deleuze and Guattari discuss the abilities of the map in *A Thousand Plateaus*:

> The map is open and connectable in all of its dimensions; it is detachable, reversible, susceptible to constant modification. It can be torn, reversed, adapted to any kind of mounting, reworked by an individual, group, or social formation. It can be drawn on a wall, conceived of as a work of art, constructed as a political action or as a mediation. Perhaps one of the most important characteristics of the rhizome is that it always has multiple entryways.[53]

As interpretable, the map presents ever changing, ever expanding interconnections between the subject-group. It is this ontology of mapping-as-practice that makes it the key method for a transversal methodology: folding and unfolding of virtualities and actualities. The virtual contains all potentialities or becomings of the real. Corner writes: "For the landscape architect and urban planner, maps are sites for the imaging and projecting of alternative worlds. Thus maps are in-between the virtual and the real."[54] Mapping projects—it is a method for discovering and creating the new. Within this design research project a collectivity of the invisible and the visible—the hidden and readily seen—has been mapped, rendering interrelations otherwise unseen or neglected, opening to a mesh-ontology. In this process, interrelationships have emerged and given life to new programmess for the site that begin to reside within ecological futures.

Territory of the map

I want to offer an exemplary mapping and design process that for me engages

52 James Corner, "The Agency of Mapping: Speculation, Critique and Invention," in *Mappings*, ed. Denis Cosgrove (London: Reaktion Books Ltd, 1999), 214.

53 Deleuze and Guattari, *A thousand plateaus*, 12.

54 Corner, "The Agency of Mapping," 225.

transversality of a subject-group, activating a mesh-ontology immanent to a transcendental field that is essentially recognized as empirical. This project was methodologically important for how I understood proceeding with my own design process. The designer, Danny Wills, explored the power of mapping in a project he titled 'Cultivating the Map'. The site of this project is the Great Plains, an expanse of flat land in the centre of the United States that is widely used for industrial farming. The landscape is at risk with increasingly detrimental effects due to exploitive farming. Wills uses mapping as documentation of the site's reality and the changes that have occurred due to intrusive agricultural practices. He notes that his project "finds itself in the territory of the map, proposing that the map is also a generative tool."[55] The process connects the landscape and its features along with the machines that inhabit and exploit it, exposing the detrimental relationship. Wills worked towards designing four new tools through mapping and surveying that "propose new ways of drawing the land and act as an instrument that reveals the landscape's new potential."[56] These tools aid the natural environment and its inhabitants yet still provide a means of farming and further socio-cultural development. Elements, such as irrigation ponds, sand dunes, water recycling stations, and air wells, activate or assemble landscape and architectural features already in place to benefit and improve the environment.

Wills focuses on the interconnections between the natural landscape and agricultural production of the site and potential new connections from these. His site—The Great Plains—was subjugated to practices of industrial farming. This subjugated institutionalization was presented through a collection of detailed mappings. From these mappings, Wills generated a plan of the territory incorporating four new tools for the management of natural resources. The mapping practice has revealed opportunities for new sustainable practices, machines and assemblages along the Great Plains. Furthermore, the implementation of the four interventions operates sustainably, to connect and to rediscover the landscape. The structures will alter the site, improve environmental wellbeing, as well as introduce

55 "Cultivating the Map," Danny Wills, accessed July 11, 2016, http://dannywills.com.

56 "Cultivating the Map."

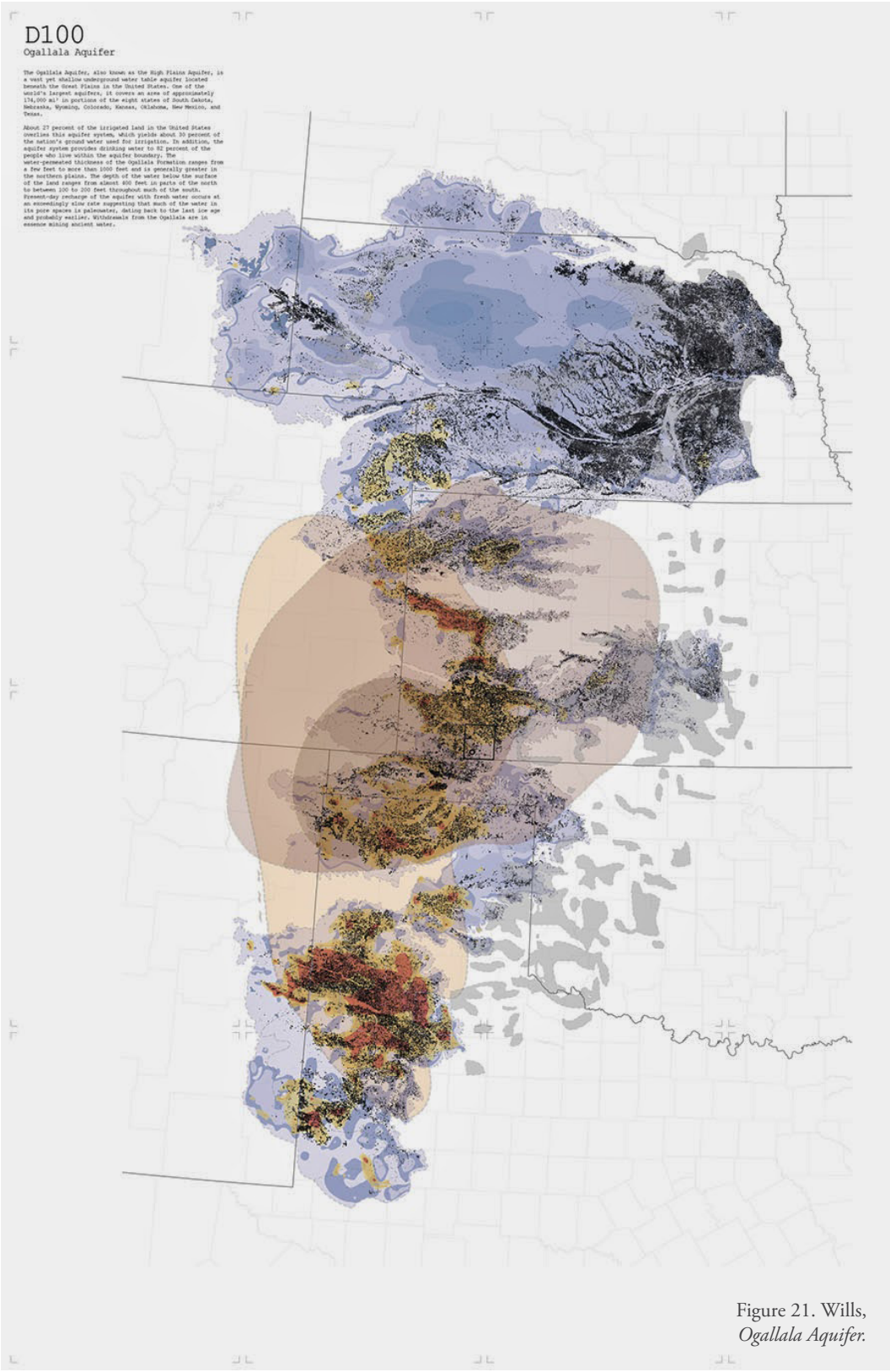


Figure 21. Wills, *Ogallala Aquifer.*

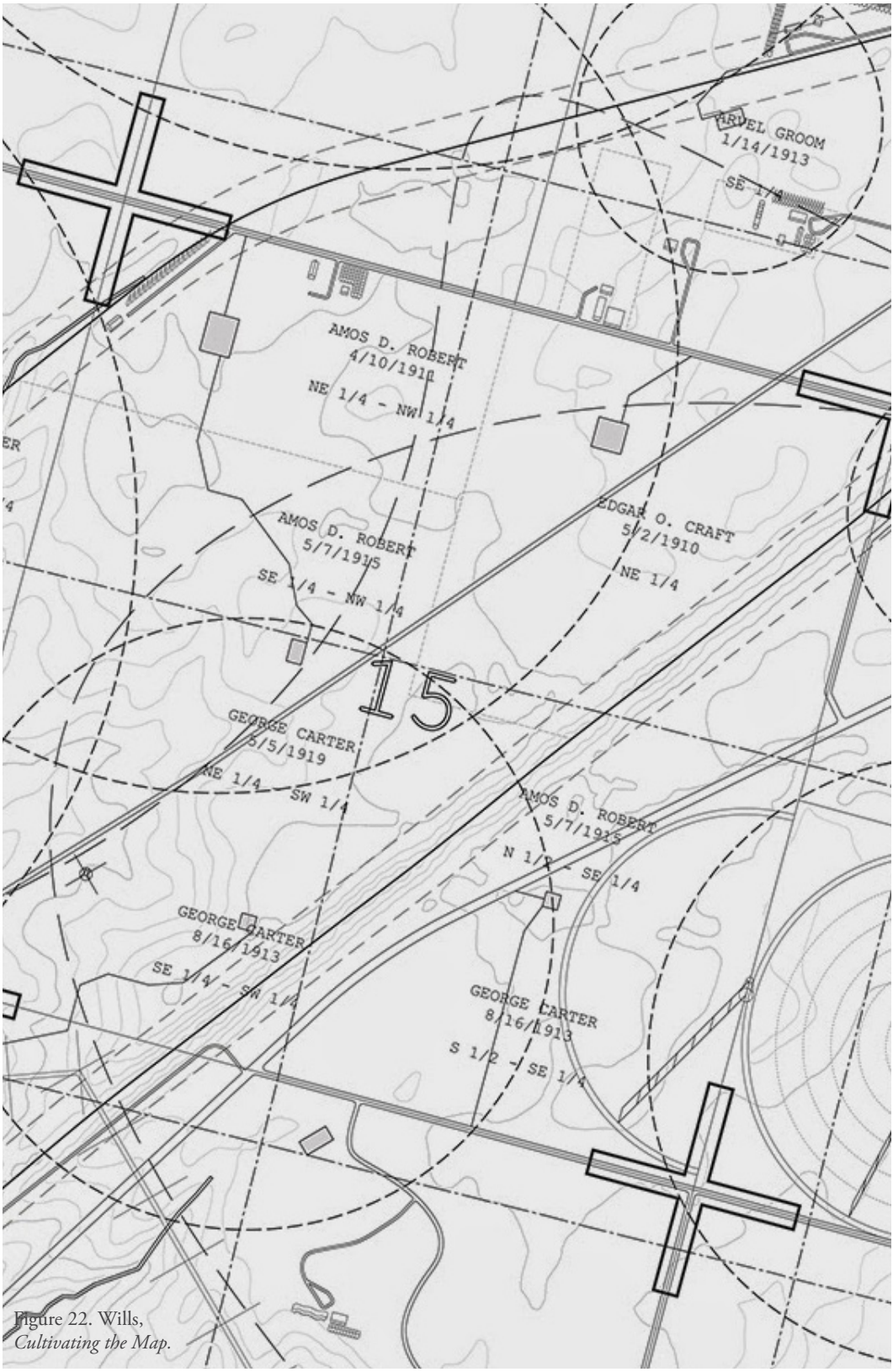
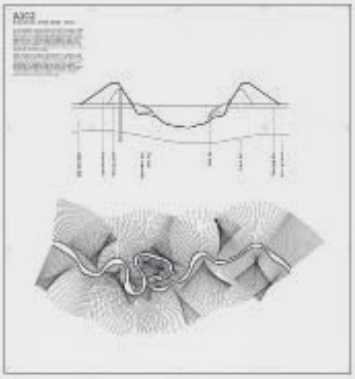
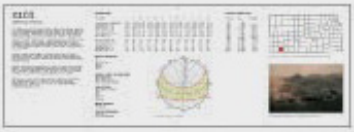


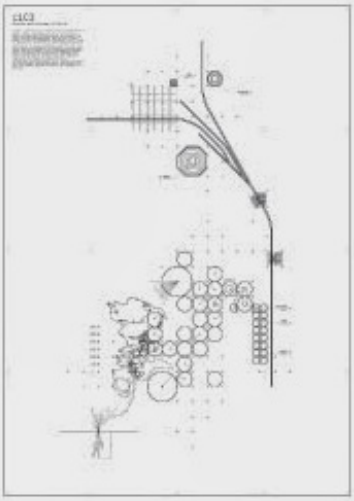
Figure 22. Wills,
Cultivating the Map.

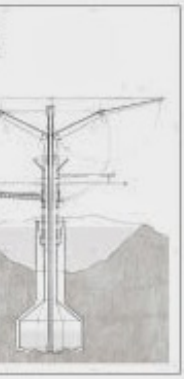
new urban and sociocultural practices that will continue to flourish in an ever-growing intertwined mesh. In delineating the elements of a subjugated-group, Wills approached the site and its current farming practices in a counter-measure as a subject group. Note that Wills himself does not use this terminology. I am reading his intervention as a transversal approach. He understands the practices and activities already present in the site and designs assembled elements that incorporate these but also considers the land upon which they depend. More so, the assemblages are designed to further reveal and enhance the potential of the landscape. His surveying and mapping practices are operating as though they are part of a transversal methodology. Various ecological features are highlighted and drawn together to reveal ecological, architectural and socio-cultural implications not otherwise recognized. Wills seems to involve the three ecologies whose interconnections constitute transversal thinking. There has been great care and consideration for the environment, social practices and individuated selves. Settlements and housing establishments are set to develop around the intervening schemes ensuring residents will live and grow alongside these within sustainable farming practices and landscape cultivation.

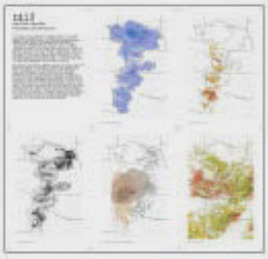
Figure 23. Wills, *Cultivating the Map.*

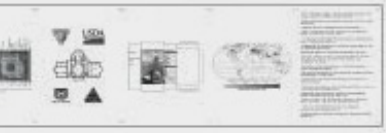


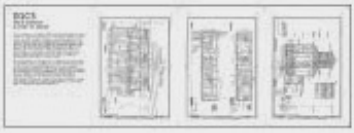


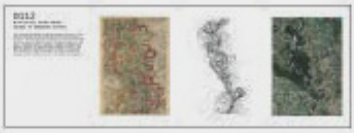


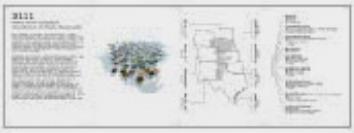


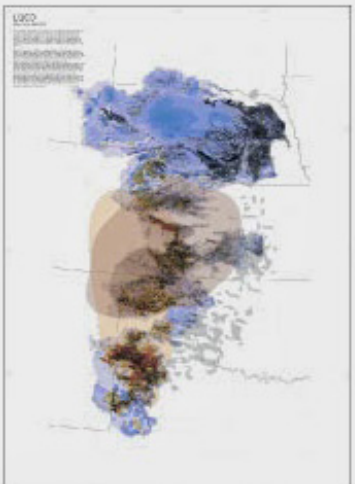


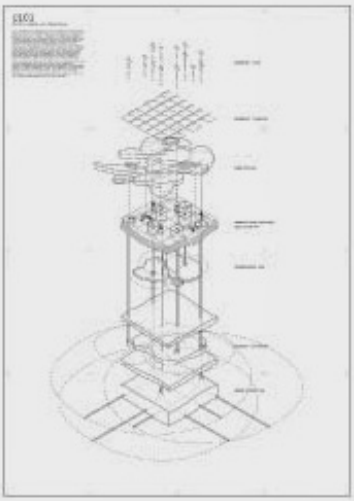












Part Three—Modalities of Composition

Planes of mapping—Art, Science & Philosophy

Towards the end of their book *What is Philosophy?*, Deleuze and Guattari present a summary of that book's concerns and in doing so they define three different planes by which existence and a self are encounterable:

> What defines thought in its three great forms—art, science, and philosophy—is always confronting chaos, laying out a plane, throwing a plane over chaos. But philosophy wants to save the infinite by giving it consistency: it lays out a plane of immanence that, through the action of conceptual personae, takes events or consistent concepts to infinity. Science, on the other hand, relinquishes the infinite in order to gain reference: it lays out a plane of simply undefined coordinates that each time, through the action of partial observers, defines states of affairs, functions, or referential propositions. Art wants to create the finite that restores the infinite: it lays out a plane of composition that, in turn, through the action of aesthetic figures, bears monuments or composite sensations.[57]

I want to say something about each of these planes, those of consistency, of relation and of composition in order to emphasise how design processes implicating notions of immanence encounter methods and problematics that challenge conventional design approaches. I will start with the notion of concepts and their consistency, then discuss functions and their relations, and finally sensations and their composition. I am exploring these three planes as they become crucial in determining what I consider to be three correlative modalities of composition that constitute the expressions of my mapping—mapping the consistencies of a conceptual field; mapping the functions of invariant relations; and mapping sensations of impersonal percepts. Ultimately, though, everything will come down to correlates of mapping itself as composition.

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57 Gilles Deleuze and Felix Guattari, *What is Philosophy?*, trans. Hugh Tomlinson and Graham Burchell, (New York: Columbia University Press, 1994) 197.

Concepts and their consistency

> There are no simple concepts. Every concept has components and is defined by them. It therefore has a combination. It is a multiplicity, although not every multiplicity is conceptual. There is no concept with only one component.[58]

Concepts present us with the consistency of their components. In this sense, a group, milieu or collection is a concept. Concepts are not what we start with in order to think. They are what we invent in thinking. We invent new consistencies, new orderings. Deleuze and Guattari emphasise that concepts are unconditioned in that there is nothing that impinges on inventing new consistencies or orderings, new virtualities:

> On the other hand, a concept also has a *becoming* that involves its relationship with concepts situated on the same plane. Here concepts link up with each other, support one another, coordinate their contours, articulate their respective problems, and belong to the same philosophy, even if they have different histories. In fact, having a finite number of components, every concept will branch off toward other concepts that are differently composed but that constitute other regions of the same plane, answer to problems that can be connected to each other, and participate in co-creation.[59]

This design research project works with a series of concepts, or rather invents its processes from out of a series of planes of consistency each of which constitutes a multiplicity of inter-related concerns. Inasmuch as this design process produces meanings, interpretable worlds, those fields of meaning have the play of their consistencies in the inventing of concepts essential to design itself. What is this series? They have been mentioned earlier:

The Urban Series
Focusing on urban fabric, the urban ecology series features elements that determine the heterogeneous multiplicities consistent with dwelling.

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58 Deleuze and Guattari, *What is Philosophy?*, 15.

59 Deleuze and Guattari, *What is Philosophy?*, 18.

The Biological Series
The biological series engages bio-diversity inclusive of and surrounding the Mangere inlet. A larger number of maps compose this series than is the case for the urban series. In this sense quantifying mapping correlates with species intensification. The maps in this series depict bird and fish species that inhabit the inlet, mangrove growth and coastal protection orders that are in place.

The Geological Series
Soil types constitute the main differentiations in the geology series. As also seen in the coastal map in the biological series, certain peripheries of the inlet have excellent examples of surviving lava flow. It is important to note that many of the maps placed in one ecological category reference and have a place in another category.

The Hydrological Series
The inlet waters have played a major role in the growth of the surrounding communities. Historically, and still today, this waterway has been a key route for transport and trading. Due to industrial growth and toxic pollution on the foreshore, the inlet's water quality has been in a poor state. The maps in this series focus on crucial stages of water rehabilitation, including the installation of oxidation ponds and the development in 2002 of a water treatment facility.

The Indigenous Series
The settling of New Zealand by Maori instigated significant change to the environment, including the evolving of history with respect to the locale. Certain landscape features, such as Te To Waka, the stretch of land between the Manukau Harbour and the Tamaki River were the most frequently used portage routes by Maori settlers. The Ngai Tai tribe, which settled in Tamaki, instigated development of Mangere Inlet. The maps in this series look at the growth and effects of indigenous settlements.

The Social Series
Social ecologies focus on multiple aspects, including historical occurrences and socio-cultural developments. This includes detrimental effects of

industrial developments due to transport lines and water access for shipping. Further investigated in the social series are the effects of sea level rising. As it is a looming issue due to climate change, it must be addressed and considered in the design.

The plane of concepts is much like ecology and the mesh. It concerns consistency in coexistence. But how do concepts function? Or what happens when the unconditionality of concepts is required to function on a conditional line of variation? It is here we encounter a plane of reference.

