This file is part of the following reference:


Access to this file is available from:

http://researchonline.jcu.edu.au/35109/

The author has certified to JCU that they have made a reasonable effort to gain permission and acknowledge the owner of any third party copyright material included in this document. If you believe that this is not the case, please contact ResearchOnline@jcu.edu.au and quote http://researchonline.jcu.edu.au/35109/
PLACING PATTERN

-mining a marine magnitude

A thesis
submitted with creative work in fulfilment of the requirements of
the degree of

DOCTOR OF PHILOSOPHY

at
James Cook University

by

CANDACE ANITA MILES BVA (Hons)

2008

School of Creative Arts
STATEMENT OF ACCESS

I, the undersigned, the author of this thesis, understand that James Cook University will make this thesis available for use within the University Library and, via the Australian Digital Theses network, for use elsewhere.

I understand that, as an unpublished work, a thesis has significant protection under the Copyright Act and;
I do not wish to place any restrictions on access to this work.

_________________________________________  ________________
(Candace Anita Miles)                      (Date)
ELECTRONIC COPY STATEMENT

I, the undersigned, the author of this work, declare that the electronic copy of this thesis provided to the James Cook University Library is an accurate copy of the print thesis submitted, within the limits of the technology available.

______________________________  ________________
(Candace Anita Miles)          (Date)
STATEMENT OF SOURCES

I declare that this thesis is my own work and has not been submitted in any form for another degree or diploma at any university or other institution of tertiary education. Information derived from the published or unpublished work of others has been acknowledged in the text and a list of references is given.

______________________________
(Candace Anita Miles)          (Date)
Frontispiece

We shall not cease from exploration and the end of all our exploring will be to arrive where we started and know the place for the first time. (T S Eliot, Little Gidding, V, 1942)
ACKNOWLEDGEMENTS

This long journey of thesis, art production and exhibition has not been produced solely. During its evolution many people have added to and assisted in its development in various ways and degrees. I would like to acknowledge and thank sincerely the people that have given their support during this time. My appreciation is given to James Cook University for the opportunity and scholarship to be able to undertake this endeavour. My principal supervisor Professor Diana Davis deserves special gratitude for her insight and guidance and valued for her capacity to hang in there through all the dramas thrown our way – you are outstanding. Though our interaction was short, my earlier co-supervisor Jane Hawkins is included in my appreciation. Many thanks are extended to Umbrella Studios – director Anne Donohue, and staff Alison McDonald, Jackie Jakovljevic and Alana Mandryk during the time of the exhibition. To all the science links, especially Dr Ed Drew, Professor David Blair, Dr Alan Dartnall, Dr John Collins, Dr Chris Alexander and Dr John Chisolm – I am indebted to your kindness and willingness to fend and field the banal and stray questions of an uninitiate. The magnificent microscope men, Zoli Florian and Dr Kevin Blake, have expanded my view by the sharing of their expertise with excellence and ease. To my technical friends, Jeff Vickers and Rattles, thank you for the many generous and selfless deeds. My artist friends, Trish Nixon-Smith and Marion Gaemers, I thank you for your continued encouragement and help. To my children, Leighton, Clinton, Kristen and Tamara, my love and appreciation for your support and belief always. Patrick Filmer-Sankey, I dedicate this to you – the one to whom I owe so much that I can’t begin to say; this would not have happened but for you. For anyone I may have missed mentioning, I thank you also.
ABSTRACT

Local place, and our connection to it, has tended to lose ground within an atmosphere that continues to homogenize the particular and the individual in the context of the global. Increasingly we are concerned with environmental issues yet we persistently establish a divide between ourselves and the natural environment. Local natural places continue to diminish within the physical spaces of our lived environment. Time and space begin to distort and overlap so that one place seems much the same as another; becoming monomorphic and generic which, in a paradoxical way, denies us the capacity to have a particular place connection. These issues underlie many contemporary problems and have also acted as a potent driver for this research. This study addresses the issue of how the individual artist working with objects and subjects of place and affected by emergent aspatiality might reconcile a personal disconnection to local place – through a re-entering – and what effect this might have on aesthetic outcomes.

The research aimed to elucidate a personal view of place through the forms and patterns revealed by the eye of the traveller in place looking through a scientific lens, to construct responses to smaller and larger forms of place by triggering an awareness by which the viewer may re-evaluate initial perceptions of local place through an idiosyncratic subjectifying and objectifying of subject, object and image. Five littoral zones within the place particular – the Townsville region were selected for analysis. This took the form of detailed sampling through the application of a dual process – the personal new eye aesthetic of a traveller (the idiosyncratic perspective), and the adoption of a scientific paradigm (the systematic method).

The history of art and science and human placement has a parallel and intertwined relationship and evidence of this is gathered through the literature sourced. To equip this expedition this literature was assembled from two main avenues of enquiry – science and place. The scientific perspective was gained
through readings encompassing the viewpoints of early and contemporary thought on mathematics, nature’s dynamic structuring and patterning system. From the foundations laid by the revered theories of form and space of the Ancient Greeks to the entwined mathematics of biological form and structure espoused through the work of D’Arcy Wentworth Thompson, the chaos theory of Mendelson, Mandelbrot, the expansive views of Lancelot Whyte, EO Wilson, Peter Stevens, Philip Ball, Ian Stewart, and Mario Livio are among the many paths viewed to gain an understanding of the filter applied to this research. An understanding of the notions of space and place, which again has a Western cultural birth in Ancient Greek thought, directs the reading through to the contemporary issues of identity crisis, sense of place and the displacement that is growing momentum. The literature of place connection has also taken a journey through the philosophies of phenomologists Husserl and Merleau-Ponty who brought the idea of place back to earth. The contemporary philosopher and humanistic geographer Edward Casey and Y-Fu Tuan are amongst the many scholars who have instigated current dialogues of place and our relationship to it.

The literature opened up a simultaneous rich line of enquiry testing the extent of the preconditions of perception, that is, to what extent does the personal and often unrecognized or examined epistemological framework of the artist – the preconditioning – drive, frame, shape or limit the perception of local place and the ultimate art product? To what extent might the artist bring an objective understanding to a subjective art practice? The deliberate adoption of an alien filter – the scientific – through which to conduct this study of space and place meant that observation of the effect of the preconditioning and the signature that this new yet well defined paradigm might identify within the consequent art production became possible. Indeed, by appropriating the eye of the individual artist/traveller to see local place anew and aided by the interpretive tools of science – methodologies and analytical instrumentation – this individual experiment was undertaken in an effort not only to re-ground an arts practice but
also to place the peripatetic individual in the context of location. It is within the juxtaposition of these two approaches that this research is conducted. As *place* offers a unique or characterizable collection or layering of magnitudes, patterns and sensitivities which can be analyzed formally, scientifically, mathematically or intuitively, aesthetically, *personal placement* and the *patterns of place* are thus the core subjects of this enquiry.

In investigating the patterns and forms of the local littoral zones and identifying what is particular to these *places* within the Townsville region, place is encompassed, not merely as a positioning in space, but as *personal, as reason, and as nucleus*. Where *place* is designed to shape artistic output, it becomes the personal, the reason and director of the outcome; *places of memory* become the *genius loci* of individual being. *Places* of pattern, form, colour, rhythm and memory thus become the *genius loci* of the artist. Hence the process of collection and data analysis of this research was developed into a creative document through the presentation of a body of art work in a formal public exhibition and research documentation.

This thesis recounts the journey of a *local person* renewing a contact with *local place* through the conscious application of a deliberatively objective methodology alongside the subjectively responsive one of the artist. Through this experimental journey equipped with the filter of the scientific paradigm, a heightened consciousness of each site’s unique character was gained. Thereby, developing a *dialogue with place*, where *subject, object, pattern, rhythm* and *form* – the visible, the invisible and generally unnoticed – lead to a *construction of place*, which in turn established an informed connection and thus, addressed my personal aspatiality. The resultant journey documents the data collected, the idiosyncratic artistic response and their coalescence which elicit directions for future research, through the promotion of contact with *local natural places* and the application of *determining filters*. 
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Table of Contents</th>
<th>(x)</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of Tables</td>
<td>(xiv)</td>
</tr>
<tr>
<td>List of Figures</td>
<td>(xv)</td>
</tr>
<tr>
<td>List of Plates</td>
<td>(xvi)</td>
</tr>
</tbody>
</table>

## CHAPTER 1 – Introduction

1.1 Perceptions of Place                   | 1                        |
1.2 Notions of Place                       | 3                        |
1.3 Dislocation                            | 5                        |
1.4 Genesis and Placement of the Artist    | 8                        |
1.5 Through the Eye of the Traveller       | 12                       |
1.6 The Application of the Dual Lens       | 14                       |
1.7 Rationale for and Aims of the Study     | 17                       |
1.8 Organization of the Thesis             | 19                       |

## CHAPTER 2 – The Scientific Filter: Possibilities and Precepts

2.1 Introduction                           | 22                       |
2.2 Science and Art – An Unnecessary Schism | 22                       |
2.3 A History of Pattern                   | 24                       |
2.  Ancient Sources                        | 29                       |
2.5 Nature Numbered                        | 42                       |
2.6 Perceptions of Spaces and Aesthetic of Geometric Form | 47 |
   2.6.1 Motif and Symmetry                 | 52                       |
   2.6.2 The Physical Geometrics of Form    | 55                       |
   2.6.3 The Shape of Life                  | 60                       |
   2.6.4 The Scales of Form – Magnitudes and Milestones | 66 |
2.7 Scientist as Artist, Artist and Science | 70                       |

## CHAPTER 3 – Place and Person: Identity and Connection

3.1 What is Place?                          | 80                       |
3.2 Notions of Place and Space             | 81                       |
3.3 The Human Connection                   | 86                       |
   3.3.1 A Central Position                 | 88                       |
   3.3.2 The Primordial Bond                | 90                       |
   3.3.3 Place and Identity                 | 94                       |
   3.3.4 Placement                          | 97                       |
3.4 The Age of Stretching and Thinning of Self and Place | 102 |
3.5 Re-Entering Place                      | 109                      |
3.6 Directions                             | 116                      |
CHAPTER 4 – Methodology

4.1 Derivation of Methodological Strategies 120
4.2 Selection of Sites 120
4.3 Data Collection and Recording Process 126
  4.3.1 Site visits – Contact with Place 126
  4.3.2 Specimens of Place – Samples of Place 129
  4.3.3 Recording Tools 131
    4.3.3.1 Photography of Place 133
    4.3.3.2 Audio Recording 135
    4.3.3.3 Diaries of Place 136
4.4 The Scientific Filter – Data Analysis 136
  4.4.1 Analytical Tools: Microscopes 137
  4.4.2 Photomicroscopy 138
4.5 Integrative Production of Art Works – Method of Practice 139

CHAPTER 5 – Data Collection and Analysis of Place

5.1 Implementation of Process 141
5.2 Site Individuality 142
  5.2.1 The Mouth of the Ross River 142
  5.2.2 Rowes Bay 146
  5.2.3 Point Pallarenda 150
  5.2.4 Saunders Beach 153
  5.2.5 Geoffrey Bay 158
  5.2.6 Individualities and Similarities 161
5.3 Characteristics of the Sites – the Interface of Place 162
  5.3.1 Site Contact and Observation 163
5.4 Issues of Sampling and Documentation of Sites 177
  5.4.1 Photography of Place 185
  5.4.2 Sound of Place 188
  5.4.3 Diaries of Place 190
  5.4.4 Analysis of Microscopic Magnitudes of Place 197
5.5 A Corollary of Place 207

Chapter 6 - Process Toward Practical Product

6.1 Simultaneous Perceptions 210
6.2 An Artist’s Codec 210
  6.2.1 The Naming code 213
6.3 Objects and Subjects of Place – Place as Subject and Object 213
  6.3.1 Symbols of Place 214
  6.3.2 Curious Collections 217
  6.3.3 The Qualia Experience 218
6.4 Microscopic Reductionism 219
6.5 Motifs and Signatures of Place  
6.5.1 The Signature Series  
6.5.2 Meanders and Branching  
6.5.3 Sculptural Motifs of Place  
6.5.4 Symmetry – Bilateral, Mirror Image  
6.5.5 Pentagonal Symmetry  

6.6 Patterns of Place  

Chapter 7 – The Exhibition

7.1 From Process to Presentation  
7.2 One Space in Place of Another  
7.3 Choice of Venue  
7.4 The Exhibition Title  
7.5 The Artworks  
7.2.1 Motifs of Place  
7.2.2 Signatures of Place  
7.2.3 Collections and Objects of Place  
7.2.4 Magnitudes of Place  
7.2.5 Patterns of Place  
7.6 The Invitation  
7.7 The Catalogue  
7.8 Artist’s Statements  
7.9 Media Communications  
7.10 Plan and Placement Possibilities  
7.11 The Exhibition  
7.12 The Exhibition Opening and Associated Events  

Chapter 8 - Final Analysis and Evaluation of the Study

8.1 Overview of the Research  
8.2 Key Findings  
8.2.1 Results and Effects of the Filter Application  
8.2.2 Artistic Synthesis  
8.2.3 Audience Response  
8.2.4 The Personal and Artistic Experience of Place  
8.2.5 The Shaping of Place  
8.2.6 A Consciousness of Place  
8.3 Reflections on the Research  
8.4 Directions for Future Research  

Bibliography
Appendices

A  Marine Parks Permit  334
B  Tidal Patterns of the *Place Particular* – Townsville  336
C  Rationale Underpinning the Exhibition Title  342
D  Examples – Exhibition Invitation & Catalogue  347
E  Selected Collection of Microscope Images – DVD  350
F  Exemplar Sand Patterns of *Place*  352
G  Looped digital Images Presented Inside Umbrella Studio Vault
   *500:5 Images of Place* – DVD  359
H  The Exhibition Images – DVD – Umbrella Studio
   Opening Night – DVD  361
I  Media Release; Exhibitions Reviews
   Gallery Visitor Book Comments  363
LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4.1 Overview of Cultural Thought on Form, Space &amp; Art</td>
<td>32</td>
</tr>
<tr>
<td>4.2.1 Criteria for Site Selection</td>
<td>124</td>
</tr>
<tr>
<td>4.3.1 Time Plan – Week One</td>
<td>128</td>
</tr>
<tr>
<td>4.3.2 Sampling Plan for Physical Material of Place</td>
<td>130</td>
</tr>
<tr>
<td>4.3.3 Recording Plan</td>
<td>132</td>
</tr>
<tr>
<td>5.3.1 Littoral Zone Visual Observation Distribution</td>
<td>168</td>
</tr>
<tr>
<td>5.3.2 Patterns of Similarity and Variation within the Five Sites</td>
<td>169</td>
</tr>
<tr>
<td>5.3.2 Littoral Zone Visual Observation Distribution</td>
<td>164</td>
</tr>
<tr>
<td>5.3.3 Comparative Visible Motifs and Signatures of Place Across Sites</td>
<td>174</td>
</tr>
<tr>
<td>5.3.4 Comparative Perceptual Motifs, Signatures and Numbers of Place</td>
<td>176</td>
</tr>
<tr>
<td>5.4.1 On Site Processes</td>
<td>178</td>
</tr>
<tr>
<td>7.3.1 Criteria for Exhibiting Space Selection</td>
<td>251</td>
</tr>
<tr>
<td>8.1.1 Aims and Implementation</td>
<td>291</td>
</tr>
<tr>
<td>8.4.1 Field Guide Check List</td>
<td>313</td>
</tr>
<tr>
<td>Figure</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1.1.1</td>
<td>Key Determining Filtering Lenses of <em>Place</em></td>
</tr>
<tr>
<td>1.6.1</td>
<td>Dual Filters of Interpretation Leading Toward Representation</td>
</tr>
<tr>
<td>4.2.1</td>
<td>Map of Townsville Coastal Area</td>
</tr>
<tr>
<td></td>
<td>– detailing highest scoring sites</td>
</tr>
<tr>
<td>4.3.1</td>
<td>Exemplar Weekly Check Sheet</td>
</tr>
<tr>
<td>5.3.1</td>
<td>Tide Heights 2005</td>
</tr>
<tr>
<td>5.5.1</td>
<td>Filtering from Data to Artistic Synthesis</td>
</tr>
<tr>
<td>6.3.1</td>
<td>Diagrammatic Expression of <em>Squaring the Five</em></td>
</tr>
<tr>
<td>7.10.1</td>
<td>Umbrella Studio Plan</td>
</tr>
<tr>
<td>7.11.1</td>
<td>Umbrella Studio Plan &amp; Diagram of Artwork &amp; Placement</td>
</tr>
</tbody>
</table>
# List of Plates

<table>
<thead>
<tr>
<th>Plate</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.4.1</td>
<td><em>Essence of Unity</em> – watercolour &amp; pen - C Miles, 2000</td>
<td>9</td>
</tr>
<tr>
<td>1.4.2</td>
<td><em>Bubble Effect</em> – watercolour &amp; pen - C Miles, 2002</td>
<td>9</td>
</tr>
<tr>
<td>1.4.3</td>
<td><em>In the Company of Diggers</em>, mixed media – C Miles, 2001</td>
<td>10</td>
</tr>
<tr>
<td>1.4.4</td>
<td><em>Bleached/beached Urchins</em> - ceramic/concrete - C Miles, 2003</td>
<td>10</td>
</tr>
<tr>
<td>2.5.1</td>
<td>Microscopic Diatoms – 1,2,3,4,5,6 – unicellular marine algae (Michell, 1979; Monkman, 1964)</td>
<td>44</td>
</tr>
<tr>
<td>2.5.2</td>
<td><em>Penrose</em>, Escher, 1971 (Schattschneider, <em>Visions of Symmetry</em>, 2004)</td>
<td>47</td>
</tr>
<tr>
<td>2.6.1</td>
<td><em>The Orchid</em>, Homer Smith, 1988 (Briggs, <em>Fractals</em>, 1994)</td>
<td>50</td>
</tr>
<tr>
<td>2.6.2</td>
<td><em>Strange Crystal</em>, Darsh Ranjan, 2005 Department of Mathematics, Princeton University</td>
<td>51</td>
</tr>
<tr>
<td>2.6.3</td>
<td><em>Smaller and Smaller</em>, Escher, 1956 (Schattschneider, <em>Visions of Symmetry</em>, 2004)</td>
<td>54</td>
</tr>
<tr>
<td>2.6.4</td>
<td>Profile in mountain (Michell, <em>Simulacra</em>, 1979)</td>
<td>56</td>
</tr>
<tr>
<td>2.6.5</td>
<td><em>The Leaf Mantis</em> (Schneck, <em>Patterns in Nature</em>, 1991)</td>
<td>57</td>
</tr>
<tr>
<td>2.6.6</td>
<td>Nautilus shell, plant frond and curled millipede (Schneck, <em>Patterns in Nature</em>, 1991; Braasch, 1999)</td>
<td>58</td>
</tr>
<tr>
<td>2.6.7</td>
<td>Cushion sea star and diatom – one celled algae (Michell, <em>Simulacra</em>, 1979)</td>
<td>58</td>
</tr>
<tr>
<td>2.6.8</td>
<td>Sea wave flow and veined marble patterns (Schneck, <em>Patterns in Nature</em>, 1991)</td>
<td>59</td>
</tr>
<tr>
<td>2.6.10</td>
<td>Fish eggs</td>
<td>61</td>
</tr>
<tr>
<td>Plate</td>
<td>Page</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>2.6.11 Sea Sponge</td>
<td>61</td>
<td></td>
</tr>
<tr>
<td>2.6.12 Mangrove Roots</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>2.6.13 Ascidian – Sea Squirt</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>2.6.14 Sea Fern</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>2.6.15 Sea Star</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>2.6.16 Spiral Shells</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>2.6.17 Octopus</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>2.6.18 Brain Coral</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>2.6.19 Sea Snakes</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>2.6.20 Sea Urchin</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>2.6.21 Fan Worm</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>2.6.22 Eye of a Fly, Robert Hooke, from Micrographia, 1665 (Kemp, Visualizations, 2000)</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>2.6.23 Various species of Radiolaria – drawn in the 1800s by Ernst Haeckel (Haeckel, 1974)</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>2.7.1 Smashing Atoms (Amato, Super Vision, 2003)</td>
<td>72</td>
<td></td>
</tr>
<tr>
<td>2.7.2 Confocal Continuum, Kevin Locke, 2002 (Angstrom Art, University of Qld)</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>2.7.3 Virus Capsid Protein, Julian Voss-Andrea, 2003 Cast and fabricated bronze</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>2.7.4 Doilies (SARS virus), Laura Splan, 2004 Computerized machine embroidery</td>
<td>74</td>
<td></td>
</tr>
<tr>
<td>2.7.5 Kidney, Jason Hampton, 2002 (ConVerge, Adelaide Biennial 2002)</td>
<td>74</td>
<td></td>
</tr>
<tr>
<td>2.7.6 Electronic Grace, Eric Heller, 2004</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Plate</td>
<td>Page</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>2.7.7 A Photomicroscopy of Beers, 2004 (Michael Davidson, Florida State University)</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>2.7.8 Fragment of the organ Corti (Ede, 2000)</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>2.7.9 <em>Fragment of the Organ Corti</em>, Sandra McQueen, 1994 (Ede, 2000)</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td>5.2.1 Mouth of Ross River, C Miles, 2005</td>
<td>143</td>
<td></td>
</tr>
<tr>
<td>5.2.2 Mouth of Ross River sand patterns, C Miles, 2005</td>
<td>144</td>
<td></td>
</tr>
<tr>
<td>5.2.3 Mouth of Ross River Soldier Crabs (<em>Micryris platycheles</em>) (C Miles, 2005)</td>
<td>145</td>
<td></td>
</tr>
<tr>
<td>5.2.4 Rowes Bay, C Miles, 2005</td>
<td>147</td>
<td></td>
</tr>
<tr>
<td>5.2.5 Rowes Bay cobblestones, C Miles, 2005</td>
<td>148</td>
<td></td>
</tr>
<tr>
<td>5.2.6 Rowes Bay sea star (<em>Asteroidea; Cryptasteriua pentagona</em>) (C Miles, 2005)</td>
<td>149</td>
<td></td>
</tr>
<tr>
<td>5.2.7 Point Pallarenda, C Miles, 2005</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>5.2.8 Point Pallarenda chitons, barnacles, limpets and worm castings, C Miles, 2005</td>
<td>151</td>
<td></td>
</tr>
<tr>
<td>5.2.9 Point Pallarenda Feather Stars, C Miles, 2005</td>
<td>152</td>
<td></td>
</tr>
<tr>
<td>5.2.10 Sand balls covering Saunders Beach, C Miles, 2005</td>
<td>153</td>
<td></td>
</tr>
<tr>
<td>5.2.11 Distinctive feeding patterns of sand bubbler crab Saunders Beach, C Miles, 2005</td>
<td>154</td>
<td></td>
</tr>
<tr>
<td>5.2.12 Saunders Beach driftwood, C Miles, 2005</td>
<td>155</td>
<td></td>
</tr>
<tr>
<td>5.2.13 Saunders Beach worm/crustacean tunnelled driftwood, C Miles, 2005</td>
<td>155</td>
<td></td>
</tr>
<tr>
<td>5.2.14 Saunders Beach Sea star cookie-cutter sand impressions (C Miles, 2005)</td>
<td>156</td>
<td></td>
</tr>
<tr>
<td>5.2.15 Saunders Beach sea stars underside and top, C Miles, 2005</td>
<td>157</td>
<td></td>
</tr>
<tr>
<td>Plate</td>
<td>Page</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>5.2.16 Saunders Beach sea jelly, C Miles, 2005</td>
<td>157</td>
<td></td>
</tr>
<tr>
<td>5.2.17 Geoffrey Bay, C Miles, 2005</td>
<td>158</td>
<td></td>
</tr>
<tr>
<td>5.2.18 Geoffrey B – live hard coral, C Miles, 2005</td>
<td>159</td>
<td></td>
</tr>
<tr>
<td>5.2.19 Geoffrey Bay – algae covered coral remnant, C Miles, 2005</td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>5.2.20 Geoffrey Bay – beached nautilus shell, C Miles, 2005</td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>5.3.1 Example of Weekly Site Check sheet</td>
<td>163</td>
<td></td>
</tr>
<tr>
<td>5.4.1 <em>Samples of place</em> – specimens in containers</td>
<td>181</td>
<td></td>
</tr>
<tr>
<td>5.4.2 <em>Objects of place</em> – Mouth of Ross River – Site N° 1</td>
<td>182</td>
<td></td>
</tr>
<tr>
<td>5.4.3 <em>Objects of place</em> – Rowes Bay – Site N° 2</td>
<td>183</td>
<td></td>
</tr>
<tr>
<td>5.4.4 <em>Objects of place</em> – Point Pallarenda – Site N° 3</td>
<td>183</td>
<td></td>
</tr>
<tr>
<td>5.4.5 <em>Objects of place</em> – Saunders Beach – Site N° 4</td>
<td>184</td>
<td></td>
</tr>
<tr>
<td>5.4.6 <em>Objects of place</em> – Geoffrey Bay – Site N° 5</td>
<td>184</td>
<td></td>
</tr>
<tr>
<td>5.4.7 Sand balls from feeding sand bubbler crabs Saunders Beach, C Miles, 2005</td>
<td>186</td>
<td></td>
</tr>
<tr>
<td>5.4.8 Soldier Crab – Mouth of Ross River, C Miles, 2005</td>
<td>187</td>
<td></td>
</tr>
<tr>
<td>5.4.9 Hermit Crab – Geoffrey Bay, C Miles, 2005</td>
<td>187</td>
<td></td>
</tr>
<tr>
<td>5.4.10 Diary Entry from Mouth of Ross River</td>
<td>192</td>
<td></td>
</tr>
<tr>
<td>5.4.11 Diary Entry from Rowes Bay</td>
<td>193</td>
<td></td>
</tr>
<tr>
<td>5.4.12 Diary Entry from Point Pallarenda</td>
<td>194</td>
<td></td>
</tr>
<tr>
<td>5.4.13 Diary Entry from Saunders Beach</td>
<td>195</td>
<td></td>
</tr>
<tr>
<td>5.4.14 Diary Entry from Geoffrey Bay</td>
<td>196</td>
<td></td>
</tr>
<tr>
<td>5.4.15 Gastropod shell from Rowes Bay – magnified x10</td>
<td>198</td>
<td></td>
</tr>
<tr>
<td>5.4.16 Back lit view of algae cells – Geoffrey Bay – magnified x100</td>
<td>199</td>
<td></td>
</tr>
<tr>
<td>Plate</td>
<td>Page</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>5.4.17 Cross section view of algae from Point Pallarenda – magnified x50</td>
<td>199</td>
<td></td>
</tr>
<tr>
<td>5.4.18 Scanning Electron Microscope – JCU</td>
<td>201</td>
<td></td>
</tr>
<tr>
<td>5.4.19 Sample stubs for SEM</td>
<td>204</td>
<td></td>
</tr>
<tr>
<td>5.4.20 Sand Dollar test – collected from Saunders Beach</td>
<td>205</td>
<td></td>
</tr>
<tr>
<td>5.4.21 Underneath section of Sand Dollar test – magnified x100</td>
<td>205</td>
<td></td>
</tr>
<tr>
<td>5.4.22 Sand Dollar test section – magnified x1000</td>
<td>206</td>
<td></td>
</tr>
<tr>
<td>5.4.23 Diatom revealed within Sand Dollar test section – magnified x1200</td>
<td>207</td>
<td></td>
</tr>
<tr>
<td>6.3.1 <em>Symbols of Place</em> – samples of collected <em>objects of place</em> (plaster casts)</td>
<td>215</td>
<td></td>
</tr>
<tr>
<td>6.3.2 Setting for 5:4 <em>Squaring the Five – Resting Place</em>, C Miles, 2006</td>
<td>215</td>
<td></td>
</tr>
<tr>
<td>6.3.3 Detail of <em>Cabinet of Curiosities</em></td>
<td>217</td>
<td></td>
</tr>
<tr>
<td>6.3.4 Small Sculptures – <em>Fossils of Place</em>, C Miles, 2006</td>
<td>218</td>
<td></td>
</tr>
<tr>
<td>6.4.1 SEM images – Detail of 1:100 <em>Postcards from Place</em></td>
<td>221</td>
<td></td>
</tr>
<tr>
<td>6.4.2 SEM images – example of 1:20 <em>magnitudes of Place</em></td>
<td>222</td>
<td></td>
</tr>
<tr>
<td>6.5.1 <em>1. Signature</em> of the Mouth of Ross River, C Miles, 2006</td>
<td>225</td>
<td></td>
</tr>
<tr>
<td>6.5.2 Detailed section of watercolour and penwork</td>
<td>228</td>
<td></td>
</tr>
<tr>
<td>6.5.3 Detail of plain penwork</td>
<td>229</td>
<td></td>
</tr>
<tr>
<td>6.5.4 Sand patterns (A) – meandering and branching, C Miles, 2005</td>
<td>230</td>
<td></td>
</tr>
<tr>
<td>6.5.5 Sand patterns (B) – meandering and branching, C Miles, 2005</td>
<td>230</td>
<td></td>
</tr>
<tr>
<td>6.5.6 Meandering tracks of a gastropod – sea snail, C Miles, 2005</td>
<td>231</td>
<td></td>
</tr>
<tr>
<td>6.5.7 Example of 4:5 <em>Flow, Contact, time &amp; Space in Place</em></td>
<td>232</td>
<td></td>
</tr>
<tr>
<td>Plate</td>
<td>Page</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>6.5.8 Detail of <em>Meandering Place</em></td>
<td>233</td>
<td></td>
</tr>
<tr>
<td>6.5.9 Detail of reflected (mirror symmetry) floor pattern</td>
<td>236</td>
<td></td>
</tr>
<tr>
<td>6.5.10 Feeding pattern of crabs – traces of radiating, meanders and branching, C Miles, 2005</td>
<td>237</td>
<td></td>
</tr>
<tr>
<td>6.5.11 Detail of <em>Traces of Space, Place &amp; Time</em></td>
<td>238</td>
<td></td>
</tr>
<tr>
<td>6.5.12 SEM image of diatoms</td>
<td>238</td>
<td></td>
</tr>
<tr>
<td>6.5.13 Detail of <em>Clarity of Place</em></td>
<td>239</td>
<td></td>
</tr>
<tr>
<td>6.5.14 SEM image of feather star cirri</td>
<td>241</td>
<td></td>
</tr>
<tr>
<td>6.5.15 Magnified image of sea star poda</td>
<td>241</td>
<td></td>
</tr>
<tr>
<td>6.5.16 Detail of cirri influence – <em>Forming Place</em></td>
<td>241</td>
<td></td>
</tr>
<tr>
<td>6.5.17 Detail of poda influence – <em>Forming Place</em></td>
<td>241</td>
<td></td>
</tr>
<tr>
<td>6.5.18 Sectioned detail of <em>Forming Place</em></td>
<td>242</td>
<td></td>
</tr>
<tr>
<td>6.5.19 SEM image of Holospicules</td>
<td>243</td>
<td></td>
</tr>
<tr>
<td>6.5.20 Detail of 8:13-5 <em>All 4 One</em></td>
<td>244</td>
<td></td>
</tr>
<tr>
<td>6.6.1 Satellite image of the contact site/places within the <em>place particular</em></td>
<td>245</td>
<td></td>
</tr>
<tr>
<td>6.6.2 Aerial Photos of Individual Sites</td>
<td>245</td>
<td></td>
</tr>
<tr>
<td>6.6.3 <em>Patterns of Place</em>, C Miles, 2006</td>
<td>246</td>
<td></td>
</tr>
<tr>
<td>7.5.1 <em>Meandering Place</em>, C Miles, 2006</td>
<td>255</td>
<td></td>
</tr>
<tr>
<td>7.5.2 8:13-5 <em>All 4 One</em>, C Miles, 2006</td>
<td>256</td>
<td></td>
</tr>
<tr>
<td>7.5.3 <em>Forming Place</em>, C Miles, 2006</td>
<td>256</td>
<td></td>
</tr>
<tr>
<td>7.5.4 <em>Traces of Space, Place &amp; Time</em>, C Miles, 2006</td>
<td>257</td>
<td></td>
</tr>
<tr>
<td>7.5.5 <em>Clarity of Place</em>, C Miles, 2006</td>
<td>257</td>
<td></td>
</tr>
<tr>
<td>Plate</td>
<td>Page</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>7.5.6</td>
<td>1. <em>Mouth of Ross River Signature</em>, C Miles, 2006</td>
<td>258</td>
</tr>
<tr>
<td>7.5.7</td>
<td>2. <em>Rowes Bay Signature</em>, C Miles, 2006</td>
<td>258</td>
</tr>
<tr>
<td>7.5.8</td>
<td>3. <em>Point Pallarenda Signature</em>, C Miles, 2006</td>
<td>259</td>
</tr>
<tr>
<td>7.5.9</td>
<td>4. <em>Saunders Beach Signature</em>, C Miles, 2005</td>
<td>259</td>
</tr>
<tr>
<td>7.5.10</td>
<td>5. <em>Geoffrey Bay Signature</em>, C Miles, 2006</td>
<td>260</td>
</tr>
<tr>
<td>7.5.11</td>
<td>5:4 Squaring the Five – <em>Resting Place</em>, C Miles, 2006</td>
<td>260</td>
</tr>
<tr>
<td>7.5.12</td>
<td><em>Cabinet of Curiosities</em>, C Miles, 2006</td>
<td>261</td>
</tr>
<tr>
<td>7.5.14</td>
<td>1:20 <em>Magnitudes of Place</em>, C Miles, 2006</td>
<td>262</td>
</tr>
<tr>
<td>7.5.15</td>
<td>5:100 <em>Postcards from Place</em>, C Miles, 2006</td>
<td>262</td>
</tr>
<tr>
<td>7.5.16</td>
<td>5:1 <em>Patterns of Place</em>, C Miles, 2006</td>
<td>263</td>
</tr>
<tr>
<td>7.5.17</td>
<td>5:1:5 <em>Patterns in Place</em>, satellite and aerial images, C Miles, 2006</td>
<td>263</td>
</tr>
<tr>
<td>7.5.18</td>
<td>4:5 <em>Flow, Contact, Time &amp; Space in Place</em>, C Miles, 2006</td>
<td>264</td>
</tr>
<tr>
<td>7.5.19</td>
<td>500:5 <em>Images of Place</em>, C Miles, 2006</td>
<td>264</td>
</tr>
<tr>
<td>7.6.1</td>
<td>The Invitation - side (a) and (b)</td>
<td>265</td>
</tr>
<tr>
<td>7.6.2</td>
<td>Invitation – Folded Square</td>
<td>266</td>
</tr>
<tr>
<td>7.7.1</td>
<td>Catalogue Cover Page and Back Page with Sponsorship</td>
<td>267</td>
</tr>
<tr>
<td>7.7.2</td>
<td>Catalogue Inside – opened out</td>
<td>267</td>
</tr>
<tr>
<td>7.11.1</td>
<td>10:1 <em>Meandering Place</em>, C Miles, 2006 – centrally placed</td>
<td>276</td>
</tr>
<tr>
<td>7.11.2</td>
<td>4:10 <em>Forming Place</em>, C Miles, 2006 – facing toward the gallery front</td>
<td>277</td>
</tr>
<tr>
<td>7.11.3</td>
<td>8:13-4 <em>All 4 One</em>, C Miles, 2006 – facing toward the gallery front</td>
<td>277</td>
</tr>
<tr>
<td>Plate</td>
<td>Page</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>7.11.4</td>
<td>1:5 <em>Traces of Space, Place &amp; Time</em>, C Miles, 2006&lt;br&gt;– travelling through space and place</td>
<td>279</td>
</tr>
<tr>
<td>7.11.5</td>
<td>1:100 <em>Clarity of Place</em>, C Miles, 2006&lt;br&gt;– flowing up the steps</td>
<td>279</td>
</tr>
<tr>
<td>7.11.6</td>
<td>Entrance to upper level of the Gallery</td>
<td>280</td>
</tr>
<tr>
<td>7.11.7</td>
<td>5:100 <em>Postcards from Place</em>, C Miles, 2006</td>
<td>281</td>
</tr>
<tr>
<td>7.11.8</td>
<td>The juxtaposing of the <em>magnitudes, objects and patterns of Place</em></td>
<td>282</td>
</tr>
<tr>
<td>7.11.9</td>
<td><em>Cabinet of Curiosities</em></td>
<td>283</td>
</tr>
<tr>
<td>7.11.10</td>
<td>500:5 <em>Images of Place</em>, C Miles, 2006&lt;br&gt;– looped digital show of place</td>
<td>285</td>
</tr>
</tbody>
</table>
CHAPTER 1 – Introduction

1.1 Perceptions of Place

Any person’s sense of place is acquired through personal experiential, cultural and historical filtering lenses that inform, form, and re-form an individual perspective. Places contextualize us. Everything exists in a space/place relationship which governs much of how we operate, who we are and what we do and experience. However, it is because place is so much with us, around us, and we with it, that it is often largely taken for granted. Humans have been able to reconstruct the environment successfully and, in turn, change their perspectives of place and its importance to our existence, especially within the natural milieu. The filters through which contemporary humans now view and experience place have been altered and are often blurred, to the point of becoming unseeing and unknowing of these changes and their effect upon us.

My personal experience constitutes one example where attachments to place have become transitory, generating a dislocation and disconnection from the local. My childhood years were spent in relocating to various schools, residences and towns; attending nine different primary schools and calling many more than that number of houses home, however transitorily. As a consequence, I have realized that I have an acquired casualness toward lived locations. While I have now lived in Townsville intermittently for more than 30 years, I also recognize I have an underlying sentiment of unattachment – unrootedness – even toward this longest associated place. It is as if, by virtue of
constant relocation in early life, one’s established *habit of mind* is not to engage fully but to see *places* themselves as transitory spaces.

The issue is, how might the artist working with *objects and subjects of place*, reconcile such subject matter with a personal disconnection to *place*, and what effect might this have on aesthetic outcomes? Figure 1.1.1 demonstrates that, although the filtering lenses of the individual or community are selective and multiple, overlapped and merged according to individual life experience, they organize a unifying perspective of *place* through which we all function.

![Diagram of filtering lenses of place](image)

**Figure 1.1.1** Key Determining Filtering Lenses of *Place*
Although these filters are not exhaustive, nature is placed as the key arbiter through which we, as elements of nature, manoeuvre, through idiosyncratic, social/cultural/historical constructs. The personal sensate experience of place, particularly natural place, is a strong determiner of place connection – and a nature based arts practice. Nevertheless we are, of course, governed equally if not predominantly, by socio-cultural morés constructing our view of place, which incorporate both personal and community histories, and our ability to interpret the particular and the universal. If we allow our own personal interpretation, and therefore connectedness with place, to be determined solely by external constructed factors, then we run the risk of becoming disconnected from the places with which we most need to link, to comprehend and protect. The question arises as to the extent to which a peripatetic individual might be able to re-form almost predetermined traits to achieve a stronger relationship to resident place, through concerted enquiry and contact with local natural space?

1.2 Notions of Place

Even before the start of the twentieth century our relationship with place was being eclipsed by rapid technological and cultural changes, resulting in a turning away from the natural world, to which our capacity for adjustment is now quite equivocal. To this present day, human mobility, national and global, is accelerating and the modern intellectual world is now becoming essentially placeless. Globalization has blurred the idea of the validity of cultural place and, with Marshall McLuhan’s (1992) global village ascending and the cyber spatio-temporal theatre of technology, speed, materialism, franchization and
monopolies in reign – Starbucks has entered the *Gate of Heavenly Peace*. Physical *places* themselves are becoming monomorphic and generic, so that one *place* seems much the same as another; *time and place* are becoming distorted and overlapped. To what extent might globalization bring the *End of Place*, of particular *place*, and reconfigure the idea of local *place*? With the rise of what Ichiyo Habuchi (2005) describes as the *telecocoon*, and the development of mobile *simultaneous* and *virtual* space, how do people continue to make *place* central to their personal and community identifications? The anthropologist Marc Augé (1995) sees this *supermodernity* and the nature of human interaction with physical *place* coming to an end as *places* become *non-places* where the new world privileges the fleeting, ephemeral and contingent? How dangerous is this new condition for us? To what extent can we survive on this wider yet centreless new world?

Humans have placed themselves centrally on the world stage, generally removed from the natural environment. Yet we are creatures of *natural place*, and experiences within *places* establish memories connected to those *places*, forming comparative responses to the various *space/places* in which we live, work and seek recreation. The distinction between the given and the made – the role of *place* in the forming of a community and the role of the community in forming *place* may be blurred yet the influence a *natural place* has on the individual and a community is profound and needs to be understood. The distinction between the exterior and interior *place* – the given dimension of the concrete world, and the projected abstract we inherit from culture, time and
experience – is not always easily definable. In his essay on the chronological transforming of a natural/cultural icon, the Grand Canyon, David Nye (1998) provides a poignant example of how a natural place can be de-realized and transformed into a social construction – with a manufactured sentiment. Its depiction in paintings and photographs in the nineteenth century cult of the sublime through to the twentieth century mass tourism and as a twenty first century virtual web tour highlights the subjectification and commodification in which real place can be immersed and shrouded (Nye, 1998). This global networking of place, this restructuring of spatiality, even in a hyper-mobile world, can lead to a de-sensitizing of natural place, an aspatiality, where the informed viewer can have seen it all without leaving the screen, thus recreating the external world as proxy place. Despite the topical concerns of environment and sustainability might modern culture in fact be diverging further from nature? To what extent does the true nature – the physis of the living environment – still play a pivotal role in connecting culture to place, and therefore place to culture?

1.3 Dislocation

In confluence with these observations and questions, the central issue relates to personal engagement with local place. How is the individual affected by the emergent aspatiality, the subjectification of place, in terms of engagement with local natural spaces?

The turbulence of modern society, where people are constantly relocating – mostly for employment – can generate a feeling of dislocation, where
engagement with the local environment is secondary to the issues of day to day existence. National and cultural affiliations may be strong but to what extent do the majority of people really engage with the local environment? By environment I am referring to the natural aspects of a place. Engagement with the local environment is more than a spatial orientation; it is the act of spending time, of gaining bio-regional knowledge, an awareness of changes, of movement, a discovering of the objects and subjects that comprise a place. Dislocation and change bring feelings of loss, a yearning for the comforts of the certainties of place and places; and we need the concept of placement in order to have a stage on which to materialize, centre and implant ourselves, a platform from which to act. Yet, the feeling of unconsidered loss in the ever accelerating changes we are experiencing, if not addressed, or even acknowledged, creates a restlessness within many individuals, generating an indefinable sense of yearning. The danger is, as Tony Hiss (1991) explains, through the lamenting of change, we can short-change ourselves by cutting ourselves off from the textures, sights, shapes, sounds, and scents of a place – that information which helps to connect and ground us to the places of the here and now. Places, by their definition of our residence within, are not remote abstracts, but enveloping concepts and constructs.

The journey towards knowledge, including the concepts of place and time, begins in early childhood. Through a life lived mainly in places on the Eastern Coast of Queensland, memories of sea and shore, and the patterns observed within the littoral zone, derive from an early age. It is precisely these places that
have informed my art practice yet, on reflection, I have somehow chosen to see beyond actual place to gain material for my art practice – to centre on objects to the exclusion of their placement. Such material, although it reflects my experiences with places, speaks little of those places themselves. To what extent might this be the “blind spot” of which the cognitive scientists Humberto Maturana and Francisco Varela (1992) wrote in relation to the experience of the human observer and the mechanism of biological cognition?

By existing, we generate cognitive ‘blind spots’ that can be cleared only through generating new blind spots in another domain. We do not see what we do not see, and what we do not see does not exist. Only when some interaction dislodges us – such as suddenly being relocated to a different cultural environment – and we reflect upon it, do we bring forth new constellations of relation that we explain by saying we were not aware of them, or that we took them for granted (Maturana & Varela, 1992:242).

We are complicated beings and we have many “blind spots”, some by conscious choice and many others unacknowledged. Places are complex compounds of nature and culture and hard to define, as is our connection to them. As Edward Relph (1976) explains,

...while scientific geography can be understood as a response to our existential involvement with the world, it is nevertheless far removed from the lived-world in attempting to make [humanity], space and nature objects of enquiry. Furthermore, while place is often considered as a formal geographical concept, any exploration of place as a phenomenon of direct experience cannot be undertaken in the terms of formal geography nor can it solely constitute part of such geography. It must, instead, be concerned with the entire range of experiences through which we all know and make places, and hence can be confined by the boundaries of no formally defined discipline (Relph, 1976:6).

This indeterminacy resists qualifying the importance of natural place to the human psyche, and the need to recognize a continued connection as a prima
facie assertion to place embeddedness, which is further hindered by the shallowness of global movement and changeability of modern society, where it is an advantage to resist an attachment to place, for change can then be accepted without regrets.

1.4 Genesis and Placement of the Artist

Personally most vivid memories of place are where I was able to interact freely with the natural environment. It was the coastal places of South East Queensland, Bundaberg, Townsville, Mackay Thursday Island, and their surrounding shores and islands which brought to my awareness, through the marine ecosystem, a sense of association and belonging. All of these places share similarity through their littoral zones – the nexus of land and sea - forming associations with previous experiences and places through the explorations of a comparable new place. This level of familiarity was perhaps the only conscious unifying structure these changes allowed. Although the forms and patterns of the littoral and marine zones which have directed the recurrent theme of my artwork for the last two decades have had the influence of imprinting a patterning of connection with these places, it has been through a shallow bond to geographical place. Nevertheless the bond to a natural environment has continued to be a governing factor for both personal and artistic placement.

While the patterns and forms of nature have always been of importance to me as an artist, these forms and patterns have often been represented out of context to their habitat – their place. Plates 1.4.1 and 1.4.2 show how my use of
form and pattern was the main focus in the development of my two dimensional works yet in Plates 1.4.3 and 1.4.4 my sculptural works demonstrate a degree of placement.

Plate 1.4.1  *Essence of Unity* – watercolour & pen – C Miles, 2000

Plate 1.4.2  *Bubble Effect* – watercolour & pen – C Miles, 2002
Plate 1.4.3  *In the Company of Diggers* – mixed media – C Miles, 2001

Plate 1.4.4  *Bleached/beached Urchins* – ceramic/concrete – C Miles, 2003

In these two approaches, the two dimensional tends to be elicited mostly as a flat patterned interpretation – an isolated selection of *place* – and left to exist on its own, in a space of its own – as an object, while the third dimensional form actually needs to have some form of placement. The contrast is of objects
within place as against objects of place. An object within place is perhaps how I see myself and my art practice and, if my sculptural works do evidence a placing, it is a placing without regard to the connection of object, or subject, to its own particular place, or even my particular location. Beyond this inability to form deep attachment to a resident town/city, a strong affiliation to the natural elements within these constructed places has continued, and has found form and concept in my art practice, albeit through a non-deliberative process. Yet to what extent does it speak of place to its audience?

If the articulation of the placing or desire to place the subject or object within an artwork is elusive, then it might also be related to the resistance to connect the object/subject to its actual place, because of the self-imposed restraints of disconnection within the artist’s experiences. To change or address this is something that is not immediately or easily evoked – how can we know how to address the feelings of loss or displacement when we are unaware, for the most part, of what it is we are missing, or how we’ve been displaced, or where our place is? This perhaps is a result of the ethnocentric tempo-spatial compression that colonizing societies have transmitted to their descendants, in contrast to the forced displacement and subjugation of indigenous peoples.

Yet, one can develop a connection to the here and now, no matter how brief the experience, and it is, I posit, a connection with the local natural environment that orientates in a more profound sense, that goes deeper than the nostalgia or sentimentalism that permeates the views of place and placement; where the
emphasis is on memory and loss rather than the experience of the new and different. Whether a contact with place can bring a greater sense of placement through a more detailed observance of the forms, patterns, objects and subjects — the macro and micro aspects of place — needs to be explored. The filtering lens of this observation may need to be modified though in order to bring to light particular aspects of varying place. The immersion and re-connection with place does not necessitate a change or restyling of existing creative techniques, the predicted changes lie in the concept of place and the artist’s perceptions of local place, thereby grounding and giving authenticity to the artwork produced.

1.5 Through the Eye of the Traveller

Jens Jacobsen (1997) evaluates the tourist encounter with place as an important modern ritual, using the terms adventurer, stranger and tourist to highlight the detachment from local community that the new eye of the sightseer can bring to place. Where the local eye of familiarity feeds back to an immunity of the familiar, it creates a “blind spot”, in the Maturana and Varela (1992) sense, and points to the difference between native and stranger in which a stranger can have a polysensual objectivity to the unfamiliar.

However, this construct of familiarity with, or inurement to, the local, is not the same as the unrootedness, the disconnection, previously mentioned. Disconnectedness comes from some deeper construct, whether social, economic or cultural. Yet both these constructs refuse to allow place to project its placeness onto us by closing the door to the possibility of which Nye (1998)
sees as the *therapeutic renewal* of the tourist. The way to avoid or address
these sensibilities, as Hiss (1991) explains, is to use the “hidden”, yet long
neglected, overlooked and undervalued “ally” that we all possess:

[The] ability that makes it possible for people to know personally,
through their own senses, about many of the ways our
surroundings work within us. [By] paying careful attention to our
experiences of places, we can use our own responses, thoughts,
and feelings to help us replenish the places [we connect with].
(Hiss, 1991: xii)

But how do we define *place*? It can be defined by its topography of course, its
position in space in relation to another *place* – but there is more to a *place* than
a mark on a map or a scenic backdrop. The various ecosystems that sustain life
on this planet proceed independently of human agency, as they did before the
ascendancy of *Homo sapiens* yet it is difficult to think of such a natural system
that has not, for better or worse, been considerably modified by human culture.

The great ocean of the earth is still the last frontier. There is so much that is
unknown within it. The *place* that is Townsville juxtaposes this great ocean, and
the nexus of land and sea is a special *place* – the littoral zone – a *place* where
humans feel safe on *terra firma* yet are drawn to the mystery of the unknown or
the unknowable of the sea. Michael Schneider (1995:97) cites Albert Einstein
(1879-1955) as having once said “that the most beautiful thing we can
experience is the mysterious. It is the source of all true art and science.”

The decision is to explore the *idea of place* using the tools of artistic enquiry. To
tackle the very *identity of place* by carefully studying the type of environment
that has a particular resonance for me – the littoral zone. *Place* is the director, the nucleus of this enquiry, *places of pattern, form, colour, texture, sound, rhythm, experience and memory* become the *genius loci* for the artist. The personal *new eye* aesthetic of the *artist/traveller* involves an idiosyncratic perspective in an attempt to *resee place*, this research also seeks an objective conduit through *the scientific lens*.

1.6 The Application of Dual Lenses

Questions and issues of the validity of *physical place* and our continued ability to connect with *local place* open up a simultaneous rich line of enquiry, that of testing the extent of pre-conditions in the *perception of place* and art production itself; perhaps a question at the heart of the philosophy and theory of art. To what extent does the personal and often unexamined or unrecognized epistemological framework of the artist – their pre-conditioning – drive, frame, shape or limit the artwork? To what extent can the artist bring an objective understanding to a subjective practice; and use the tools of artistic enquiry to form an *idea of place*?

Modern theories tell us that we see what we know, that our openness to the world is limited by our experiences, expectations, systems of belief and intellectual frameworks. To explore the power of pre-conception, the decision is to, in a deliberate and formal sense, adopt a *foreign* epistemological framework or *filter* – a different lens – through which to conduct my study of *place and space* and to observe the effect of that pre-conditioning. Previous filters applied
to my artistic perception and production have been directed from such areas as
sight deprivation and haptic interpretation, promoting the power and importance
of touch. Yet before this deliberate application, the majority of my work relied
more on an intuitive, almost subconscious response to the form and pattern of
marine life, intertwined with an ecological perspective. Naturally, there can be
any number of such possible filters available, but some are more likely to be
useful in this study than others. The best filter should be distinct, yet novel,
likely to produce a definite effect in the finished works, *acquirable*, that is, open
to effective and deep adoption in a reasonable time. Several suggested
themselves, from Feminist through to Utilitarianist to Marxist and
Environmentalist. The decision to adopt a *scientific filter* through which to
conduct my work derives from the fact that it is a powerful and well defined
paradigm with strong accessible local resources. Furthermore I believed that its
*signature* would be singular enough to identify the extent to which, as I
hypothesized, it would significantly colour my art production.

By appropriating the eye of the individual *artist/traveller to see local place* anew
aided by the interpretive tools of the *scientific filter*, this experiment is
undertaken in an effort not only to ground an arts practice but to *place* the
peripatetic individual in the context of location. To what extent might the artist’s
perception and therefore artistic output be challenged and/or altered by
deliberately assuming a value/belief system – the epistemological/philosophical
scientific paradigm which has hitherto been unfamiliar to the author/artist?
The natural *signatures of place* vary from location to location and are at different levels of scale/magnitude, time and topography. They are independent of human artifice and uninfluenced by our perceptions. Such ordering forces determine the shape of coast lines and geographical formations, living skeletons, the flow and contour of water amongst nature’s enumerative patterning. They are fractal in that they are scale invariant. Their indifference to human interpretation makes their study more akin to a scientific act in that there is no objective *feedback loop* to the observer – they are the raw material of scientific enquiry. The adoption of a scientific viewpoint allows access to this other human method of communication. Humans have limited language for expression, and visualizing, abstracting, representing and reinterpreting things are as important for epistemic advances as are rational discourse and empirical validity. This personal impulse for an artistic aesthetic of *place* is designed simultaneously to incorporate these different systems of knowledge.

Through a controlled yet simultaneously uncontrollable experiment in which the artist adopts an analytical tool kit, this project aims to explore *place* by means of the deliberate use of two foundational conduits through which we operate to understand our world – the personal lens of the *artist as traveller* who brings the singular viewpoint of the individual within a developed psyche, and the collective epistemological paradigm of the *scientific model*. The application of this *new* lens will dictate how and where the artist/traveller’s eye will travel yet it will be through the personal lens that the creative aspect will be formed.
Figure 1.6.1 gives a simple diagrammatic perspective of these two applied filters for the reinterpretation of place through the concept of determining lenses, with the objective of producing a personal aesthetic result.

![Diagram showing dual filters of interpretation leading toward representation](image)

**Figure 1.6.1** Dual Filters of Interpretation Leading Toward Representation

### 1.7 Rationale for and Aims of the Study

What happens at the intersection between the impersonal natural order and the intensely personal definition of place? To what extent does place depend on the tools applied to the search for it? To what extent does it vary with scale? How
do the order based natural places coincide with the personal? How is the lacuna, the space between the systems itself, significant in the notional construction of place?

The focus of art from the perspective of place and nature is centred on what we can see, what is obvious to our senses. Yet, the majority of what constructs a littoral place may lay hidden from our visual field. As an artist then, the question is how to integrate a natural interest in defining place and the personal relationship to it through the use of scientific filters, to produce an individual artistic conception and production which relates to place, space and the marine environment. What does scientific research reveal about these particular patterns and forms of nature in place? What might these perspectives communicate to the artist? More importantly, what effect might the immersion in a scientific milieu have on perceptions of place and subsequent art production?

It could be presumed that the arbiters of beauty, pattern and form lie within the realms of our familiarity. What of the unfamiliar, the unseen smaller forms of place and their place in the dialogue of place formation and art practice? A change in scale – larger or smaller – transforms a subject, sometimes with more abstract possibilities, sometimes beyond recognition. The smaller forms of place might be brought into a focus which will assist in the problem of sourcing and discovering the patterns, forms and rhythms that construe place. To what extent might a contemporary artist use the dimensions – second, third and perhaps even fourth (that of time and motion) – to portray the elements and
essence of these forms, patterns, colours and rhythms from the inspiration and reaction they stimulate and evoke?

Scientists have traditionally had advantage in being the main observers of nature’s hidden patterns and forms within place. Yet, the tools of science can potentially also be the tools of the artist. There is much that is beautiful in nature and there is a gallery of invisible wonders that tends mostly to be reserved for scientists. The sight of these amazing objects, forms and patterns brings a sense of awe – a wonder in how minute things can have such a complexity of structure and interaction with their environment. It is within this context that this study aims to:

1. explore place within the place particular in order to discover the uniqueness and significance it holds – perceptually, psychologically and aesthetically,

2. explore the power of the pre-existing epistemological/philosophical filter, and the ways in which the personal-sensate filter interact and coalesce in an experimental frame, and their effects on perception and art production,

3. use the data gathered in (1. and 2.) to develop creative responses to place, and to present this work in a formal, public exhibition.