Functions and their relations

> The first difference between philosophy and science lies in the respective propositions of the concept and the function: in the one a plane of immanence of consistency, in the other a plane of reference. The plane of reference is both one and multiple, but in a different way to the plane of immanence. The second difference concerns the concept and the function more directly: the inseparability of variations is the distinctive characteristic of unconditioned concept, while independence of variables, in relations that can be conditioned, is essential to function.[60]

Hence, the plane of reference deals with science. Claire Colebrook explains that the purpose of science and the plane of reference is to create "functions, such as those of physics, that will be true for any point of view whatever, regardless of historical or cultural context."[61] Deleuze and Guattari describe the function of science: "[It] determines a state of affairs, thing, or body that actualizes the virtual on a plane of reference and in a system of coordinates."[62] The mappings of the plane of reference place the current and historical site conditions onto the map. We can return to the series of series, the urban, biological, geological and so on. Inasmuch as these constitute a plane of

60 Deleuze and Guattari, *What is Philosophy?*, 125-126.

61 Claire Colebrook, *Understanding Deleuze* (NSW, Australia: Allen & Unwin, 2002): 176, accessed September 23, 2016, https://seminario2012.files.wordpress.com/2012/02/colebrook-claire-understanding-deleuze.pdf.

62 Deleuze and Guattari, *What is Philosophy?*, 133.

consistency, all these series are immanent to the multiplicities that constitute field. Yet, inasmuch as the Mangere Inlet functions, each of these series constitutes a line of variation of independent variables whose relationality is functional. By 'function' Deleuze and Guattari infer especially this term in its mathematical sense: of relations that define independent variables [x + y = z]. But function is also that which repeats as a relation of independent variables: the moon's gravitation and tidal variance. Hence, each of these series, as well as constituting a series of differentiating becomings, also functions as a series of repeatable relations. The plane of concepts differentiates; the plane of reference repeats. Along with difference and repetition their lies a plane of composition: how matter itself congeals. Here we encounter the third plane: the plane of composition of percepts and affects. As one engaged in design process, in the forming of matter and the finalizing of functions, the plane of composition is crucial. How does it work?

Sensations and composition

> In the first case sensation is realized in the material and does not exist outside of this realization. It could be said that sensation (the compound of sensations) is projected onto the well-prepared technical plane of composition, in such a way that the aesthetic plane of composition covers it up. The material itself must therefore include mechanisms of perspective as a result of which the projected sensation is realized not solely by covering up the picture but according to a depth.[63]

Composition, in the most general sense, infers an assembling of discrete elements according to some rule, or perhaps according to chance. We see from the above quotation that Deleuze and Guattari make a distinction between two notions of composition that elsewhere they insist should not be collapsed or confused. One is a technical plane of composition. The other is an aesthetic plane of composition. They suggest:

> Composition is aesthetic, and what is not composed is not a work of

63 Deleuze and Guattari, *What is Philosophy?*, 193.

> art. However, technical composition, the work of the material that often calls on science (mathematics, physics, chemistry, anatomy), is not to be confused with aesthetic composition, which is the work of sensation. Only the latter fully deserves the name composition and a work of art is never produced for the sake of technique.[64]

It is recognized that all design knowhow, in whatever fields of design, has its particular plane of techniques. And we tend to distinguish between the fine arts and design. In fact, in the quote above, Deleuze and Guattari are referring to painting. What then, for this research is the work of sensation? Is aesthetic composition relevant at all? How are we able to locate, through the force of sensation, the consistency of concepts and the regularity of functions? I am suggesting that design has a two-fold compositing, one that follows variations defined by technical requirements, in some way or other reducible to a logic of sense. Such knowhow is precisely what I am contesting via a mesh-ontology and transcendental empiricism. The other fold concerns a logic of sensation. What are sensations? Deleuze calls them affects, how something encountered affects a self and becomes, in turn, affected or modified by that self, a relay between percepts and affects. Sensations should not be reduced to personal feelings or emotions. They happen when we are absorbed by something we encounter such that we lose our self. Our self becomes unimportant in the event of encounter. The thing encounters us in that sense: we are impersonal. Moved by sensations of colour, texture, surface, formation and deformation. This is why percepts are not perceptions, or what we in a sense know we encounter.

A depth opens in something that no longer concerns its technical realization or even its conceptual formation, its meaning or possible meanings. Deleuze suggests this is the condition by which art is encountered. In this sense, art is not what artists do, but rather what something is when encounterable on its plane of composition, when the thing is our 'becoming impersonal'. In such encounters, the designer as 'author' withdraws: "perception does not transmit any information here, but circumscribes a (sympathetic or antipathetic) affect".[65]

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64 Deleuze and Guattari, *What is Philosophy?*, 191-192.

65 Deleuze and Guattari, *What is Philosophy?*, 132.

Therefore it is my responsibility as 'creator' to efface myself, to withdraw from the design. The very nature of a subject group allows for continuous open relations thus the nature of the design must be to allow it to unfold as it will. As Deleuze and Guattari mention of the plane of percepts and affects:

> What about the creator? It is independent of the creator through the self-positing of the created, which is preserved in itself. What is preserved—the thing or the work of art—is a *bloc of the sensations, that is to say, a compound of percepts and affects*.[66]

The plane of percepts/affects is a compositional method of mapping-as-folding—the multiple is not that which has many parts but what is folded in many ways—overlaying and stretching beyond the other planes, mapping time, change and growth. The following chapter outlines a series of design projects undertaken during candidature that lead to the final submission. My aim is to show how the design is composed via the consistency of concepts, the relations of functions, technical composition in embodied knowhow and the composition of material sensations: "It is no longer sensation that is realized in the material *but the material that passes into sensation.*"[67]

66 Deleuze and Guattari, *What is Philosophy?*, 164.

67 Deleuze and Guattari, *What is Philosophy?*, 193.

Figure 24. Stay, *Sense*.

Chapter Three
Ecologies

Introduction

The current chapter, Ecologies, brings together the series of design contexts outlined in Chapter One as well as the transversal methodology and three planes of consistency, function and composition defined in Chapter Two, in order to explicate a series of design projects developed during the year of candidature. The chapter is presented in four sections. The first, Mapping Research, repeats discussion of each of the three planes though grounds this discussion in the field contexts of the actual research project and in the methodological procedures of mapping deployed in the research. The second section, Design's Guises, outlines five projects developed during candidature that each led to partial development of a design resolution. Each of the five projects is critiqued for its limitations and for how it contributes to an understanding of a transversal design strategy and a mesh-ontology. There follows a third section, The Final Design, which draws from each of the earlier five schemes in order to sophisticate a compositional strategy. The fourth section defines the exhibition strategy for the final project.

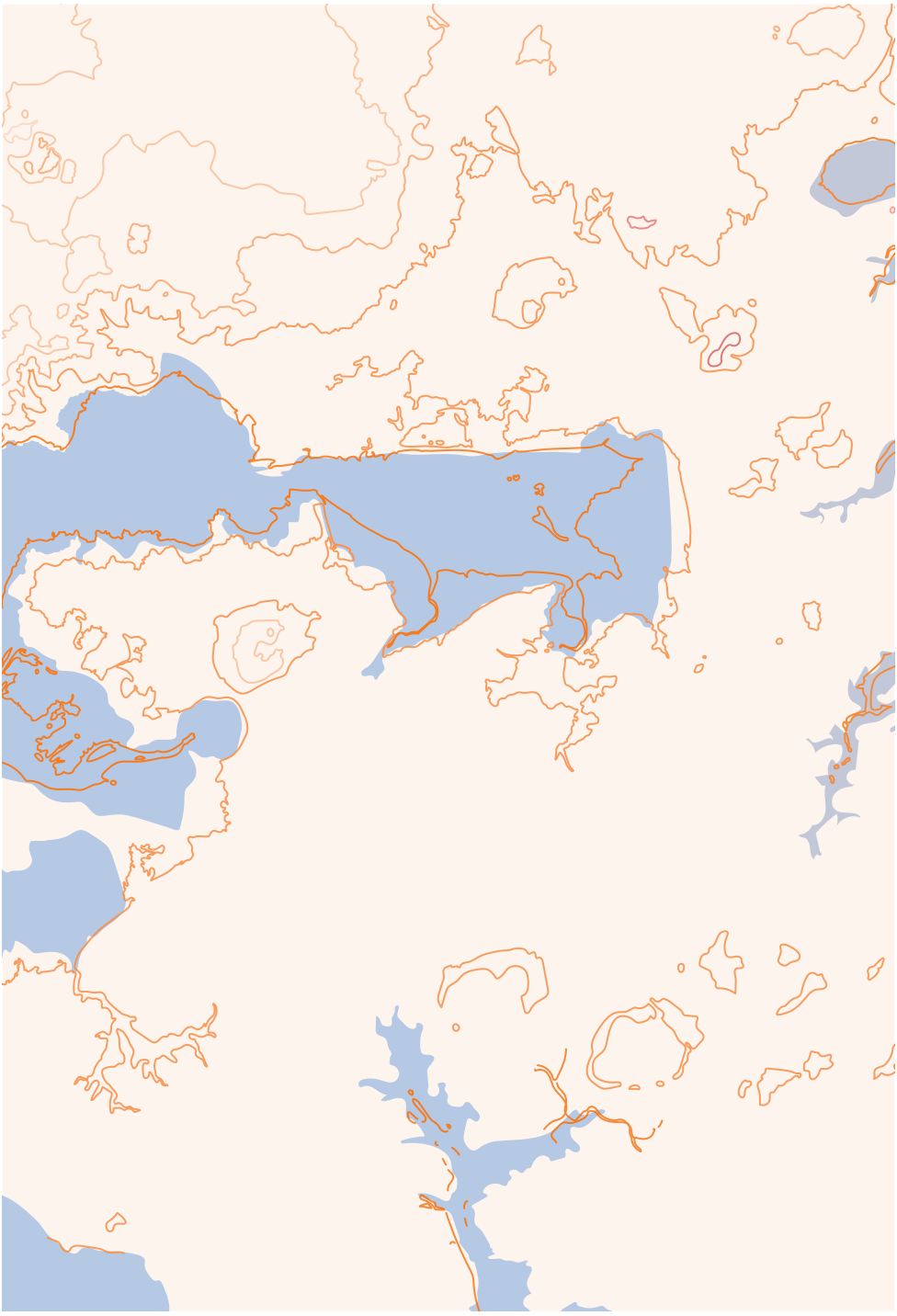
Part One—Mapping Research

The project engaged three different modes of mapping and reading map, correlating with an exploration of the consistency of a conceptual field, the regularity of relational functions and the composing forces of sensations and affects. Each of these works to create open and continuous relations between the subject-group—the multiple ecologies of site. Transversality works across the modalities of mapping to operate with the space of potential, to actualise the virtualities of site. It is through three different modalities of expression—the three different planes of percepts/affects, concepts and reference that the coefficients of transversality are explored. In the space of continuous dynamic relations exist the potentiality of site actualised through the design of functions and concepts.

Plane of reference

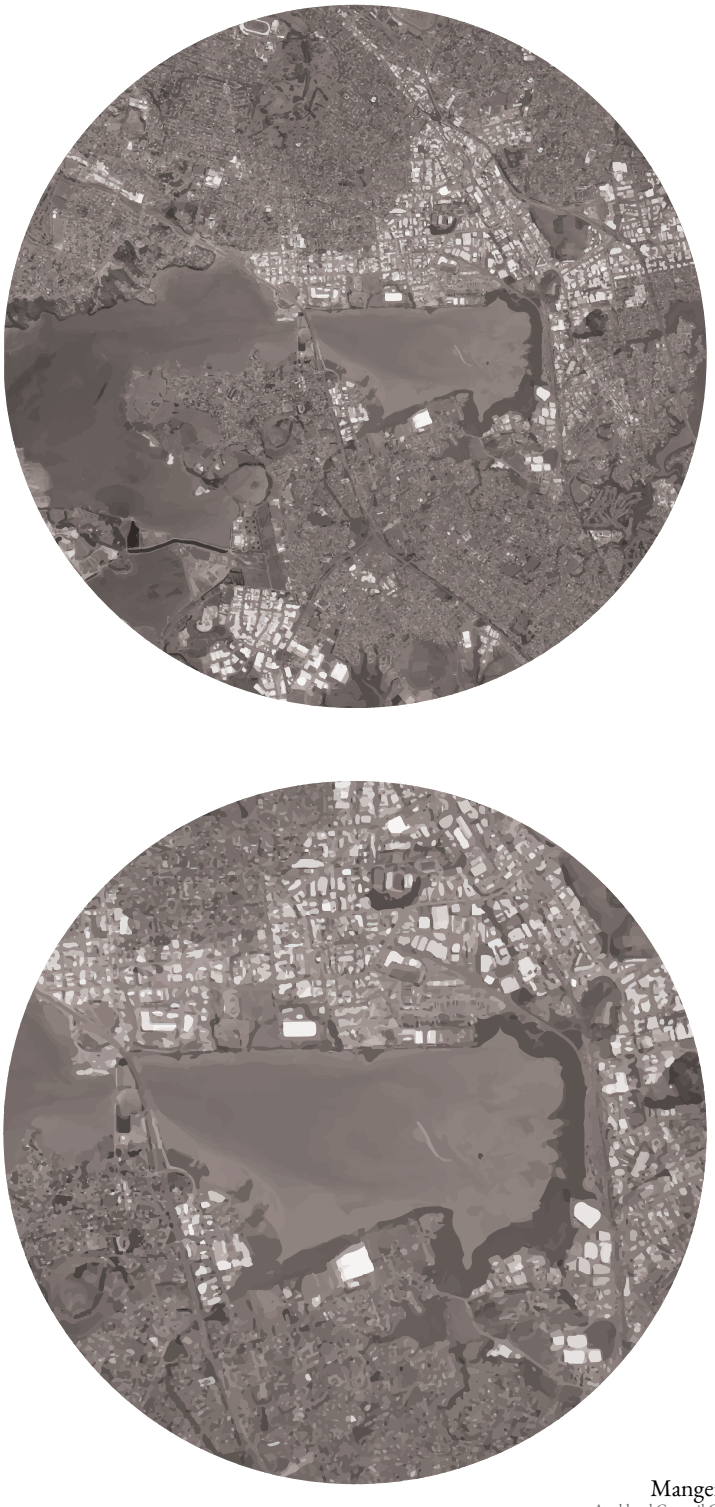
There are twenty-six maps in the plane of reference. They relate the functionality of the six ecology-series previously discussed: the urban, biological, geological, hydrological, indigenous and social, presenting coefficients of variance as conditioning design potentials. The mapping of the plane of reference explored the vast extent of the inlet, giving scope to the group that the project was dealing with. These micro maps are a fragment-series of the site. They are partial objects—a series of particles whose relations to other parts cannot be predetermined by totalizing, though the lines of variation of functions is finite. While researching and drawing these maps I was guided, on the one hand, by the conditioned field of functioning variables though, on the other, by a plane of unconditioned consistencies in the invention of concepts. In this latter regard, there was no agenda or predetermined outcome, no structure or framework guiding the work, other than that of technical composition defining the purposiveness of design as such. But equally I am guided by the impersonal bloc of sensations that construe the affective register of the expressionism of my design's communicability, a logic of sensation.

Figure 25. Stay, *Urban: Contours of Mangere Inlet.*



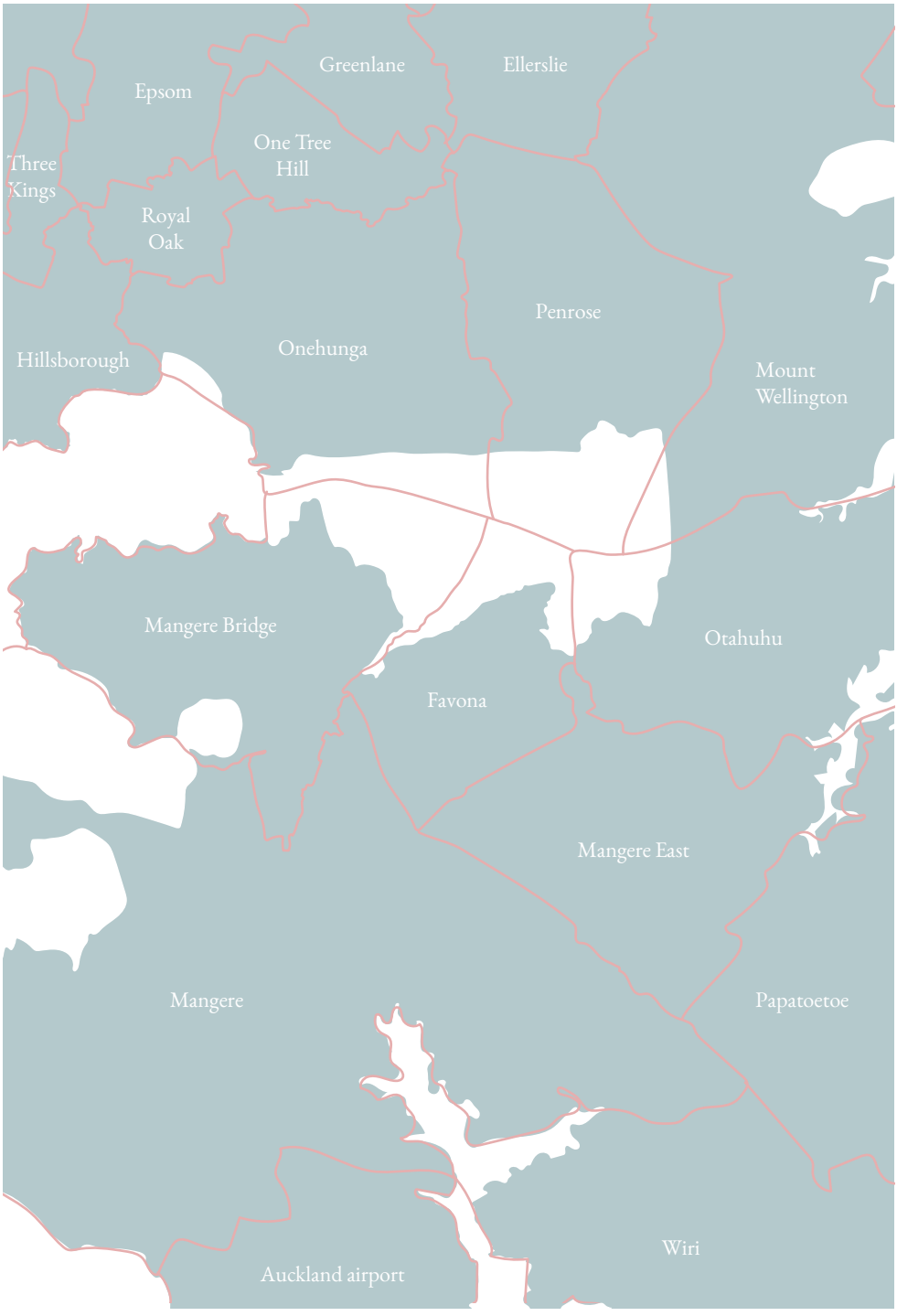
Urban: Contours of Mangere Inlet
Auckland Council GIS Viewer
http://maps.aucklandcouncil.govt.nz/aucklandcouncilviewer/

Figure 26. Stay, *Urban: Mangere Inlet.*



Mangere Inlet
Auckland Council GIS Viewer
http://maps.aucklandcouncil.govt.nz/aucklandcouncilviewer/

Figure 27. Stay, *Urban: Suburbs.*



Urban: Suburbs
Auckland Council GIS Viewer
http://maps.aucklandcouncil.govt.nz/aucklandcouncilviewer/

Figure 28. Stay, *Urban: Road site plan.*

Urban: Road site plan
Auckland Council GIS Viewer
http://maps.aucklandcouncil.govt.nz/aucklandcouncilviewer/