With the two key hypotheses being that:

$H_1$ place is “real” and it is amenable to artistic analysis,

$H_2$ preconception, or the pre-existing world view of the artist is a powerful determinant of the art produced

1.8 The Organization of the Thesis

Given the aims of the research, the eight chapters of the thesis are designed as follows. The deliberate choice of the scientific-epistemological filter applied to
view place directs a literature review encompassing two chapters, in which the nexus of science, art and place is explored; hence,

- Chapter Two reviews the scientific perspective in order to acquire an understanding of its epistemological framework, seeking synergies between the polemics of science and art, object and subject, mathematical motifs and symmetry in the dynamics of nature’s pattern and form. Through a brief view of the historical paradigmatic shifts of the Western cultural perspective of the language of science, pattern and form, this chapter also includes a short outline of the complex intertwining of contemporary art/science directions.

- Chapter Three explores Western cultural debates on space and place, and investigates the human relationship to these issues. It concentrates on the meaning of place and identity, the primordial bond and the attachment to natural place. By seeking to understand the identity crisis facing the modern networked and transient individual, this chapter sources the dialogue and debates of preceding and contemporary philosophers, phenomenologists, humanist geographers, and environmentalists. Further directions are sought from a literature that espouses the re-entering into local place through the example of personal contact.

- Chapter Four synthesizes the directions from the literature as a basis for the methodology. It details the structure of the research as well as the processes and tools to be applied to assist with the analysis of the selected sites through this idiosyncratic experiment.

- Chapter Five presents and synthesizes the results of the data collection and analysis from the five selected sites.

- Chapter Six maps the transposition of idea into art product which takes the crucible of personal experience and re-presents it as a public one. In
this chapter the personal *qualia* experience (the real time experience) now becomes the physical interpretive concretion of the research, bringing together the replica object, the photographic frozen moment, the *wabi-sabi* – the minor and the hidden elements of the places. Through the explanation of the artist’s codec extracted from the *collections* and *data of place*, the representative *Motifs* and *Signatures* described become physical and symbolic ideas of these individual places.

- Chapter Seven presents the public exhibition. The exhibited artistic product articulates the processes of gallery selection and the pertinence of the placement of the works, invitation and catalogue design.

- Chapter Eight reflects on the processes and product of the research. It details how the use of the *unfamiliar filter* has exposed unseen elements of *place* which communicates how this research has expanded a personal consciousness and understanding of each of these *sites*. The implications of the research are also explored, with the research clearly demonstrating the importance of pre-existing perceptions in determining the outcome of both an idea and an artistic product and the possibility that *place* can be recovered through concerted contact with rich and varied effects.
CHAPTER 2 – The Scientific Filter: Possibilities and Precepts

2.1 Introduction

To coalesce the literature on science and place may at first seem aligning disparate avenues of enquiry yet both are essential to gaining an understanding of the milieu of science, its methods and processes and an appreciation of the perceptions of place and personal placement. Place, like any other objective/subjective construct, has potentially infinite faces dependent on the vantage point from which it is observed, and often can be a governing factor for the undertaking of scientific research.

The extant literature sourced was confined to attaining a basic understanding of the history and workings of science, as a journey towards a lucid awareness of how nature’s forms and patterns have emerged. The language of science charts a path through the mathematical motif and symmetry of nature’s dynamic physical structuring and harmonic principles, seeking synergies between the polemics of science and art.

2.2 Science and Art – An Unnecessary Schism

The scientific perspective is but one of many potential vantage-points but has the advantage of being amendable both to characterization and documentation. In theory this formal stability allows, for the identification of the effect of the filter on the artist’s perception of place and for the leaving of a discernable signature on the resultant artistic productions.
Further, the author has for a long time, in common with many others, been intrigued and sometimes frustrated by the equivocal nature of the relationship between science and art. The teasing, often unproductive but beguiling “co-dependency” of scientist/novelist C.P. Snow’s 1959 Rede lecture on the two cultures – “Artistic” and “Scientific”, remains an area of fascination and potentially productive paradox (Snow, 1993). Snow argued that a "third culture" was needed which would close the communications gap between scientists and artists, where both would benefit from an understanding of the other. This project offers a means of approaching this fascinating area as well as tackling the issues of placedness and place.

Science, however, is a vast, ever growing and somewhat manifold set of disciplines, as is art. Art and science tend to be perceived as separate entities, seemingly divergent and, both have their own unique language. Yet a correlation tends to be obscured by their specific contexts, in everyday language, as well as to each other. Form, light, space, volume, mass, force, colour, density, harmony, tension, symmetry, aesthetics, pattern, beauty are recognizable interchangeable descriptors in both areas. But the words of our language often fail in describing what can essentially be intuitively or emotionally felt, or abstractly thought. The radical difference between the two epistemological disciplines is that one believes that there is an implicit reality waiting to be discovered, and the other, a view that reality is at least partly a construction of the mind, and in accordance with the prevailing value and beliefs systems of particular times and places (Ede, 2005). The postmodernist writer
Ronald Barthes (1975) sums this up with, “…the systems of meaning…take over this absolutely plural text, but their number is never closed, based as it is on the infinity of language” (Barthes.1975:5-6).

Where art employs image and metaphor and the imagination is allowed to run free, science is considered to be constrained by quantifiable conventions. Art has perhaps traditionally created illusions meant to educe emotion, and the sciences have formed to extract reason from the natural world. Despite what, to many, may appear as polarities of human endeavour, there is a fundamental nexus of these disciplines. Both conduct investigations into the nature of reality and the reality of nature. The search for the connections between disparate things is known as the Aristotelian Quest – the earliest known formal method of logical investigation – which was incorporated in the nineteenth century into modern formal logic – a system of enquiry that, throughout history, has been undertaken by many, including philosophers, scientists and even artists.

2.3 A History of Pattern

Our view is limited by our spatial orientation. Without the invention of the lenses as extensions of the eye, the microscope, telescope and the uses of different light/energy frequencies, much could not be seen or understood. Once the pretext of scientific investigation and a quest for knowledge has been removed, what remains is an image of the world – a universe of forms, patterns, texture, colours and materials in which a change in scale alters perspective and familiarity.
Within its variability and general constancy, our universe has a structure which directs all life and being. This structure can be defined as nature’s designs or patterns - whether visual, tactile, rhythmic or cyclic. The elemental patterns of our world all have an anecdotal quality and share a common language. The eye and hand are led from facet to facet producing visual, tactile and logical narrations which do not require a degree in biology, geology, botany, physics, mathematics, or art to appreciate. Nevertheless a concerted inquiry is needed to form a richness of perception and understanding – nature’s designs are what this inquiry is about. To this artist (as for many other artists) the patterns and forms of nature have always been of importance, and instrumental to the formative process of my development and work. As the biologist Peter Stevens (1974) asserts, visual pattern and texture in nature are the keys to help us learn about, remember and connect elements of the world around us, and all discovery, whether scientific, technical, artistic or philosophic, has been the result of pattern observation (Stevens, 1974; Wilson, 1996).

Our world is filled with visual patterns of numerous variations, contrasting tones and colours, with textural equivalents featured as bumps, surface ridges, and channels; there are patterns of organization and behaviour amongst all organisms and natural processes. People have long been tempted to find some obscure intelligence behind all these biological patterns (Camazine, 2003). Humans are not the only living beings sensitive to pattern, form and colour, yet we are the most controlled by, interested in, and influenced by this basic phenomenon of nature. We begin our lives with a synaesthetic interest in the
world as a whole. Things are blended together as part of each other and belonging together, the sky, trees, water and the animals that inhabit these components of our natural world. As we grow older, the more we live in and make use of the universe we live in, the more we take it for granted and become almost immune to awareness by channelling interests into narrowed and specialized fields, which tends to blur evident connections (Coren, Ward & Enns, 1994). What can also contribute to the blurring are modes of communication.

All the world offers as clues to its own nature is the evidence available to our senses. Our senses have been structured in order to perceive our world, without telling us how or why such forms arose in the first place (Coren et al, 1994). The senses combine to enable us to develop our experiences (visual, tactual, auditory, olfactory and gustatory) into concepts organized by notions of position, size, weight, volume, substance, temperature, configuration, quantity, contrast, brightness, colour, flavour, scent and function – resulting in the concept of object. In order to react appropriately to objects we must first recognize, then codify and categorize them. We give objects our attention for two main reasons: because we cannot help it, and because we want to (Stewart & Cohen, 1997; Clifford, 1968). For the twentieth century sculptor Henry Moore, everything in the world of form was understood through the body. To observe, to understand, to experience the vast variety of space, shape and form in the world, we learn from our skin, our bones, our hands, from bumping into and touching things, we learn about texture, temperature, contact (Levine, 1978).
With so much to discern in our visual world we can only afford to take the part for the whole. If we responded to everything in the world that bombarded our senses they/we would be overwhelmed; we would not move from one spot if we were to take in everything available to be noticed. We can only cope by ignoring about ninety nine per cent of the recognizable objects about us, which necessitates some kind of simplification or data compression in order to understand how the universe works. (Clifford,1968; Stewart & Cohen,1997; Barrow,1998). Yet, as a conglomerate of shapes, forms, sizes, patterns, colours, and quantities, nature has always inspired humans to attempt to understand, decipher, record, count and interpret it. The artist and scientist do not differ in the essence of this quest, as Leonard Shlain (1993) argues,

The physicist, like any scientist, sets out to break “nature” down into its component parts to analyze the relationship to those parts. This process is principally one of reduction. The artist, on the other hand, often juxtaposes different features of reality and synthesizes them, so that upon completion, the whole is greater than the sum of its parts. There is considerable crossover in the techniques of both (Shlain, 1993:16).

This description of the artist is built on the Gestalt view needed to gain an overall perspective, which scientists from many areas have realized and incorporated, e.g., Charles Darwin’s high explanatory natural selection theory and Edward O Wilson’s cross disciplinary socio-biology. Indeed, nothing is separate from its environs, its place, and its connections with others in that space. Derived from the psychological theories of Max Wertheimer (1880-1943), Kurt Koffka (1886-1941) and Wolfgang Kohler (1887-1967), Gestalt theory strongly influenced research and theorizing over the latter half of the twentieth century. The zoologist Konrad Lorenz (1903-1989) saw this as the merit of Gestalt
psychologists to have introduced the method of correlative analysis to the study of organic systems at a time when the atomistic way of thinking was holding sway. Nikolai Berdyaev (1874-1948) in *The Destiny of Man*, earlier noted the connection of living beings, given that,

> The only thing a living organism can do, when it is completely isolated, is to die. Left to itself, life dies, but in commerce with its surroundings it survives. Living is the word by which we describe this unceasing interaction between organism and its environment. The process does not go on in the body of the plant, animal or [human], but between it and its surroundings (Berdyaev, 1945:75).

Why should it be surprising that, through the endeavour of human interaction with the natural environment, seemingly different disciplines have similar questions and thoughts, although the outcome or ultimate goals may be widely dissimilar? It could be equated to two people looking at a tree, where one concentrates on the leaves and the other the branching system, where a description of one will not encompass the other, yet both are descriptions of a tree, albeit partial. The difference is the methodology, or the perceptual frame of the viewer. Shlain (1993) regards the physicist as the modern representative of a tradition that has travelled through human history back to the first scientists, to Christian theologians, natural philosophers (in the Western context), pagan priests and Palaeolithic shamans. So too has art been tied together with all the paradigmatic shifts of Western culture evolution.

The enquiry into nature’s forms and patterns (both the same story), leads one through the history of the development of Western thought and discovery, to its beginnings, or at least its documented beginnings – the Ancient Greeks.
Ancient world thoughts of nature did not separate into different disciplines. There were no scientists or artists; these are more modern qualifiers, which have tended both to isolate and contain.

2.4 Ancient Sources

In trying to understand why or how such an amazing amount of variety of design has evolved, I have been directed on a path which at first takes in the historical development of our understanding of nature’s patterning and form. The Natural philosophers saw the universe and all it contained as a whole being – all connected to all. Pythagoras (c.565-490BCE), Plato (384-322BCE) and Aristotle (384-322BCE) considered nature as designed by a sacred geometry in the form of number. Michael Schneider (1995) recounts that,

> In ancient Greece[,] the advanced students of the philosopher Pythagoras who were engaged in deep studies of natural science and self-understanding were called Mathematekoi “those who studied all.” The word mathema signified “learning in general” and was the root of the old English mathein “to be aware”, and the old German munthen “to awaken” (Schneider, 1995:xvii).

For the majority of people today, the word mathematics is restricted to the estimation of measurement and quantity. How do you define measure? Measure is a consideration of relationships, a comparative study, a juxtaposing of ideas, a contiguity – the way we evaluate and inform – Geometry is the measure of the earth. Geometry is also the science of form, and the spheres, cylinders, spirals and geometric regularity of the ancient geometry can be seen throughout the forms of Nature. The pervasiveness and subtlety of form is what
interests artists, and the first attempt made to generally survey form in physics, biology, psychology seems to be in its characterization.

Seeing the world as a unit, the Ancient Greeks tried to explain the relationship between different elements, searching to find the laws that would support their precept of teleology – the final cause (Whyte, 1968). Teleology is the belief and relating philosophy that all in the world and beyond is connected and that there is an overriding cause above and beyond the immediate cause. Where the modern examination is of a reductionist outlook, for the ancient Greeks the final cause was the overview from which things can be reduced to separate components in order to understand the immediate cause more fully. As the philosophical scientist George Williams (1996) explains:

They [Ancient Greeks] believed that the basic laws of nature prevail over all that is put together by nature and man; a lyre in tune, the work of a craftsman, a cactus or a seashell. If the modern world were to consider teleology in its own terms, it might be said that all substance about us has the same physiochemical basis. Animal fur and bone, shell and plastic membrane and soap film, are all particles of matter moulded by the same physical laws (Williams, 1996:113).

Despite their detractors, the Ancient Greek’s input into the formation of Western cultural thought – e.g., Pythagoras, Plato, Aristotle and Euclid (f.300BCE) – had a profound influence over ensuing Western philosophy, science and art. Whether this is the result of direction by the majority of published history and scholastic thought or a genuine result of their contribution, is a matter for speculation and beyond the scope of this study.
For many civilizations around the time of the ancient Egyptians, art was an expression of their connection with the external world – the Gods as they saw them; the interplays of nature, and the human relationship to them. It became a static art. Egyptian art represented the human figure in much the same configuration – face and legs in profile, torso in full view – for around three thousand years. Nomadic tribes were far more likely to be open to change, in terms of the subjects and styles of their art than their settled contemporaries. The art of the Celts and the Scandinavian regions also shows a more involved connection with the forms of nature.

For the ancient Greeks the axiom of the philosopher Protagoras (480-420 BCE), *man*, as the measure of all things that he is and that he is not, became evident in the works of the Classical and Hellenistic periods. The iconoclastic view of the early Christian period changed directions with the view that *God* is the measure of all things, and for nearly a thousand years art and thought were controlled by the powers that be.

Tables 2.4.1, covering the next four pages, provides an overview of some of these paradigmatic shifts, or ideas that helped create these changes of cultural thought on *form, space and pattern* in the history of Early Western civilization up to the Middle Ages. This table gives a linear and condensed view of historical event and time enabling parallels between the early sciences and artistic endeavour to be identified throughout Western cultural evolution.
**Table 2.4.1 Overview of Cultural Thought on Form, Space & Art**

<table>
<thead>
<tr>
<th>Era &amp; Origin of Source</th>
<th>Contemporary Thought, Theory or Development</th>
<th>The Manifestation of These Developments</th>
<th>Originator/s, Developer/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before 6000BCE</td>
<td>Cannot be actually known, but generally believed to be:</td>
<td>In the form of cave paintings, domestic and hunting implements, ceremonial and ornamental artefacts</td>
<td>Early societies e.g.</td>
</tr>
<tr>
<td>The Neolithic Period</td>
<td>- a development of spiritual connection with the natural world</td>
<td>- pottery</td>
<td>- African tribes</td>
</tr>
<tr>
<td>Throughout the human inhabited world</td>
<td>- form had already begun to be of a subjective and spiritual quality</td>
<td>- masks</td>
<td>- Aust. Aborigines</td>
</tr>
<tr>
<td></td>
<td>- geometric forms, patterns are seen through all cultures</td>
<td>- small sculptures with symbolic meaning</td>
<td>- Nordic Tribes</td>
</tr>
<tr>
<td></td>
<td>- belief that some of these were the result of the trance like state of tribal shamans</td>
<td>- decorative textiles</td>
<td>- Celts</td>
</tr>
<tr>
<td></td>
<td>- natural forms gave meaning to human life</td>
<td>- large natural formations were attributed significance</td>
<td>- Asian tribes</td>
</tr>
<tr>
<td></td>
<td>- animism</td>
<td>- the symbolic use of spirals in many cultures</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- urban civilization and agriculture began in the later years (around 9500BCE in Near East)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- symbolic formality adhered to a prescribed set of rules as to how 3D art should be represented. 2 distinct qualities – cubic &amp; frontal</td>
<td>Built monumental temples</td>
<td>- Sumerians</td>
</tr>
<tr>
<td></td>
<td>- mathematical form in a decimal system is being used.</td>
<td>- ziggurats (traditional design)</td>
<td>- Babylonians</td>
</tr>
<tr>
<td></td>
<td>- mensuration and calculations on simple geometric solids are established</td>
<td>- pyramids</td>
<td>- Egyptians</td>
</tr>
<tr>
<td></td>
<td>- later they developed a scientific and historiography understanding and recording</td>
<td>- large sculptural forms</td>
<td>- Assyrians</td>
</tr>
<tr>
<td></td>
<td>there is some thinking (Henry, Schneider, Hedian, Lawlor, Taylor, Smyth, Gazalé) that the Babylonians and Egyptians used the proportions of the Golden Mean (symbolized by the Greek Phi (φ), in the building of their monuments etc.</td>
<td>- sophisticated architecture, highly decorated inside and out with columns, arches, mosaics, paintings</td>
<td>- Etruscans</td>
</tr>
<tr>
<td></td>
<td>- evidence that the earliest known pentagrams (4th millennium BCE) came from Mesopotamia. The Sumerian pentagram meant ‘the regions of the universe.’</td>
<td>- highly symbolic forms</td>
<td>- Hittites</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- introduced pictographs, hieroglyphics and the form of written language</td>
<td>- Persians</td>
</tr>
<tr>
<td>Era &amp; Origin of Source</td>
<td>Contemporary Thought, Theory or Development</td>
<td>The Manifestation of These Developments</td>
<td>Originator/s, Developer/s</td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------------------------------------</td>
<td>----------------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>The Archaic Period</td>
<td>- Milean thinkers 'discovered' speculation after asking a simple but profound question: &quot;What exists?&quot; - began to question the human existence, experience, and place in the universe as a whole - sought natural explanations for the origin of the natural world - proposed the first natural cosmology - water as the first substance (Thales) - postulated that the first principle was not water but <em>aperion</em>, the <em>indefinite</em> - 'invent' philosophy, defined as 'the love of wisdom.' - founded abstract geometry (Thales) - matter philosophy – everything has its origin in material substance - idealized, yet realistic expression based on the observation of living beings, and the refinement of anatomical elements. - the unclothed figure in its Most perfect manifestation was admired for its harmonious beauty - the archetypical proportions Of the human body were considered the measurement of all things - the apparent unity of and stability of the world conceals a dynamic tension between opposites (Heraclitus).</td>
<td>- the foundation of 'Modern' thought and philosophy - started the first documented questioning of 'matter' and 'form' - a move beyond superstition toward explanation - speculative thinking expressing human curiosity about the world, striving to understand in natural (rather than supernatural) terms how things really are, what they are made of, and how they function - practical thinking emphasizing the desire to guide conduct by comprehending the nature of life and the place of human beings and human behavior in the greater scheme of reality - a belief in an absolute, unchanging reality of which the world of change and movement is only a quasi-existing phantom, phenomenal, not real. - pottery of this time was mainly painted vases of the: - the black figure period - the red figure period - sculpture and architecture was the main artistic outcome - depicting the figures of The Greek Mythology, in heroic pose. - the Gods in human form - representations of battle, sport, animals and the hunt - the architecture was monumentally decorative in itself.</td>
<td>Thales (624-548 BCE) Anaximander – pupil of Thales (611-547 BCE) Anaximenes (d.c. 500 BCE) Heraclitus – the weeping philosopher /the riddler (fl.500 BCE) His most famous doctrine is that everything is in a state of flux – 'you can never step into the same river twice' – this saying is also attributed to his disciple Cratylus</td>
</tr>
<tr>
<td>Era &amp; Origin of Source</td>
<td>Contemporary Thought, Theory or Development</td>
<td>The Manifestation of These Developments</td>
<td>Originator/s, Developer/s</td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------------------------------------</td>
<td>---------------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>The Classical Period</td>
<td>- the universe contained an inherent mathematical order - mathematical discoveries involving the chief musical intervals (rhythms) - the relations of numbers and the fundamental beliefs about the understanding and representation of the world of Nature through Numbers - mathematical relations - the kinship of all living things - Pythagoras is tentatively accredited with having discovered the what was to be called the Golden Ratio – the extreme and mean ratio, and incommensurability/irrational numbers - the emphasis on form rather than matter - Parmenides - We &quot;know&quot; reality not by the senses, which are capable of deception, but through the human mind, not through experience, but through reason. This concept shall become central to the philosophic thought of Plato. - Democritus argued that knowledge was derived through sense perception -- the senses illustrate to us that change does occur in nature - empty space and an infinite number of atoms (a-tomos, the ‘uncuttable’). Eternal and indivisible, these atoms moved in the void of space. An atomic theory, Democritus saw all matter constructed of atoms which accounted for all change in the natural world. - Protagoras believed that sense perceptions are all that existed, thus reality differs from one person to another. Socrates, Plato and Aristotle all proposed the essence of order, beauty, proportion and limit, yet its purpose was more aesthetic than religious or political.</td>
<td>The application of mathematics to the concept of order and harmony in music, the cosmos, human ethics. The reinforcement of three aspects of comprehension – abstraction, linearity and continuity, were the foundation for the new conception of space, time and light that would emerge centuries later. The abstract concept that the basic forces in the universe may be expressed through the extreme and mean ratio language of mathematics. - the logic of mathematics – The measure of all things. Mathematics is the Universe’s Language - set the groundwork of formal logic - developed an early system of cosmology - Plato’s concept of ideal forms in Nature Greek artists began to position their figures in a linear orientation directed by the horizon. The Greek sculptors, a century before Euclid, had accurately estimated the proportions of the human face and body. The 5th century sculptor Polycitus wrote a book, the Kanon (rule), which established the measurement relationships of the different parts of the human body – he recommended these values as the basis of an entire aesthetic, sculpting Doryphoros (spear thrower) to illustrate these principles.</td>
<td>Anaximander (c.580-507 BCE) Pythagoras of Samos, pupil of Anaximander (c.565-490BCE) Parmenides of Elea (c.515-450 BCE) Leucippus (c.5th century BCE) - influenced Democritus’ atomistic theories Democritus of Abdera (c.460-370 BCE) Protagoras of Abdera (480-420 BCE) Socrates (c.469-399 BCE) Plato (c.428- c.348 BCE) Pupil of Socrates Aristotle (384-322BCE) pupil of Plato</td>
</tr>
<tr>
<td>Era &amp; Origin of Source</td>
<td>Contemporary Thought, Theory or Development</td>
<td>The Manifestation of These Developments</td>
<td>Originator/s, Developer/s</td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------------------------------------</td>
<td>----------------------------------------</td>
<td>--------------------------</td>
</tr>
</tbody>
</table>
| The Classical and Hellenistic Period | - the first deductive theory of geometry  
- parallels lines never cross, so begins the linear view of space and time which lasted 2500 years | Euclid’s *Elements* of geometry is the earliest substantial Greek mathematical treatise to survive – the most influential mathematical textbook ever written.  
- created a model of mathematics that lasted till the 20th century  
- the concept of formal reasoning is established  
- the Archimedes spiral  
- art was stylized yet realistic, depicting humans in heroic poses. Animals were included but were additions to man’s controlling of his environment | Euclid (f.300BCE)  
Archimedes (ca.287-212BCE)  
Apollinus (fl.250-220BCE)  
Hipparchus (fl.160-125 BCE)  
Ptolemy (c.90 BCE-168 CE)  
Pappus (4th century) |
| 300sBCE-400CE Continued by the Romans, the Classical world lasted some 800-900 years | | | |
| 400-1250 Christianity became ascendant by 400CE and took over the rational system conceived by the Ancient Greeks | St Augustine, one of the most influential people in medieval thought, negated the work of the ancient Greek when he proclaimed: When the question was asked what we are to believe in regard to religion, it is not necessary to probe into the nature of things, as was done by those whom the Greeks call *physic*:...It was enough for the Christian to believe that the only cause of created things, whether heavenly or earthly is the goodness of the true God.  
- the religious concept of space was not homogenous  
- earth was flat and the outer reaches of space was the purest and called the seventh heaven  
- time also became fractured  
- there existed nothing before the Genesis | The result of the destruction of Greco-Roman art and thought led to the long Dark Ages  
- artists emerging in the middle to Late period had few traditional skills  
- art reflected the cultural thought on space, time, light and philosophy  
- mosaics formed the basis for Christian art – each piece of mosaic is a small part; the sum of the parts makes a whole which is greater than the individual  
- frescos, paintings and stained glass windows were also the media used for the religious art that controlled artistic perception in this long period  
- the art was stylized and singular in theme science and free thought were replaced/overlaid by a complex theological system | The religious powers |
Scientific enquiry for the Roman Empire was not as important as in classical antiquity, and the demise of the dominant Roman civilization brought the period where much was lost and scientific knowledge advanced slowly. However, from the beginning of the Renaissance period – twelfth century – a renewed interest in natural investigation was underway. Science developed with scholastic philosophy focused on logic and the promotion of the empirical view of nature as a coherent system of laws that could be explained. Art, which still followed religious direction, was slower to venture into broader epistemologies.

Aristotle's inductive and deductive methods of observation in the physical sciences continued to have strong influence on medieval scholarship, which extended well into the Renaissance. They were ultimately replaced by modern physics yet, in the biological sciences, some of his observations were confirmed to be accurate in the nineteenth century. Even today aspects of Aristotle's philosophy continue to influence academic study.

The scientific philosopher Lancelot Whyte (1968) explains that in 1214, the English scholastic philosopher Robert Grosseteste (1175-1253), defined form as that by which a thing is what it is, and the Oxford School of logicians sought to determine understanding of any selected phenomenon and its generating conditions. Albertus Magnus (c.1200-1280), following Aristotle, concentrated on the hierarchy of organic forms while Thomas Aquinas (1225-74) – pupil to Albertus – also used Aristotelian concepts to develop the Scholastic doctrine of form as the essential creative quality or determinant principle of a thing, and the
root principle of activity (Whyte, 1968). This was explained as a world as a hierarchy of forms, where essential form is bound up in matter, or exists immaterially in pure intelligence, the primary forms being in the mind of God.

Though by 1254, Roger Bacon (1214-1292) was regarding mathematics as the alphabet of philosophy, Whyte (1968) explains that at the beginning of the 1300s,

...fourme, or form is used for the character, nature or structure of a thing; its visible aspect of shape; for its image, representation or likeness; for the manner or procedure of doing anything; and soon after for model, type, pattern or example. Also for beauty, comeliness, and in general the appearance of a living thing or person (Whyte, 1968:231).

The Renaissance can be considered as the next major step in the development of the human understanding of nature, its composition and relations. In 1411, with Filippo Brunelleschi’s (1377-1446) statement of the mathematical law of linear perspective, a new era was beginning for science and the arts (Kemp, 2000). From the viewpoint of geometry, the Renaissance was characterized by the graphical mastery of 3-D space in 2-D pictorial space on the basis of projective geometry. The development of central perspective is probably the main aspect of Renaissance painting (Livio, 2002).

The fundamental rise of early scholastic thought was perhaps not truly challenged until the era of Rene Descartes (1596-1650) and the modern thinkers. However it was not until the early twentieth century that the influences of the previous views on space, form and time began to change so forcefully.
New theories, such as Quantum mechanics, started to indicate that not everything can be as analytically explained or as clearly understood as the previous mode of thought had reasoned. The *cosmological principle* of classical thought – that in particular respects, this universe looks the same wherever you are – was thus being questioned (Casey, 1998). Yet even with the later development of theories such as those proposed by Niels Bohr (1885-1962), John Wheeler (1911-2008), and Richard Feynman (1918-88), which detailed the different spatial possibilities of the universe, the average person can only conceptualize within the space of their own knowledge and experience (Barrow, 1998).

The nature of space – determined as empty space in the ancient world – of all the constraints of *nature*, has turned out to be the *control* that shapes *all* things. As Stevens (1974) states, “every form, every pattern, every existing thing pays the price for its existence by conforming to the structural dictates of space” (Stevens 1974:5).

The cognitive scientist Markus Graf (2004) argues that artists like Albrecht Dürer (1471-1528) worked extensively to describe biological shapes – and their variability – on the basis of affine and projective transformations. He sees the next step in this transformational framework as *topological geometry*, which was first employed in scientific theories of Albert Einstein’s (1880-1952) *General Relativity* (1915) and in the British zoologist/mathematician D’Arcy Wentworth Thompson’s (1860-1948) synthesis of natural history, biology, mathematics,
physics and engineering, *On Growth and Form* (first published 1917). Graf (2004) proposes that topological geometry has significance for our present time similar to that of projective geometry for the Renaissance:

> Like projective geometry, topological geometry also allows a further geometrization of representational and pictorial space. Topological geometry provides a basis for describing perceptual categories and classes, and for an embodied description of concepts. Topological geometry allows you to comprehend the structure of physical, representational and pictorial space, and might be regarded as the geometry of biological shapes (Graf, 2004:2).

During the mid twentieth century, abstract theory began to take a backstage to the increasing interest in spatial form. Whyte (1968) asserts that, “for many scientists the primary emphasis appears to have switched from the discovery of *new fundamental laws* to the *progressive identification of natural structures*” (Whyte, 1968:x). He further argues that this switch was also taken up by groups outside the natural sciences, establishing a *new school of form*, mainly in the disciplines of architecture, design and art, which he saw as a new branch of scholarship: “the unified study of all kinds of natural and man-made structures” (Whyte, 1968:x). This new school of form – *Fundamental Design* – was based on the principles of mathematics, physical and organic forms. The *leit motif* of this new unifying discipline, sometimes called the *morphological point of view*, or *General Morphology* (the theory of form in biology), this he explains, “as… a world of form and structure … [which] can only be properly understood as such” (Whyte, 1968:xi).
Earlier assumptions were that nature, in rare instances, was paying an unconscious tribute to art; or that the artist was unconsciously imitating nature. The cultural theorist Herbert Read (1893-1968) saw the developments in perceptual psychology as beginning to reveal

...that perception itself is essentially a pattern seeking, selecting and pattern making function (a gestalt formation); that pattern is inherent in the physical structure or in the functioning of the nervous system; that matter itself analyses into coherent patterns of arrangement of molecules; and the gradual realization that all these patterns are effective and ontologically significant by virtue of an organization of their parts which can only be characterized as aesthetic - all this development has brought works of art and natural phenomena on to an identical plane of enquiry. Aesthetics is no longer an isolated science of beauty; science can no longer neglect the aesthetic factors (Read,1965:xxi).

Read (1965) argued that the increasing significance devoted to form or pattern in many fields of science, in the mid twentieth century onward, suggested the possibility of a certain parallelism in the structures of natural phenomena and of authentic works of art; works of art having a rhythmical, even a geometrical structure that had been recognized for centuries – excluding the philosophies of the Dadaists, and similar movements. Some of these structures or proportions – notably the Divine Proportion, the Golden Section/Ratio – have correspondences in nature that have also been recognized for many years.

Early humans were surrounded by organic forms – as the people of today relatively still are. It is reasonable to expect that specific biological form would imprint itself by mere association on people (especially artists) that were in contact with nature. This is true of much art, especially in its earliest forms, but an externally imposed sense of representation or symbolism, is more likely the
product. The developmental biologist/philosopher Conrad Waddington (1905-75) further argued that

Much more can we anticipate an influence of man’s intellectualising, pattern-making habit of simplification, diluted perhaps by an intrusion of unresolved detail. Only the extremely simple, or the extremely sophisticated, are likely to stray into the realm of form which is the proper outcome of the blind but complex forces of life (Waddington, 1961:52).

By this is meant, not the obvious form of nature e.g., the shape of a tree, but that which underlies, constructs and controls the forms, rhythms, patterns of nature.

As the artist is interested in the appeal and subtlety of form, pattern and rhythm, so the scientist, too, is drawn to the form, pattern and rhythm of object or phenomenon. Since Democritus (c.460-370 BCE) looked for comprehension in atoms, and Plato and Aristotle in forms, there has been spirited competition between the ideas – atomism – material, analysis, quantitative, precision; form – unity, symmetry. Yet these are complementary rather than oppositional, though early thought suggested little as to how to combine the two, other than the holistic approach. Subsequent thinkers, as a result, fell into one side or the other. Democritus followed by Isaac Newton (1642-1727), Ernest Rutherford (1871-1937), and all other atomists, and Aristotle, Thomas Aquinas, Johann Wolfgang von Goethe (1749-1832), and the morphologists in biology and other sciences – the old mechanism-vitalism argument continued. In the mid twentieth century with the increasing interest in form and pattern in the various fields of science, parallels in the structures of natural phenomena and artistic endeavour were becoming evident.
2.5 Nature Numbered

The more it is observed and discovered, the more nature is seen to conform to the geometric ideal until, on the atomic scale, matter loses its appearance of solidity and can only be defined as patterns of energy directed by laws of numbers and proportion (Stewart, 1995). Herein, modern physics arrives at the same conclusion as did Pythagoras (c.565-490BCE) more than 2500 years ago, “that ultimately all is number” (Michell, 1979:34).

From the earliest documented Western histories – Thales (c. 624-c.545 BCE) and Aristotle, to the discoveries of the well known scientists e.g., Galilei Galileo (1564-1642), Newton and Einstein, science has been informed by nature, form, number and art and, in return, art has been informed by nature, form, number and science (Ede, 2000; Kemp, 2000; Ball, 1999; Schnieder, 1995). Although there were many opponents (e.g., Henri Bergson) for the scope of the mathematical description of the natural world, in the early twentieth century, Thompson (1992) was promoting a mathematical interpretation of all form and growth as an underlying phenomenon.

So the living and the dead, things animate and inanimate, we dwellers in the world and in this world wherein we dwell ...are bound alike by physical and mathematical law (Thompson, 1992:1030).

The mathematician Ian Stewart (1995) determines that the “human mind and culture have developed a formal system of thought for recognizing, classifying and exploiting patterns,” which we called mathematics – that

by using mathematics to organize and systemize our ideas about patterns, we have discovered a great secret; nature’s patterns are
not just there to be admired, they are vital clues to the rules that
govern natural processes (Stewart, 1995:1).

It seems that each of nature’s patterns is an enigma which mathematicians and
scientists strive to solve, and artists choose to espouse, and therefore the
organic view of Goethe’s nature need not be in conflict with today’s scientific
nature.

Classical mathematics had its roots in the regular geometric structures of Plato
and Euclid and the continuously evolving dynamics of Newton, and John Michell
(1979) posits that Platonists saw numbers as the first paradigm of creation, with
a link between original creative thought and the formation of design types which
determine nature’s appearance.

Humans are the only counting animal and seek statistics in connection with a
range of phenomena – many see a fascinating connection between nature and
numbers. Numbers can be restrictive but they can also open up insights into the
formation of our world. Plate 2.5.1 shows the minute forms of marine diatoms
only revealed through the microscope and how they can elicit the connection of
number in nature.

Ten mathematical archetypes are noted by Michael Schneider (1995), where
each number has its distinctive functions and confines. Michell (1979), Robert
Lawlor (1982) and Schneider (1995) relate every geometric type to certain
numbers or code of numbers.
Plate 2.5.1 Microscopic Diatoms – 1,2,3,4,5,6 – unicellular marine algae
(images Michell,1979; Monkman,1964)

Numerology, the branch of knowledge dealing with divination by numbers, or the esoteric or occult significance of numbers may be devalued as a factual discipline yet, there is a scientific basis for many of the number associations seen in nature. Six characterizes astronomical ratios and the inanimate forms of nature; as with the formation of crystals, snowflakes and the economizing of two-dimensional space packing, e.g., honeycomb cells.

To the ancients, numerologists and within the concepts of many cultures, the most influential of all is the one, the monad – the most basic form (the circle, the centre, the cell, atom or sphere), which equates to the whole, the beginning. Schneider (1995:1) points out that Plotinus (c.205-270) believed that, “one principle must make the universe a single complex living creature, one from all,” a theory that James Lovelock (1979) developed further as Gaia. Two, the
dyad, signifies the duality of nature and life – heaven/earth; day/night; good/bad; male/female; life/death. Three, the triad, is the form of completion – beginning, middle and end. Nature demonstrates a tripartite structure – insects to humans are sectioned into head, body, leg proportions. The geometry of fruits and vegetables observe a three-part structure when they begin as three-petalled flowers. As materials dry out (mud, concrete, skin) three-way cracking is evident, with 120 degree joints. Three points define a flat surface area but it takes four to define depth. The geometry of the tetrad (four) manifests as volume in the tetrahedron, and “other than the sphere, the universe doesn’t allow any volume to have fewer than four corners or faces” (Schneider, 1995:62).

The Pentad represents a new level of cosmic design: “the introduction of life itself” (Schneider,1995:97). The fifth of the five Platonic solids having twelve pentagonal sides, was seen by the early philosophers as the Quintessence (fifth being) of nature, “…encompassing and infusing the four elements [solids, liquids, gases, and electronic fire] with the life they cannot create by themselves alone” (Schneider,1995:97). Five gives shape to numerous living things, including humans, flowers and many sea creatures – e.g., echinoderms and shell structures. Pentagonal symmetry is perceived as the supreme symbol of life and regeneration, and is linked with mystery of the mathematical infinite. (Schneider,1995; Lawlor,1982; Michell,1979) As Schneider (1995) posits,

Pentagonal symmetry has been long revered due to its profound insight into living nature and to the powerful psychological hold it has upon people throughout the world. It manifests itself in
surprising ways and places in art, crafts, architecture, religion, magic ritual, national icons, and much else that is rooted deep within us (Schneider, 1995:97).

The Fibonacci series of Leonardo of Pisa (c.1170-c.1250) reaches into many areas of science, the natural world and art – related to the Golden Ratio; Golden Angle; Divine Proportion, and the spiral forms of organic growth – the phyllotaxis of botanical growth. In nearly all flowers, the number of petals is within the sequence 3, 5, 8, 13, 21, 34, 55, 89 (the Fibonacci sequence); lilies 3; buttercups 5; delphiniums 8; marigolds 13; asters 21; daisies 34, 55 or 89 (Stewart 1998:22). The Golden Ratio (sometimes erroneously) has been connected with many art works, architectural forms, pieces of music, human measurement and form and poetry as a cannon for ideal beauty stressing a fixed standard for aesthetics (Livio, 2002). Artists, most notably Leonardo da Vinci (1452-1519) and Dürer, also discovered and revealed their beauty while early astronomers built a theory of the cosmos around them (Kemp, 2000).

It can be seen that the simplest mathematical objects are numbers, and the simplest of nature’s patterns are numerical (Huntley 1970; Ghyka 1977; Stewart, 1998). Many theories, effects, laws and sets, have developed since the Ancients e.g., Euclidian versus Non-Euclidian theory and the Chaos theory of Henri Poincaré (1854-1912), Ilya Prigogine and Isabelle Stengers (1984), and Jonathan Mendelson and Elana Blumenthal (2003). Abstract art was greatly influenced by contemporary studies in mathematics and physics and the science/art writer Martin Kemp (1992:29) acknowledges many artists who have consciously looked at the structures of growth in nature and allowed an organic
discipline to inform their work, both intuitively and consciously. Sian Ede (2000), Doris Schattschneider (2004) and Mario Livio (2002) all declare the essence of non-Euclidian geometry can be found in the art of Maurits Escher (1898-1972) who has captured pictorially the geometry of space and the logic of space; in the work of Plate 2.5.2, Escher solves the mathematician Roger Penrose’s (b.1931) puzzle – periodic tiling.

![Plate 2.5.2 Penrose, Escher, 1971 (Schattschneider, Visions of Symmetry, 2004)](image)

Using well defined algorithms, Escher’s designs were precursors to fractal tilings - today called “self-similar” tilings and are the subject of mathematical research.

(Schattschneider, 2004; Livio, 2002; Hofstadter, 1979)

2.6 Perceptions of Space and the Aesthetics of Geometric Form

We become so accustomed to a regular scenery or background pattern that irregularities stand out, and we continue to learn to recognize new kinds of patterns. The character of space was not recognized until the non-Euclidean
geometers of the nineteenth century and the twentieth century theories of Einstein showed that there are other spaces, and that patterns and forms in those spaces differ from the ones we see in ours. As we have evolved to fit our own space, it is hard to visualize those other spaces. Only within the last thirty years have we become aware of two new pattern systems – fractals and chaos. Fractal was a word invented by Benoît Mandelbrot (1983) to describe the irregular and fragmented patterns that surround us, which Euclid’s regular geometry failed to address - the shape of a cloud, a mountain or a coastline. Mandelbrot (1983) claims

...that Nature exhibits not simply a high degree but an altogether different level of complexity. The number of distinct scales of length of natural patterns is for all practical purposes infinite (Mandelbrot, 1983:1).

Chaos is a kind of apparent randomness whose origins are entirely deterministic (Briggs,1994). Fractals are shapes that repeat their structure on all scales of magnification – the simplest being continuously self similar, copies of copies. Given that these are mathematical ideals, real world versions will always be imperfect – as no two forms, objects etc. can be exactly the same, and the closest look will reveal a composition of atoms (Stewart,1998). But mathematic descriptions have been devised and we have come to realize that there are spaces in the world of the very small – fundamental particles, smaller life forms and in the world of the very large – the universe. John Briggs (1994) sees Chaos theory and fractal geometry as extending science’s ability to establish order in perplexity.
Briggs (1994) postulates that Chaos theory and fractal geometry echo earlier scientific discoveries of the twentieth century: the fundamental uncertainty that Kurt Gödel's (1906-78) theorem found buried inside mathematics, and the array of essential atomic uncertainties and paradoxes unearthed by quantum mechanics (Hoftstadter, 1979). Science seems to begin to understand nature only to find that nature is forever shifting, slipping just beyond understanding with a self serving order. Whereas Euclidian geometry idealizes forms (albeit in the controlled sense – the regular, ordered forms of triangles, squares, circles and curves in smooth and regular formation), fractal geometry, still idealizing form, focuses on dynamic movement, ragged lines and spaces that are neither line nor plane nor solid, and this is what attracts the artist (Briggs, 1994; Stewart, 1998).

Briggs (1994) argues that artists have always exploited and valued what might be called “the order that lies in uncertainty”, in the sense that

Artists have perennially discovered in the doubt, uncertainty and haphazard of life a harmony that goes straight to the essence of being. Whatever it is that the painter, poet, or musician depicts – whether abstract or realistic – the artist’s final product implies worlds within worlds. Within art there has always been something more there than meets the eye, the mind or the ear. Because of this ability to intimate worlds within worlds, art has always been fractal. The science of chaos is helping to newly define an aesthetic that has lain beneath the changing artistic ideas of different periods, cultures and schools (Briggs, 1994:28).

The fractals of Mandelbrot and Briggs will argue complexity, and that measurements can never be perfect, but they are a point from which to start. Is nature that complex, or is it the many different perspectives that create the
perplexity? The same complexity can be attributed to art where layers are added or subtracted, depending on the context of placement, and the perspective of the creator or viewer. But there is a search for order and understanding in all divisions of human enquiry which tends to simplify the complexities.

The beauty of the hidden forms of fractal geometry attracted artists and, from the 1970s, fractal art (Plate 2.6.1) developed with the use of computers and programmes. The work by Homer Smith (1988) exemplifies the artistic influence of the Mandelbrot Set – a self replicating (at many scales) mathematical system, which scientists now use in order to attain insights into the nonlinear (chaotic) dynamics of real systems (Briggs, 1994).

Plate 2.6.1 The Orchid, Homer Smith – 1988
(Briggs, Fractals, 1994).
Mathematicians themselves are not immune to the patterns they produce through their computer modelling processes. Darsh Ranjan (2005) from Princeton University explains that the image created in Plate 2.6.2 is a computer modelled crystal structure that,

...grows on its black substrate from a pentagonal seed by reflecting it across its 5 vertices and rescaling the new pentagons by a factor of 0.61803..., the “golden mean,” back towards the point of reflection, and repeating this for all the new pentagons, *ad infinitum*. Each seed can have its own rule to determine its color and the colors of its descendants. The growth of a single seed has finite area but infinite detail (possessing a fractal dimension of 2). This crystal is strange because crystals in nature do not possess 5-fold symmetry on any large scale, while this one can fill the entire plane very nicely with appropriately placed seeds. In understanding this shape, the arithmetic of the integers extended by the fifth roots of unity proves very helpful (Ranjan, 2005).

Plate 2.6.2 Strange Crystal, Darsh Ranjan, 2005 – Department of Mathematics
http://www.princeton.edu/artofscience/gallery/view.php%3Fid=76.html
2.6.1 Motif and Symmetry

The mathematical rules of the universe are visible to us in terms of what we call motif, symbol, form, symmetry and beauty, and the desire to link all things together to find reason for the whole can be seen as an innate quality. This affinity for completeness is closely associated with the human attraction to symmetry and beauty, says John Barrow (1998). He states that

This biological source of our appreciation of symmetry is supported by the fact that our most acute sensitivity for symmetry is manifested in appreciated of the human form, especially the face – which is our most common indicator of beauty… and in humans has all manner of by-products which influence our aesthetic appreciation and underlie our acute sensitivity to patterns, symmetry and form (Barrow,1998:5).

The documented artefacts of early civilizations from as far back as the Stone Age reflect the aesthetic concept of geometric symmetry humans have continually used as ornamental or symbolic representation. The experimental psychologist Richard Gregory (2004) identifies our tendency to seek out symmetry as important for our survival and a physical characteristic possessed by nearly all living things. Symmetry underlies the classification of fundamental particles and the forces through which they interact – intrinsic to mathematical calculations and theories, trying to find repeatable patterns. Platonic perfection, with the ideal of symmetry, was expressed by much of classical art, and twentieth century artists, most notably Paul Klee (1879-1940), Constantin Brancusi (1876-1957), and Piet Mondrian (1872-1944). Seeking a universal holistic vision, they held the philosophy that there was a natural harmony
underlying nature and applied it through the paradoxical perspective where asymmetrical works indicated an ultimate symmetry (Ede, 2005; Hahn, 1998)

In the phylogenesis (family history) of organisms, their morphology has described extensive specifics of symmetry on the relative structuring of living matter, and Werner Hahn (1998) demonstrates symmetry as a far-reaching, leading, structuring, causal element of evolution, as fundamental to nature and culture and the form-developing process in art. Rupert Riedl (1978) believes a world without symmetries would be inconceivable and probably not possible at all; our senses, our consciousness are formed according to symmetries, as the driving force behind organization and evolution. Hahn (1998) expounds that the view of symmetry as an evolutionary concept which could lead to a new unity of science and art. He sees that encompassing the study of nature and art through interdisciplinary and transdisciplinary researching and integrating of evolutionary aesthetics can counter the postmodern anaesthetization of everything aesthetic, and could potentially lead to the objective explanation of natural and artistic beauty. Any divergence of the artistic and scientific descriptions of the world has perhaps been made prominent by the focus of twentieth century artists upon abstract images and distortions of the everyday picture of the world, though as Barrow (1998) points out,

one of the most extraordinary consequences of human consciousness is the ability it gives us to imagine things which are physically impossible. By this device we can explore reality in a unique way – creating resonances of meaning and juxtapositions of ideas which are mind-stretching and stimulating (Barrow, 1998:13).
There are many artists whose work centres on the observations of pattern and form influenced by the harmonies and symmetries of nature, emerging as strong themes in the art of the twentieth/twenty first century artists Damien Hirst (b.1965), Antony Gormley (b.1950), Bridget Riley (b.1931), Andy Goldsworthy (b.1956), Yayoi Kusama (b.1929), Mona Hatoum (b.1952) amongst many – through the effect of repeating motifs.

Again, the work of Escher is especially known for his use of space, symmetry and motif, which Schattschneider (2004) describes as visual poetry to characterize Escher’s use of repetition, rotation, and reflection in his recurring and diminishing patterns of interlocking shapes (his tessellations). Escher’s work in Plate 2.6.3 (see also Plate 2.5.2) has created stimulating patterns with nature’s forms – patterns within patterns; which Douglas Hofstadter (1979) compares to the fugues of the musician Johann Bach (1685-1750).

Plate 2.6.3 Smaller and Smaller, Escher, 1956, (Schattschneider, Visions of Symmetry, 2004)
2.6.2 The Physical Geometrics of Form

The shapes of classical geometry (lines, planes, circles, spheres, triangles, cones) were often viewed as a \textit{sacred geometry} - abstracted from nature and motivating the influential philosophy of \textit{Platonic Harmony} (after Plato); from which Euclid created a geometry that lasted more than 2000 years. Livio (2002), and Stewart (1995;1998) come from the contemporary, scientific view and debate the assumptions of earlier mathematicians like Samuel Coleman (2003), Robert Lawlor (1982), Theodore Cook (1979), Daniel Pedoe (1976) and Herbert Huntley (1970), in exaggeratedly attributing the use of \textit{nature’s numbers} and \textit{sacred geometry} to much of the formation of architecture, art and philosophy of the ancients through to the Renaissance, and beyond.

Hahn (1998) recounts that the intentions of early twentieth century artists Klee and Wassily Kandinsky (1866-1944) were to show in their own sense of art, a related growth pattern of artistic and organic structures by discovering the forms and factors which participate in the development of shape and its changes – to shape something “intellectual and organic” according to Goethe’s \textit{laws of reality and nature}. Klee started with the basic, purportedly from chaos, leading toward order, which Hahn (1998:121) defines as a “boundless action of form.” Klee saw form and therefore “art as genesis” (Klee;1962:92). Paul Cezanne (1839-1906) saw colour as form and “art as harmony parallel to nature were everything in nature models itself …as sphere, cone and cylinder” (Hahn, 1998:122).
Beyond personal philosophies of the *sacredness* or *reality* of nature, all would surely agree, however, that there are consistencies underlying the production of nature's forms, patterns and the rhythms, of which humans (being part of nature) cannot be immune. It is thus that heterogeneity can be turned into pattern, where any duplication of shape, tone, colour or form is distinguishable and related. It is why we see shapes and faces in clouds, rocks and trees – Plate 2.6.4, and why we are amazed at nature mimicking itself – plate 2.6.5.

**Plate 2.6.4** Profile in mountain – forms in nature to which we give meaning. (Michell, Simulacra, 1979)
Plate 2.6.5 The Leaf Mantis – evolved to be as its background.
(Schneck, Patterns in Nature, 1991)

By studying the strange and sometimes counter-intuitive processes we discover that nature's patterns recur again and again in matter and place where there is seemingly no connection. The historian Simon Schama (1995) quotes the artist Rene Magritte (1898-1967) as saying that

...we see ... [the world] outside ourselves even though it is only a mental representation of what we experience on the inside. What lies beyond the windowpane of our apprehension, needs a design before we can properly discern its form, let alone derive pleasure from its perception. And it is culture, convention, and cognition that makes the design; that invests a retinal impression with the quality we experience as beauty (Schama,1995:12).

The complex natural forms tend to have similarity within diversity (as illustrated in Plates 2.6.6 to 2.6.8) which nature continually displays as apparent contradistinctions.
**Plate 2.6.6** Nautilus shell, plant frond and curled millipede
- Logarithmic spiralling forms repeated seemingly coincidentally
  (Schneck, *Patterns in Nature*, 1991; Braasch, 1999)

The patterns in Plate 2.6.6 are in the form of the logarithmic spiral, first characterized mathematically by Descartes in 1638 (Ball, 1999:11), and is the definitive form of sea shells, horns, or any material where a constant rate of growth or force is greater on one side than the other, which Thompson (1992) noted is mathematically well defined and comprises a simple growth law.

**Plate 2.6.7** Cushion sea star and diatom – one-celled sea algae, magnified x1460 (Michell, *Simulacra*, 1979)
Plate 2.6.8  Sea wave flow and marble vein patterns  
(Schneck, *Patterns in Nature*, 1991)

Plate 2.6.7 reveals form repeating in animal and plant growth and pattern that is also reminiscent of Islamic design, while Plate 2.6.8 illustrates nature’s flow patterns are evident in many different materials. The enquiry into nature’s design system brings an understanding of some of the basic configurations found throughout natural forms displayed as spheres, radiations, spirals, cylinders, meanders, curves and flows, branchings and angles; shapes and patterns that humans have continually appropriated for their designs and structures.

*Biomorphic* styles of the *Art Nouveau* period and its extensions of *Geometric Abstractionism* of the *De Stijl* movement in the early twentieth century has revisited an influence on the natural contemporary architecture of *Zoomorphic designs* – Plate 2.6.9 (Aldersley-Williams, 2003).

2.6.3 The Shape of Life

The urge to connect with other life forms is termed the biophilic tendency which Wilson (1984), sees as the innately emotional affiliation – engrained in our genotype – of human beings to other organisms, which ranges on the scale from aversion to attraction. It explains why people need to connect with nature; desire to live near parklands and waterways, watch wildlife programs and strive to protect endangered species. It is this pattern recognition through which we tend to anthropomorphize other forms of nature. It is relevant to our assumptions of nature, landscape, art and mythopeia.

The beauty we can find in nature’s designs is endless, and it nature that has skilled us in the all human perception including that of science and art. It is physical nature that has taught us to perceive patterns. Rainbows tell of the
scattering of light and imply that raindrops are spherical; the periodic form of waves are evidence of the flow of water, as are the patterns of sand and air; the stripes and form of a shell or the markings of a fish and all attest to mathematical regularities in biological growth and form, which Thompson (1992) eloquently describes:

The waves of the sea, the little ripples on the shore, the sweeping curve of the sandy bay between the headlands, the outline of the hills, the shape of the clouds, all these and so many riddles of form, so many problems of morphology, and all of them the physicist can more or less easily read and adequately solve. ...Nor is it otherwise with the material forms of livings things. Cell and tissue, shell and bone, leaf and flower, are so many portions of matter, and it is in obedience to the laws of physics that their particles have moved, moulded and conformed (Thompson, 1992:10).

Plates 2.6.10 To 2.3.21 give example of some of these design templates – the blueprints of nature (Ball, 1999) – all found within the marine environment – a combination of patterns of taxonomy (classification), morphology, symmetry, motion and growth.