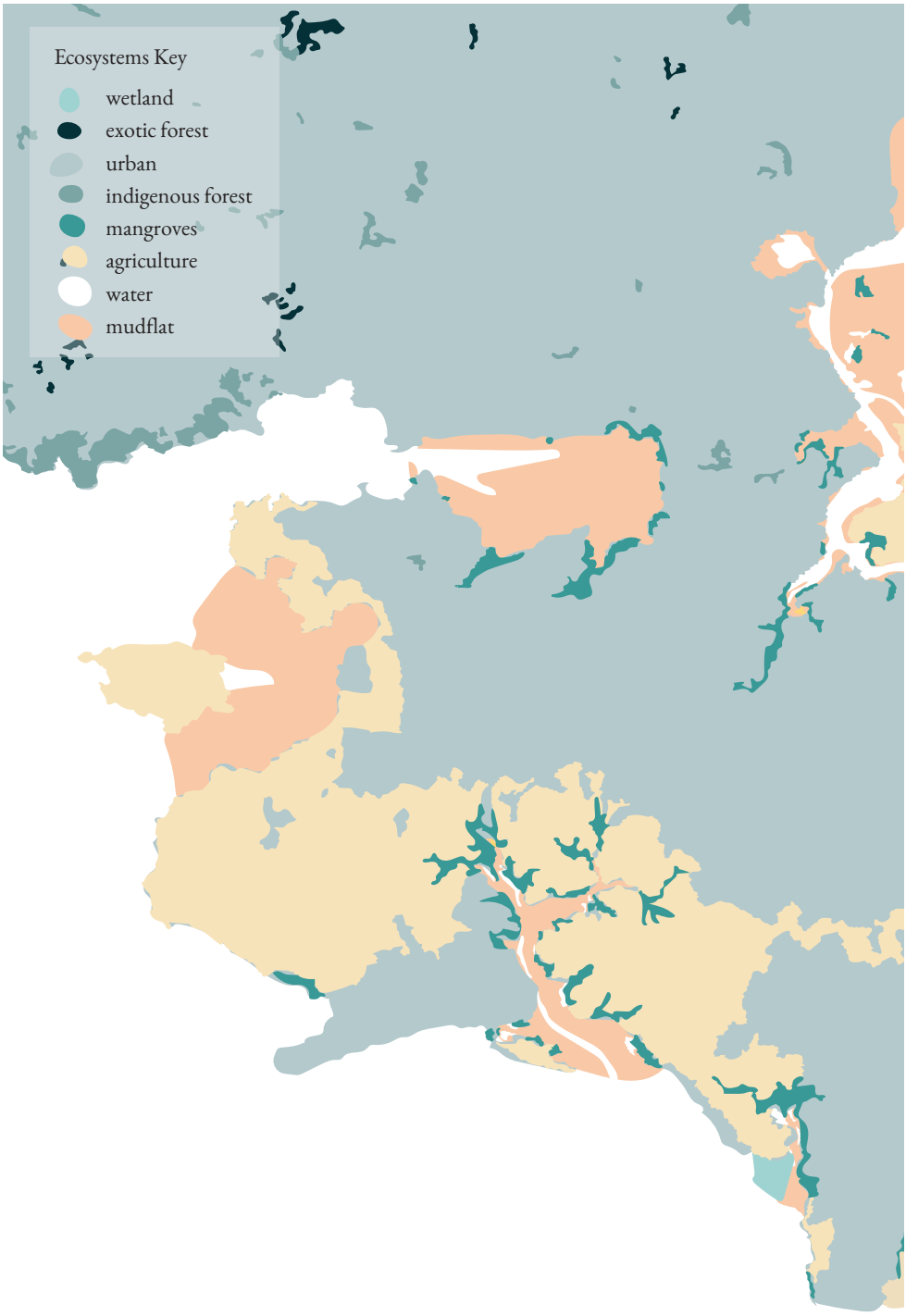
Figure 29. Stay, *Urban: Northern Shoreline changes of Mangere Inlet.*

Urban: Northern shoreline changes of Mangere Inlet

Environmental condition and values of Manukau Harbour

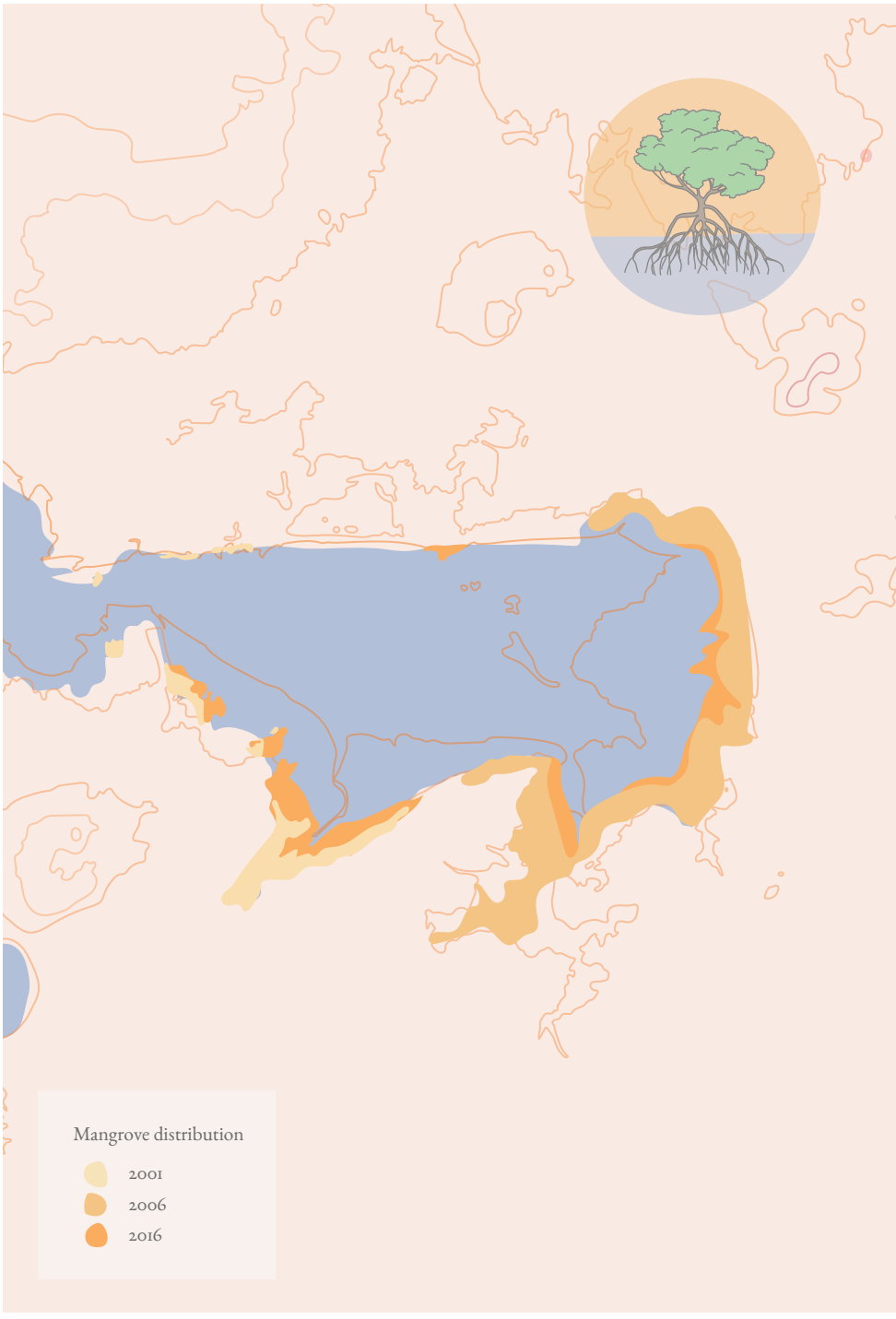
KELLY, S.; 2008. Environmental condition and values of Manukau Harbour. Prepared by Coast and Catchment Ltd. for Auckland Regional Council. Auckland Regional Council Technical Report 2009/112

Figure 30. Stay, *Biology: Ecosystems of Mangere, Auckland.*



Biology: Ecosystems of Mangere, Auckland
S-Map Landcare Research
http://smap.landcareresearch.co.nz/smap#layerIds=82,84,106,76,125,77,83,113,109,107,78,116,115,112,99&center=5746843.33813111,1352778.4833347&z=1

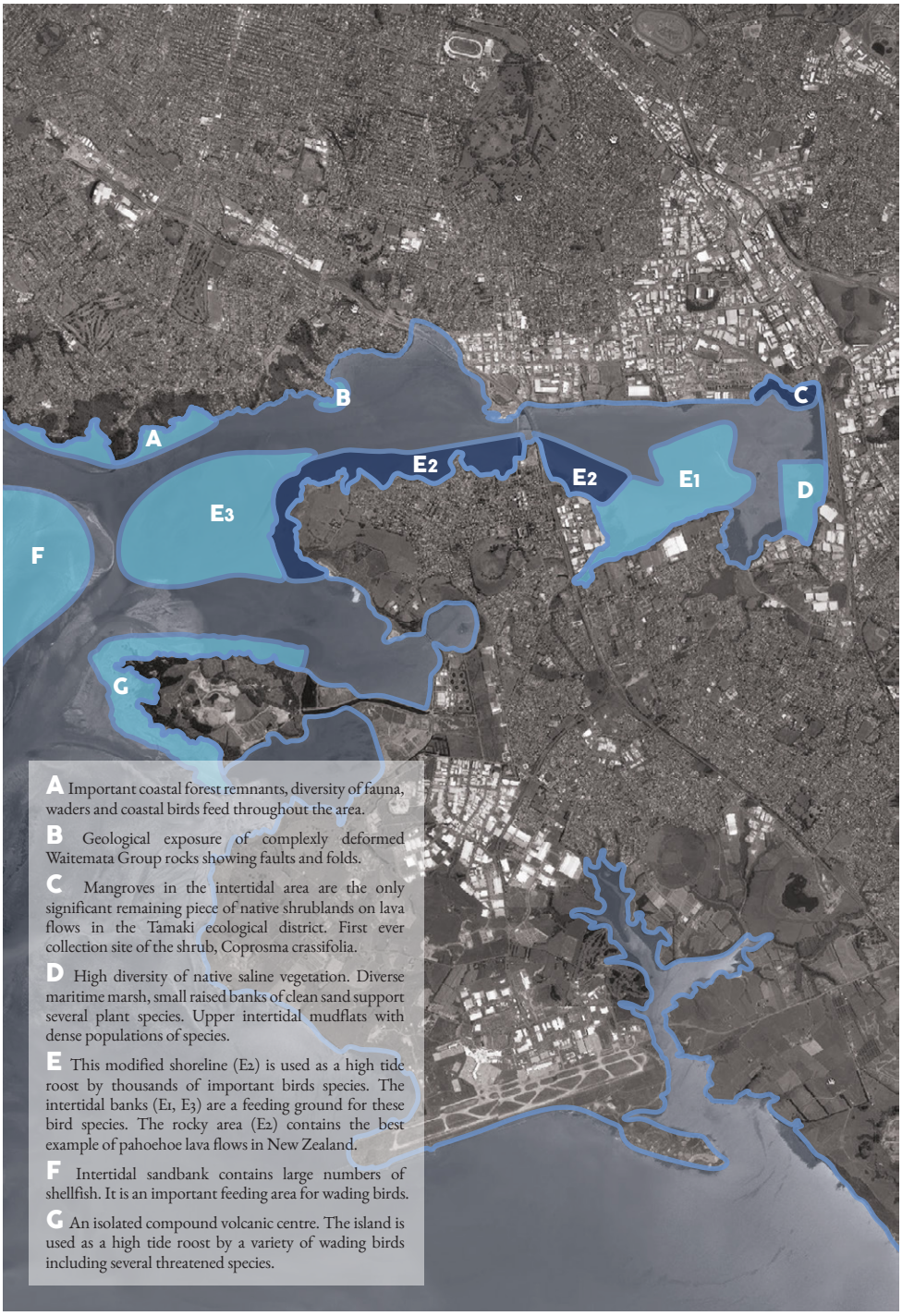
Figure 31. Stay, *Biology: Mangrove distribution in Mangere Inlet.*



Biology: Mangrove distribution in Mangere Inlet

Environmental Condition andValues of Mangere Inlet, Whau Estuary and Tamaki Estuary
KELLY, S.; 2008. Environmental condition and values of Manukau Harbour. Prepared by Coast and Catchment Ltd. for Auckland Regional Council. Auckland Regional Council Technical Report 2009/112
Auckland Council GIS Viewer
http://maps.aucklandcouncil.govt.nz/aucklandcouncilviewer/

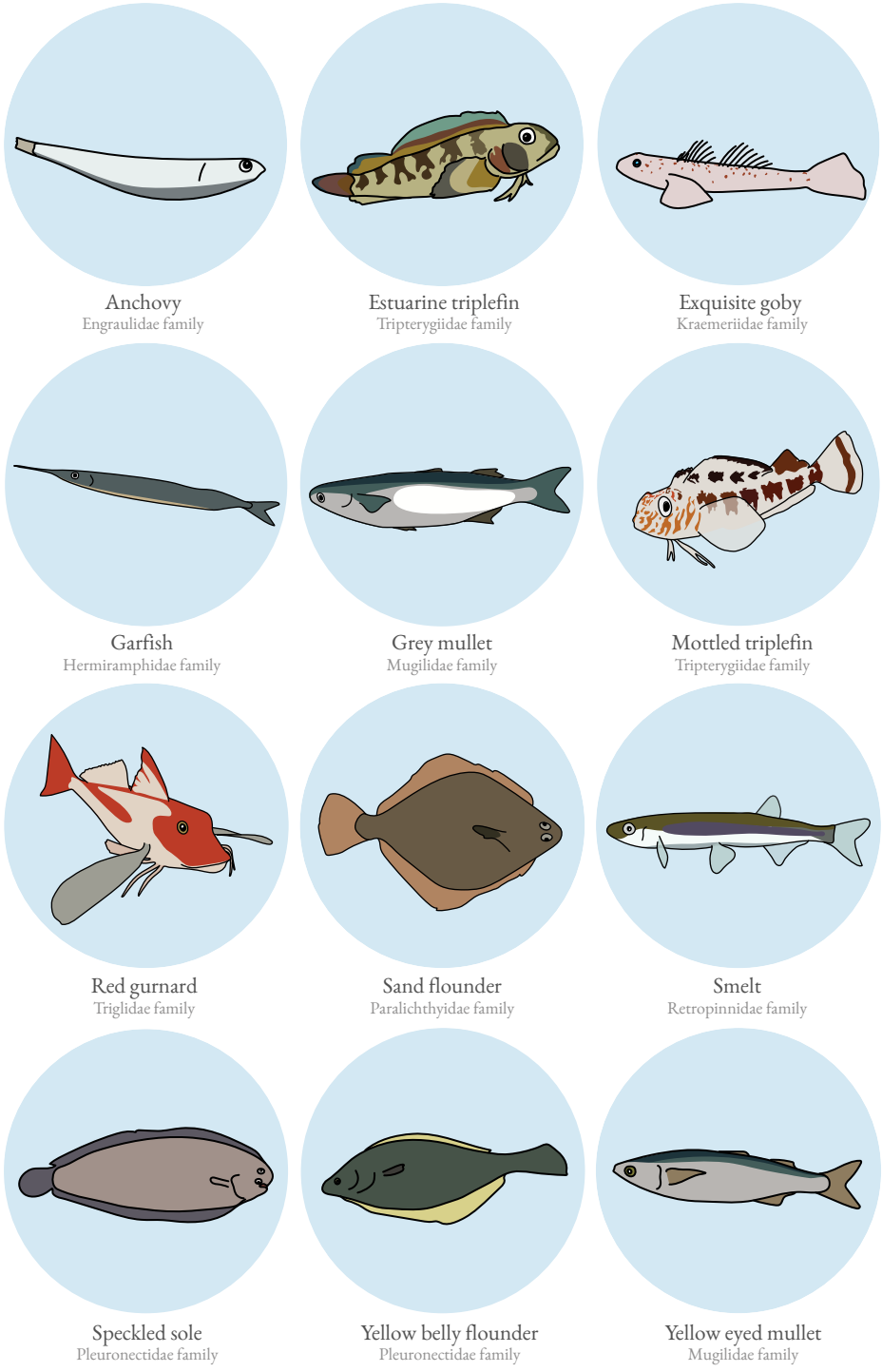
Figure 32. Stay, *Biology: Areas of Coastal Protection in Mangere Inlet.*



Biology: Areas of coastal protection in Mangere Inlet

Environmental Condition and Values of Mangere Inlet, Whau Estuary and Tamaki Estuary
KELLY, S.; 2008. Environmental condition and values of Manukau Harbour. Prepared by Coast and Catchment Ltd. for Auckland Regional Council. Auckland Regional Council Technical Report 2009/112

Figure 33. Stay, *Biology: Fish species found in Mangere Inlet.*



Biology: Fish species found in Mangere Inlet

Environmental Condition and Values of Mangere Inlet, Whau Estuary and Tamaki Estuary
KELLY, S.; 2008. Environmental condition and values of Manukau Harbour. Prepared by Coast and Catchment Ltd. for Auckland Regional Council. Auckland Regional Council Technical Report 2009/112

Figure 34. Stay, *Biology: Fish distribution in Mangere Inlet.*

The Manukau Harbour has always been an important source of fish for subsistence, commercial and recreational fishers. The main commercial fish species obtained from the Manukau Harbour are grey mullet, yellow-eyed mullet, rig and parore, with set nets comprising the primary fishing method.

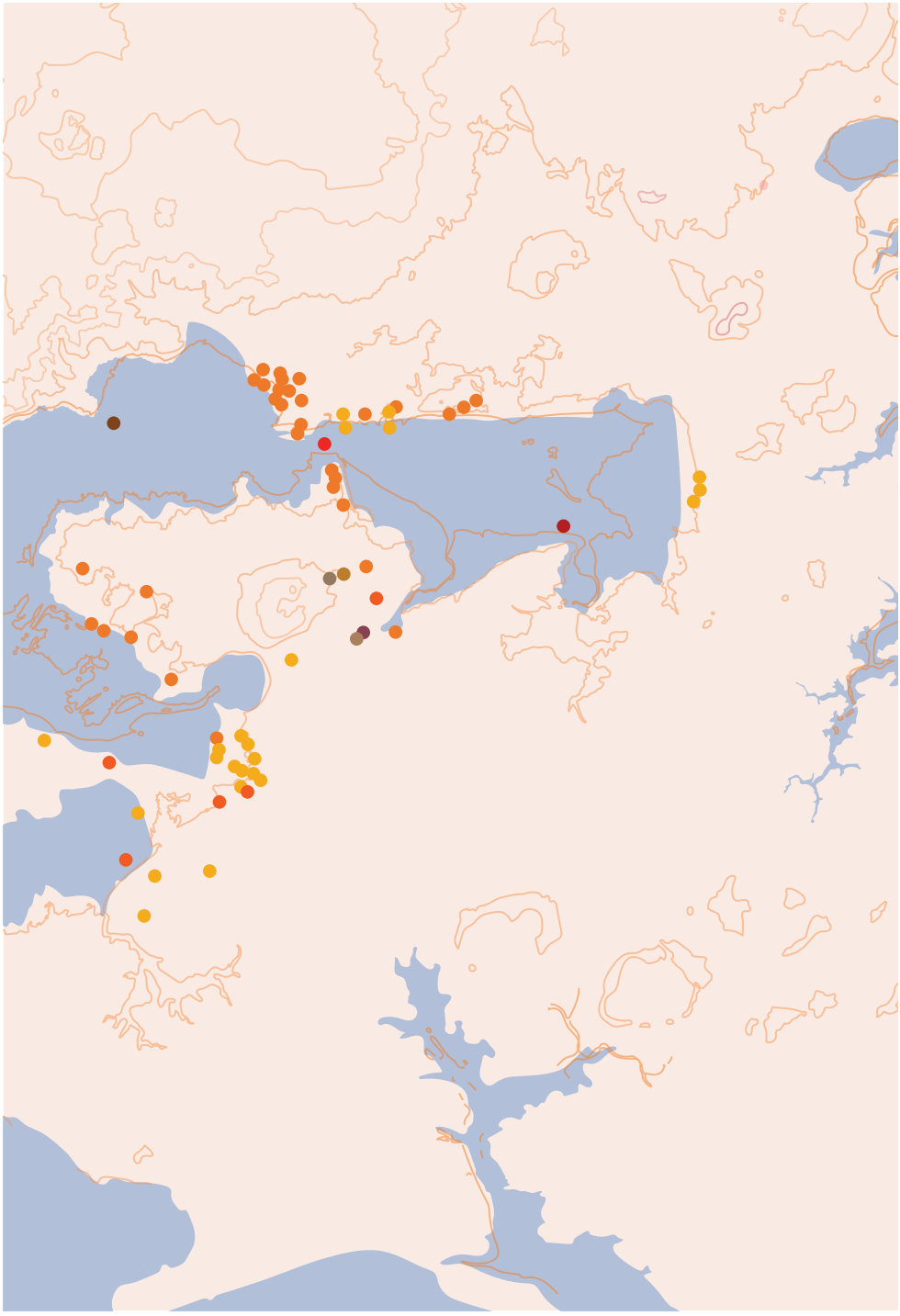
A substantial amount of recreational fishing is carried out from boats, but shore based line fishing, netting and spear fishing are also popular. The old Mangere Bridge, in Mangere Inlet, is one of the most popular land-based fishing spots on the harbour, and regularly attracts large numbers of anglers.

Figure 35. Stay, *Biology: Bird species in use of Mangere Inlet and Manukau Harbour.*

Biology: Bird species in use of Mangere Inlet and Manukau Harbour

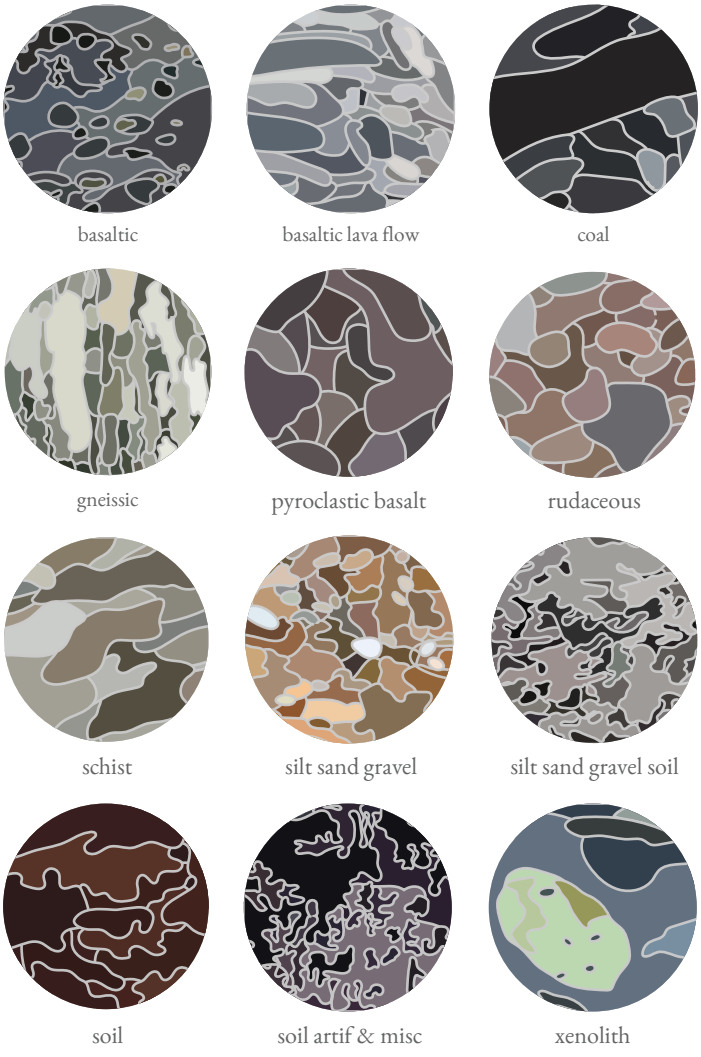
Environmental Condition and Values of Mangere Inlet, Whau Estuary and Tamaki Estuary
KELLY, S.; 2008. Environmental condition and values of Manukau Harbour. Prepared by Coast and Catchment Ltd. for Auckland Regional Council. Auckland Regional Council Technical Report 2009/112

Figure 36. Stay, *Geology: Core samples surrounding Mangere Inlet.*



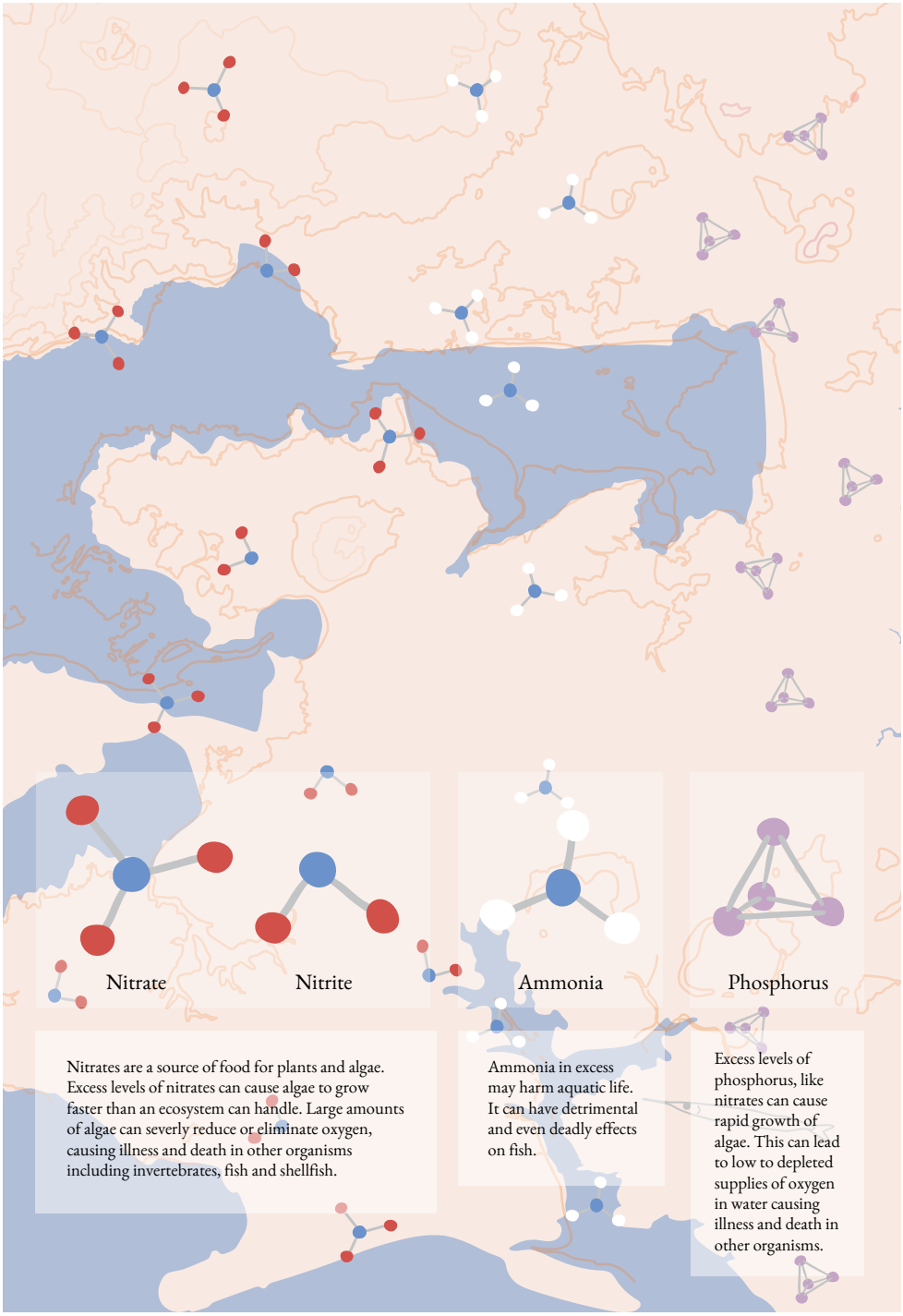
Geology: Core Samples surrounding Mangere Inlet
GNS Science PETLAB Database
http://pet.gns.cri.nz/worldMap.jsp?sess=1

Figure 37. Stay, *Geology: Core sample illustration.*



Geology: Core sample illustrations
GNS Science PETLAB Database
http://pet.gns.cri.nz/worldMap.jsp?sess=1

Figure 38. Stay, *Hydrology: Water Quality of Mangere Inlet.*



Water quality of Mangere Inlet

Water Research Centre
http://www.water-research.net/index.php/nitrate
http://www.water-research.net/index.php/ammonia-in-groundwater-runoff-and-streams
Wheatley River Improvement Group
http://www.wheatleyriver.ca/current-prjects/wrig-pilot-ntrate-study/nitrates-and-their-effect-on-water-quality-a-quick-study/

Environmental Condition andValues of Mangere Inlet, Whau Estuary and Tamaki Estuary
KELLY, S.; 2008. Environmental condition and values of Manukau Harbour. Prepared by Coast and Catchment Ltd. for Auckland Regional Council. Auckland Regional Council Technical Report 2009/112
EPA US Environmental Protection Agency
https://www.epa.gov/nutrientpollution/problem

Figure 39. Stay, *Hydrology: Water Management.*

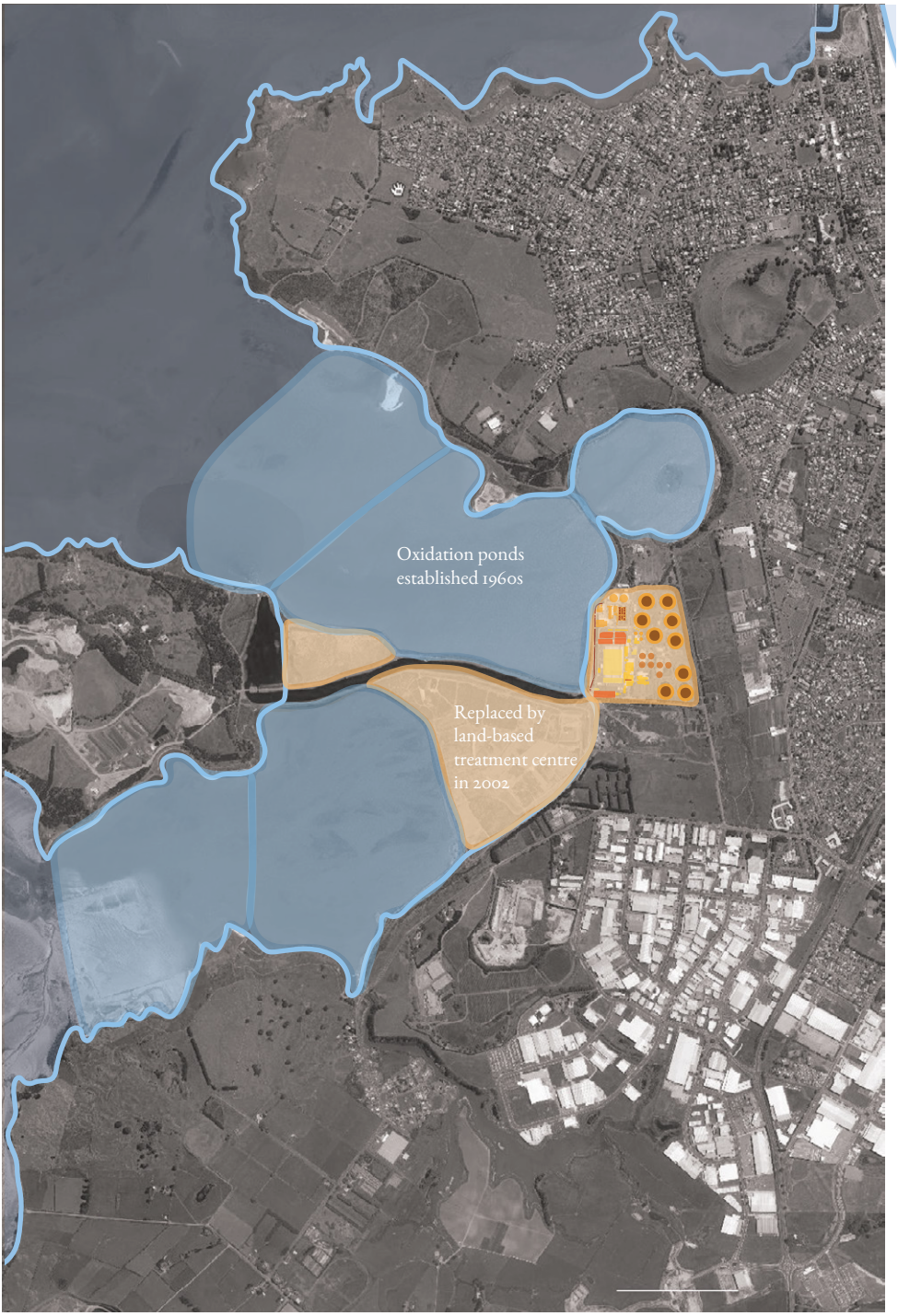
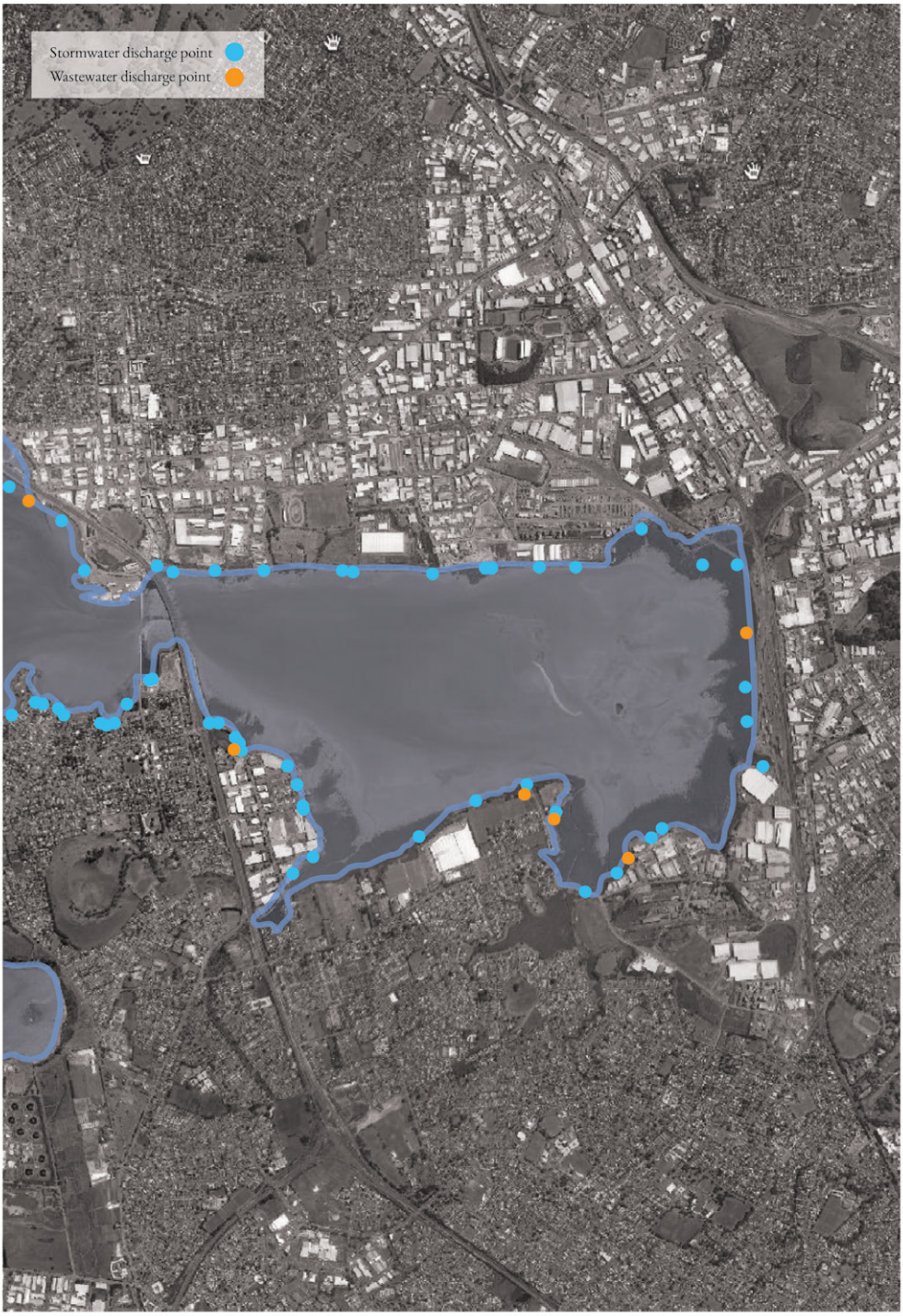


Figure 40. Stay, *Hydrology: Water Discharge points around the Mangere Inlet.*



Hydrology: Discharge points around the Mangere Inlet
Auckland Council GIS Viewer
http://maps.aucklandcouncil.govt.nz/aucklandcouncilviewer/

Figure 41. Stay, *Indigenous: Social Timeline.*

Foraminiferal record of sewage outfall impacts on the inner Manukau Harbour, Auckland, New Zealander
Andrew Matthews , Hugh R. Grenfell , Bruce W. Hayward & Mark Horrocks (2005) Foraminiferal record of sewage outfall impacts on the inner Manukau Harbour, Auckland, New Zealand, New Zealand Journal of Marine and Freshwater Research, 39:1, 193-215, DOI: 10.1080/00288330.2005.9517300

Figure 42. Stay, *Indigenous: Deforestation of New Zealand.*

c.1000 AD

Forest covered more than 80% of New Zealand before humans arrived. The only areas without tall forests were the upper slopes of high mountains and the driest regions of Central Otago.

1840 AD

When Maori arrived around 1250-1300 AD, they burnt large tracts of forest, mainly on the coasts and eastern sides of the two main islands. By the time European settlement began, around 1840, some 6.7 million hectares of forest had been destroyed and was replaced by short grassland, shrubland and fern island.

2000 AD

Between 1840 and 2000, another 8 million hectares were cleared, mostly lowland or easily accessible confier-broadleaf forest. By 2000 New Zealand had only 6.2 million hectares of native forest. Most of it was on mountainous land and was dominated by southern beech.

Indigenous: Deforestation of New Zealand

John Dawson. 'Conifer–broadleaf forests - Loss of conifer–broadleaf forests', Te Ara - the Encyclopedia of New Zealand, updated 25-Jun-15
URL: http://www.TeAra.govt.nz/en/interactive/11674/deforestation-of-new-zealand

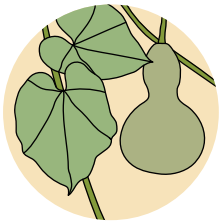
Figure 43. Stay, *Indigenous: Prehistoric Maori Settlement.*

Arrival of
Prehistoric Maori

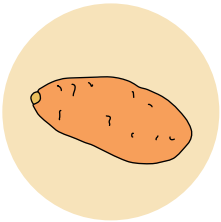
c. 1200 - 1400 AD

First forest clearance and horticulture.

Dog
kuri
species introduced



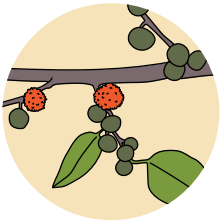
Gourd
lagenaria siceraria
species introduced



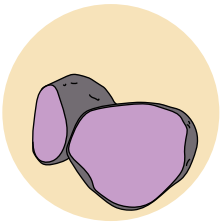
Kumara
ipomoea batatas
species introduced

Pacific Island Cabbage Tree
cordyline fruticosa
species introduced

Pacific Rat
kiore
species introduced

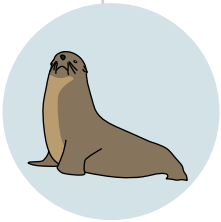


Paper Mulberry
broussonetia papyrifera
species introduced



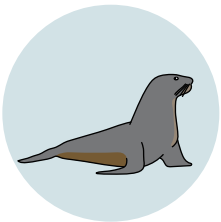
Taro
dioscorea species
species introduced

Yams
colocasia antiquorum
species introduced

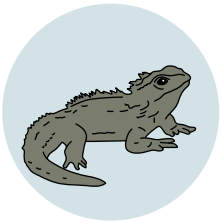


Fur seals
species declined

Moa
species declined



Sea lions
species declined

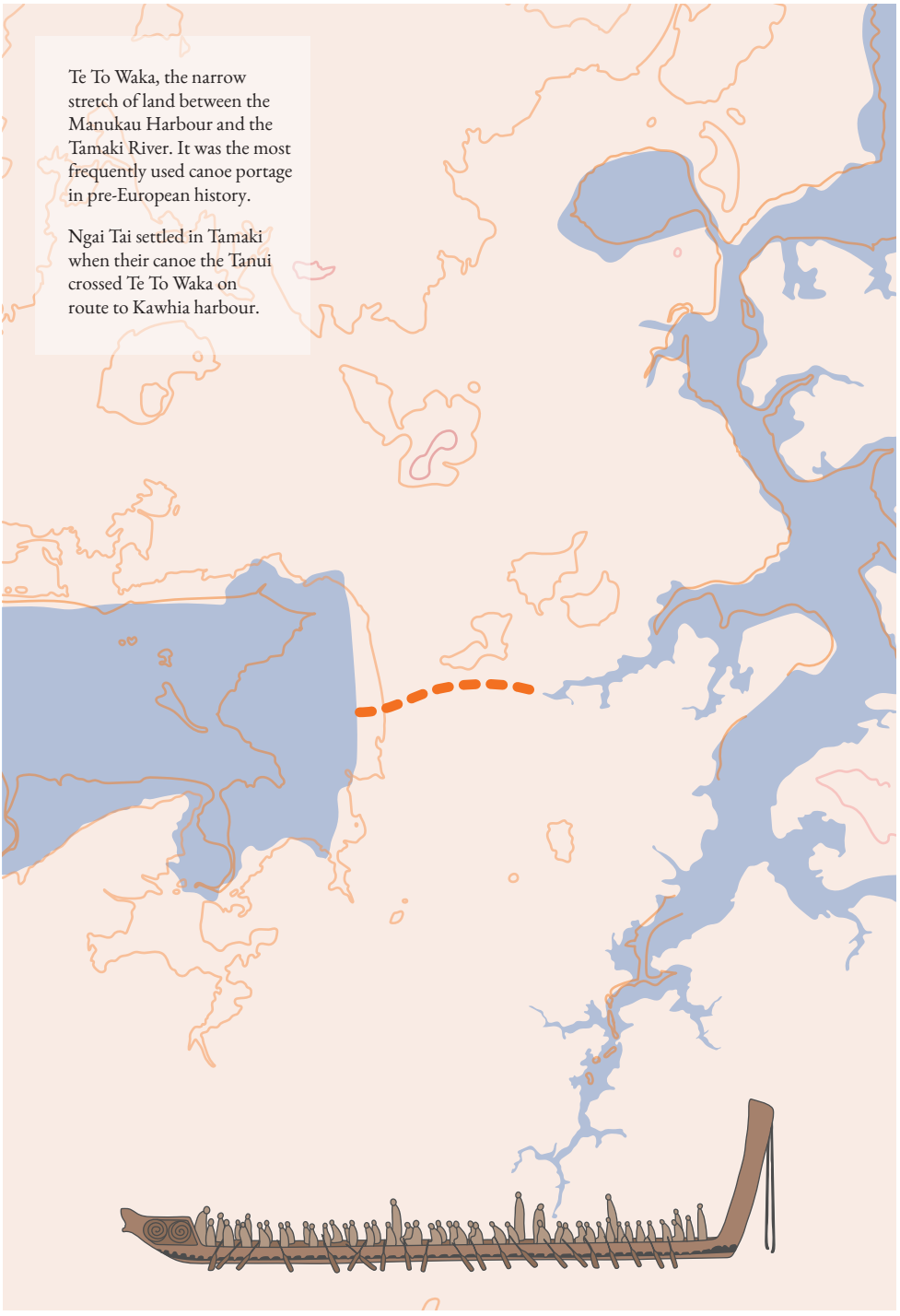


Tuatara
species declined

Figure 44. Stay, *Indigenous: Tainui Voyage.*

Indigenous: Tainui voyage
Te Ara, The Encyclopedia of New Zealand
http://www.teara.govt.nz/en/map/1713/the-tainui-settlement-area