**Spheres**

![Plate 2.6.10 Fish eggs](Image)

![Plate 2.6.11 Sea Sponge](Image)
Cylinders

Plate 2.6.12 Mangrove roots

Plate 2.6.13 Ascidian – Sea Squirt

Branching/angles

Plate 2.6.14 Sea Fern

Plate 2.6.15 Sea Star

Spirals

Plate 2.6.16 Spiral shells

Plate 2.6.17 Octopus
Meanders

Plate 2.6.18  Brain Coral  
Plate 2.6.19  Sea Snakes

Radiating

Plate 2.6.20  Sea Urchin  
Plate 2.6.21  Fan Worm


There still remains many unknown or described species however the biology of known life form is basically categorized in terms of hierarchy – starting from the largest taxonomic (classification) unit – that of, kingdom, phylum (the Greek word meaning tribe/race/stock/division), class, order, family, genus and species. Ranks in addition to these are given finer distinctions to specify relationships such as, subclass, suborder, superorder, infraorder, superfamly,
subfamily, tribe, subtribe, subgenus, subspecies. The average person is likely to know the common name of an organism but scientists need a much more rigorous classification system. Until the Swedish botanist Carl von Linné (1707-78) – his name was Latinized to Carolus Linnaeus – developed a standardized naming method, there was no clear cut scientific nomenclature for plants and animals. His main contribution was the introduction of generic and specific names. The system itself has remained the same though certain criteria for placing have changed. The scientific name for each organism consists of two Latin names (in italics) – the first is the Genus, the second the species (the genus begins with a capital letter, the species is lower case), often with the name of the author/discover and the date in brackets after. An unpublished or unclassified organism where the genus is known but not the species has the generic name followed by sp (Burnett & Matsen, 2002; Coleman, 1991; Rosenberg, 1992). To give an example of the scientific classifying system, the modern human species would be detailed as:

<table>
<thead>
<tr>
<th>kingdom</th>
<th>Animalia</th>
</tr>
</thead>
<tbody>
<tr>
<td>phylum</td>
<td>Chordata</td>
</tr>
<tr>
<td>subphylum</td>
<td>Vertebrata</td>
</tr>
<tr>
<td>class</td>
<td>Mammalia</td>
</tr>
<tr>
<td>order</td>
<td>Primates</td>
</tr>
<tr>
<td>family</td>
<td>Hominidae</td>
</tr>
<tr>
<td>genus</td>
<td>Homo</td>
</tr>
<tr>
<td>species</td>
<td>sapiens</td>
</tr>
</tbody>
</table>

Diversity is the key to the survival of life, and it is the most neglected (from the human perspective) and diverse forms of life, the invertebrates, that make up ninety eight per cent of the animal kingdom (Burnett & Matsen, 2002). Humans could not survive without invertebrates yet invertebrates would obliviously
continue without the human species. There are thought to be between three million and fifteen million species in the world (with 47,000 species of vertebrates). Of the roughly thirty five basic body plans called phyla, about ninety per cent of the billions of species that ever lived, belong to only eight of these groups (Burnett & Matsen, 2002). The recognition of the structure of place and the body patterns of its inhabitants is how the marine littoral place can begin to be described, and all of these patterns of form are to be found in the local littoral place:

**Sponges** – There about 10,000 known species of sponges which only officially became part of the animal kingdom in 1825 – only about 150 don’t live in the sea.

**Cnidarians** – *(corals, anemone, sea jellies)* the first animals with a regular form and the ability to really move – also about 10,000 species

**Flat worms** – (many colourful) hunters that now have a head. – known around 20,000 live today on land, fresh and salt water.

**Annelids** – (meaning ‘little ring’ – tube/Christmas tree/fan worms etc.) – segmented worms, about 15,000 species (now we have legs).

**Arthropods** – (Crustaceans – *crabs, prawns, barnacles etc.*) the first true eyes. Meaning jointed leg – the Greek root from which derives the modern word **Art** (defined as the joint between actual and imagined). Out of the 1½ million described species, over 1 million are arthropods – this includes of course insects of all sorts – on which we depend.

**Molluscs** – *(gastropods, bivalves, nudibranchs, chitons, squid, octopus etc.*) around 70,000 species today – their shell is the key to their success as survivors.

**Echinoderms** – *(sea stars, urchins, sand dollars etc.*) are enigmas in the animal world. Around 6,500 named species.

**Chordates** – *(fish, dolphins, humans and most recognizable animals)* vertebrates – includes 50,000 species. Yet fewer than 5% of all animals that ever lived on earth have/had backbones.

(Burnett & Matsen, 2002; Mather & Bennett, 1993)
2.6.4 The Scales of Form – Magnitudes and Milestones

The technological developments of science have coincided with progressive thoughts and discoveries on the dynamics of form and pattern. The end of classical optics began around the time the painter/sculptor Brunelleschi decided to make a painting look just as it appeared in reality. In the years that followed Alberti’s (1404-72) publication De pictura, On Painting (1435) - which rationalized what Brunelleschi had done – artists developed new techniques of representation and looking at space and volume (Livio, 2002). New canons of beauty were being formed and this began to challenge the old assumptions of vision and reality, although the church had to be placated before the new metaphysics was accepted (Daston & Park, 2001).

Visual perception is extremely important for the science and the aesthetics of pattern and form and, just as the use of tools has extended the skills of the hand, optical implements have extended the use of the eyes. The significance of lenses as tools of science and art was not realized until the Renaissance (Park, 1997). This simple genre of shapes – named after their similarity to lentils (the Latin for lentil is lens) – has allowed us to transform time and space and to study perception itself (Park, 1997; Gregory, 1997). Galileo’s, then Newton’s improvement of the telescope changed the focus of science and philosophy.

Like no other invention, the microscope has revealed the secrets of nature. The human eye has a resolution in the order of 100 um (10^{-4} m), which is about the thickness of a hair (Amato, 2003). With the microscope, a new world was
exposed to the human eye, bringing a new perspective which altered concepts of our world and nature’s boundless surprises, a world in which knowledge of its intrigues can inspire our imagination.

Interest in the microscope did not eventuate until Robert Hooke ((1635-1703) published his book *Micrographia* (1665), and Antonie van Leeuwenhoek (1632-1723) conducted his experiments with the microscope in the 1670s (Amato, 2003; Kemp, 2000; Park, 1997) – but from then on *reality* would never be the same, as other *worlds* came into view. A new vision through a small simple tool began to open up the world beyond recognition.

Art, traditionally seen as the work of artists, has also been produced by scientists appreciative of these forms in nature. Nature’s miniature forms and patterns have been represented by both artists and scientists, as illustrated by the scientific records of Hooke (Plate 2.6.22) and the nineteenth century biologist/artist Ernst Haeckel’s (1834-1919) detailed drawings of the organisms he studied (Plate 2.6.22).
Plate 2.6.22  *Eye of a Fly*, Robert Hooke, from *Micrographia*, 1665.  
(Kemp, *Visualizations*, 2000)

Plate 2.6.23  Various species of Radiolaria – drawn in the 1800s by Ernst Haeckel, as seen through the microscope (Haeckel, 1974)
For Thompson (1992) all the concepts of form and direction must refer to the terms of magnitude. Object and form can only be defined when its magnitude is known – e.g., the growth and extension of the body in several dimensions of space. We have become accustomed to thinking of magnitude as a purely relative matter, that things are viewed as big or little by comparison.

The observed orders of magnitude have moved beyond the early geometer's thoughts on nature – nature as number, and the precursive studies of the ancient Greeks, to the realization of modern physics, that all scales and departments in nature are linked by the same codes, in magnitudes of space. More than forty two orders of magnitude – from below a millionth of a billionth of a metre \(10^{-15}\) (a proton of the hydrogen atom) to beyond a hundred trillion trillion meters \(10^{26}\) (a distant galaxy) are now observed. These magnitudes display a universe woven in polarities, positive and negative charges of sub-atomic matter, and recurring eight step cycles to manifest all atomic matter (Morrison & Morrison, 1982; Amato, 2003). Combined with the knowledge of the ninety two naturally occurring periodic elements and the immense spatial scales that describe our universe and beyond, there is a realization that paradoxically we can understand so much more by looking further into these magnitudes, yet only to realize that we see and know less and less.

With the theories of quantum physics, new possibilities appeared – the electron, with its extremely short wavelength could illuminate with unprecedented resolution; and the first electron microscope was constructed around 1939. In
the decades to follow, smaller and smaller objects were studied, with magnifications up to one million times, atoms thus finally being seen by the human eye (Amato, 2003). With the camera developing alongside microscopy, we have been allowed to follow the tracks of scientists. Pictures of cell division and images of the nerves (dendrites) that make up the brain have changed our view of the human body and nature itself. Even today, our ability to examine nature intensifies, owing to new techniques of microscopy for studying delicate processes within the cell or the building of materials – atom by atom with nanotechnology (Amato, 2003). Alongside the drive to discover the meaning and structure of life, the aesthetic appreciation of the smaller forms of nature has also developed.

2.7 Scientist as Artist, Art and Science

The paths of science and art continue to cross and merge, as the palaeontologist/zoologist/writer Stephen J Gould (2002) states,

we cannot perceive the world in a totally "objective" manner, for we must filter reality through meshes of physiological preference and social prejudice (Gould & Purcell, 2002:87).

Yet we are extremely adept in unfamiliar spaces at distinguishing forms and systems of organization comparable to those with which we are familiar, as the science and arts writer Kemp (2000) speculates,

...why do we gain pleasure from seeing a beautiful tree and its surrogate in a painted landscape? My suspicion is that what we call the ‘aesthetic impulse’ is part of the feedback mechanism that reinforces our hugely demanding attempts to make coherent sense of those natural orders with which we can and must work if we are to survive. Our pleasure in pattern, in symmetry, in order and its judicious breaking, in minutely discriminatory acts of recognition,
and so on, provides a system of gratification and reward. We have
the ability to activate this system artificially; an ability that we have
cultivated in science no less than in art (Kemp, 2000:2).

There are many examples of science influencing art and vice versa, and the
pattern propensity of nature has inspired artists and scientists from all eras. The
arts have a long history of cross disciplinary practice, and have freedom to make
associations that the scientist is often discouraged from by the strictures of the
scientific method – the hypothetico deductive method, of specialization,
rationalization and reductionist practice. Yet, it is contemporary science that
continually forges the way with new metaphors and paradigms for viewing the
world. Artists also operate through an awareness of the world yet, as Ede
(2000) warns, that although,

the arts constituencies have their discourses...they should not
ignore the emerging paradigms of science, for these are already
becoming part of the currency of the wider world and deserve to be
taken seriously (Ede, 2000:17).

While exposing the beauty of the miniature, the exploration of the microcosmos
has led to numerous discoveries in science. With electron microscopes, and
other scientific measuring and recording devices being able to see the
microscopic object and its processes, contemporary scientists and artists alike
have been stimulated to expose the forms and processes of nature they reveal.

Looking like an abstract painting, Plate 2.7.1 presents a computer coloured
image of the collision pathways taken by smashing atoms take within the bubble
chambers science uses to track them – the subatomic particles causing these
traces are approximately one-millionth of one-billionth of a metre – 1 fermi (10^-
$15^m$ – ten minus the power of fifteen). It is indicative of nature’s intrinsic design processes and our ability to read them as such, which are displayed every second of every day; we just need to be able to see what is there to be seen. Plates 2.7.2 to 2.7.9 are also examples of how scientists turn to art and artists turn to science as they are inspired to depict and recreate natural processes and patterns and see further into the structure and substance of the natural world.

Plate 2.7.1 Smashing atoms

Angstrom Art is comprised of interested people from the University of Queensland's Institute of Molecular Bioscience who have an enthusiasm for visual art and an interest in raising awareness of science within the community. Plate 2.7.2 gives an example of the aesthetic these scientists are attuned to.
Plate 2.7.2  *Confocal Continuum* – Kevin Lock, 2002
Angstrom Art, University of Qld – [www.imb.uq.edu.au](http://www.imb.uq.edu.au)

Plate 2.7.3  *Virus Capsid Protein*, Julian Voss-Andrea, 2003
Cast and fabricated bronze, length 23 cm – artist and scientist
[www.julianvossandrea.com/Artist/](http://www.julianvossandrea.com/Artist/)
Julian Voss-Andrea (Plate 2.7.3), a science trained artist, uses molecular form as artistic inspiration, and similarly Laura Splan (Plate 2.7.4) is an artist working with molecular magnitudes.

Plate 2.7.4 *Doilies (SARS Virus)*, Laura Splan, 2004 (computerized machine embroidery with thread, velvet, wood, plexiglas 16.5” x 16.5”)

Plate 2.7.5 *Kidney*, Jason Hampton, 2002 (ConVerge, *Adelaide Biennial 2002*)
Jason Hampton’s work in Plate 2.7.6 incorporates the health issues that indigenous people are confronting, modern technologies and the traditional style of Australian Aboriginal X-ray painting to illustrate the bio-medical function of the kidney’s filtering system.

Plate 2.7.6  *Electronic Grace* – the movement of electrons in a layered semiconductor crystal. 2000, Physicist and artist Eric Heller, Harvard University (Heller, 2004, [www.ericjhellergallery.com./index](http://www.ericjhellergallery.com./index))

The strange, often chaotic quantum domain yields forms which the theorist physicist Eric Heller (2004) uses as a medium, creating images which convey the mystery of quantum physics. Heller (2004) sees that

…there is a connection, a feedback from the science to the art and back again. In me, this has happened many times and has led to new scientific discoveries through the attempt to produce art (Heller, [www.ericjhellergallery.com./index](http://www.ericjhellergallery.com./index), 2004).
Even beers undergo scrutiny to reveal hidden patterns and colours under the microscope – shown in Plate 2.7.6.

Plate 2.7.7 A Photomicroscopy of Beers
Plate 2.7.8  Fragment of the organ Corti – structure in mammalian ears that converts sounds into nerve signals (high resolution light microscope) University of Bristol, photo M Holley (Ede, 2000)

Plate 2.7.9 The same image as an artwork by Sandra McQueen, *Fragment of the Organ Corti*, 1994, enamel on copper (Ede, 2000)
Artists have always been aware of shape and pattern, swiftly perceiving their possibilities. They also are capable of what Kemp (2000) sees as structural institution suggesting alternative interpretations that can contribute to a greater understanding of the structure of natural phenomena. Although the inter-relationship of art and science may have been in existence for centuries – in varying degrees – the pioneering of arts-science collaborations is a relatively new phenomenon. Organizations such as London based Arts Catalyst, and Sciart programmes, set up ways for both disciplines to reflect new ways of seeing. Closer to home the art/science alliance is cultivated through enterprises like Angstrom Art by the University of Queensland and the Adelaide Biennial of Australian Art 2002, presented through conVerge: where art and science meet. Challenging new facets of artistic response to questions such as ecology, physical sciences, biotechnologies, Indigenous knowledge, information technology and cognitive sciences; where all artists represented were involved with scientific research.

In essence, Science and Art enjoy a close though complex association; their strong divergences are matched often by strong similarities. Science offers a means of revealing underlying forms which are imposed by surprisingly simple yet implacable set of rules. These rules impose a set of hierarchies and networks that are to a large extent indifferent to the scale at which they operate, they are necessary and ubiquitous though often not apparent to the insensitive observer.
Humans have limited sensory capacities, a limitation which makes us quintessential pattern spotters. Faced with a necessary incapacity to absorb and process everything, we are forced to extrapolate from what we select as key data or impressions. Much of what we do select as worthy of recognition works as a basis for effective extrapolation because it is predicated on an unconscious response to unrecognised/underlying natural pattern. The hypothesis that the iterative interaction between nature's unknown patterned templates processed through our order seeking senses results in the development of interpretative schema such as the scientific and the artistic is thus a reasonable one.

Environmental issues, our connections to, and perceptions of place are not contemporary subjects yet they pervade current dialogues. A culture’s place in nature is more than an intellectual debate or interest, as beliefs influence actions which, in turn, affect our thoughts of, and interactions with places. The scientist may tend to overlook the complexity of the diversity of human subjectivities in the pursuit of reducing nature to a set of understandable equations. Yet even the most detached scientist must start and conclude their study in the subjective field of experience. None of us, whether scientist, artist or whomever, can ever completely succeed in being purely a spectator of the external world or our interactions with it. Therefore the human element cannot be removed from any theoretical approach as all knowledge is gained through the common human/nature denominators, and every action and every thing has a place connection. But what is place?
CHAPTER 3 – Place and Person: Identity and Connection

3.1 What is Place?

Humans have been depicting and representing features of their local landscape since at least the Upper Palaeolithic period – c.40,000 BCE. Rock carvings and paintings – early maps (petroglyphs) – were created as ancient peoples began orientating themselves by mapping their surrounds. The world view of many native peoples was structured around their interactions with the natural environment they lived in – their place. We automatically use the word place to describe the world and our connection to it, yet the idea or concept of place is a modern one. The Ancient Greeks had no word for universe; their world was pan – the All, all there is. Cosmos, as the natural philosopher Edward Casey (1993) explains, implies what was bodily sensed, through the essential reference of the aesthetic experience of place – cosmos and cosmetic sharing connection to aisthēsis as a bodily sensing (an aesthetic being). The ascendency of the concept of universe over cosmos is what Casey (1998) sees as deriving from a transition in which

the universe [in its original Latin form as universum – the turning around one totaled whole] is a passionate single aim of Roman conquest, Christian conversion, early modern physics and Kantian epistemology. In contrast, “cosmos” implies the particularity of place; taken as a collective term, it signifies the ingrediency of places in discrete place-worlds (Casey, 1998:78).

To understand the idea of place, this chapter, following from the scientific filtering perspective, now leads into a consideration of the complex and often unheeded nature of place. It is necessary first to take a brief look at how the notions of space and place have been caught up in the theorizing and debates
of Western thought, encompassing the abstract and sometimes cold physics of space’s central position over place, and its affiliation with time, to the progressively challenging ideas of the twentieth century and contemporary philosophers and humanist geographers. How does one describe place and what do we understand by the concept?

The nature of place is explored through the central position of the human perspective – from which it cannot be separated. It is important to understand the ideas of identity and place and the functioning of the human connection with the natural environment, tracing through a literature trail that leads into the realms of the primordial bond and the concept of tophilia. Clearly, however, all social constructions reflect the values of a society and era, and objectivity and pure theory are unsupportable under these variable considerations.

The demise of a sense of place, coupled with the detachment people are feeling as we become consumed by new technologies and global environmental issues, is sourced in the endeavour to set a scene for the re-entry into the particular place.

3.2 Notions of Place in Space

Place, space, location, site, zone, position, locality, setting, vicinity, scene, area, region, district, spot; such words proliferate in the descriptions and associations of placement and orientation. We cannot escape being in place, it encompasses our every decision, from where we will live, to our daily
movements of where we are, where we will go and who we will meet, even to
how we will feel. Yet we rarely consciously consider how important it is to us.
Casey (1991) argues that our lives are so place orientated that, without the
ability to place ourselves within space and time, we would truly be displaced
persons, not just without a place to live and interact with, but also without
memory. Not to have any connection with place or memory of place would
render us virtually non-existent. So, being, therefore, must equate placement.
Whether that placement is good or bad is another issue.

Space and place are human constructs to explain our outer world with their
meaning often merging in usage. We cannot escape space; we are placed in it;
we live in it; we move in it; we are affected by it. The notion of, and debates on,
place, space and time have continued over more than two millennia – from at
least Aristotle’s era (384-322BCE) to this day, with many noted debaters such
as lamblichus (2nd century CE) and Plotinus (c.205-270), Nicholas of Cusa
(1401-64) and Giordano Bruno (1548-1600), Descartes (1506-1650) and John
Locke (1632-1704), Isaac Newton (1642-1727), Gottfried Leibniz (1646-1716),
Gaston Bachelard (1884-1962) and Michel Foucault (1926-84). It has occupied
the intellectual space of Immanuel Kant (1724-1804), Alfred Whitehead (1861-
1947), Edmund Husserl (1859-1938), Maurice Merleau-Ponty (1908-61), Martin
Heidegger (1889-1979) and Luce Irigaray (b.1932), but place lost ground to time
over the last two hundred years and was “…reduced to locations between which
movements of physical bodies occur” (Casey,1998:x).
The view of the *place-world*, from the modernist, reductionist perspective – espoused by Locke (1959) – was assumed to derive from impersonal, direct spontaneous experience, observable through the objective dimensions of our instruments and equations. This view of place, according to Casey (2001), kept personal identity and place far apart through the tenet that there is no relation between the self and place, where “place belongs entirely to the physical world, the self to the realm of consciousness, and the twain supposedly never meet” (Casey, 2001:405). If this Cartesian view kept mind and matter separate, it also gave primacy to space over *place*, a view which Casey (2001) challenges,

I maintain the “space” is the name for that most encompassing reality that allows for things to be located within it; and it serves in this locatory capacity whether it is conceived as absolute or relative to its own nature. “Place,” on the other hand, is the immediate ambiance of my lived body and its history, including the whole sedimented history of cultural and social influences and personal interests that compose my life-history (Casey, 2001:404).

The intellectual landscape of Postmodernist thought began to contest the modernist dichotomies of self apart from body and *place*. The geographer Robert Sack (2001) suggests that places require human agency, while Casey (2001) specifies that place is required for the self to become, as,

personal identity is no longer a matter of sheer self-consciousness but now involves intrinsically an awareness of one’s place – specifically geographical awareness (Casey, 2001:406)

Sack (1997) believes that space is coextensive with nature, arguing that he “…personally think[s] of nature as the most basic category, and thus would say that space is primary to *place*” (Sack, 1997:265). While it cannot be denied that *places* are in space, Sack (2001) points out that an often neglected fact is that for humans, both the effects of space on our behaviour and our use of space are
mediated by *place*. Casey (1993) himself is of the view that space itself could
constitute *place* even if the infinity and silence of space reflects emptiness. For
Sack (2001), *places* are “the primary means by which we are able to use space
and turn it into humanized landscape” (Sack,2001:233). Casey (2001) sees
Sack’s (1997) analysis as Cartesian, countering with his own view

...that space and place are two different *orders* of reality, between
which no simple or direct comparisons are possible. ... Nor can we
justifiably affirm that place somehow derives from space: that it is
dependent on it and shaped by it (Casey,2001:404).

The argument from science might be that everything is restricted by three
dimensional space, and the physics of space itself has a structure that
influences the shape and behaviour of every existing thing – it is not just a
backdrop. The case is that every form, pattern and object conforms to the
compositional dictates of space; where the forming mechanisms are controlled
by forces and the restrictions or assistance of space. (Wilson,1996;
Stevens,1974)

It is evident from the literature that a distinction is often made between *space
and place*, and can be of assistance in understanding their established meaning.
Yet *space* and *place* are both abstract terms with complex meanings, both of
which we have different ways of experiencing and describing; either directly and
intimately or indirectly and conceptually, *space* can transform into *place* as it
gains definition and significance. *Place* is characterized by *space* and, even
though, as Casey (1993), and the humanist geographer Yi Fu Tuan (1977)
debate along the lines that space has no recognized pattern of meaning for
human placement, to stand in a place, whether the outback of Australia or its coastal beaches, to look outwards toward a far horizon, can and does affect experience and therefore a personal sense of that place through the context of the open space in which it is framed. The space of a place can have significance in how a place is perceived or lived.

Time, another abstract concept, can not be removed from any association with space and place. To spend time in place also affects a personal connection to it. Although it was Kant’s (1965) intention to keep time and place separate – time as history, place as geography – they nevertheless become indivisible in the narrative of self and position. Time equates movement and also connotates length, and therefore, direction. Since we experience space and place in time, our connection with place can only happen through time – as pause and continuation of our personal and collective experience and histories. As Tuan (1977) explains,

the ideas of “space” and “place” require each other for definition. From the security and stability we are aware of the openness, freedom, and threat of space, and vice versa. Furthermore, if we think of space as that which allows movement, then place is pause; each pause in movement makes it possible for location to be transformed into place (Tuan, 1977:6).

Time creates histories, and Tuan (1977) describes space as becoming historical if it has direction and perspective. Maps, landscape paintings and photographs recreate places within spaces within times, and

under the influence of the landscape picture, painted or captured with the camera, we learn to organize visual elements into dramatic spatio-temporal structure (Tuan, 1977:123).
Landmarks/milestones of place become measurements of space, time and direction. To return home or travel up a river is to go backwards, to set out on a journey from home is to go forth.

3.3 The Human Connection

As the connection between being and placement became more central to societal and environmental understanding, the complex human correlation became a guiding factor in the literature of place.

Tuan (1977) posits that we may know a place intimately as well as conceptually or just conceptually in the spatial sense. We may never have travelled the world or even to towns within our own country but we are aware of and know about them so that we can abstractly picture their locations. Though we have a collective geographic knowledge of our world, factual errors abound in empirical knowledge, creating “mythical” spaces and places, which Tuan sees as “the fuzzy ambience of the known which gives man confidence in the known” (Tuan,1977:87).

According to Casey (2001) the self is directed by the agency and identity of the geographical subject, “

where body is what links this self to lived place in its sensible and perceptible features; and landscape is the presented layout of a set of places, their sensuous self-representation as it were (Casey,2001:405).
While landscape surrounds us, the word landscape itself is ambiguous; a term used by many but having many different connotations. It is a way of viewing and placing the natural surrounds yet related to the development, history and management of our lived environments; it is external and objective yet defined by our vision and interpreted by our minds. The social geographer Donald Meinig’s (1979) view is that landscape is related to, but not identical to, nature, environment, places, and scenery. It is a vast realm necessitating many interpretations, complexly dense with evidence that is often difficult to read.

The meaning of place also has ambiguity. Meinig (1979) explains it more clearly in terms of the general and personal recognition and experience of certain areas which, either as public or private concepts, become combinations of a sense of place. The public concept of place is a commonly understood idea involving name, location, and descriptive nature. The personal knowledge of place, Meinig (1979) posits is somewhat different, in that,

...our personal sense of place depends upon our own experiences and sensibilities. It is unique to each of us in its content and in the way it relates to general social definitions of places. Thus each of us creates and accumulates places out of living whenever we pierce the infinite blur of the world and fix a piece of our environment as something distinct and memorable. Such memories of place almost certainly depend in some degree upon landscape, upon the external visible character of localities. Yet the two are not the same (Meinig,1979:3).

Landscapes can be designed to convey particular political or social orientations of a community that elicit a certain sense of place as Schama (1995) has argued. As a product of our intellect and culture, the sense of place engendered by a landscape will typically differ among individuals. Landscapes of a particular
place may also be utilized as a time-line that reflects the history of the people inhabiting that place because, as Tuan (1977) elaborates, it is the history, no matter how short, that one has with a place that forges its character and is therefore a key factor in the understanding and interpretation of a sense of place.

3.3.1 A Central Position

Kant’s (1965) argument that we cannot sensately know things that are external to us except in so far as they are situated in relation to ourselves brought a return to the orientating bilateral body as the central point of reference (Casey, 1998). As the wider world of matter, time, space and human life is profoundly intertwined, there is a responsive reciprocation that is continuous. Intimate places are spaces we experience through our senses – the touch, sight, smell and sound of them. Our own body – our person place, is the centre of our reference to the outer space of our world, and from it we gain comparative data and all directional schema – up/down, high/low, big/small, left/right, front/back, far/near. We engage and judge the external world by our own internal circumstances, which constitute a looping feedback relationship.

Beliefs differ from culture to culture and era to era but one central theme is that of humans as the centre of the universe – anthropocentrism. This is an inevitable perspective because we are, by our very nature as humans, limited to
an anthropocentric understanding of the universe, though many native cultures, especially nomadic, saw the earth as the central pivot.

Human supremacy in a hierarchy of living form, commonly called “the Great Chain of Being” (Abram, 1997:48) was polarized by the early Western philosophical tradition and set by Descartes into a dichotomy between unthinking matter – physical matter (minerals, plants animals – including the human body) and pure thinking mind – exclusive to humans and God.

In the early twentieth century, the philosopher Husserl, initiated the philosophical discipline of phenomenology – the science of experience – to address the separation of mind and body and the solidifying of mind as object which began to prevail in Western thought, by turning to “the world as it is experienced in its felt immediacy” (Abram, 1997:35). Husserl (1999) determined that there was an inevitable affinity between the self and external field of phenomena, a collective landscape composed of other experiencing subjects – intersubjective experience of phenomena. Abram (1997) explains this as

The “real world” in which we find ourselves, then – the very world our sciences strive to fathom – is not sheer “object,” not a fixed and finished “datum” from which all subjects and subjective qualities could be pared away, but is rather an intertwined matrix of sensations and perceptions, a collective field of experience lived through from many angles. The mutual inscription of others in my experience, and (as I must assume) of myself in their experiences, effects the interweaving of our individual phenomenal fields into a single, ever-lasting fabric, a single phenomenal world of “reality” (Abram, 1997:39).
Phenomenology, as defined by Husserl (1999) is a philosophical science, concerned with understanding the *universal laws* that direct the true essence of human experience – spiritual and psychological. It argues that the earth lies at the centre of our notions of time and space and is thus important to all human cognition; the *intersubjective world* as the *life-world*, the *Lebenswel*, which is always present (peripherally/unconsciously) in all thought and activity, yet which, through our determination to describe our world as objective experience has lead to an estrangement of the direct human experience of our sensuous world (Adams, et al., 2001; Abram, 1997). This is evidenced today by our imprudent destruction of land, water, air and others life forms through an ignorant progress oblivious to the living world on which it depends, which also extends to the inability or refusal to perceive other organisms and their *place* in the world, thus suggesting a self-destructive human arrogance.