Figure 45. Stay, *Indigenous: Te To Waka (portage crossing).*



Indigenous: Te To Waka (portage crossing)

Auckland Council GIS Viewer
http://maps.aucklandcouncil.govt.nz/aucklandcouncilviewer/
Te Ara, The Encyclopedia of New Zealand
http://www.teara.govt.nz/en/tamaki-tribes/page-2
Kawhia Maori, Spiritual and Ancestral Home of Tainui
http://www.kawhia.maori.nz/tainui-waka.html

Figure 46. Stay, *Indigenous: Te Pane o Mataoho.*

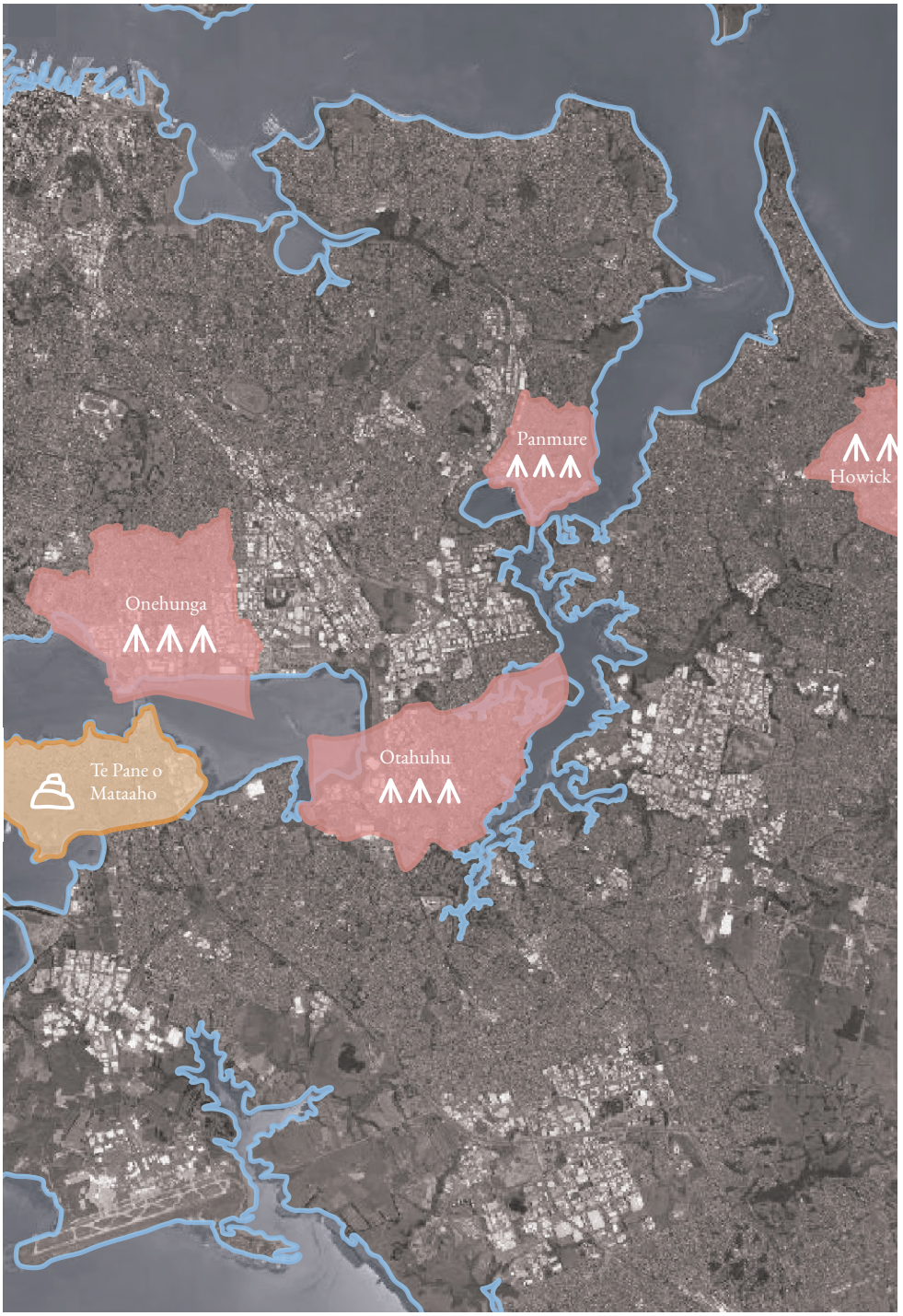
Indigenous: Te Pane o Mataoho
Auckland Council GIS Viewer
http://maps.aucklandcouncil.govt.nz/aucklandcouncilviewer/

Figure 47. Stay, *Social: Mangere Inlet Railway.*

Social: Mangere Inlet Railway

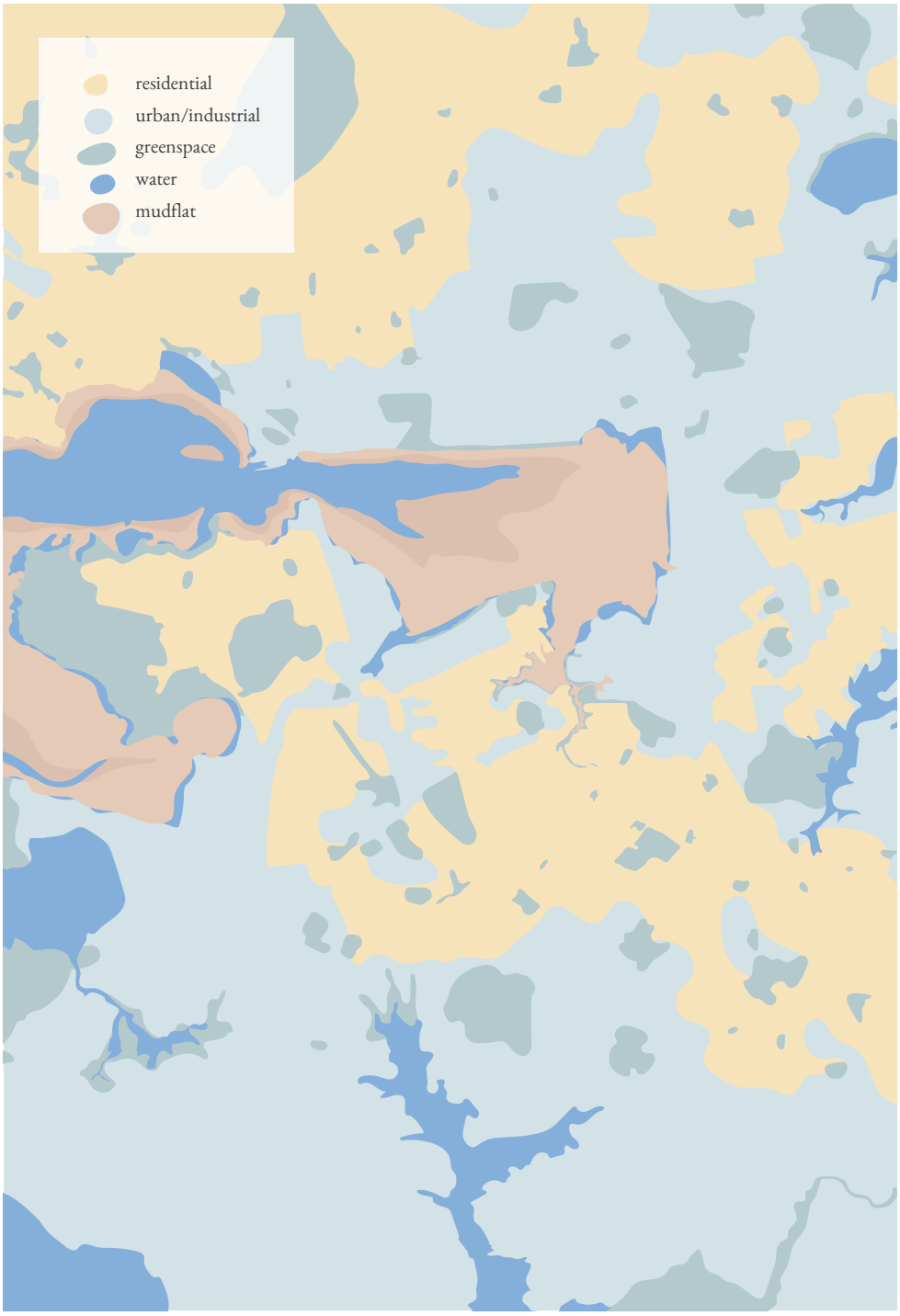
The railway renewed: 150 years of railways in Manukau
http://www.aucklandlibraries.govt.nz/EN/heritage/localhistory/countiesmanukau/transport/Pages/railwayrenewed.aspx

Figure 48. Stay, *Social: Fencible Settlements.*



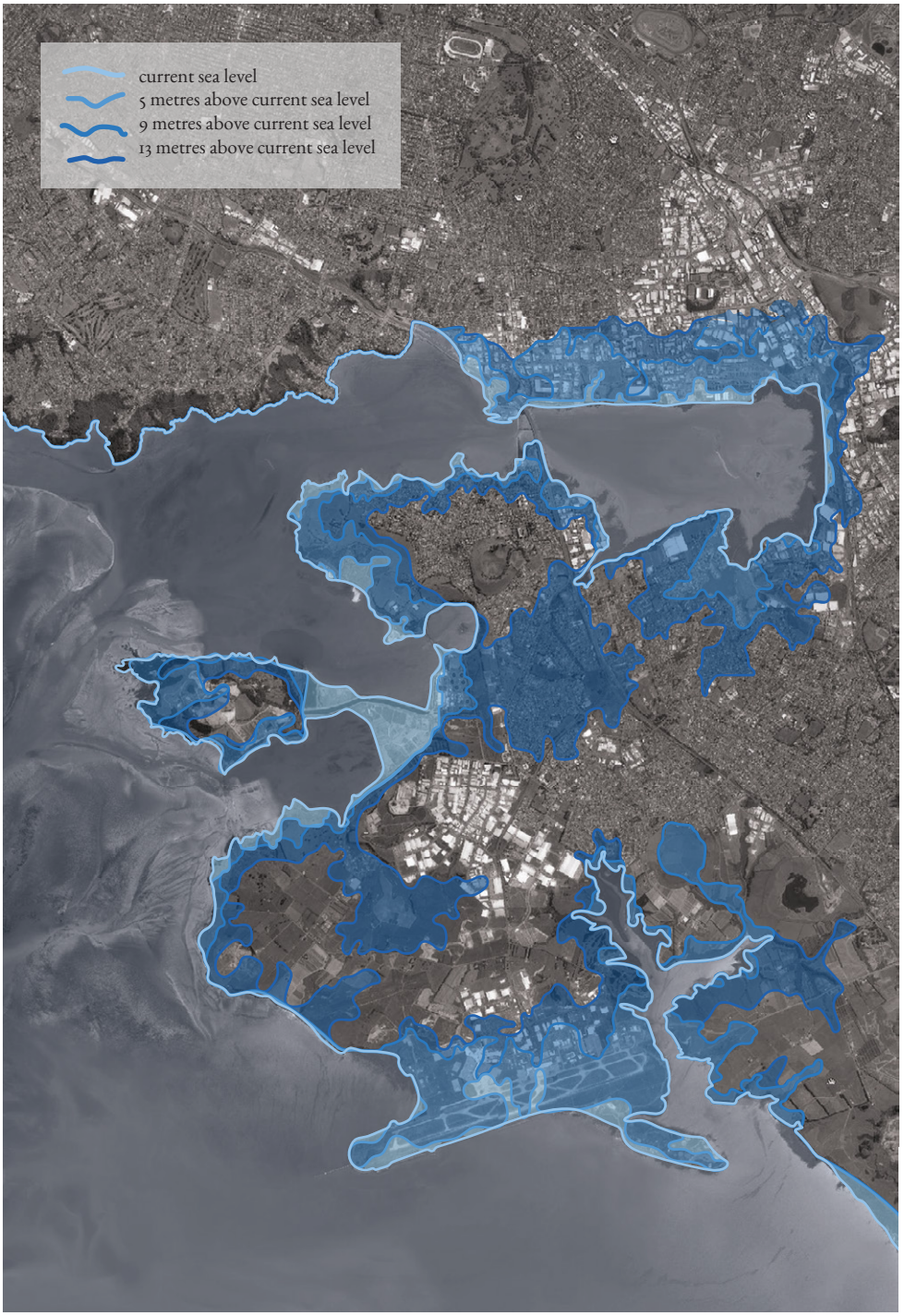
Social: Fencible settlements
Auckland Council GIS Viewer
http://maps.aucklandcouncil.govt.nz/aucklandcouncilviewer/
New Zealand History
http://www.nzhistory.net.nz/war/new-zealands-internal-wars

Figure 49. Stay, *Social: Predominant zones.*



Social: Predominant zones
Auckland Council GIS Viewer
http://maps.aucklandcouncil.govt.nz/aucklandcouncilviewer/

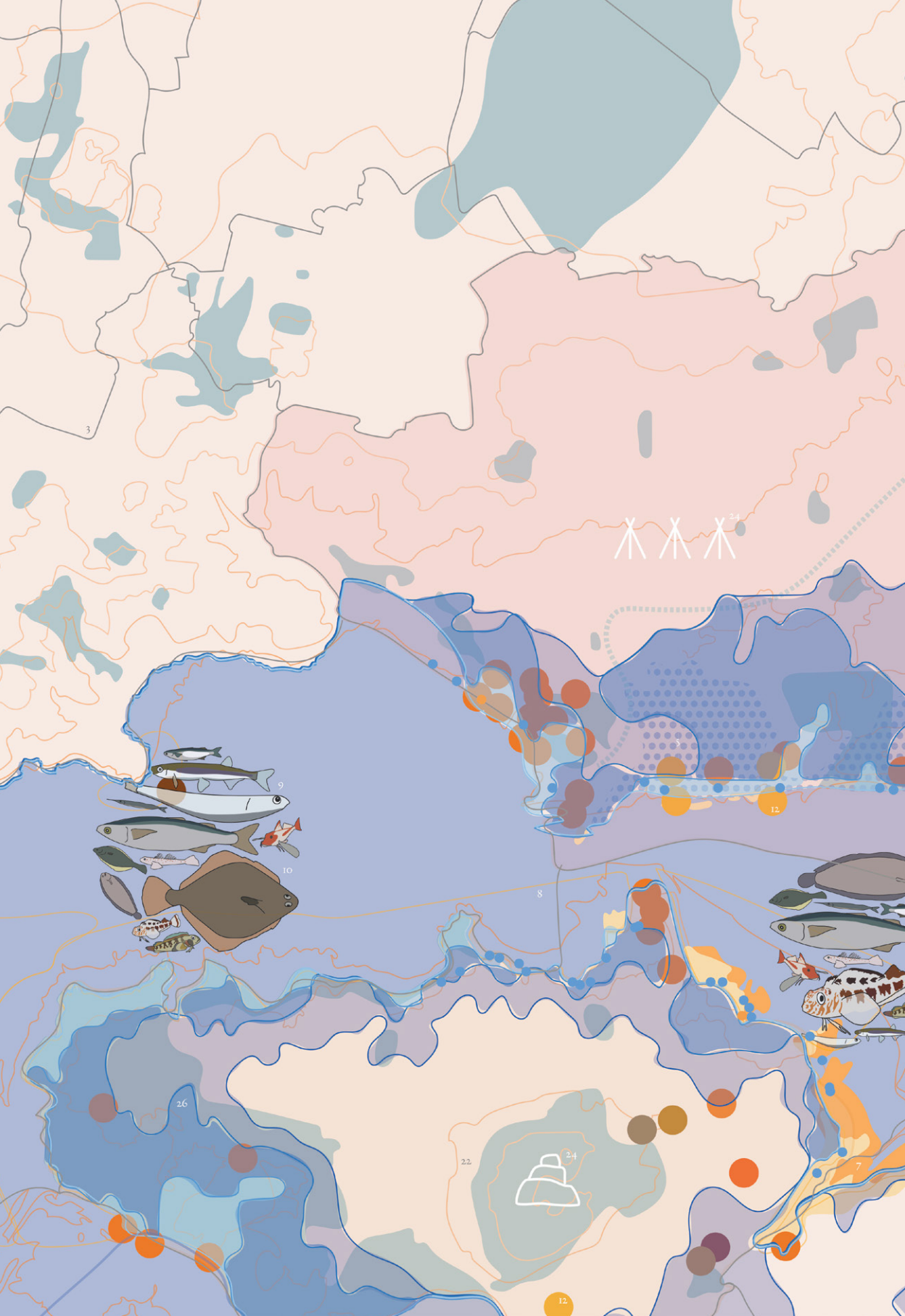
Figure 50. Stay, *Social: Rising Sea Levels.*



Social: Rising Sea Levels
Weather Watch
http://www.weatherwatch.co.nz/content/interactive-map-alarming-flood-scenario-nz

Plane of concepts

The transformation of elements and partial objects from the plane of reference to the plane of concepts opened the function of the maps to not only inform but also create and produce potential becomings. In mapping difference, the plane of concepts expresses intensities of difference rather than extensities of functioning coefficients. The mapping of a plane of consistency compounds the micro-maps—where all partial objects of the micro are assembled for intensive definition of site: site's potentialities. The gathering of micro-maps into a larger-scale mesh-map depicts gradients—shifts from predominantly urban areas to the shoreline and into the inlet. A gradient of materiality is mapped through differences of intensity. All these differentials that make up the mesh and reveal differences of intensity then constitute potentials for emergence. It is this field or milieu of emergence that becomes actualised in my design. The design is composed of series: assemblages of functions and of concepts. These series constitute the actualised milieu of emergence. The composing forces producing these parts—functions and concepts—enable the design's play of relations. Of significance in these ontologies of ecologies—immanent to the fields of emergence—is that, radically, the designer withdraws in the sense of being the causal agent of composition—final cause—from which or by which concepts and functions evolve non-linearly and non-logically.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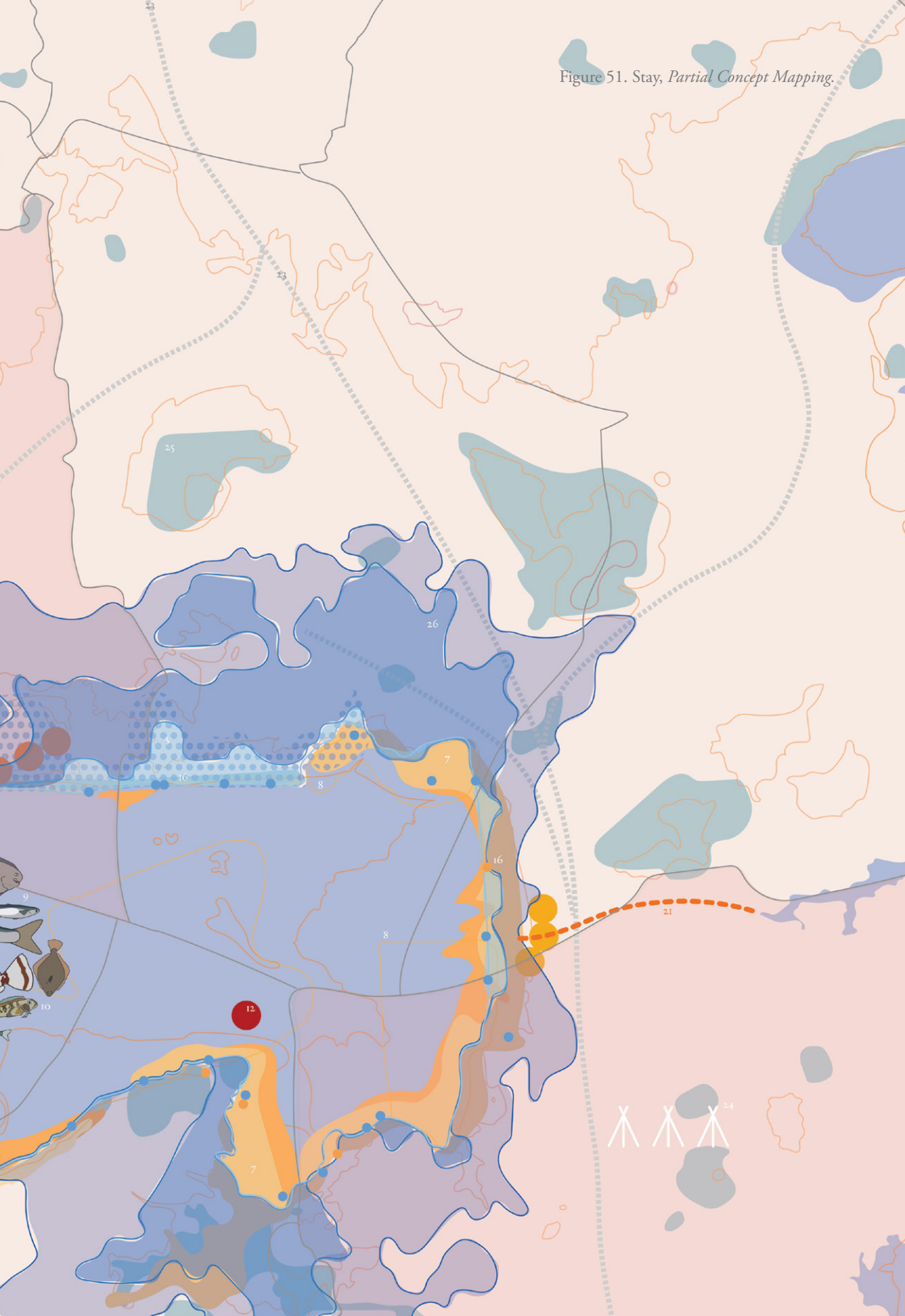
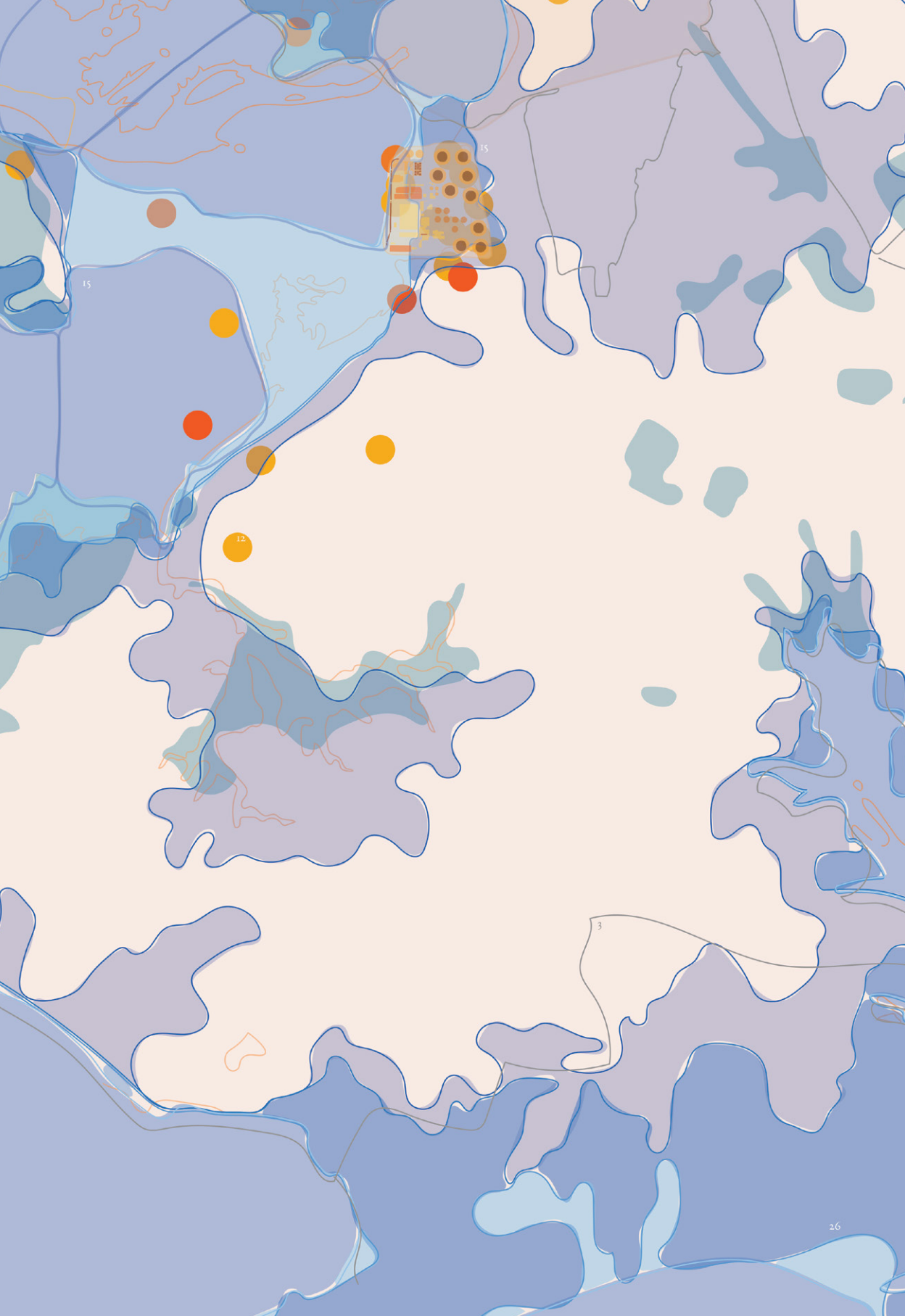


Figure 51. Stay, *Partial Concept Mapping.*


15
15
12
3

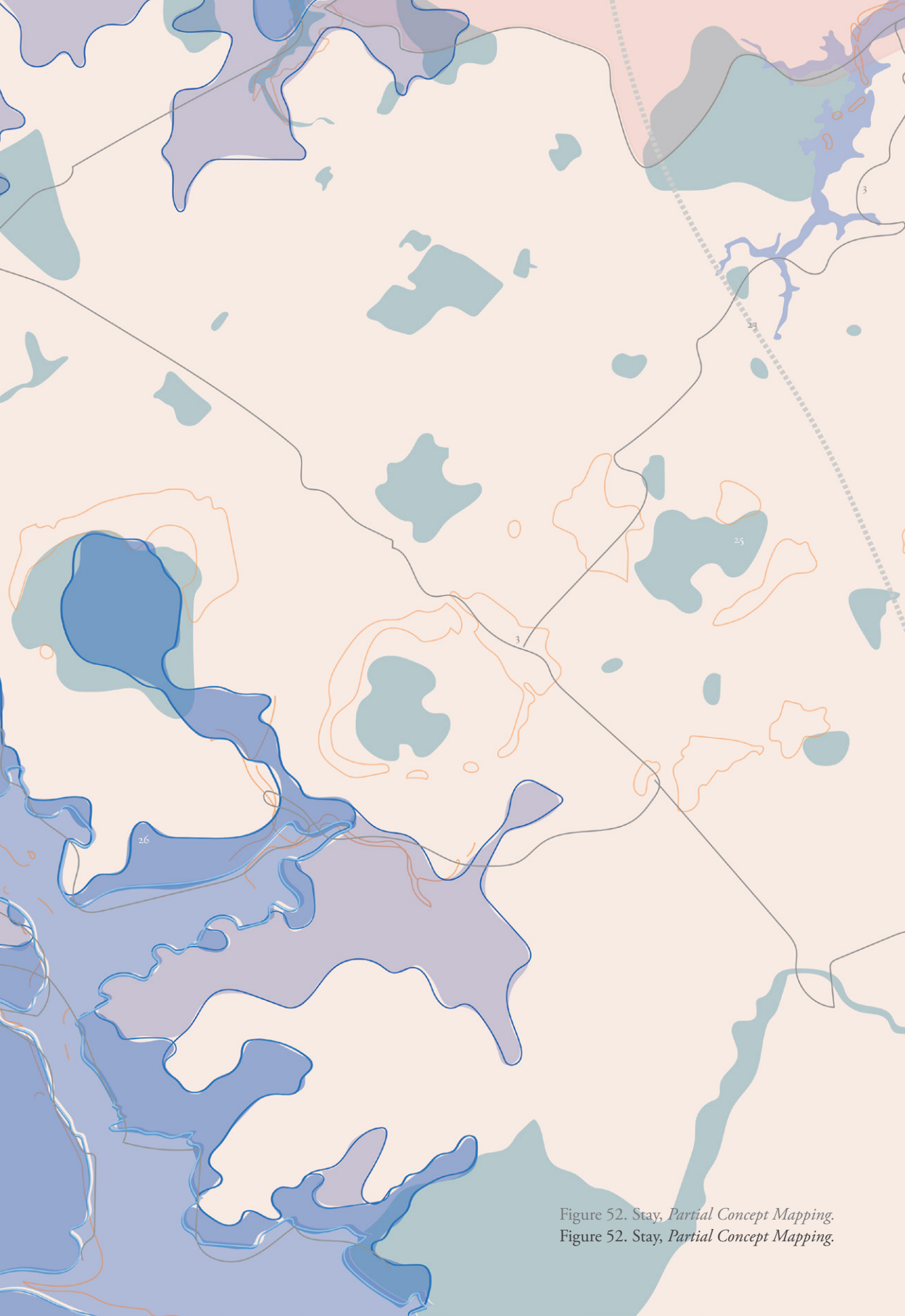


Figure 52. Stay, *Partial Concept Mapping.*
Figure 52. Stay, *Partial Concept Mapping.*

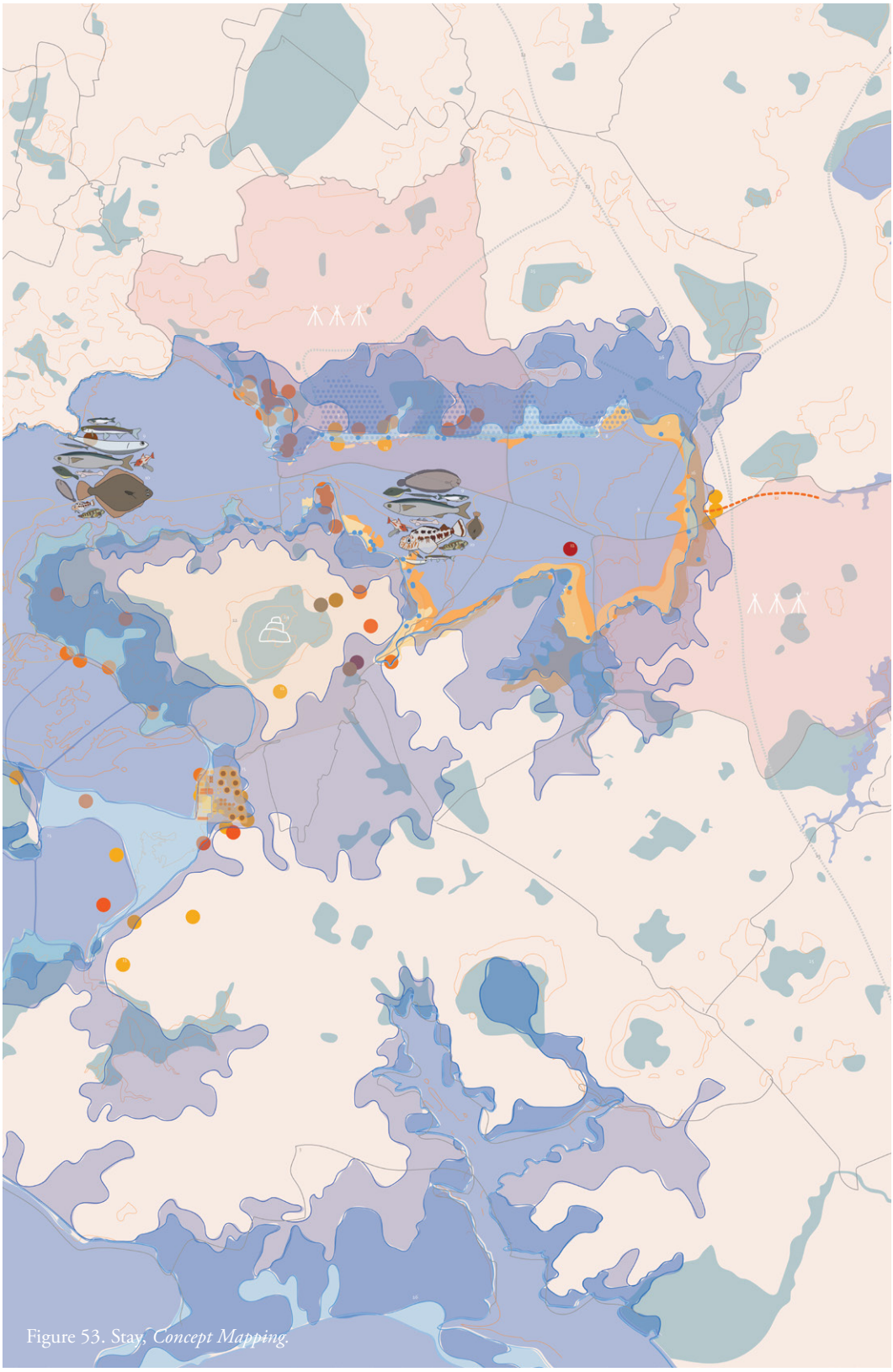


Figure 53. Stay, *Concept Mapping.*

Plane of percepts/affects

Percepts/affects as a plane of composition are divided, as Deleuze and Guattari emphasise, between a faux-plane of technical composition and a genuine plane of sensations, directly engaging the material as a self withdraws in the immediacy of the sensate. But in design itself this plane is split again. On the one hand, design is led by its technical plane of composition, which relegates sensation to an effect of material resolution. Hence, in discussing the actualizing of a designed scheme we are drawn away from genuine sensate composition to engage the schematization of a designed possibility or future reality. With mesh ontology I want to move away from the privileging of such a faux-plane of composition. But there is, on the other hand, another consideration, that of design's very communicability: how these various mappings constitute so much technical exposition and how much they are immediately a bloc of sensations, conveying the very materiality of design's communicability itself, apart from what is actually projected as a potential realised future. I will return to this consideration in discussing the exhibition strategy for the final design, though in what follows in the next section, Design's Guises, we need to consider not simply the play of concepts and functions but the very expressionism of design communication's sensate materialism.

Figure 54. Stay, *Connective Link Path.*

Part Two—Design Outcomes

During the year's candidature, I developed my design process by producing a successive series of design projects, each tracing quite different understandings of the Mangere Inlet site and each activating different kinds of design precedence, concepts and functions. These five generally progressed such that the elements implicated in the design increased in complexity, commencing with a simple pedestrian footpath or link, to then considering a skateboard park, then a coastal wetland as experimenting in biodiversity and regeneration, then to a large-scale physical installation, folding pedestrian walkway and wetland, and finally an intervention as counter-measure to storm water outlets that pour toxic materials into the Mangere Inlet. My final design project takes partially from a number of these in formulating a large-scale wetland intervention. Initially I will outline the five initial projects.

Pedestrian Links

A connective path following the coastal edge of the Mangere Inlet was the first potential design outcome for the project. It was from the moment of first having visited the site that there was an appeal for increasing access and connection. It is quite direct reaching the Inlet shoreline on the western side of the site's State Highway 20-bridge. However, the eastern end of the Inlet is not so simple to reach. After a couple visits to the site, accessing various points from minor side-roads and walking off the path among grasses and trees, I found the walkway spanning the northern foreshore of the Inlet. This lack of ability to access the eastern inlet's coastline inspired a connective path following the inlet's edge. This initial design outcome recognizes some strong design aspects to the Chicago Riverwalk precedent. Prior to the Riverwalk, the Chicago River was polluted and disconnected from its surrounding city. Opening and activating the river through a series of six areas has decreased pollution, created a thriving atmosphere and brought the river back to the forefront of the city. In a sense, this was the intention of a connecting path surrounding the inlet's edge—to reconnect the surrounding suburbs with the inlet and subsequently call for action on its dire ecological state.

There were several interventions proposed along the connective walkway—harbour baths, paths, park, and zones for education, gathering and connection. The link proposal took advantage of biological, indigenous, urban, geological, social and hydrological features that had been discovered in the early stages of concept and function mapping. The process of design at this early stage in the project is very much like that of a typical architectural project whereby investigation into the site reveals ecological or historical features which are then activated in a design concept. While this project could be developed into a site-wide transversal engagement, at the stage it was proposed there hadn't been enough research and exploration into what transversal design encompassed. However, it illuminated how the conditioned and the unconditioned, functions and meanings happen in mapping from a plane of reference to the composing of a design proposition.

Skatepark

The skatepark was a more detailed, in-depth iteration that developed out of the connective path concept. It was intended to be the first of many installed functions to be designed around the Mangere Inlet. However, post evaluation of the design demonstrated its lack of genuine considerations of transversality—in particular was the inherent dominance of urban and social frameworks. During the design of the skatepark the site functional mapping was well underway. However, I had not really engaged with the unconditioned multiplicity constituting a plane of concepts. The design process commenced with rough working drawings—technical compositions—visualising a myriad of connections between the different elements that had been mapped in a plane of reference. The entanglement of lines showed that the furthest eastern shoreline was found to be overflowing with interconnections. The group of elements fostering these connections included a portage crossing, areas of ecological protection and historical transport links. Thus the need for a plane of consistency emerged during the design of the skatepark bridging the mapping processes and design processes.

Precedence for the skatepark came from the LEMVIG skatepark in Denmark. It is a well-designed, multi-layer space accommodating a multitude of activities. The repurposing of a disused site resulted in reinvigorating a coastal area for public enjoyment. The eastern end of the

Mangere Inlet is surrounded by industrial and urban areas, leaving it largely cut off from a general recreational public. Therefore, creating a design that catered to multiple activities for different age groups was key. The skatepark location exists in an area that has strong historical and present day ties to transport—thus the movements and flow of the designed pathway in the skate-park alluded to different modes of transport. Community gardens offered healthy, safe food and opportunities for community development, friendship, relaxation and even relief from financial hardship. The park included space for multiple activities: a basketball hoop, court, children's playground and a skate bowl. Unseen is a water network designed to collect rainwater from the series of shelters and store it in underground water tanks. The park was able to provide drinking water sustainably, as well as for the community garden. Finally, native planting along the foreshore encouraged habitat regeneration and provided habitats and safety for many species.

What, then, was the problem with all of this? The problem was how the group itself had been conceived as multiple. My design thinking, especially in terms of allowing the design precedence and elements to be constituted from out of already-determined institutional frames, defined the group as subjugated rather than as subject. That is to say, the conditioned lines of variation of functions too precedence over the unconditioned plane of consistency of concepts. I was not inventing with concepts but stymied by the totalizing of functions. The name 'skatepark' did not allude to a multiplicity of partial-objects but an already fully determined totality. The skate-park design arose from a conventional architectural analysis of functions—there is a discrete series of functions and a series of spatial configurations for these functions. Whereas, if a transversal group analysis of the site and its partial objects occurred, the overarching framework is no longer institutional but that of a mesh—incomplete and infinite in its potentiality. This may produce what we might term skatepark's otherness or a kind of nomadism of skating's elemental compositions. This could be considered as a transversal engagement of site.