Husserl’s assistant Heidegger gave his attention to the phenomenon of time, a primordial time that he divided in to the *three ecstasies* of past, present and future, which he believed carries us toward the *horizon*, and what lies unknown beyond, and through a convoluted journey brought the relationship and dynamics of *place* in *being* back to philosophical dialogue (Casey, 1998; Abram, 1997).

### 3.3.2 The Primordial Bond

The phenomenologist Merleau-Ponty (1964) expanded Husserl’s philosophies, by bringing the self and body together as the whole experiential participation in
the *here-and-now*, affirming our existence as one of earth’s animals and the organic base of our intelligence. Merleau-Ponty (1964) suggests that participation is the defining attribute of perception itself and that, when we define another being as an inert object, we reject its capacity to engage and provoke our senses and that, prior to our use of language to characterize our experiences, at the level of our immediate sensorial engagement with our environment, we are all animists (Merleau-Ponty, 1964).

The term *biophilia* (coined by E O Wilson, 1984) describes the innate affiliation that human beings have toward other living organisms. It is a complexity of emotional instincts, unique to each individual but woven into the collective symbolism of human culture, ranging from awe, attraction and attachment to indifference and fear driven aversion (Wilson, 1996). Is this still a term implying separation? Perhaps we need another term where human and *other* organisms of nature are seen as having an immediate correlation.

Our primordial environmental consciousness is described by Merleau-Ponty (1964) as being innately synaesthetic, yet we have greatly weakened this through our ethnocentric distancing of the natural world and direct experience:

...synaesthetic perception is the rule, and we are unaware of it only because scientific knowledge shifts the center of gravity of experience, so that we have unlearned how to see, hear, and generally speak, feel, in order to deduce, from our bodily organization and the world as the *physicist* conceives it, what we are to see, hear, and feel (Merleau-Ponty, 1962:229).
Humans continue to represent their environment not only as thought in philosophy but in concept and tangible media in art, word and idea in literature and gesture in theatre. As Merleau-Ponty (1968) positions it,

   everything is cultural in us (our Lebenswelt is ‘subjective’) (our perception is cultural-historical) and everything is natural in us (even the cultural rests on the polymorphism of wild being) (Merleau-Ponty, 1968:253).

The human experience of the natural world has gone from one of embeddedness, where the land was something that could not be owned; in fact the land possessed the human (which belonged to it) – a mutual engagement, contrary to one of control and separation. This separation created the predominant drift for other organisms to be seen either as something that repels, to be anthropomorphized, commodified, exploited, ignored or destroyed.

The affective bond of one’s environment – defining a person's mental, emotional, and cognitive ties to a place can also be expressed by the term topophilia, coined by Tuan in the 1970s – Ptolemy first used the word topography for the geometrical coordinates of geographical space (Olwig, 2001:96). By promoting the belief that the division of places and peoples establishes anomie and migration, the hallmarks of postmodern alienation, Tuan (1974) proposed the replacement of this estrangement with topophilia – an affection for places – which thus preserves their aesthetic value, integrating feeling and thought which, in turn, sustains ethical behaviour toward the earth. Topophilia is a latent construct, an abstract psychological concept similar to attitude or intelligence whose changeability can only be observed indirectly through its measurable effects. The pervasive role of the aesthetic is reflected
by its root meaning of feeling and is suggested even more by its opposite, anaesthetic, lack of feeling. Tuan reminds us that “The more attuned we are to the beauties of the world, the more we come to life and take joy in it” (Tuan, 1974:64). Tuan, much like the early American environmentalists Henry Thoreau (1817-62), Ralph Waldo Emerson (1803-82) and John Muir (1838-1914), is concerned with the human relationship to nature – their external spaces/places as a means to understand the human condition. For Tuan, nature provides nurturance and stability - though not always reliably.

Though we are increasingly concerned with environmental issues we continually divide ourselves from nature, even though it is something from which we can never completely detach ourselves. It might be argued that one of the factors contributing to the contemporary surge of environmental activism is a traditionalist yearning to turn back to a past where humankind and the ecosystem co-existed in healthy equilibrium. Though such a utopian vision may be unattainable, as the environmentalist philosopher/geologist George Seddon (1997) points out,

There is no Golden Age, neither fore or aft, no Shangri La, no El Dorado to be stumbled upon, no Bali-hai in the blue Pacific, This is our garden of earthly delights. The earth is home. If we are at war with it, it is a war we cannot win; better to think of it as a partner, for richer or for poorer, in sickness and in health, ‘till death us do part’ (Seddon, 1997:248).

Yet, if we become immune or even rival to our interchange with natural place – thus creating paradigms of control to engage or understand it, we essentially
harm ourselves, and a result we can become increasing immune to our own lived spaces.

Cultural diversity and biological diversity, though intertwined and complex, seem at loggerheads. Culture is how humans arrange more predictable, controllable, and advantageous worlds of their making. Essentially it is still one world, even if enormously diverse – on the material, technological level – hut to cultural monument to city skyscraper, wheel to jet to satellite, tablet to paper to internet; the social – from family, tribal to community to global; also on the intellectual level – from magic to religion to metaphor to virtual. The multilayering of contemporary societies is on the fast track to somewhere.

3.3.3 Place and Identity

Every mature nation has its symbolic landscapes. They are part of the iconography of nationhood, part of the shared ideas and memories and feelings which bind people together (Meinig,1979:164).

They are part of what develops a personal identity – but what is identity? The use of the word has become an automatic description of personality. Yet identity, like place, is of modern origin, as both word and meaning (Zelinsky, 2001).

If identity is a configuration of placement within the historical, cultural/political elements of race, culture, gender, religion, class and sexuality, comprising different combinations of context and conjuncture, it still poses questions of what is deep/superficial, what is peripheral/central? How does a connection with the
land, the landscape, or topography of *place* affect or mould an identity? How does a deeper connection with *natural place* itself affect these variables? These questions perhaps do not lend themselves to definitive answers.

The elements and meanings of the relationship between *self and place* – and the many equivalent variations of the theme – have varied significantly since the early twentieth century. The cultural landscape of geographer Carl O Sauer (1925) began an examination into human societies and their lived environment but, for the most part, these aspects were defined as consisting of two separate sets of features – the material and the visual – and further separated from human thought and practices into a triadic model of *land, cultural artefacts* and *social life – a segmented world* – which the humanist geographer John Paul Jones (2001) considers still held sway at the beginning of the new millennium.

The influence of Poststructuralism brought attention to the representational worlds of material and social constructions, and the humanistic geographers of the 1970s began to posit a *lifeworld* that connected place, the human body, and meaning, and thus began examining spatio-social structures – spatially dependent social relations. Jones (2001) explains

...that part of the rationale behind both behavioural and humanistic geography was based in an effort to recover the individual, whose identity had largely been annulled in previous schools of thought (Jones, 2001:122).

The engagement of philosophical questions and debates over the last thirty years has grown a complexity of interdisciplinary definitions and methodologies -
poststructuralist, feminist, postcolonial etc; of analyses of worlds and selves – *people and place*.

The cultural geographer Wilbur Zelinsky (2001) is pessimistic about contemporary alignments of *place* and *identity* and finds that we are “caged in a world of contradictions, of unprecedented personal and group anxieties” (Zelinsky, 2001:137). He believes that it is ethnicity, however tenuous and contingent, that holds the primary ground for identifications, of the pandemic *identity crisis* (coined by the psychologist Erik Erikson in his 1968 publication, though the identity status model was designed by Marcia in 1964,1966). Zelinsky (2001) though remains sceptical about its social and political consequences and possibilities, believing there is a larger issue interwoven not just with the currently unanswerable questions of *who am I?* and *what are We?* and *where do I belong?*

Personal identify is entwined with a need to be situated in a *place*, which is inseparable with the necessity to be assimilated into a society – to have *no place* or no place within a society renders one an outcast, a vagabond. A pertinent example is seen in the plight of aboriginal Australians; traditionally nomadic, they were once paradoxically much centred within their known environment, always responding to change. The Australian Aborigine’s central belief was formed around the "dreamtime" - when powerful beings walk the land, establishing the topographic features, calling all the natural species to life, and instituting rules of group and individual behaviour. Landscape was personal and
the individual’s place was not in doubt – the whole countryside constituted the family tree (the totem). They knew the environment they travelled with a profound attachment that is almost alien to the Western understanding. Deracinated, they have lost their identity and their *sense of placement* in the wider world is lost. To lose *placement* is to lose *identity* and, as Schama (1995:24) notes, “Unstable identities are history’s prey.” Robyn Davidson (1980) is highly conscious of the complexity of the relationship between Aboriginal *identity and place*:

…trying to describe Aboriginal cosmology briefly is like trying to explain quantum mechanics in five seconds. Besides, no amount of anthropological detail can convey Aboriginal *feeling* for their land. It is everything – their law, their ethics, their reason for existence. …they are not separate from the land. When they lose it, they lose themselves (Davidson,1980:167).

### 3.3.4 Placement

The standard definitions of *placement* have long been used to construct geographies of inclusion and exclusion which the humanist geographer April Veness (2001) illustrates as setting not only social and spatial boundaries but also setting conventions of experience and expectations into contexts of meaning and value.

For the environmentalist Wendell Berry (2003), if you don’t know where you are, you don’t know *who* you are. The politics of emplacement are encased in the politics of identity, which is also context dependent. The fact of displacement with regard to colonized societies, such as the aboriginal Australians, cannot be
argued, yet for humanity as a collective whole, Modernism, essentially beginning with the industrial revolution, has had the effect of decentring both people and place (Olwig,2001). The contemporary individual as the New World transient is a by-product of our history, as environmentalist/historian Wallace Stegner (1992) argues:

To the placed person he [the transient] seems hasty, shallow, and restless. He has a current like the Platte [River], a mile wide and inch deep. As a species, he is non-territorial, he lacks a stamping ground. Acquainted with many places, he is rooted in none. Culturally he is a discarer or transplanter, not a builder or conserver. He even seems to like and value his rootlessness, though to the placed person he shows the symptoms of nutritional deficiency, as if he suffered from some obscure scurvy or pellagra of the soul (Stegner,1992:1).

Although Stegner is commenting on the American individual, a similarity can be seen amongst other developed and developing countries, and the shift from country to city as global pastoral place becomes unable to support growing populations and the very thing that gives life to our life – the earth – is degraded, with people losing their stability – their grip on the ground. Stegner (1992) believes that a place is not a place until it has both been experienced and shaped,

as individuals, families...some are born in their place, some find it, some realize after long searching that the place they left is the one they have been searching for. But whatever their relation to it, it is made a place only by slow accrual, like a coral reef (Stegner,1992:2).

In trying to understand the complex placement of human geography, an awareness of the circumscription of humanity is revealed by the knowledge we have only occupied Earth for a fraction of its history, in an area of less than five
per cent of its dry surface. Our knowledge is inevitably bounded. Friedrich Nietzsche’s (1964) view is that, “a living thing can only be healthy, strong and productive within a certain horizon; if it be incapable of drawing one around itself. …it will come to an untimely end” (Nietzsche,1964:10). Patrick Mc Greevy (2001) also observes this as, “a sense of identity depends on limits”…”as beyond the known limits, becomes the void” (McGreevy,2001:247). As a cultural geographer, McGreevy (2001) believes that attending and recognizing the value of what lies beyond parochial boundaries does not necessarily have anything to do with travelling outside them, mental if not physical transport must be attended by either the narrator, author or audience. This understanding of self in relation to surrounding world context is the desire for objectivity, which the philosopher Richard Rorty (1997) argues, need not be

the desire to escape the limitations of one’s community but simply the desire for as much intersubjective agreement as possible, the desire to extend the reference of ‘us’ as far as we can (Rorty,1997:575).

The notion of the world in terms of a theatre, the world as a stage on which we act remains a powerful metaphor for the experience of our existence, which landscape geographer Kenneth Olwig (2001) details as having sprung from scenic conception of landscape and the cosmology it expressed – our sense of environment or world-picture; as established through the science of Ptolemy; an episteme that Olwig (2001) notes as having inspired globalizing thinkers from the Renaissance and modern structuralists (Olwig,2001:112). The ability to conform to this world-picture, Olwig (2001) sees as the mark of the modern individual and collective national make-up, which he argues in terms of
encouraging the person to decenter his or her identity, reducing it to that of an individualized actor in an abstract, spatialized, national landscape. ... personal identity is thereby removed from the concrete context of local community and transferred to the imagined (or “make-believe”) community of the nation-state (Olwig, 2001:111).

If a perception of the world requires more than merely seeing it, then first the act of seeing needs to be addressed. To Kant (May, 1970) the concept of the world as scenery acted as an efficient preconceptualization, which he explained as

The world is the substratum and the stage on which the play of our abilities takes place. It is the foundation upon which our modes of knowledge are acquired and used. ...In addition we must get to know the objects of our experience as a whole, so that our modes of knowledge do not constitute and aggregate but a system. Because in the system the whole precedes the parts; in the aggregate, however, the parts precede [the whole]. ...the whole is here the world, the scene upon which all our experiences are placed (Kant, in May 1970:257).

Contemporary humanist geographers and philosophers have freed the concept of landscape and place from the modernist ideas of progress that tended to displace the human connection, manifesting place as more than a location in space (Tuan, 1977, Olwig, 2001). Yet we are living in an Age of Extremes as the historian Eric Hobsbawm (1994) wrote, with changes happening so fast that, no one can keep up. Jones (2001) perceives this inevitability thus,

The simultaneous fragmentations and flows set in motion by the globalization of capital and culture have so undermined previously secure definitions of space that to speak with certainty of any such grouping (such as community, region, or nation), one risks being labeled a romantic. The rise of transmigration, telecommunication, and the internet has complicated subject positions to such an extent that we no longer have faith in well-established categories, such as “citizen” (Jones, 2001:124).
If it is now recognized that identity is manifold, then the same point can be made in relation to places. This multiplicity complicates an understanding and can either be a source of strength or a cause of conflict, or both.

For some dis-placed peoples the mythical homeland shines brightly in the imagination. Memory and place are intertwined and, through loss or change, memories can become embroidered, cemented or sources of anguish. The desire to recover past solidities is very old and may be typically unproductive, maybe involving a sentimentality that began when humans settled in a place and needed to defend their lived space from intruders; when they felt the need to build and to collect objects which became symbols of self and wider connections. Yet it is a human trait that cannot be denied and, even if all experiences lie in the past, it does not render them obsolete and unworthy of retaining or at least understanding. This understanding must include both indigenous and non-indigenous peoples as the desire to be placed, whatever the degree is universal and not culture or place specific.

The historian Peter Read (2000) queries whether it is ethical for the non-indigenous person to wish for a deep connection to the Australian land. He suggests that there is envy of the sense of identity that a deep belonging to place has instilled in the indigenous person, and something that perhaps the recent occupiers also wish to take from them. It may be that, without a deep connection, all are rendered vagabonds, destined to remain denizens even within a country that has the cultural aspects of home. Yet, how can a feeling of
placement be maintained within a world that is speeding up, and spreading out with a shallower awareness of what constitutes a place, and a connection to it?

3.4 The Age of Stretching and Thinning of Self and Place

Place, it seems, is far from a source of stability in contemporary life, it is in a process of a deep transformation, to the extent that, “the fading and discolouration of place has been going on around us for generations” (Hiss, 1991:xv).

If the Age of Exploration began an era of displacement of native peoples and the systematic destruction of cultural and natural landscapes, contemporary philosophies, technologies and events are exhibiting a dromocentrism (after Casey, 1998) – a speeding up of time – creating a cosmic displacement, where place is irrelevant, just as long as there are linking technologies.

The current globalization of the world resulting in the often termed identity crisis is accompanied by a vanishing sense of place. The anxiety that we are all being squeezed into the anonymity of sameness is what Zelinsky (2001) describes as perhaps endemic to the inescapable qualities of the postmodern condition. Hence, while there may be no effective general solutions – either individually or collectively, an attempt to reflect these issues can support at least an understanding. Contemporary Western societies have had a growing debate in respect of the postindustrial landscapes and associated values with the re-theorizing of the concept of social nature for at least the last three decades. But
what distinguishes this period is the technological revolution in travel and communication, accompanied by the rise of modern environmental activism.

The study of cultural and historical geography encompasses a wide array of subject matter, including the historical reconstruction and the changing geography of a *place* through individual and collective understandings and interpretations, often connected with the field of environmental perception. To Sack (2001) the *geography of place* has two levels of meaning. On one level, our creation and use of a *place* itself is tied up with our role as geographical agents. We are continuously transforming the world into a *home* though we seem to be incapable of accepting reality – especially the reality of nature, so we continually transform it. On the second level, is our awareness of our *place-making actions* and our reflections upon it. Sack believes *place* and reality are linked and, “as we destroy, create and change places we are destroying creating and changing portions of reality” (Sack, 2001:233). In his view, all *places* are equally real, but some *places* may increase and enrich reality while others may contract to diminish it, and others may expand or contract our awareness of reality (Sack, 2001). Relph (2001) directs attention to the essential descriptions rooted in the empirical world of everyday landscape; encompassing authentic landscape as it is tied to the social contexts and natural environments in which they were developed as opposed to the *placeless* modern landscapes of suburb, mall and shopping complex that lack context and, are the same as anywhere else.
This is the *age of easy copying*, as Seddon (1997:113) observes; which began during the *age of colonization*, with the newly transplanted peoples bringing the familiarity of objects – dress, arts, architecture, flora and fauna, social morés and standards to help in the transposition and assimilation of their new surrounds. Seddon (1997) sees this continuously absorbing homogeneity as something of matter, as the continued reduction of regional singularity and diversity brings with it a negation of the self and the local – where

...experience itself is of the specific, and each of us is an individual with a need to see ourselves in a unique set of relations, as well as in general ones. This need is not fully met in a homogenizing world ...those who are responsible for the care of landscape in this country [Australia] can do much to resist the effects of homogenizing technology, to individuate by understanding and clarifying the locally distinctive – in short, by respecting the *genius loci* (Seddon, 1997:114).

The price that is paid for the *blending of place* is that the *individuality of place* is lost and *home is nowhere*. The environmental historian, William Howarth (2001) believes that, until critics learn to read the language of the land in ways that involve recognition and integration they will continue to alienate human culture toward its only planet (Howarth, 2001:61).

It is ironic, as Davidson (2006) implies, that while classical nomadism is extinguished, hypermobility is the contemporary characteristic of globalization, where the modern nomad

...is not just uprooted from place, but severed from deep connections with other human beings. Local attachments are the same as all other attachments – shallow. Kinship and community bonds become frail and brittle, not so much nomad as monad. This is the price paid for freedom of movements based entirely on
whim and wealth. A forgetting of the interconnectedness of all things. …the new nomadism is contributing to modernity’s malaise (Davidson, 2006:51).

This transience creates detachment from surroundings, raising questions concerning personal and national identity.

A sense of detachment can be observed as the rapid move in mobility began with the accessibility of the private car which began a networking of ground place similar to the expansion of the networking of cyberspace of the 1990s. The cultural theorist McLuhan (2001) linked television as the beginning of the weaving of a global village of telepresent images in which the medium produced a simultaneous double of place, where public events now occur, simultaneously, in two different places: the place of the actual event and the observer’s place of viewing. Television offered a sense of belonging and connection to the isolating and rapidly spreading suburban environments and, while the public space became increasingly privatized and virtualized, with networks of individuals being replaced by televised networks, individuals became less and less citizens and more and more consumers, and place began to loose its individuality; its identity. The public sphere was being evacuated and, along with it, place – with its deeply-etched social and historical meaning quickly disappearing. (Varnelis and Friedberg, 2005).

A decade ago anthropologist Marc Augé (1995) suggested that our sense of place is coming to an end, with supermodernity placing us in a realm finally devoid of history as, instead of being filled with individual identities, language and references we become like fellow travellers, passengers in a continually
mobile space, congregating in connecting stations of distribution and off again without meaningful contact — in fact an avoidance of contact — our identities muted or lost. Although Augé (1995) notes that non-place and place are only conceptual poles and declares that there is no such thing as pure non-place or pure place. He nevertheless observes that our era is increasingly dominated by non-place and hence our existence is destined to experience isolation, as the new world privileges the fleeting, ephemeral, and contingent.

This destination toward isolation and further thinning of place is paved along the information superhighway — a metaphor of the early 1990s — with a world moving fast along it toward what Ichiyo Habuchi (2004) describes as the telecocoon. The virtual networked space which brings with it a remoteness that simultaneously maintains a paradoxically greater connection. The telecocoon relies on networking technology to deal with the problems caused by distance in our lives. Varnelis and Friedberg (2005) consider that the proliferation of simultaneous environments in our culture, the series of overlapping spatialities in which individuals dwell on one level, create a generic space of anonymity, but on another level a place in which a number of individuals inhabit distinct spaces, many of them networked spaces (MySpace, Utube, Friendster, blogs etc): creating simultaneous environments (Varnelis and Friedberg, 2005).

Varnelis and Friedberg (2005) see the growth of the always connected, always accessible, in the developed world, as producing a broad set of changes to our concept of place in terms of,
...the development and practices of technology (and the conceptual shifts that these new technological practices produce) are thoroughly imbricated in culture, society, and politics. ...Taken together, these changes are already radical, but they may not be radical enough. These could well be the first steps in restructuring our concept of spatiality. ...[and] may be mere evidence of the early days of sociocultural shifts of which we can only be partially aware, just as the first theorists of modernism and postmodernism could only partially understand the emerging condition of their day (Varnelis & Friedberg, 2005:2).

They argue that culture is no longer localized in time and space, but neither is it non-place. Instead, individuals inhabit a physical world of simultaneous environments, of localized time and space as well as of multiple telematic worlds in which they can be co-present with others at a distance. They see Auge’s (1995) solitary non-places as an artefact of the past yet they can see that, being more connected may become more of an issue than isolation. Their view is the new reality – where ground-place, real place, is almost seen as obsolete, and the yearning for a return to it is of a romantic nature. However, humans are social, sensate beings, and surely contact, with their own kind as well as physical natural place, is an inherent component of healthy equilibrium.

The social scientist/geographer Doreen Massey (1994) though sees place, even for the networked privileged, as constituted through a variety of means that still include the geospatial. She argues that claims to place are often claims to supremacy – in the power geometry of time-space compression – and that a complex understanding of place, as structurally heterogeneous, is especially necessary. She also warns against a romantic or reactionary identification of place with community and locality and, concludes that place does not require a physical boundary, that it may even be transportable.
Places, Massey (1994) points out, are inhabited by coherent and homogeneous communities set against the current fragmentation and disruption, creating an idealized notion of past eras. She adds that this counter-positioning is dubious, that place and community have only rarely been coterminous. Yet, the longing for such coherence is a sign of the geographic fragmentation, the spatial disruption, of contemporary times, and is part of the rise of defensive and reactionary ideas and actions – e.g. certain forms of nationalism, sanitized heritages, and antagonism to newcomers and outsiders. The search for the true meanings of place, the quest for heritage, is a desire for stability that rootedness can bring. The effect of such responses, Massey (1994) argues, is that place itself and the search for a sense of place have come to be seen by some progressive peoples as reactionary, and interpreted as a retreat from unavoidable progress with place and locality becoming loci for a form of escapism. Our attempts to demarcate place are complicated which, Massey (1994) suggests, should be defined and understood in relation to places beyond, which construct links and characterizes contrasts – a global sense of the local.

The dilemma of contemporary and future generations therefore may become one of global connections versus local disconnections, with the growth of environments that allow a simultaneous enactment of real presence while engaging in networked forms of tele-presence. The network forms a new socio-spatial organization, with global information (GIS – Geographic Information Systems) and global positioning (GPS – Global Positioning System), and the mappable world is reorganized into a virtual place (a Google Earth), and the
modern human can create and occupy *avatars* to construct an alter-life, shaping
second life identities and social interactions through the *connected* technology.
The new *flâneur* (Baudelaire's (1994) *person on the street* – observer) may be
the modern *teletech* individual, but what of *local and global socio-economic populations* that are not caught up in the web?

As Zygmunt Bauman (2000) expresses it,

> Postmodernity is the point at which modern untwisting (dis-embedding, dis-encumbering) of tied (embedded, situated) identities reaches its completion: it is now all too easy to choose identity, but no longer possible to hold it. At the moment of its ultimate triumph, the liberation succeeds in annihilating its object. …Freedom. … has given the postmodern seekers of identity all the powers of Sisyphus  (Bauman,2000:50-51).

Beyond the concerns of postmodern dialogue, *natural place*, as it is central to
*our placement* and the reality of the empirical and the moral, exerts a positive
power when it communicates an understanding of beauty, reality, truth and
individuality. If the *non-places* we are creating bring a further distancing from
*natural place* and endanger the capacity of nature to support the undertaking, as
Sack (2001) argues, “

> if our transformation of the world impoverishes natural variety and complexity to the point where we no longer can increase the variety and complexity of places and our awareness of the world – then we are not moving in the right direction (Sack,2001:244).

### 3.5 Re-entering Place

The navigation and history of *place* is a mapping –a *tempogeography* and
*tempology* – which “people from oral traditions carry [as a] detailed map in their
heads over years; the rest of us depend on outside sources” (Lippard1997:75).
To re-find place, as philosopher Gaston Bachelard (1884-1962), writer Marcel
Proust (1871-1922) and poet T S Eliot (1888-1965) imply, we need to return to
it, whether in actuality, memory or imagination; to refine our idea of place, we
need to do the same.

Just as imagination takes us forward into the realm of the purely
possible – into what ‘might be’ – so memory brings us back into
the domain of the actual – the what ‘has been’ (Casey, 1993:xvi-
xxvii).

Thus, the places of memory become the genius loci of individual being.

When we re-enter the natural world with willing and open senses, we can again
enter a communication that is stimulated through the evident forms, patterns and
rhythms of a world with which we have coevolved, coincide and cohabitate,
stimulating a recuperation that Abram (1997) sees as

...an interpenetrating webwork of perceptions and sensations
borne by countless other bodies – supported, that is, not just by
ourselves, but by icy streams tumbling down granitic slopes, by
owls wings and lichens, and by the unseen, imperturbable wind.
...It is, indeed, nothing other than the biosphere – the matrix of
earthly life in which we ourselves are embedded (Abram, 1997:65).

The problematic aspects of the mapping of identity onto or through place may be
just one of the issues confronting the contemporary individual. Yet a re-entering
involves issues in ways which are at once locally specific and broadly global:
particular place is made to resonate with wider, more profound, implications.

How long does it take to know a place, to become attached to a place?
Attachment is rarely gained quickly. Tuan (1977) sees even the 1970s man as
...so mobile that he has no time to establish roots; his experience and appreciation of place is superficial. ...Abstract knowledge about a place can be acquired in short order if one is diligent. The visual quality of an environment is quickly tallied if one has the artist’s eye. But the “feel” of place takes longer to acquire. It is made up of experiences, mostly fleeting and undramatic repeated day after day and over a span of years (Tuan, 1977:183).

Contrary to contemporary societies, life in older, smaller traditional countries was more centripetal – held in tight upon its centre. In Ireland, for example, Yeats (1865-1939) through his poetry espoused that there is no mountain or river not associated in the memory of some event or legend.

The return to place and the natural world as personal identifiers may be seen as a form of Romanticism – a desire to escape reality rather than comprehend it, or the idealizing of earlier societies’ mandatory connections with the natural world out of ignorance of the hardships that these times effected. Yet, the romantic view is still alive and perhaps growing strength in a world finally realizing, or re-affirming its connection to the whole of nature, where survival might again dictate unity.

Innate and quantifiable connections and sentiments can also be intensely felt. A vision of a beautiful sunrise or sunset, the first glimpses of mountains, seas, and native animals can evoke powerful sentiments of connection to the primordial world, or the return to lived spaces after long absences. Time spent in one place though does not necessitate connection and knowledge; it is the intensity of experience, as Tuan (1977) explains, that can alter our lives, and also the fact that
...it is obviously necessary to take the human life cycle into account: ten years in childhood are not the same as ten years in youth or manhood. The child knows the world more sensuously than does the adult. ... [which is] also one reason why a native citizen knows his country in a way that cannot be duplicated by the naturalized citizen who has grown up elsewhere (Tuan, 1977:185).