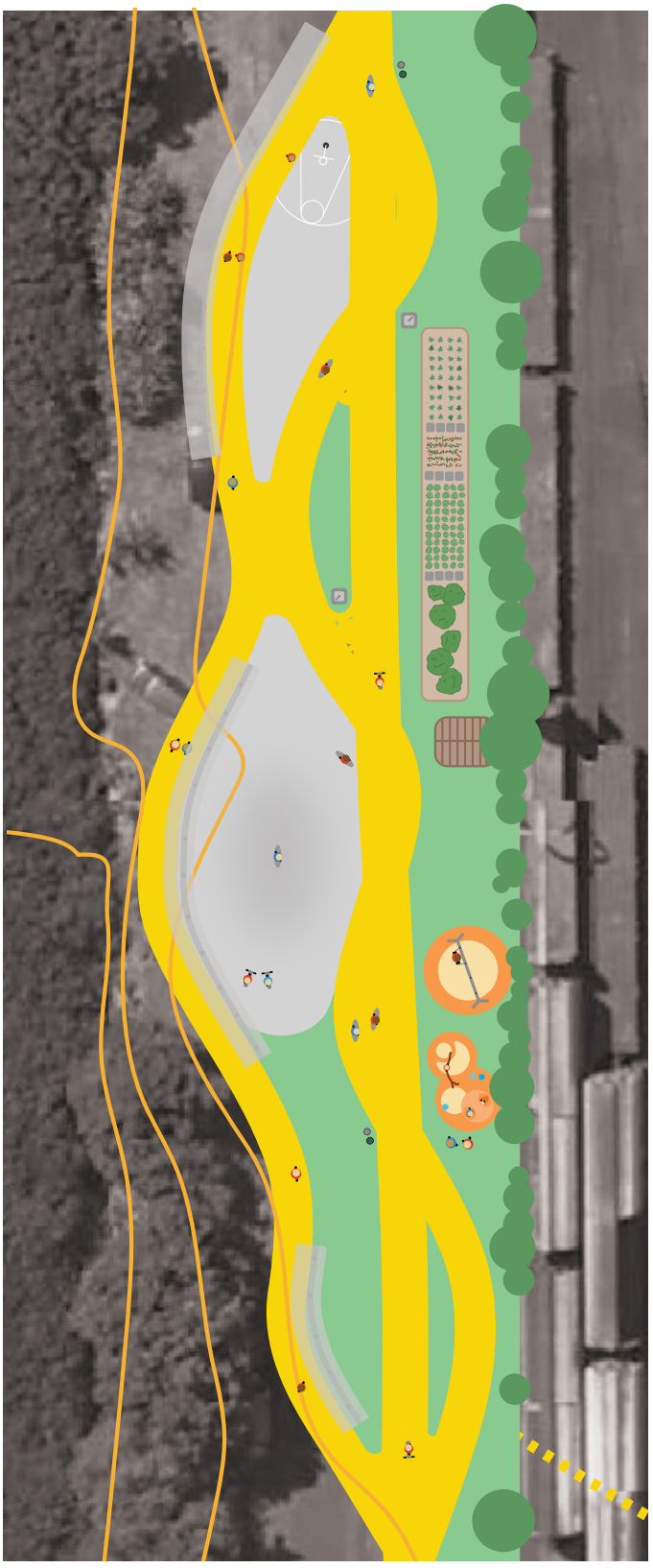
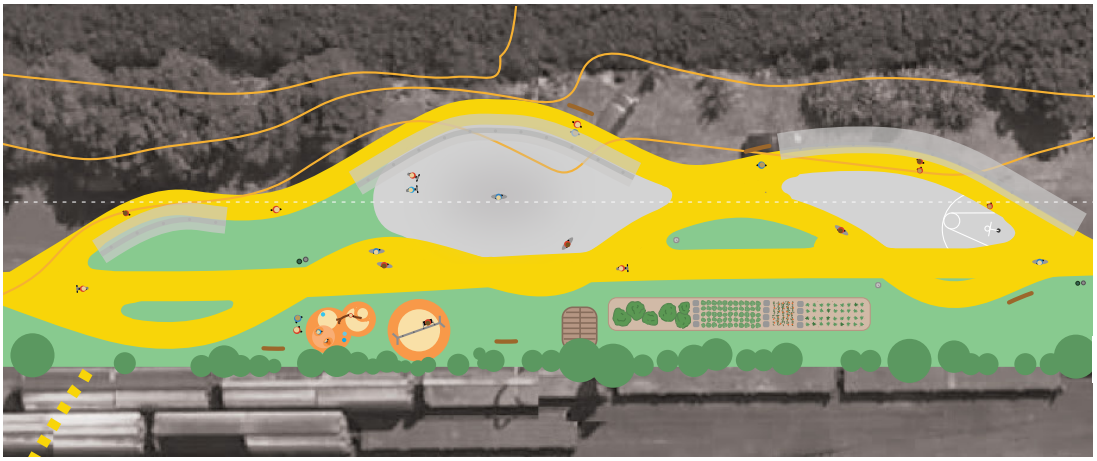
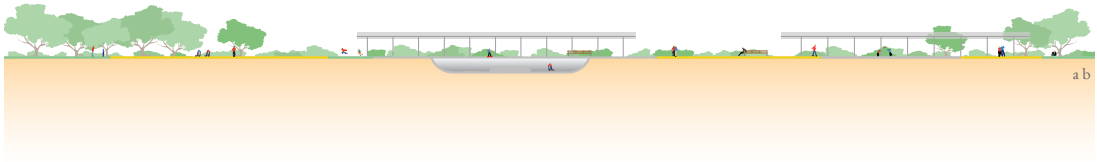


Figure 55. Stay, *Skatepark plan.*





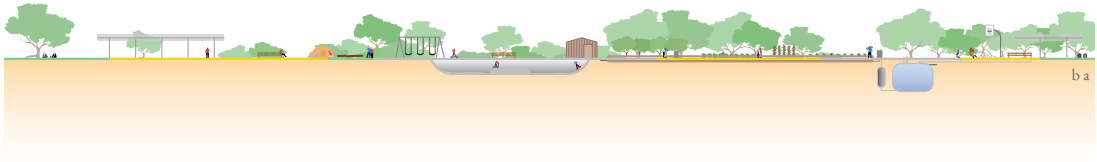


Figure 56. Stay, *Skatepark*.

Coastal Wetland

This design exploration constituted introducing extensive coastal wetlands/ marshlands to the far eastern edge of the Mangere Inlet. The adjacent intertidal mudflats of the wetland are areas of coastal protection—a high tide roost and feeding ground. Thus it was crucial for this design to consider more than the urban and the social, much like the design precedence I discussed in Chapter One, the Floating Gardens of Yongning Park in China. These gardens offer a similar perspective on introducing vegetation and developing resilient ecosystems in urban environments. They show not only the environmentally beneficial effects of introducing a wetland to a coastal edge but also the possibilities for education and other social amenity.

The design comprises construction of a large-scale coastal wetland, which is flooded at high tide. As the tide recedes, water is retained in the wetland. Planted with an array of native vegetation it offers further protection for the shorelines in adition to the already rooted mangroves, water filtration, protected habitats and feeding grounds for many native, endemic and migratory bird species. A minimal intervention boardwalk installed in the wetlands offers depth engagement, education potentials, and a connective link to surrounding environs. At designated water bodies along the boardwalk path, there are camouflaged swimming locales within the wetland that are naturally filtered by the surrounding plants and work to educate a community on water quality and processing. A central pavilion provides a place to gather, has high tide markers with the potential to record sea level rise. The coastal wetland not only provides numerous ecological benefits, it also aids in the protection of the shoreline and offers educative frameworks on a vital and potentially disappearing environment. The wetland seems to operate transversally as a subject-group and responds to conditions of the site by considering species habituating the inlet, planting, processes and flows of materials such as time, tides, toxins, social flows, feeding rhythms and diurnal cycles. Commencing with base planting and moulding, the design evolves as self-emergence, immanent to its milieu's conditions. A public can wander, observing and interacting with this environment, part of the ecosystem in passive and active ways, growing with the landscape. As sea level rise, this site eventually becomes submerged. What remains are poles from the boardwalk or pavilion rising above the new water level, becoming home to oysters and barnacles and a trace of what once was.

Mangere Inlet

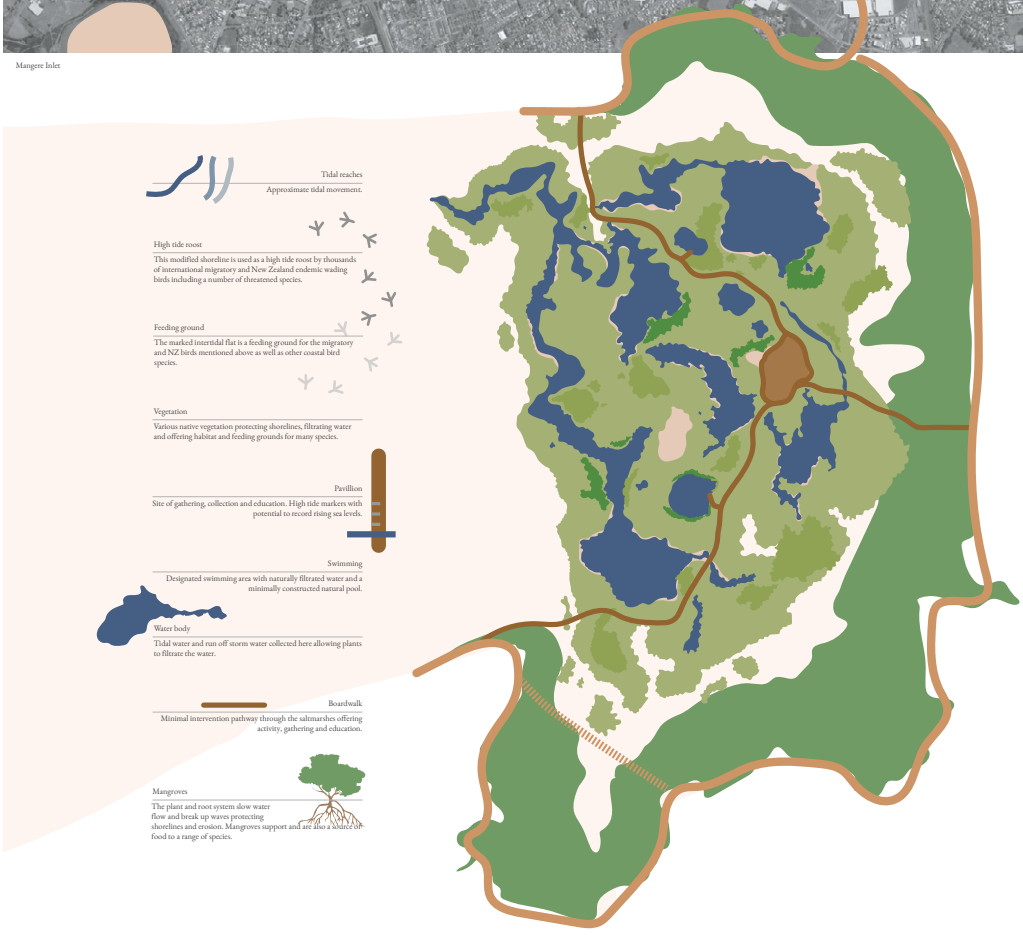


Figure 57. Stay, *Coastal Wetland.*

Annulus

The fourth design scheme was an Annulus. It was conceived as a move away from the skatepark and the pedestrian link. Though the pedestrian link is a notion I modify and further explore in this project. However, issues I seemed to face with the skatepark—the institution and subjugated group—led me to move away from frameworks that enlisted agendas that came with top-down programmes such as skate-parks or harbour baths which were originally programmed into the link. The Annulus operates similarly to the coastal wetland but progresses differently in its explorations of transversalities in ecology and architecture. The wetland annulus is a circular wharf-like structure in the centre of the inlet, attached by a long raised walkway or boardwalk. The circular wharf-like structure is floating. It rises and falls with the tide and has aquatic vegetation planted around its perimeter, comprised of native, floating plants. The annulus, located by a storm-water outlet, deploys aquatic vegetation as a means for filtering storm-water effluent. The vegetative circle-wharf is designed such that if sea levels continue to rise to unprecedented levels, the circle too rises and eventually is free to float away.

The structure responds and subsequently maps site conditions through an ongoing shifting and developing in its situation to the inlet. Beginning as an intertidal wharf, the ring rises and maps the tides and sea level differentiations—organisms such as mussels can be tipped as natural indicators along the wooden structure. Aquatic plantings offer better conditions for aquatic species as they provide shelter, oxygen, food, as well as filtrate the water. The sustaining of these plantings is an indication of the health of the environment. Tidal swimming and other social functions offer a point of interaction and access to the inlet, as currently there is little access along the shoreline of most of the eastern coastline. Historically the northern shoreline had a series of small bays, which many once enjoyed as recreational zones. Land reclamation from the 1970s to 1990s saw the straightening of the shoreline and the loss of these swimming areas. Reintroduction of accessible swimming in the inlet is a response to these lost functions. As an ongoing transversal myriad, the development of plantings and spreading of mangroves, sea level and social activity will see the wetland annulus develop and grow, spreading its ecological reaches to bettering the health of the inlet. By the end of the century when sea levels have risen above the extended path

to the ring, the circular structure will detach from the path and float like an island or camp. The annulus, like most of the proposals in this project, is designed to accept environmental change. This is an important feature of the design precedent, the Amphibious House in the United Kingdom. The house was built in a designated flood zone area and rather than building flood defenses, the architects accommodated and welcomed water. Operating as a subject-group, the lack of agenda and control—unnecessary cultivating or replanting—allows the circle-wharf to develop into its own independent mini ecosystem while remaining in touch with the urban and social.

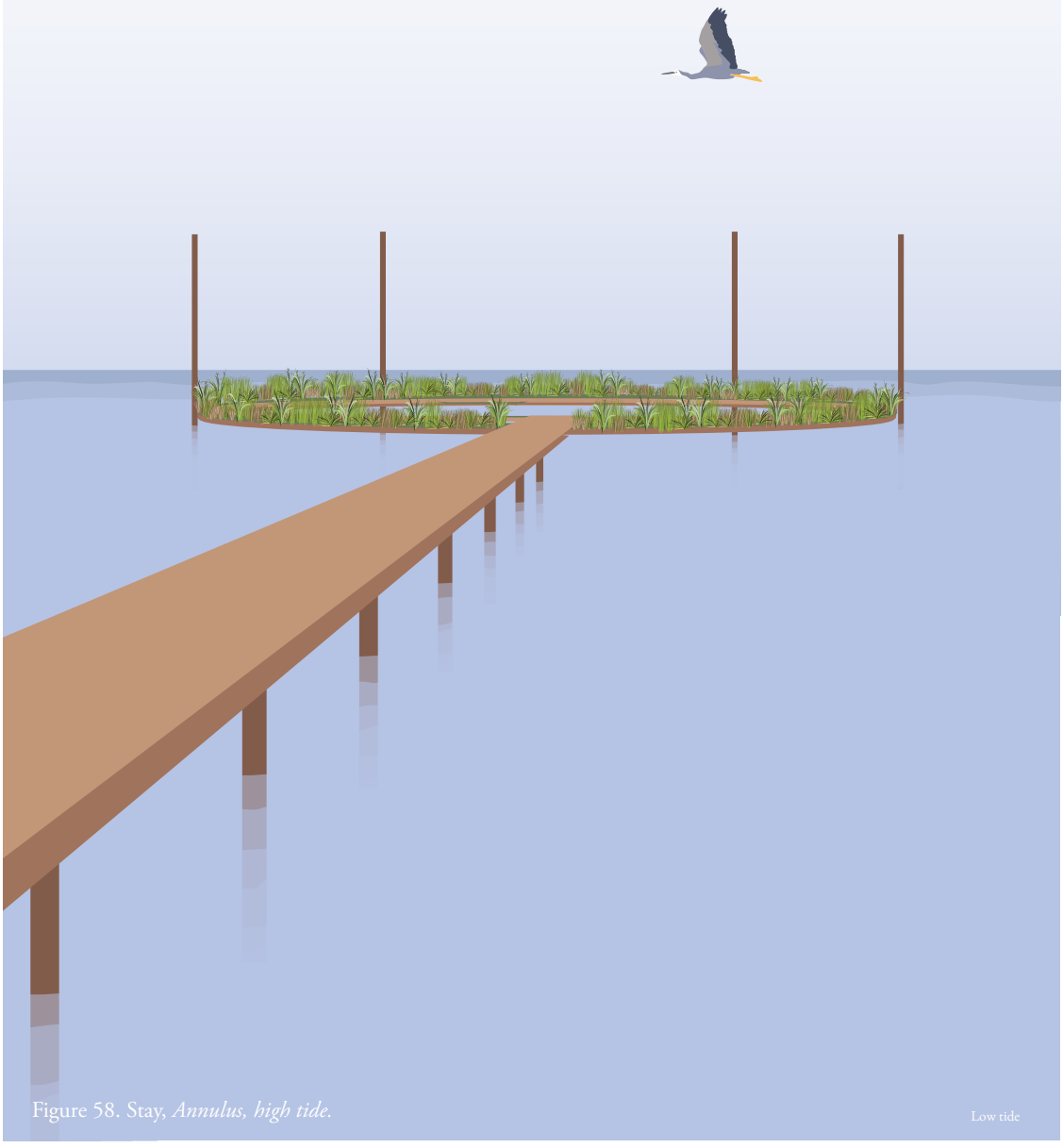


Figure 58. Stay, *Annulus, high tide.*

Figure 59. Stay, *Annulus, low tide.*

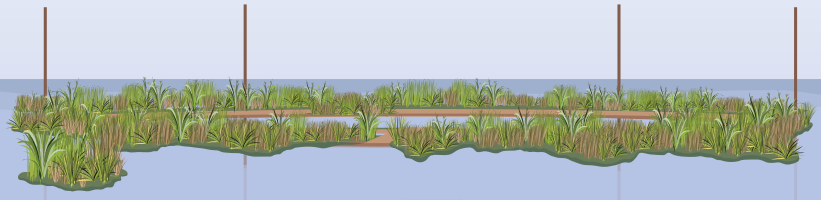


Figure 60. Stay, *Annulus, five years on.*

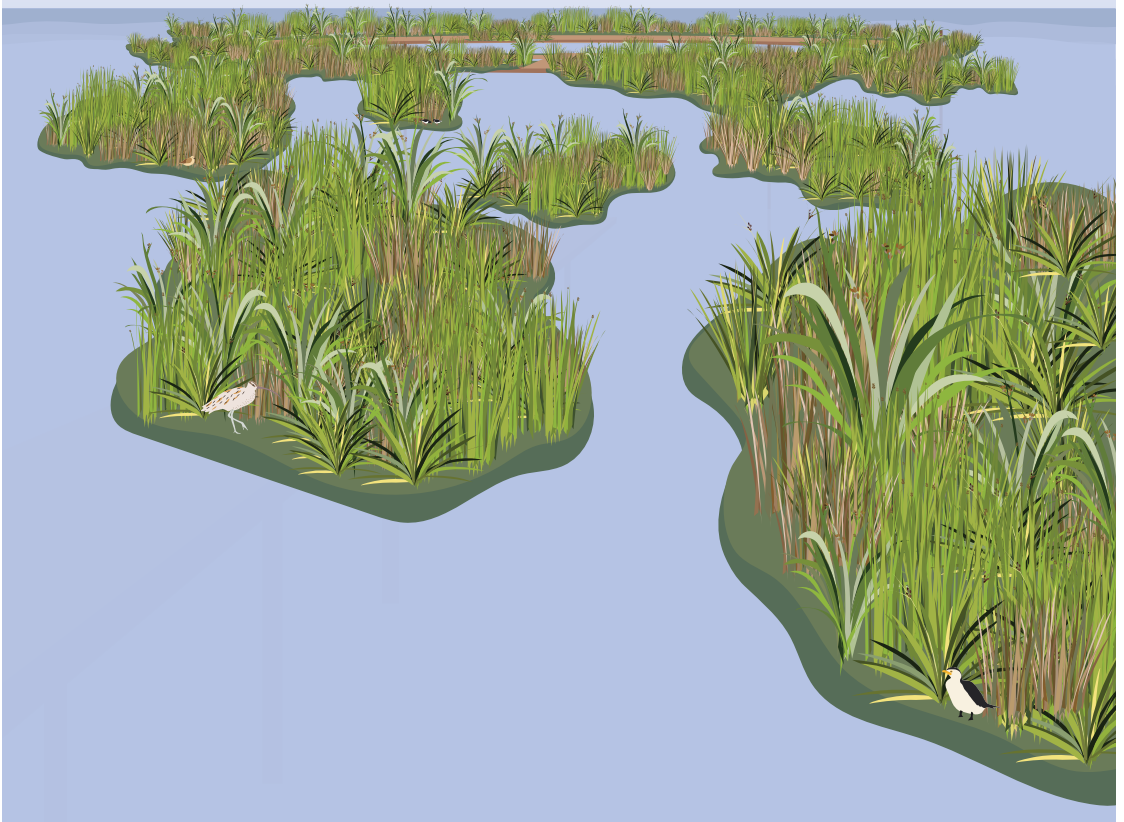


Figure 61. Stay, *Annulus, one hundred years on.*

One hundred years

Stormwater Device

The storm-water device was a further iteration of the annulus. It is designed for receiving or accepting storm-water runoff rather than such runoff directly flowing into the inlet. The storm-water device is large and circular in shape, it has a boardwalk circumscribing its perimeter, and it stretches to include two storm-water pipe outlets on the northern foreshore of the Mangere Inlet. Within the circle is a constructed wetland, an environment that supports many species, including birds, fish, plants and most other habitats. Filled with native wetland vegetation, it is designed to filtrate unwanted chemicals from the storm-water before that water it is released from the outlet. The design includes two separate sedimentation ponds at the mouth of each outlet pipe and a large pond for filtrating out chemicals. Surrounded by natural vegetation, the design will also encourage habitat regeneration. The pathway around the perimeter of the storm-water device is for pedestrian recreational activities. While a public would not engage actively with the wetland itself or the species habituating it, there is an opportunity for education on the water quality of the Mangere Inlet and with enough drive this scheme could lead to progressive action towards further cleaning up the Mangere Inlet.

The group of the storm-water device includes those elements needed to create the wetland. The elements form a series of processes, machinic assemblages that, once planted, are free to grow and develop without further human intervention, control or moulding. Within the storm-water circle, there is a myriad of connections. However, the storm-water device seemed to be cut off from the inlet in many aspects. It connected in other ways, through the storm-water outlet, release of water, habituating species, but it appears to have evolved as a thriving island amongst a degrading ecosystem. The value of the design lies in its ecological and environmental considerations. Biological, geological and hydrological maps were considered in the design of the storm-water device, and there was extensive research into types and species of native vegetation that would be required. However, for a genuinely transversal engagement with site, it needs to have more fluidity and connection to the wider inlet as well as greater consideration for all the ecologies. Revisiting the storm-water device design process, I can see that there was a lack of connection to the mapping methods, plane of

Figure 62. Stay, *Stormwater Device.*

reference, concepts and percepts/affects. The design was developed from the Annulus and didn't think to reconsider the plane of concepts for alternative perspective—inventions—or new connections to develop within the maps.

Part Three—Final Design

Group & Field

As I have suggested above in discussing the series of preliminary design projects, the final design takes aspects from this series, operating transversally with them in order to determine a subject-group, unconditioned by institutional closures to functional relations and technical composition. This thus enables experimenting with concepts, inventing a new plane of consistency and a genuine plane of composition. The group consists of a concatenation of this site's water body, the animal and plant organisms it contains, mudflat soil, a proposed highway, urban links, developing infrastructure, the public, native, non-native and migratory birds, wastewater and its runoff, and historical intensities. The group enacts plane of reference or referentiality—an horizonal mesh. A plane of immanence is always *plus one*—and … and … and—inexhaustible interconnections and relationships, inventing concepts in their multiplicities.

The group of the design has been consciously considered and thought through as a *subject group*. As discussed earlier, the group of the skatepark was a *subjugated* group. While considering the design and the finality of its functions, it was a matter of reviewing the subject group and all its beings, how their processes operated and how to invent or compose an assemblage as something that is yet to find a name but is nonetheless recognizable or disclosable as ecological design: operating on the virtual planes of non-finalised functions and un-formed matter. In this sense it is an ongoing battle to stop frameworks—naming things as or in fixities of good form—from overcoming the design and the site, its mysteries and open potentials. It has been designed in order to keep open a kind of nomadism, with no framework or intended outcome that would necessarily finalise functions and

form matter. Rather there is a passivity to the site, not simply in the sense of recreational use and public education but rather—in alluding to mesh-ontology—a letting be of self-cultivations constituting an impersonal self as affective response.

Transversality & Mesh

The constructed design is a large, circular boardwalk that begins and ends on the existing concrete walkway, running along the northeastern foreshore. The circular boardwalk, six hundred metres in perimeter and one hundred and ninety metres in diameter, extends into the middle of the inlet. It involves two storm-water pipe outlets, mangroves, mudflats, vegetation, and animal species. In a site that has long suffered and is in ecological despair due to urban waste run off, any additions to the site need be supportive, sustainable and beneficial to the environment. The boardwalk is designed to enable the transversal self. Its purpose is to complicate disclosive potentials of the site—composing in percepts/affects the natural weathering of site—to form an understanding of the birds which inhabit the mudflats for wading and feeding, oysters and barnacles attaching themselves to new surfaces, and mangroves slowly spreading. It enables a viewing of processes and interconnections. It places a self in a web of relations. The storm-water outlets at the beginning of the base of the circular structure, that feed urban runoff into the inlet, are visible from the boardwalk, providing the ecologically destructive nature of our social and industrial practices a noticeable direct link to the inlet. Native grass plantings, included in the implementation of the boardwalk, will help to trap and filter out unwanted chemicals from the runoff.

Most importantly from the design is a passive educative framework in which transversal being and mesh-ontological disclosure of a transcendental field of virtual potentialities are brought forth. This bringing-forth is reflection on society and social practices—to actualities of the real. Simply walking along the existing path across the northern foreshore of the inlet, a public glimpses only tidal variability. It does not see seasonal variations or the relationality of functions. Providing an extensive, encompassing boardwalk that spans from the edge of the urban, through the high tide zone, to the low tide zone, and into the inlet's water body, provides opportunity for observation and

education into the processes and relationships of the Mangere Inlet and the actual importance of such an ecosystem. Through the final design, there is exploration and speculation into short and long term growth and change of the site. Exploration begins with the site as it is presently. The scheme depicts what happens over the next two centuries when sea levels might well rise by two metres or more. The depictions exploring the temporality of site conditions also reveal the dynamics of the subject-group and a withdrawal of the designer—a making impersonal. Or rather than a withdrawal of designer, it is a surrendering of the design, letting the environment—the mesh—transform and adapt the design to its milieu. It becomes a part of a series of assemblages. Markers on the design, such as oysters and barnacles appearing higher on the poles of the boardwalk, mud mounds shifting from tidal forces, mangroves spreading and growing where it was once clear and sea level rising closer to the boardwalk level will all be indicators of the group operating in a transversal dynamic. Perhaps the most significant effect of the transversal dynamic is the evolution of a transversal self.

Part Four—Exhibition

Difference & Repetition

As I have earlier discussed concerning the three planes defined by Deleuze and Guattari in *What is Philosophy?*, the plane that they designate 'philosophy' is constituted as the consistency of concepts that are themselves multiple and invented. There is nothing finite in the inventing of concepts—the virtual potentialities of things suggest that actuality of things is merely the play of differentiations of a thing with respect to its own possibilities to be. This suggests meanings are open and unanchored, inventions. Yet there is the finitude to our world of things inasmuch as things function as a line of variation of the conditioned constituting relations between things. Functions are repetitions. Deleuze and Guattari give the name 'science' to this finitude. Every design project engaged the movements between difference and repetition, inasmuch as every being, as well as beings in assemblages is composed of differentiations of itself with itself and repetitions of itself. We play these movements in asking how designed thing mean something and how they operate. This final scheme shuttles between such self-differentiations, an infinitising of its fields of engagement, and the finitude of its actual functions and their relations. Yet, on a third plane, the design of this thing is expressible, in two senses. There is the technical composition of its expression: how it can be seen to function. And there is the genuine plane of composition, how its material strata overwhelm us in their material sensations. What we first and for the most part when this project is exhibited are these two notions of composition. It is only in the encounter of percepts and affects of what is expressible that we are able to open to a plane of relations and a plane of consistency. How have I engages the expressionism of a logic of sensation?

The circle boardwalk design is encountered serially—a durational series. The manner by which it was chosen to present the design and site as a series of illustrations over time returns us to Deleuze's notion of being. Deleuze is interested in the notion of being, that is, the notion of what something essentially is; being is differentiation—that something is always differing

from itself. He approaches this understanding, in part, via the French philosopher, Henri Bergson, and his *Matter and Memory*[68]. Traditionally, difference is thought of between two discrete things: how one essentially differs to the other. But this is difference in *extensity*. Bergson, on the other hand, discusses how difference happens in terms of *intensity*—difference of a thing with itself. He says that matter is the congealing of the duration becoming of something. That is, a thing is always changing in itself from itself, and it is always differing to itself, and its matter is the congealing of that differentiation.

In *Desert Islands*, Deleuze notes: "differentiation is … the original and irreducible mode through which a virtuality is actualized."[69] He further emphasises:

> We must understand that the virtual is not something actual but is for that no less a mode of being, and is, moreover, in a way, being itself; neither duration, nor lie, nor movement is actual, but that in which all actuality, all reality is distinguished and comprehended and takes root. To be actualised is always the act of a whole that does not become entirely actual at the same time, in the same place, or in the same thing; consequently, it produces species that differ in nature, and it is itself this difference of nature among species it has produced.[70]

For transcendental empiricism, difference is the means by which actualities are realised. In those terms, all virtualities of a being are in fact differences—potentialities—by which it differs from itself. However, to keep in mind when one of these differences is actualized, it is a part of the whole of the being—with all of its potentialities to be—a species of something, and these parts are only the act of a whole that never actualizes. In terms of difference in relation to the expression of the circle boardwalk, it is encountered as a series. Each repetition in the series of ten is a differentiation of site—a

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68 Henri Bergson. *Matter and Memory*. New York: Zone Books, 1990.

69 Gilles Deleuze, *Desert Islands and Other Texts 1953-1974* (Paris: Semiotext(e), 2004), 28.

70 Gilles Deleuze, *Desert Islands*, 28.

virtuality whose multiplicity invents potentials for actualization. The first five of the series involve the site over the span of a day. There is a multiplicity of virtualities or differentiations for what the site could be at this stage. Gregory Bateson discusses this in 'Ecology of Mind':

> There is an infinite number of *differences* around and within the piece of chalk. There are differences between the chalk and the rest of the universe, between the chalk and the sun or the moon. And within the piece of chalk, there is for every molecule an infinite number of differences between its location and the locations in which it *might* have been.[71]

The northern foreshore of the Mangere Inlet has a multiplicity of differences, the highway could be built, land reclaimed and a new shoreline built. Or, on the other hand, this project could be noticed, developed and implemented by Auckland Council. Or there might be no significant change, and the coastline continues growing and differing as it is. The important thing is that at this stage there are an infinite number of potential becomings or differences. Through my mapping methods—the plane of references, plane of concepts and plane of percepts/affects, I have actualised within the project the circle boardwalk on site. Though it can always already fold and refold at any time to be invented on other planes. With the implementation of the boardwalk, there will be an array of subsequent differences that could be and will be actualised. I have implicated those that I believe would be most likely to occur, and those most noticeable to express, in the last five of the series of site maps.

The exhibition has two other series as well, that also engage how something happens as difference and repetition, as seriality immanent to a milieu. There are also other series: two bound volumes, one of micro-maps of elemental relations and one of this exegesis document. There are also two models of the site, one at a scale that takes in the entire region and one that encounters the discrete boundaries of the Mangere Inlet site.

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71 Bateson, *Steps to an ecology of mind*, 460.

Figure 63. Stay, *Boardwalk 01, present day.*

Figure 64. Stay, *Boardwalk 02, present day.*

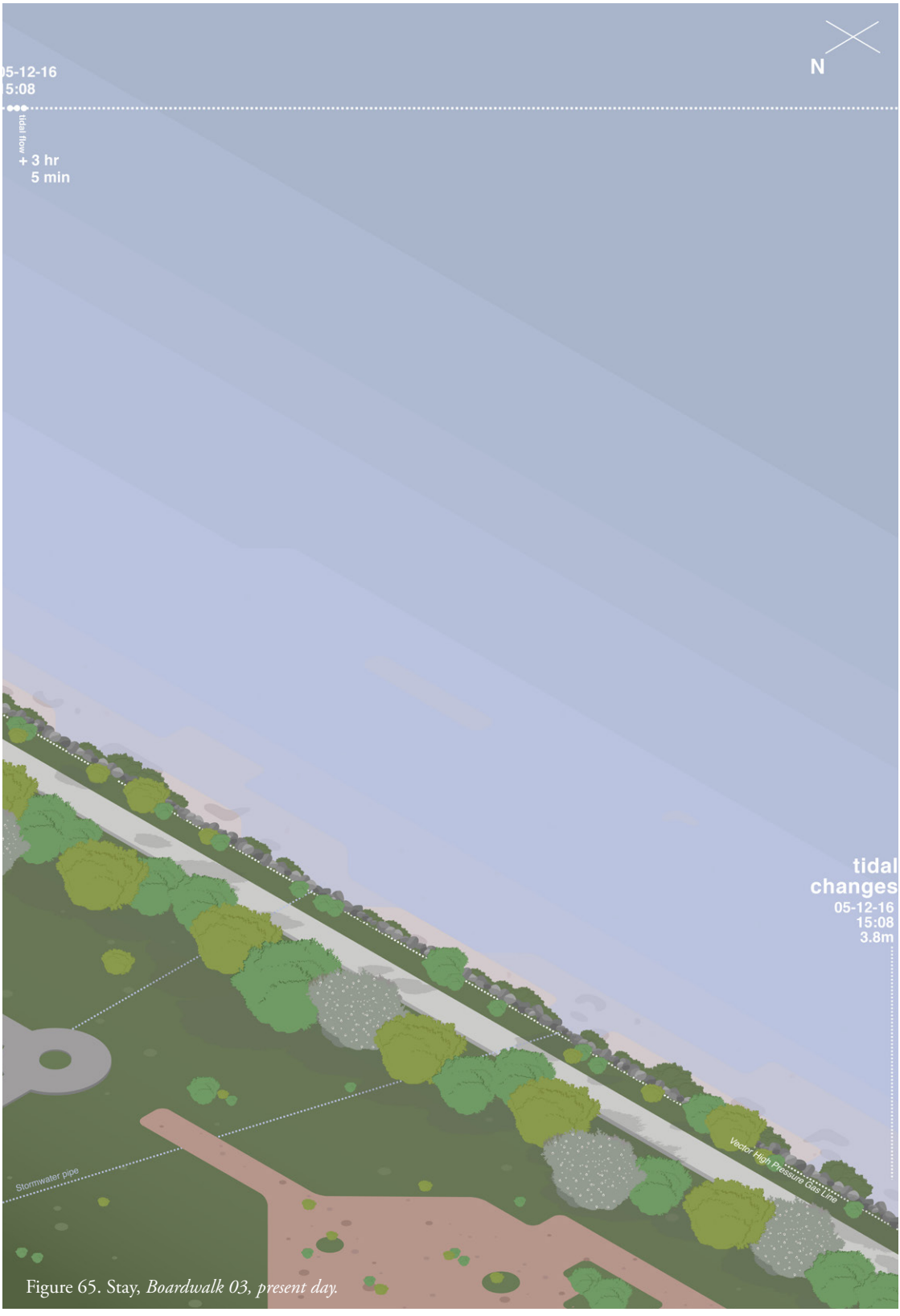

Figure 65. Stay, *Boardwalk 03, present day.*

Figure 66. Stay, *Boardwalk 04, present day.*

Figure 67. Stay, *Boardwalk 05, present day.*

Figure 68. Stay, *Boardwalk 06, boardwalk.*

Figure 69. Stay, *Boardwalk 07, mud mound movement.*

Figure 70. Stay, *Boardwalk 08, mangroves.*

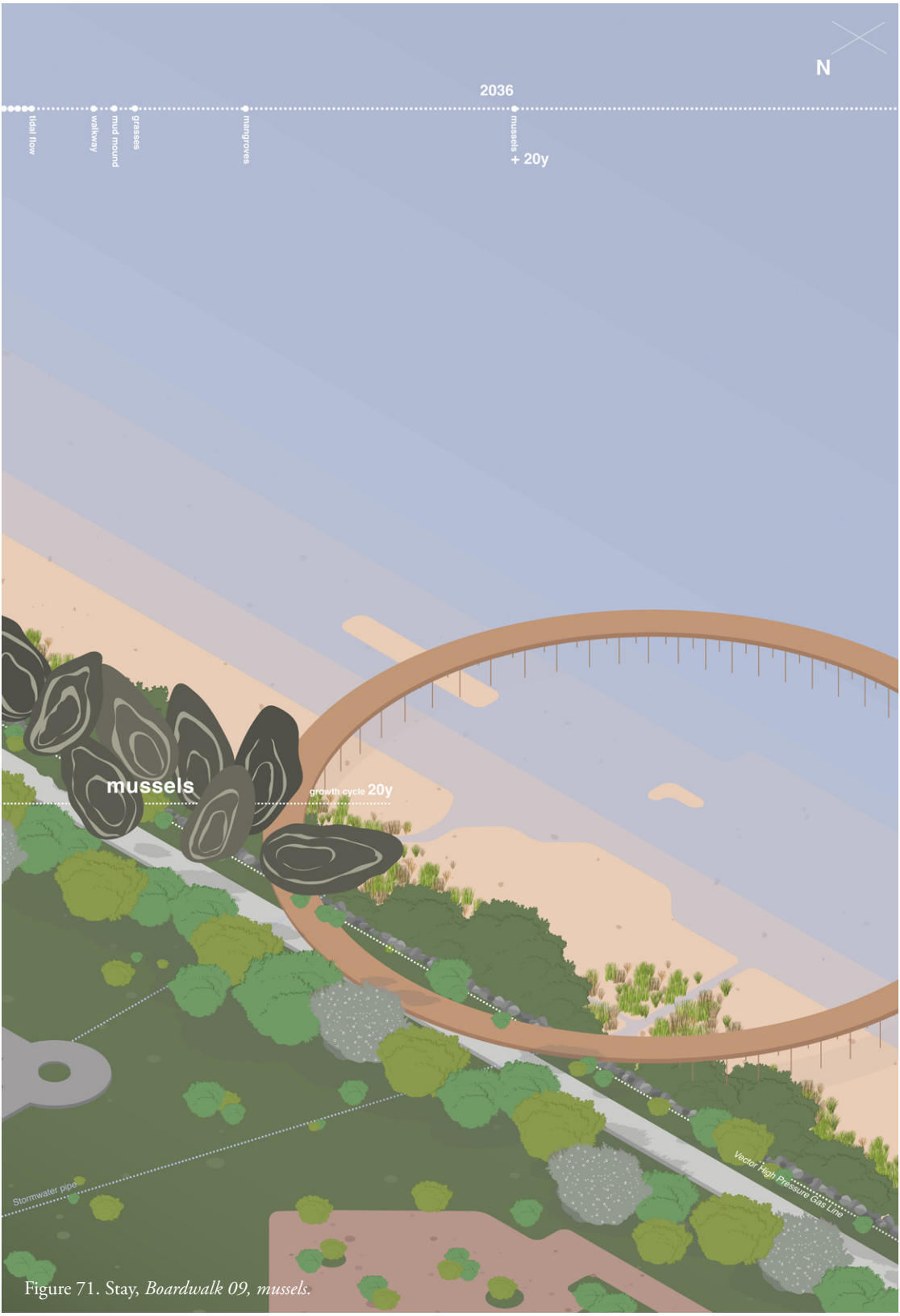

Figure 71. Stay, *Boardwalk 09, mussels.*

Figure 72. Stay, *Boardwalk 10, sea levels.*

Conclusion
Becoming Impersonal

As a practice-led design research project, *Ecosophies: Field/Mesh/Transversality* engaged two spheres that should not be considered two halves of something whole but rather two perspectives on a series of common problematics. On the one hand the project engaged a physical site in Auckland with the aim of making a series of speculative design propositions as to how to resolve that site's ecological degradation. The scope of the series of design resolutions were local and immediate, responding to a designer who lives in this city and understands a complex of issues—political, instrumental, public and private—from the conditions of living here. On the other hand, the project addressed something global, and aimed at making some ground on thinking just what design is, inasmuch as design—and design's design—has placed us all, globally, in crisis. How should design be thought as something that can respond to ecological imperatives? This second issue takes us out of the realm of the local, though it does impinge on how the local is so understood. Hence the aims of this research fell between the specifics of a geo-physical and functioning site and questions of design process itself.

To address the first of these I needed to define how my understanding of design differs from conventional approaches. For this I engaged the eco-philosophical writings of Timothy Morton, Felix Guattari, Gilles Deleuze and Gregory Batson. I deployed new technical language, such as *mesh* and mesh-ontology, *transversality*, immanence, field and transcendental empiricism. These are not just current new jargon. They genuinely ask us to think deeply and carefully about what design is and how it works. My project aimed to work with the kinds of processes these terms suggested in defining how I go about resolving my local design projects. There were three chapters to this exegesis. The first provided a series of design contexts, encompassing design literature and precedents. The second outlined a design methodology, forged in thinking through the process eco-philosophies of field, mesh and transversality. The third chapter outlined the parameters for the series of design projects I undertook during the year, along with the final

design project to be exhibited.

The project in its entirety is speculative and experimental. To invent on a plane of concepts is to work genuinely in an unconditioned way, despite the finitude of design's functions. The notions of design I have aimed to work with work against notions of instrumentalism, ends-means distinctions, and the historical emergence of design science. In asking for a designer to become *impersonal*, to withdraw into the milieu of the processes of becoming comprising assemblages so developed, seems to run against the grain of so much design thinking. Yet, our ecological crises demand some other ways of conceiving ourselves and our world than along the lines of the humanism of design, its implied moral or ethical good, founded on an anthropocentric understanding of our existence. My aim was to disappear in a sense into the affective sensations of the expressible in my work, and not to be the final cause of my design.

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Figure 73. Stay, *Mangrove growth*.

Appendix

Ecosophies Field/Mesh/Transversality

Ecosophies: Field/Mesh/Transversality
Examination - 04/04/2017

- 14 x A1 prints
- 25 x A4 prints
- 2 x site models
- 1 x printed exegesis
- 1 x micro maps book