This statement though, does not allow for the reality that not all native citizens will get to truly know the place in which they may have grown up. There are many variables in knowing, and it also does not allow for the new eye that can be brought by the new inhabitant who desires and seeks attachment. The eye of the long established local resident can become jaded and immune to place depending on personal and learned attributes.

According to Nietzsche (1968), learning to attend should be one of the most important central objectives of learning and, is how degrees of resonance are accumulated.

...learning to see – accustoming the eye to calmness, to patience, to letting things come up to it; postponing judgment. ...not to react at once to a stimulus, but to gain control of all the inhibiting, excluding instincts (Nietzsche, 1968:463-563).

Furthermore, as philosopher José Ortega y Gasset (1883-1955) points out,

...understanding is a lantern which must go directed by a hand, and the hand must be moved by a pre-extistent eagerness for this or that type of possible things (Ortega y Gasset, 1960:171).

By this he means that intellectual sharpness is not enough to be attuned to new things, for enthusiasm or strong desire is just as important. Yet, the natural environment can and does speak even to the resistant individual for, to be totally immune to the effects that natural environments exhibit, would perhaps define
one as senseless. As Tuan (1977) states, nature’s most powerful aesthetic experiences are likely to catch us by surprise.

Armed with a sense of Tuan’s *topophilia*, and Wilson’s *biophilia*, the re-entering, the re-visiting of place, emphasized with mediation and dialogue, the isolating attitude of alienation can be bypassed and the learning of why *natural places* have, and continue to have, meaning and significance to the human consciousness can begin. By *mapping an identity through the narratives of place*, transplanted peoples can begin to tell their own stories.

Davidson’s (1980) story speaks of how of her journey through the Australian desert by camel allowed her to discover hidden connections to the natural environment, that *all* humans have ability to tap, with an attuned mind, an *open eye* and time spent:

> My environment began to teach me about itself without my full awareness of the process. It became an animate being of which I was a part. What once would have been merely a pretty visual design with few associations attached, now became a sign which produced in me instantaneous associations …a new plant would appear and I could perceive its association with other plants and animals in the overall pattern, its place. I would know the plant without naming it or studying it away from its environment. What once was a thing that merely existed became something everything else acted upon and had a relationship with and vice versa. …this is part of a net. This, which everything acts upon, acts. When this way of thinking became ordinary for me, I too became lost in the net and the boundaries of myself stretched out forever (Davidson,1980:191-92).

She found the changing of this view of reality had been a long hard struggle against the old conditioning, emphasizing that it was not a form of mysticism and, that it is dangerous to attach these words as they are prone to
misinterpretation. The environment found roots in the subconscious before the conscious and in

...a growing awareness of the character of a particular place ...the self did not seem to be an entity living somewhere inside the skull, but a reaction between mind and stimulus (Davidson, 1980:193).

Drawing attention to the unknown more than half a century ago, through his field of enquiry term *geosophy*, the geographer John K Wright (1947) used the term *terra incognita* to describe the areas of unknown territory that, despite the comprehensive mapping of the world, comprise an immense patchwork of particular places that lay hidden from view and human consciousness; realms that are consigned to the imagination. We may well now be able to Google Earth to view the geography of our world, yet this view is still a virtual one leaving much still than is unknown of these sights; e.g., what is the texture of the sand, the colour of the sky, the ambient temperature on the skin, the fine details on the shell, the actions of a small crab? As Adams (2001) also points out,

...what is once known can later become terra incognita through the abandonment of normal frequent relations with a place (as was the case with East Germany for West Germans, and vice versa, during the Cold War). the same occurs on an individual level through the abandonment of certain paths and routes over the course of a lifetime. Furthermore, place-experience is not binary, a simple matter of knowing or not knowing; knowledge arises from actions, and place-experiences thus present innumerable shades of differentiation depending on what one is doing in a place. Accordingly, *terra incognitae* can emerge when any way of interacting with the world is changed ...when *paths are no longer traveled in the same way* (Adams, 2001:186).

What Adams espouses is the loss of the intimate travelling of place. In developed countries *dromocentrism* has gone hand in hand with the loss of *ambulocation*. Where once walking allowed a broad method of place-
experience, today the car – “a motorized metal box” (Tuan,1977:175) – has added to the loss of the sense of local natural place. The majority of modern paths that people travel are paved with bitumen, with little or no remnant of the natural topography recognizable.

The regular routes to work, school and shopping centre are sped along in such a rush no one has time to know place – adding to a thinning of meaning and sensory based awareness. Walking becomes limited to an exercise regime to counter the sedentary effects of modern life. People interpret their environment not in isolation but in the context of the other – what they have read, heard or seen – “intertexturally” (DeLyser,2001:26). Tourism and fictional theme parks are the methods we undertake to create or recreate meanings and connections to place. The realm of the imagination has taken over the realm of the real and, in fact, as Dydia DeLyser (2001:36) states in her examination of the mindset of the tourist engaged in a created myth of a historical town, “it is...in part through fantasies that they create their realities.” Yet, of course different cultures, groups and individuals engage memory and meaning in a variety of ways.

The remoteness of our involvement with local place is reduced to detachment, and the simulated experience is left to dictate an idealized view of place as the distinction between virtual and physical place is blurred and involvement or non-involvement becomes almost irrelevant, as Adams attests:

...as walking disappears from the human-environment interaction, the multisensory qualities of landscapes experienced by the remaining walkers are increasingly degraded with sounds, smells, dust and spray of traffic. Furthermore, an absence of positive
social interactions in transit spaces prompts a psychological retreat from public space as that space is increasingly accessed remotely, ...a product of the evisceration of our unmediated experience through the presence of machines in the landscape and elsewhere in daily life (Adams, 2001:189).

Thoreau, one of the nineteenth century founders of environmentalism, advocated the innate value of the natural landscape and slow walking as the best way to get to know place (Thoreau, 1994). Thoreau, generally thought of as a devotee of wild nature, saw the local and the intimate as the most powerful expressions of personal place, with his conviction that the whole world can be revealed in our own backyard, if only we give it our proper attention. (Schama, 1995:577).

Walking necessitates and involves all of the senses as well as the kinetic proprioceptive sense (our body orientation and sense of movement) which Tuan posits as “a more profound mode of experiencing place.” (Tuan, 1977:10). Adams (2001) sees that a sense of place constructed purely through the visual mediated experiences of others – the televised documentary, film, book or travel show – and as common and seamlessly woven into our daily lives as these mediated experiences are – will be “…sensorially impoverished in comparison with a peripatetic sense of place.” (Adams, 2001:189).

3.6 Directions
There are almost no limits to the territory of literary criticism of place and its connections and consequences to the human condition as they proliferate and continue to accumulate. Yet, in exploring the nature and demise of place and
the human connection, this literature, both historical and contemporary, espouses the significance and attachment to place in terms of what roots us not only to the world but also to our personal and collective histories. More important is our constancy through the connection to natural place and the pertinence of physical contact and time spent in learning about, therefore understanding, any particular place.

New landscapes will continue to be created; acting as mirrors of individual expression as well as a reflection of the cultural climate they are produced in, offering insight and context to the texture of the people, and place perspective.

Places serve as multiple realities and the argument in favour of respecting the physicality of place in contrast to the metaphorical anecdote or commodity is essential. The re-centring of place rescues it from the alien detachment and reconstitutes an expression of collective human identity. Without the destruction of natural, physical place it is hard to comprehend how these spaces will cease to continue to inspire, mould and weave a connective and collective narrative of human sustenance and substance. The understanding of place may not require a bounded space yet identity and particular place still depend on boundaries and selective contact.

The geographer Peter Fuller (2007) in declaring that, “modernism drove a wedge between the pursuit of art and the study of nature” (Fuller,2007:11), also attributes the modernist flight from the world of nature evidenced as geography became stripped of its aesthetic and dimensions in the post-second-world-war
years. Which he sees as evidenced by the paradigms of the *mechanical as opposed to natural; art for art’s sake* giving rise to the insistence that a correspondence between aesthetic experience and natural forms was obsolete or non-existent, and by the mid twentieth century spread a positivistic scientism over the discipline. Perhaps it is time for us to rethink. It is now a challenge for the contemporary artist to reassert a *picture of place* through whatever aesthetic perspective serves as a descriptive narrative.

The impulse to affirm the beauty and unity of the natural world lies between affirmations of its physical magnetism, which are evoked by the primordial connections of the human to environment, and the creative metaphorical capacity of the human mind. Regardless of the charm of the symbolic language a natural subject can embody, all deserve acknowledgement and interpretation – not just the imposing majesty of mountain or elderly tree, but the broken shell, the bleached bone, the microscopic worm. It is not just about the Arcadian or utopian landscape but also an empirical understanding – as the remark of the physicist Feynman (1998) expresses, how understanding a flower scientifically can only increase an appreciation of it.

The complex verbal, visual, felt, experienced and built landscape is a cultural image and has become a pictorial symbol for the human connection with the *natural world* and their constructed spaces. Artistically this iconography is represented in as many materials and genres as it is layered through many eras and interpretations, from naturalistic, empiricist, emblematic, poetic, symbolic,
historic, expressionistic, fantastic; it is palimpsest, whose real and enigmatic meaning accretes along the parallel of the human story.

Less manifest than say, vocabulary or the artistry, but more powerful, is the mindset that we bring to the perception and analysis of our environments. Just as one cannot articulate the inexpressible, one cannot see what one is not predisposed to comprehend. By bringing the self back to place, to attempt to feel and absorb the particulars of which it is composed is one method of experiencing, a method that will surely tell more than the fleeting glance or removed detailing.

All places have reality and meaning, the question and answer lies in what is being looked at, who is doing the looking, with what mind-set and how it is perceived.
CHAPTER 4 – Methodology

4.1 Derivation of Methodological Strategies

This chapter presents and describes the instrumental methods selected in the pursuit of this project. This project is multifaceted in that it seeks to:

- experimentally adopt a scientific world view (foreign to the artist) and assess the impact of that adoption has on the artist’s personal perception and expression,

- as a result explore and experience the idea and manifestation of place through the selection of a series of sites,

- use the data collected and analysis conducted to produce an explication of a series of art works – interpreting personal and objective qualities of local place

The processes applied to this multi-layered project must therefore be rigorous, defined, consistent and relevant across the key outcome areas. The methods thus consist of a series of interlinked and mutually supportive strategies and processes encompassing four main areas;

1. site selection

2. data collection – objective/subjective /aesthetic recording,

3. the development and plan for the application of the scientific filters and analysis of data,

4. the production phase where, through the creation of finished art works, the parallel themes are bought to coherent resolution.

Each will be discussed in turn below.

4.2 Selection of Sites

The first step in developing the methodology of re-enter in establishing communication with the concept of place is the choice of physical place in which
to conduct the study. As well as choosing a *place as stage* upon which to act, there is the equally important consideration of the approach to be adopted so as not to allow unconscious predetermination to bring fixed attitudes to bear on data collection and analysis. To approach familiar territory with the viewing filters of the individual *traveller* seeking new sights informed by the *scientific model* could easily be swayed by previous entrenched programming – learned and experienced histories. Therefore, recognition that the roots of human/nature value sets can hinder fresh *perceptions of place*, the *entering into place* needs to be with an open mind – as much as is humanly possible. The applied set of intellectual tools means that the *experiment* is directed to the external world with an expectation that the outcome will reach beyond the previous experience.

It is necessary that the sites be similar enough to be broadly comparable but, at the same time, show sufficient differences to be individually characterizable and amenable to the analytical power of the methods to be applied to their interrogation.

The first consideration is the selection of littoral zones within the *place particular*, the Townsville area – the artist/author’s placement, which forms the *metro-cell* (the defined area of the focus), within which the individual *nucleic sites (littoral zones)* were considered. The terminology used in the study describing *place* – sites/locations/zones – is interchangeable, in the descriptive sense. It was considered that five sites would be a reasonable focus for a manageable study.
This had the serendipitous advantage in that, not only is five a practical number for the scope and time of the study, but it is also one that has recurred throughout the selected literature in connection with science and the evidence of nature's dynamic systems (see section 2.5: 47).

Being a coastal place, the Townsville/Magnetic Island area has many shorelines for potential inclusion. However the number of sites considered for selection is necessarily limited by the primary criterion of the artist’s personal connection with and memory of individual places within the Townsville region. The personal criterion was qualified by the degree of contact or experience indicated through a five point scoring system (five is Very High and one Very Low). The remaining criteria are also scored on the five point scale and used to generate a total score for each site under consideration.

- **Propinquity to the Place Particular**
  The site must resonate with the local geography of the place particular – Townsville region, and be placed within a reasonable spatial radius. That is, within travelling distance, requiring less than one hour travel time.

- **Evidence of Human Interference**
  The site must not have been subjected to significant human interference within the last fifteen years, and evidence faithfulness to natural habitat,

- **Accessibility**
  The site must have reasonable accessibility to the general public, as well as to the researcher – since multiple experiences and familiarity with a site is intrinsic to a sense of the place particular,
• **Evidence of Distinctive Characteristics**
  Each site should ideally display individual environmental characteristics, so far as reasonably possible within the similar locale of the littoral zone, e.g., muddy flat; sandy; rocky, mangrove etc. This should, in turn, indicate an element of variation with regard to the hosting of patterns and life forms within,

• **Manageability of the Site**
  The magnitude of the site has to be of a reasonably manageable size to accommodate the time frame of the research.

Table 4.2.1 details the application of the selection criteria to the fourteen practically suitable sites.

Five sites achieved a ranking of five on special personal relevance to the artist, with another three having a significance of four. When the scores on the remaining other criteria were combined, eight attained a score of twenty five or above and these were considered for selection, as follows:

- **Point Pallarenda** – 28.5
- **Saunders Beach** – 28
- **Rowes Bay** – 27.5
- **Ross River Mouth** – 27
- **Geoffrey Bay** – 26.5
- **Radical Bay** – 25.5
- **Pallarenda Beach** – 25
- **Cockle Bay** – 25
Table 4.2.1 Criteria for Site Selection

<table>
<thead>
<tr>
<th>Place</th>
<th>Personal Relevance to the Shaping of the Artist</th>
<th>Propinquity to the place particular</th>
<th>Evidence of Human Interference</th>
<th>Accessibility</th>
<th>Evidence of distinctive characteristics</th>
<th>Manageability of the Site</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cape Cleveland</td>
<td>1</td>
<td>4.5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>24.5</td>
</tr>
<tr>
<td>Cockle Bay</td>
<td>3</td>
<td>5</td>
<td>4.5</td>
<td>2.5</td>
<td>5</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>Geoffrey Bay</td>
<td>4</td>
<td>5</td>
<td>3.5</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>26.5</td>
</tr>
<tr>
<td>Horseshoe Bay</td>
<td>2</td>
<td>5</td>
<td>3.5</td>
<td>5</td>
<td>4.5</td>
<td>4.5</td>
<td>24.5</td>
</tr>
<tr>
<td>Nelly Bay</td>
<td>3</td>
<td>5</td>
<td>2.5</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>24.5</td>
</tr>
<tr>
<td>Pallarenda Beach</td>
<td></td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>Pallarenda Point</td>
<td></td>
<td>5</td>
<td>3.5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>28.5</td>
</tr>
<tr>
<td>Picnic Bay</td>
<td>3</td>
<td>5</td>
<td>3.5</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>21</td>
</tr>
<tr>
<td>Radical Bay</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>4.5</td>
<td>5</td>
<td>25.5</td>
</tr>
<tr>
<td>Ross River Mouth</td>
<td></td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>27</td>
</tr>
<tr>
<td>Rowes Bay</td>
<td>4</td>
<td>5</td>
<td>3.5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>27.5</td>
</tr>
<tr>
<td>Saunders Beach</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>Shelleys Beach</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>5</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>Townsville Strand</td>
<td></td>
<td>5</td>
<td>2</td>
<td>5</td>
<td>2.5</td>
<td>5</td>
<td>24</td>
</tr>
</tbody>
</table>
Five sites stand apart from the other three and logically self select as the research sites. While Rowes Bay had a personal relevance score of four, it was clearly differentiated from the Townsville Strand which, while it achieved a five for personal relevance, scored only 24 across all criteria. Thus the five highest scoring sites were chosen as the sites for exploration of the aims of the study:

- **Pallarenda Point** – 28.5
- **Saunders Beach** – 28
- **Rowes Bay** – 27.5
- **Mouth of Ross River** – 27
- **Geoffrey Bay** – 26.5

Figure 4.2.1 shows the position of the eight highest ranking sites which have emerged from this process within the *place particular*, with the five highest sites highlighted in bold.

![Map of Townsville Coastal Area](image)

**Figure 4.2.1** Map of Townsville Coastal Area – detailing highest scoring sites
4.3 Data Collection and Recording Process

This section refers to the plan for obtaining data to capture the character of the site and enable:

- an understanding of the nature of individual sites and their relation to each other through personal sensate experience – the experiential method – documenting my personal reaction/aesthetic,
- a viewing of place through an understanding of the codes of nature’s dynamics; its mathematical structure of growth and pattern formation – the scientific, analytical method,
- synthesizing both types of material to support ongoing analysis working toward the development of an art product.

Practical considerations must, however, also be taken into account in determining the capacity to record and analyze the individual sites including the study schedules, and the means of capturing raw data to inform subsequent analysis and art production. These recording and analyzing methods and considerations were essentially assembled as below:

- Site/place visits – contact time
- Sample collection – specimens of place
- Recording tools:
  i. photography
  ii. sound recordings
  iii. diary entry

4.3.1 Site Visits – Contact with Place

Contact time with each of the sites is a key element in the gaining of knowledge in relation to each place. As each space or site becomes more familiar, it is anticipated to develop as a place of kinaesthetic and perceptual experience – a
field of pragmatic activity aimed at a holistic view. In the terms of Gregory (1997) a *qualia* experience is the experiencing of a *thing* in real time. The true experience of *place* can only happen within the space of the place itself, activated through the passing of real time.

A time schedule to assist the planning of site visits was developed (Table 4.3.1). An initial daily contact period during the first week was planned in order to gain an epiphanic idea of each place in relation to the others. This was to facilitate a kind of “simultaneous perception” (after Hiss, 1991), and thus, to bring the five *places* into a broader perspective of the *place particular* by the conscious awareness of their nearness yet distance. As Hiss (1991) explains,

...through this change of perception the familiar hard-and-fast boundary between ourselves and surroundings seems softened, expanding our sense of the space occupied by “here” and the time taken up by “now”, and uncovering normally ignored patterns of relationships that make us part of larger groups and events [and places]. (Hiss, 1991: xiii)

The time frame for *place interaction* was designed to be open so as to allow the intuitive sense to dictate – to discover what each site and each day suggested as to what was an agreeable/ideal amount of time and time of day for the prospect of the best sensate experience.
**Table 4.3.1** Time Plan – Week One

<table>
<thead>
<tr>
<th>Time period</th>
<th>Mouth of Ross River</th>
<th>Rowes Bay</th>
<th>Point Pallarenda</th>
<th>Saunders Beach</th>
<th>Geoffrey Bay</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-8am</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>8-10am</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>10-12am</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X X</td>
</tr>
<tr>
<td>12-2pm</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>2-4pm</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>4-6pm</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X X</td>
</tr>
<tr>
<td>6-8pm</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X X</td>
</tr>
</tbody>
</table>

**Day**

| Day | M | T | W | T | F | S | S | M | T | W | T | F | S | S | M | T | W | T | F | S | S |
|     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

128
4.3.2 Specimens of Place – Samples of Place

If life began in the sea, then it is no surprise that the sea, and all it contacts, is where life or its traces are most abundant, where the strange and unseen reside. The littoral zone is an inexhaustible capturer of evidence of place, time and space, a rich textural forest, and it would be a futile and beyond life time effort to attempt to record all there is to note, even in one small area. It is itself a literal, physical documentation of place – an *archaeography* of place; a transcribing of what was and what is, in the patterns and forms that compose it as a place. Any detailed understanding of it compels the collection and study of its component parts, hence the need to sample in a disciplined and systematic way. In applying the methodology, the material residue of each *site specific* was to be the driver for the development of the art product resulting from the study

The collecting of *specimens of place* for scientific and artistic interpretation can be linked to the histories of the *Wunderkammer* (chambers or cabinets of wonders – precursors to the museum and art gallery) and the innate human desire to collect. It is also influenced by the primary consequence of accumulation and collage in modern and contemporary art where items take on a life, history and meaning of their own, beyond the symbolism placed on them by the artist and the observer. Where the artist and scientist seek to achieve an understanding of the mysteries of nature, *objects of place* become *arbiter of place; symbols of place*. Even though each of the littoral zones will display a different composition on each visit, it is predicted that there will be basic
characteristics that can be considered as representative samples of these places. Table 4.3.2 presents a sampling plan for specimen collection, together with the intended screening and interpretive processes.

**Table 4.3.2** Sampling Plan for Physical Material of Place

<table>
<thead>
<tr>
<th>Sample Material</th>
<th>Selection Process</th>
<th>Projected Analysis/ Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand/mud</td>
<td>small samples from different locations within the site.</td>
<td>Physical/microscope/artistic</td>
</tr>
<tr>
<td>Plant</td>
<td>small samples of local plant life, including any located marine algae.</td>
<td>Physical/microscope/Artistic/scientific</td>
</tr>
<tr>
<td>Invertebrate</td>
<td>sampled invertebrates for further viewing i.e. plankton and minute creatures or selected forms found within each place</td>
<td>Physical/microscope/artistic/scientific</td>
</tr>
<tr>
<td>Mineral</td>
<td>small samples of local minerals other than sand or mud e.g. rock, shell.</td>
<td>Physical/ microscope/Artistic/scientific</td>
</tr>
<tr>
<td>Water</td>
<td>small samples of sea water</td>
<td>Physical/ microscope/ artistic</td>
</tr>
<tr>
<td>Unknown Material</td>
<td>any unidentifiable material for identification</td>
<td>Physical/ microscope/artistic/scientific</td>
</tr>
</tbody>
</table>

A small hand held magnifying – x30 – glass to be used for viewing the finer textural details of objects is part of the equipment for site contact and sample collection. A Marine Parks permit Nº QN04021 was obtained to collect samples – mainly required for the National Marine Park ‘A’ zones of Pallarenda and Magnetic Island (Appendix A). As the tourist will collect souvenirs of places visited, samples of site are memories of time and place, and a selection of objects and subjects of place gathered in the debris littering the tidal wash lines.
and from areas exposed between extreme low tide – the infralittoral zone – and the high tide line and above – the supralittoral zone – will be collected as examples of each site.

Quantities of small glass bottles and plastic containers with screw tops will be used to store the samples of sand, water and small objects, with the details of the site, day and position taken to be written on labels of clear sticky tape. A large box designated for each site will hold the larger objects gathered over the period of collection. This gathering and storing of objects of site is designed to allow for ongoing examination in the studio.

4.3.3 Recording Tools
Physical and perceptual senses may be the best recording tools for observing place but they have limited capabilities for objective memory. Physical place is also composed of other sensorial data; the ambience of visual structure which are evident in form and colour to the atmospheric temperature and resonance of local sound – not able to be collected as a whole, yet integral to the genius loci. Some of these aspects are able to be sampled in less tangible ways through recording processes, which help to reflect the salience of place. The recording tools needed to collect these facets of place were selected to capture impressions, and are described below.

The Recording Plan (see Table 4.3.3) gives an indication of the expected focal concerns and recording techniques used to gather information of place.
### Table 4.3.3 Recording Plan

<table>
<thead>
<tr>
<th>Focus</th>
<th>Recording Process</th>
<th>Recording Tool/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stationary forms &amp; patterns</td>
<td>Diary notation, photography and sketches of forms of place, e.g. mangroves, rocks, beach formation, interesting tidal flotsam forms and patterns</td>
<td>Visual diary, digital camera, frottage, plaster casting</td>
</tr>
<tr>
<td>Mobile forms</td>
<td>Diary notation, photography and sketches of observed inhabitants of place, e.g. crabs, worms, gastropods</td>
<td>Visual diary, digital camera</td>
</tr>
<tr>
<td>Tidal position</td>
<td>Tide level recorded both by photograph and diary &amp; weekly sheet entry – sketches may be included</td>
<td>Visual diary, digital camera, observation</td>
</tr>
<tr>
<td>Local colours</td>
<td>Diary notation, photography and colour palettes</td>
<td>Visual diary, digital camera, sensate</td>
</tr>
<tr>
<td>Local texture</td>
<td>Photography, diary notations, sketches, frottage rubbings and castings of local texture, e.g. plaster casting of tracks, traces and selected local objects</td>
<td>Visual diary, digital camera Frottage, sensate, plaster casting</td>
</tr>
<tr>
<td>Local sounds</td>
<td>Ambient sounds of site - noted in diary entries and digitally recorded</td>
<td>Sound recorder</td>
</tr>
<tr>
<td>Temporal ambience</td>
<td>The effects of wind, tidal flow, temperature and weather effects recorded through diary entry and photographs</td>
<td>Visual Diary</td>
</tr>
<tr>
<td>Site samples</td>
<td>A component of sampling undertaken and recorded through diary entry and time/sample/location forms – e.g. shells, carapaces, flotsam</td>
<td>Visual diary, collection containers, digital camera, plaster casting</td>
</tr>
<tr>
<td>Personal connections</td>
<td>Personal insights from the artist noted in each site diary</td>
<td>Visual diary, digital camera, sensate, intuitive</td>
</tr>
</tbody>
</table>

By taking into account the *aspects of place* which will support their representation, Table 4.3.3 covers the visual, tactile and partial ambient elements that, when combined with the idiosyncratic experiment undertaken, gives a framework for discourse. A true *gestalt of place* would of course include an exegesis of all sense descriptions of *place* yet the difficulty of their recording precludes their explicit inclusion in a *holism of place*. 
To help facilitate the recording process, a weekly check sheet was devised (see Figure 4.3.1) to record the times each place was visited and the samples collected as a snapshot description and correlation of each place. The sites are indicated by the coloured columns; e.g., R R is Ross River and so on. The columns to the right of the site columns are abbreviations for Diary Entry – D E; Photographic Record – P R; Sound Recording – S R, with space for other notations.

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Time</th>
<th>R</th>
<th>R</th>
<th>B</th>
<th>P</th>
<th>P</th>
<th>S</th>
<th>B</th>
<th>G</th>
<th>B</th>
<th>D</th>
<th>E</th>
<th>P</th>
<th>R</th>
<th>S</th>
<th>R</th>
<th>Other</th>
<th>Samples Taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 4.3.1** Exemplar Weekly Check Sheet

### 4.3.3.1 Photography of Place

The digital camera is an important instrument in the collection of the sights of site. Used to document objects and subjects, as well as encompassing the broader view of place, it becomes a composer of the aesthetics and morphology of place detailing both the particular and the regular. As an aid to the tourist/traveller’s memory of place, it records the trace of the journey in the
moments of awareness of the *other*, where *temporal frames of place* become immediate records of provoked thoughts and sensations of past passage.

Each site will be digitally photographed at each visit. From the panoramic vista to the close up detail of a shell or crab, the convenience of the digital camera allows the taking of hundreds of photos (depending on the capacity of the memory card) on each journey and also offering the ease of erasure and retake. A very moderate range four megapixel camera with an optical zoom of ten will be used to take the onsite photos. The advantages of the digital camera over the traditional SLR (Single-Lens-Reflex) camera are manifold. The superiority of the SLR image quality is outweighed by the ease and economics of the digital camera. With no film and development costs and the ability to download and correct any image imbalances with a computer program, as well as the capacity to store large numbers of images of CDs and DVDs, a digital device offers the average photographer a chance to create multiple high-quality images.

Change is perpetual, even more visibly obvious in the littoral zone, and the instantaneousness of the digital medium is invaluable for encapsulating the vagaries of active movement – whether atmospheric, tidal, inanimate or animate – allowing hundreds of photos to be taken at each visit. The spontaneity of the camera lens can be deemed more reliable than the artist’s eye in information gathering within a given time period. Of course the artist’s eye is always roaming, always seeking the inspirational, aesthetic communication between
subject/object and viewer – therefore the photographic eye is governed by the artistic eye.

No preconceived idea of what or how to photograph each site exists other than the desire to record the *wider view as well as the smaller details of object in place*. It is envisioned that each day will be a venture in action, interaction and reaction, so an unencumbered mind will be needed to observe from the perspective of the *traveller* in novel surrounds.

### 4.3.3.2 Audio Recording

Sound is an integral part of place, and is absorbed as part of the whole in the interfacing of the experiential appreciation of place, and when a concerted effort is made to isolate the *sounds of place* another domain is visited, potentially enhancing the personal view. Sound, like odour and temperature, are all particulars in the individual *personality of place*.

It may be largely academic whether the spatially inchoate mixtures of sound, like odour, when isolated can give an individual sense of place, yet they are intricately linked to the indelible qualities of *each place*, and hence an important dimension of the study. The recording of sound as an *element of place* however, will take a secondary position of importance behind the visual and tangible features comprising *place*. The process of recording the *sounds of place* will undergo an experimental evolution and will be governed by the available technical recording instruments.
4.3.3.3 Diaries of Place

To assist the artist/traveller in locating, reviving, and unravelling the narrative and patterns of place, the visual diary is integral to the recording process as it facilitates the process of layering field observation with the artist's abstract imagery, the mixing of naturalism and stylist, substance and trace, present and remembered experience and rough calculation. Each site will have a separate diary which will be included in the daily equipment employed to record various aspects and thoughts related to each visit. Used anecdotally, the dairy gives the option to record graphically, personally and philosophically, the parameters of each site.

4.4 The Scientific Filter – Data Analysis

The gathering and recording of data during the site visits need to be analyzed in a manner that unites the personal experience and scientific perspective. Cameras, sound recorders and diaries are recording tools of both traveller and artist, as is the accumulation of particular objects collected from the travelled spaces. Scientific recording methods operate along parallel paths, though with different outcome expectations. Collected data will be taken further by the use of sophisticated scientific tools, though moving beyond the systematic procedures of which science is somewhat formulated and restricted by. By developing an understanding of the application of scientific technologies that apply to the area of study and by using the tools of science as the tools of the
artist, the aesthetic of the minutiae of place will be sought, revealing the stepping stones that will channel an artistic vision of place.

The scientific paradigm and mathematical understanding of the structure of growth and formation look for the patterning, symmetry, order and chaotic weaving of a place – endeavouring to see further into place by examining the minutiae of the space of place. To facilitate this appreciation, the scientific perspective adopted is expanded by taking advantage of local marine scientific expertise and to benefit from a basic tutoring from, and contact with scientists from the school of Marine and Tropical Biology, James Cook University, AIMS (Australian Institute of Marine Science) and GBRMPA (the Great Barrier Reef Marine Park Authority), thus initiating a science/art discourse.

4.4.1 Analytical Tools: Microscopes
Pattern infiltrates all magnitudes of place, from tidal patterns to the cellular structure of the substances of place and, as vestiges of past existence or the structural symmetry is not easily erased. A closer look at the details of a site involves time and the use of technology. As place, and objects of place are constructed as much by the hard-to-see and the invisible as by the visually perceptible, the interrogation of these hidden patterns becomes an extension of the sampling process. To assist in managing the scope and scale of place – which can only be a specifically human experience of place – a selection of the
samples taken from each site will undergo examination through various microscopy techniques.

To gain a basic understanding, and therefore preliminary skill, in the various uses, abilities and availability of microscopes, a period of instruction and experiment will be undertaken to facilitate the achievement of this objective of the research. The process of learning to operate the different microscopes – low power, high power light microscope and the scanning electron microscope (SEM) – is an involved one, especially as this researcher had not before experienced these instruments, and is an experimental undertaking underpinning the analytic framework. Access to the scientific tools of microscopy will be facilitated through James Cook University’s Advanced Analytical Centre.

4.4.2 Photomicroscopy

The microscopic view of objects of place has been the stanchion of the scientific view, and the microscope equipped with camera allows the recording of the normally unseeable patterns of place. Photomicroscopy is to the scientist as the camera is to the artist/photographer, and the contemporary artist seeks any tool that will elucidate or depict a profound, evanescent, or even illusionary subject or interest. During the analysis, images of particular forms and patterns will be recorded through the use of the digital imaging process that goes hand in hand
with microscope techniques. From the samples taken from each site, a variety of items will be selected and recorded through the microscope’s camera.

A handheld digital microscope camera has been obtained for use in the studio. This piece of equipment does not have the precision standards of the scientific tools used but allows for ease of use and accessibility – where objects can be scrutinized either quickly or at leisure.

4.5 Integrative Production of Art Works – Methods of Practice

The matrix of being is a parallel universe, where time and experiences of place are turned into artworks. The artist’s idiosyncratic perspective brings with it the creative element of the study. Although the camera and microscope will reveal and detail what is actual, the artist must choose to depict what is relevant to self, site, specimen and study with regard to media, experience and projected outcome.

Returning to places that have had some mapping in memory, the benefit of time and experience using a new set of tools forms a new memory of place and space. The leit motif of place is determined not only through the artist’s memory of place and the contemporary journey and interaction with each selected site, but also from the collected sample specimens gained during the period of site investigation. Key deliberations in the process may be brought about by the
recurring and novel patterns and forms within each site seen through the different magnitudes of space revealed by the microscope.

Through the conjunction of the personal experiential interaction with place, the data collection process and the analytical perspective of the scientific paradigm, various codes of nature’s patterning within each site will be brought together and the personal response directed or stimulated the artistic product - becoming the Motifs and Signatures of Place to be depicted in various media. In deciding how to manifest what is revealed and gained from the research, the artist brings to this deliberation the experience and skills already acquired through previous practice. The process of analysis is thus designed to lead toward the artistic output.
CHAPTER 5 – Data Collection and Analysis of Place

5.1 Implementation of Process

This chapter reports the implementation of the research plan, extrapolating the experience of the artist/traveller looking through the scientific lens in order to give both context and attribute to place and to interpret the habitual experience of place sufficiently to provide concentrated topophilic understanding; thereby testing the effect of the adoption of this new epistemological filter.

Selectivity and perception are not always congruent and while, for the most part, culturally based, they are also personally determined. There is screening of experiential input and breaches in the understanding of experiences while, conversely, certain forms and patterns repeatedly attract attention. Whatever it is that directs these contrary states, Relph (1976) observes that we are able to smoothly accept such biases and lacunae in our overall knowledge.

This study aims to realize a characterization of place idiosyncratic to this artist/traveller applying a different filter, one that weaves rational observation with the abstract language of place through the mental construction of symbolic interpretation; forming a negotiation between the self and the external reality – a multiplicity at times, yet with underlying similarities.
5.2 Site Individuality

The individual qualities of a site can be discerned in the colours, patterns, forms, objects and subjects that each display outwardly to the observer. No place/site can be identical yet by the association of their geomorphic similarity as littoral zones – shorelines – all spaced within a small radius within the Place Particular, they are counterparts of an ecosystem; more alike than different. Though each has physical parallels easily detailed, the emotional quality each place radiates is determined by the mediation processes of the receiver/interpreter. In this section, each of the sites will be described through this dichotomous process of personal/scientific observation and aesthetic perception.

5.2.1 The Mouth of the Ross River

A small area of braided beach and boat channel, the mouth of the Ross River - Plate 5.2.1 – is tucked against the port entrance road and the rocky port breakwater wall. On one side trucks rumble to and from the local port; on the other sea vessels travel in and out the mouth of the city’s chief river to the fishing boat wharves. Necessary to the local economy, both avenues of industry are dependent on the sea and tides to continue their existence, yet both are oblivious, or indifferent to this sandwiched space. It is not a particularly popular or noted attractive beach.
Plate 5.2.1 Mouth of Ross River, C Miles, 2005

Mainly forgotten or unknown, it is used by surrounding residents for dog exercising and yabbie pumping. With small to medium sized mangroves re-establishing along the edge of the rock protected shoreline, it is the most disturbed site within the group (through the dredging of the boat channel and port redevelopment). Yet it has much to recommend it as a place worthy of notice and appreciation.

Its display of intricate and endless varieties of sand or sand/mud patterns (exampled in Plate 5.2.2) are characteristic of this site, where each day a different demonstration of the physical dynamics of the effects of flow, contact and time produces the meandering and branching patterns in three dimensional form, spreading across the exposed lower littoral zones. They are examples of periodicity and spatiotemporal symmetry.
Plate 5.2.2  Mouth of Ross River sand patterns, C Miles, 2005
Consecutively these patterns can be explained in the mathematical terms of Stewart (1998) \textit{traverse dunes, barchanoid ridges, linear dunes} or \textit{seifs}, and a mixture including \textit{barchan dunes}. The travelling wave is a constant in nature occurring in liquids, gases, sound, light, x-ray, and microwaves and are allied to the creation of these sand/water formations, and which Thompson (1992) refers to as dynamical laws governed by the general principles of physical law. The littoral zone abounds with the traces and tracks of animate life and the patterns left by the movement of sand dollars – species \textit{Arachnoides placenta} (phylum, \textit{echinodermata}), as well a few varieties of molluscs – gastropods (univalves–snails) and bivalvia (bivalves–doubled shelled) – are found in this site, as in other sites. The amazing little blue soldier crab (phylum Crustacea, order Decpoda – Plate 5.2.3) however, was observed only at the Mouth of Ross River site.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{Plate_5.2.3.jpg}
\caption{Mouth of Ross River Soldier Crabs (scientific name \textit{Mictyris platycheles}), C Miles, 2005}
\end{figure}
Memories of earlier connections to *local place* were of these little crabs scurrying along the edges of the tide at Point Pallarenda in the late 1960s; interestingly, for whatever reason, they do not now inhabit this area. As planned, invertebrates (and their external structures) and simple plant life formed the basis of collected physical data from the sites. Images of their particular patterns were recorded mainly through the *artist/traveller’s* eye, captured by the digital camera and further revealed by scientific lens of the microscope. The dominant particular forms of this site are definitely the meandering, branching sand patterns, created not only by the effects of tide on sand but also the radiating dispersal patterns left by feeding worms and small crabs, including the little blue soldier crabs which added distinctiveness to this site. Expectations of seeing these diminutive beings scurrying this way and that in their efforts to elude notice elicited a new valuation of a place that was previously thought to be reasonably familiar. Memories of childhood years and soldier crab experiences at other beaches along the East Coast of Queensland flooded back. As an epicentre of calm within a circle of activity, this small area as a port within a port evokes the meaning of the word *haven*.

**5.2.2 Rowes Bay**

Rowes Bay (Plate 5.2.4) is unique in that it is the only cobblestone beach in the group. Another small area effectively shielded from the general interest of Townsville inhabitants, it nestles around the corner from the popular Strand and Kissing Point headland. Fringed with small mangroves, the multi-hued forms of
the naturally occurring sea-rounded, cobbled granite contrast with the large angular forms of the purposely positioned, protective rock wall and manifest a dominant individuality to this space – creating motif (Plate 5.2.5).

This site is mainly visited by fisher people, scientists or children from the Reef Guardian Program operated by the Belgian Gardens Primary School. Not a popular place for the average beach goer (mostly muddy based) this site nevertheless abounds with different life forms previously unknown to the researcher.

Plate 5.2.4  Rowes Bay, C Miles, 2005
Plate 5.2.5 Rowes Bay – cobblestones, C Miles, 2005

The gnarled, worm case encrusted and pitted forms of long discarded invertebrate tests – shells etc., lie scattered and covered with the mud that accumulates in this protected corner bay. This researcher had only casual familiarity with this site as the discovery of the diversity within this site ultimately revealed. This is indicative of the superficial knowledge of place we, in general, have of our local spaces, yet we often seem content to assume a believable attentiveness. A small brown sea star (Asteroidea; Cryptasteriua pentagona) shown in Plate 5.2.6, is found only at this site in North Queensland (Muller and Troschel, 1840; Dartnell, personal conversation), and with its camouflaging colour blends with its surroundings within the cobblestones of the midlittoral zone, where tiny dark crabs scurry as the rocks are turned to discover what they hide.
Plate 5.2.6 Rowes Bay sea star (class Asteroidea, scientific name *Cryptasteriua pentagona*), C Miles, 2005

To see beyond the limits of previous awareness, the muddy unknown zones of the littoral need to be negotiated. As the tide went out on this site, a multitude of life forms is revealed to the aware observer. It is a shelter for small formations of bryozoans and brightly coloured sponges and ascidian which can be seen sprinkled through the infralittoral zone and exposed only at low tide. Living razor shells display themselves in regimented formation, where the artist/traveller has only observed the broken, washed up husks on beaches past travelled. The small form of a snail coloured bright red wending its way amongst the mud coated stones attracts attention, though with closer observation, the realization is that the redness is a covering of algae and not the true colour of the snail’s shell. Many unknown sights are divulged through attention and curiosity which begin to deepen a sentiment for this place. It evokes a secretive sensibility,
which only renders its unconcerned, seemingly ancient inhabitants and relics to the now attentive, previously indifferent observer.

5.2.3 Point Pallarenda

The shore at the Point Pallarenda headland (Plate 5.2.7) is the closest part of the mainland to Magnetic Island, facing directly across from the southwest of the island before it sweeps sharply northwest towards Shelley and Saunders Beaches. This site is situated at the end of a road traversing the edges of the area known as the Town Common – the only reserved wetland in an environment that previously abounded with natural watercourses, which demonstrates the incipient encroachment of the expansion of suburbia.

Plate 5.2.7 Point Pallarenda, C Miles, 2005
The beach area along the tide wash lines is frequently littered with the forms of white calcareous husks of the algae Halimeda, and the delicate lacy casts of bryozoan structures. This is a glorious place where boulders, small and large, etch the shoreline and tumble down to a small sandy beach next to the remnants of a rock breakwater and demolished jetty which were established to support the old quarantine station placed just in from the beach. Sporting an array of geological textures and colours – black, grey, red, terracotta, ochre, and a mixture between, these boulders are decorated by the tonal bands of the tidal lines, and local life – barnacles, limpets, gastropods, worm casings, chitons – an ancient group of molluscs (phylum Mollusca, class Polyplacophora), found only in the sea (Plate 5.2.8), and their trace patterns as they feed on the covering algae. These abstract arrangements of sculptural form, colour and tonal placement become as *masterpieces of place*.

Plate 5.2.8 Point Pallarenda chitons (*Acanthopleura gaimardi*), barnacles (*Tesseropora sp*), limpets (*Siphonaria atra*) and worm casings, C Miles, 2005
Low tide and, in particular, extreme low tide allows the exposed multitude of life often submerged beyond view by the average tidal heights, to be accessed. One can walk along the opened beach amongst the rocky pools which are shelter for a variety of life forms. Form algae, brown and green, of various shapes (*Halimeda cylindracea, Padina australis, Sargass*), to ascidians, sea cucumbers (holothurians), shrimps, crabs, gooseneck barnacles, anemone and little fish, calmly awaiting the sea’s recovering. Sinuous grazing patterns of dugong are seen through the exposed beds of sea grass – *Haladule uninervus*. Particular to this site are the delicately constructed feather stars (Crinoids, shown in Plate 5.2.9); considered the most ancient of echinoderms, anchored to their protective rock by their cirri (anchoring appendages) – Latin for *curl*, moving their arms (pinnules) sinuously in the small sea pools.

![Plate 5.2.9 Point Pallarenda Feather Stars](image)

*Plate 5.2.9* Point Pallarenda Feather Stars (Phylum Echinodermata, Class Crinoidea), C Miles, 2005
Here the mainland and Magnetic Island seem almost united again. It is a vibrant place, where life abounds and the vitality of colour and form bring a feeling of freshness and expectation.

5.2.4 Saunders Beach

Saunders Beach, the furthermost site of the study, is an expansive space with a broad, open, flat beach that travels into the distance, where the sound of the waves is a constant background rhythm. Fringed with Casuarina trees just above the high tide mark, it settles into low to medium scrub along the uninhabited coast. One of the first forms that strike resonance is the covering of the upper mid littoral zone by the remarkable pattern of tiny sand balls left by small crabs as they feed – Plate 5.2.10.

Plate 5.2.10  Sand balls covering Saunders Beach, C Miles, 2005
Glimpses of these minute creatures (adult size 20mm) scurrying into their holes feel almost imagined – too fleeting to focus as a reality. During high tide they live beneath the sand in hard packed burrows, as the tide recedes they dig their way to the surface and start to feed by scraping the sand between its claws. After eating the organic matter mixed within the sand they pack the filtered sand into a ball and leave it behind as they continue feeding, creating a trace of their journey. Plate 5.2.10 shows the beach at the height of feeding where the sand balls pack the whole mid-beach area, though some patterns are quite distinctive (Plate 5.2.11) before they are buried under the accumulation.

Plate 5.2.11  Distinctive feeding patterns of sand bubblor crab  
– Saunders Beach, C Miles, 2005

Sand wave patterns are also individual and notable to this site, created not only by the usual tidal regularity but also by the ebb and flow of the mangrove framed creek that meets the sea to the right of houses of this beachside community.
Particular to this site was the accumulated debris of past floods and rough seas, amassed branches and even whole trees (Plates 5.2.12), and the interesting finds of weather worn, worm holed or barnacle decorated logs (Plate 5.2.13).

Plate 5.2.12 Saunders Beach driftwood, C Miles, 2005

Plate 5.2.13 Saunders Beach worm/crustacean tunnelled driftwood, C Miles, 2005
These large areas of flotsam piled high and littering the supralittoral zone of the beach were interspersed with the usual marine flotsam. Later, during the highest tides of the year, the beach was washed almost clear and these amassed heaps were regained by the sea.

During the mid year the fascinating sight of a beach decorated with small star shapes (Plate 5.2.14) was added to the experiences of this site.

Plate 5.2.14 Saunders Beach sea star cookie-cutter sand impressions

Like cookie cutter shapes embossed into the sand, these little sketches of place were again indicative of how a place cannot begin to be known until one takes time to observe. Plate 5.3.15 reveals the constructors of these patterns that spread across the exposed mid tide area as they burrow into the sand and feed, their numerous tiny tube feet (poda) flailing when lifted to discover their identity.
Plate 5.2.15  Saunders Beach sea stars underside and top, (phylum Echinodermata, class Asteroidea – pentameral symmetry) C Miles, 2005

A sea jelly influx was most evident here in the early months of contact – though each of the sites was a final resting ground for these pelagic patterned forms (Plate 5.2.16).

Plate 5.2.16  Saunders Beach sea jelly – hairy or snotty (phylum Cnidaria – coelenterates, class Scyphozoa, C Miles, 2005
This site has past connections for the artist yet many of the creatures were observed for the first time during the contact period. The sentiment toward this place is ambiguous, whether as a result of the author/artist’s past experiences, or some intuitive nuance not yet acknowledged. Shaded by a melancholy, it also exudes a peaceful wistfulness, mysterious yet with an expanding promise of consciousness; it is a site that contrasts the brooding while promising escape and carefree open space.

### 5.2.5 Geoffrey Bay

Geoffrey Bay (Plate 5.2.17) the only site on Magnetic Island is a place where the reef meets the beach, and is characteristic of the northern tropical islands of Queensland. Great boulders of granite tumble down to the sea and edge the bay like protective bookends characteristic of the thematic outlines of Magnetic Island.

![Image](Plate 5.2.17 Geoffrey Bay Magnetic Island, C Miles, 2005)
The Casuarina lined sandy beach curves gently around a small bay embracing remnants of a small reef shelf, which strives to re-establish its former magnificence. The dead and algae covered reef rubble and the vestiges of invertebrates litter an exposed shore and are ground down by the constant power of the sea into the coarse coral sand that accumulates in the south western corner. Red, green and brown algae are all found here, both as washed up specimens and living within the shallow reef lagoon. At extreme low tides the reef is open for view, and its marvels are revealed (Plates 5.2.18 to 5.2.20). Subtle and vibrant colours are strewn through the jungle of patterned and textured corals (living and dead) – an inundation of sensory stimulation housed within a small space. Little crabs, fish, sea cucumbers, snails, molluscs scuttle or glide into view where the expectation of discovery is heightened and realized.

Plate 5.2.18  Geoffrey Bay – live hard Coral (phylum Cnidaria, class oantharia, order Sleractinia, family Faviidae, species *Leptoria phrygia*)  
C Miles, 2005
Plate 5.2.19  Geoffrey Bay – algae covered coral remnant (Phylum Cnidarian, class Zoantharia, order Scelactinia, family Poritidae, species A. allinga), C Miles, 2005

Plate 5.2.20  Geoffrey Bay – beached nautilus shell (Phylum Mollusca, Class Cephalopoda) with barnacles attached, C Miles, 2005

Geoffrey Bay has a diversity and colourful vibrancy different to the other sites, though it seems reluctant to exhibit its treasures. The lowest tides allow observation of a reef environment just by walking in from the beach. Like an
age old museum – a natural Wunderkammern – its older collections gather algae and silt, to be raided by the marauding tides and delivered up again for display along the shore’s edge only to be gathered up as treasured artefacts for curatorial evaluation and reinterpretation.

5.2.6 Similarities

All five sites possess a distinct character, either topographically and/or compositionally as well as a sensed atmosphere. They are complex, though their components are structurally so similar that, without boundaries, they would blend into each other as spaces of singular sameness. Though each exudes a different sentiment, through a collation of parallel narratives, and the balance of relatively common features, they exude a general harmony. In deciphering these evocations these places read as physical dualities – borders between and of the land and sea. Blending and separating in continuous cohesion, they are places of passage yet reliability. Those that travel along or rest for a while, must absorb the effect of these scapes and be influenced, even if subliminally, by the harmonious tractions of transformation within an elemental constancy. The ambiguous word landscape cannot provide an adequate description of the nexus between land and sea. Yet the littoral zone is a scape (the word meaning is essentially the same as shape), which once meant a composition of similar objects (Jackson, 1984:7). Given that humans need to explain their circumstances in relation to the external world and its effect on them, it is the geography, geometry and processes of nature that unites these places and it is
human culture and symbolism that separates and distinguishes them, giving anthropomorphic sentiment to systems unreliable on such interpretations.

5.3 Characterization of the Sites – the Interface of Place

The twofold geometry of the littoral zone, which Sauer (1963:309) saw as a “congenial ecological niche in which animal ethology could become human culture,” is a universal place, where time becomes distorted. Each place has its own idiosyncrasies, its own character, which denotes an individual incomparable value yet all yielded a similar makeup of external, sensate objectivities. There was no pre-assumed hierarchy of the sites in respect of either evaluation or contact. Relativities of importance of one place over another represent a human value system that is calculated by gain or profit of some sort, yet individual preference for a place may be elicited by other factors. In this instance the gain sought was that of a connection with place, where the peripatetic individual elicits an internal response not previously attained.

Access to each place constituted a journey in itself and became, over the period of study, a desirably anticipated expedition. Each journey into place was different - the Mouth of Ross River which lies south of the city of Townsville was the closest to home base, and the principally level beach could be entered easily, as was Saunders Beach, the most distant site – situated in the Thuringowa shire, some thirty kilometres north of Townsville. Rowes Bay held a central position and entrance was gained via the sloping low rocky foreshore.
Entrance to Point Pallarenda, the northern most beach within the Townsville city limits, was through the old quarantine station situated at the end of Cape Pallarenda Rd. The area encompassed here began at the old break water and remnant jetty site and continued over the hill walk into the next cove – low tide permitted access around the Point by the exposed beach zone. Geoffrey Bay on Magnetic Island was unique as a ferry ride to Nelly Bay was required before a walk over Bright Point - the separating headland – gave entry into this southern bay.

5.3.1 Site Contact and Observation

Plate 5.3.1 exemplifies the Weekly Site Check Sheet (abbreviations explained in Figure 4.3.1) documenting the time and data trace. Succinctly written, it offered a quick overview of the times sites were visited supported by collection notes and comments.

![Site Check Sheet - Week 3](image)

**Plate 5.3.1** Example of Weekly Site Check Sheet
The first week of contact was designed to experience each of the sites during different daylight hours. To see a place at dawn, through the day and at dusk conveys different ambience, colour and sentiment. After the first week of imprinting, where each site was visited each day, the site visits settled into weekly visit schedule which, over this period clearly demonstrated that the littoral zone was a place governed by the dictates of the lunar cycle rather than the regularity of the twenty four hour clock. Figure 5.3.1 gives the monthly highest/lowest tide levels during the 2005 year, creating a pattern within a pattern – a tide time pattern within the wave motion of the sea.

![Figure 5.3.1 Tide Heights 2005](image)

Within the monthly cycle over the year another pattern of the daily and weekly high/low tide levels were also taken into account (see Appendix B). The ebb and flow of the sea is a predictable system. These tidal patterns manifest an age-old interplay of order and disorder, pattern formation and fractal geometry which leads processes of repeated division according to the principle of self-similarity - resemblances across scales (Mandelbrot, 1983).
With approximately seventy per cent of the earth’s surface covered by sea water it is no wonder that the majority of its life is found there. The regularity in the tidal curves (including its ebb and flow) is formed by harmonic patterned motions of the earth and moon, produced by the gravitational attraction of the moon and the sun.

When the sun and moon are in line, at the time of the new, or full moon, tides rise higher and fall lower, and are called spring tides. When the pull of the sun and moon are at right angles to each other – at half-moon …the range of [the] tides is smaller [, these] are called *neap* tides [lower average heights] (Underwood & Hutchings, 1989).

The highest tides – *spring* tides – occur during the summer months of December, January and February and also in the winter months of June, July and August. As a consequence of the awareness of these patterns, the tidal position began to form a significant part of the interaction and perception of each of the sites. Contact times during the first weeks were not determined by the tides, although the tidal flow did become reasonably predictable after the first week. Once each place became more well-known it was observed that the lower tidal levels, by exposing a different space and form, showed a place where a diversity of invertebrates thrived. Visits were then scheduled to coincide with the low tide to view the exposed areas of these sites.

It was planned that each site would be visited weekly over the five month period. This schedule was followed for the four weeks following the initial week, but proved to be too rigid to accommodate the tidal variations noted above hence a more flexible approach was adopted, wherein two and very occasionally three
sites were visited in one day or conversely the interval for visits was extended. This variation was desirable to fit in with daily tidal times which would sometimes allow a short window of opportunity to view exposed areas. This change was also determined by prevailing weather conditions – Townsville during the first few months of the field research had an inordinate amount of cloudy, wet, or smoke/dust haze days for that time of the year. As the lowest tides were only available at certain times of the year, the proposed five month period of regular contact was extended to ten months to accommodate the valuable opportunities afforded by the lowest yearly tides. Each visit began by entering the space to stand and absorb the overall vista – to gain a feel for the day and way of the place, as each day, each time of the day, is singular. Initially, photographs of the panorama were taken, and the site was then traversed for a closer look along the sea’s edge and higher tide zones. The sea is magnetic; it draws the traveller to its sound, its action, its object and formation – mysterious yet always familiar, where the land beckons and the sea delivers. This scrutiny involved visual observation, photographic recording and the collecting of various objects that were of interest to the researcher. Depending on the time and position of tide, any previous deposits left along the high or low marks were observed, examined and/or recorded. Once the initial traverse was completed, and samples collected, a more in-depth observation and rapport was sought. At this stage in each site visit, finding a position to sit quietly and let the sense of place be absorbed was fundamental. Here, diary entries were made, objects were sketched, and voice and sound recordings experimented with, and occasional
plaster castings of tracks and traces were taken. This sequence was to become a basic model of interaction, yet each day and place might elicit a different impulse which, in turn, stimulated the degree of time spent on the various interactions or responses, i.e., more time photographing; less sample collection; longer periods of contemplation; fewer diary entries.

The basic geology of all the places is similar because of their geographical placement, although Point Pallarenda and Geoffrey Bay are both edged with dramatic boulder formations. The littoral zone topography of each site showed consistency, that is, each beach is flat, allowing for large low tide areas to be exposed although the actual configuration and orientation of each is unique. This affected how and which parts of the site were protected or open to the wave direction, dictating where and how much flotsam is washed up. Vegetation was of a similar composition, with the size variation or absence of the mangrove growth perhaps manifested by human interference over time in Mouth of the Ross River and Rowes Bay. No mangroves grew in Geoffrey Bay, though it was edged with planted casuarinas. All are in close proximity to the human constructed environment, while Point Pallarenda and Saunders Bay are adjacent to large areas of natural surrounds and correspondingly natural shrub beginning at the high tide demarcation.

A very important feature of this tidal environment is the exposure of the areas between the high and low tide marks. Unlike land based animals and plants, the
marine life in these areas has to cope with the repeated rise and fall of their life source. The spaces between the tide levels are abundant with life that has adapted to tolerate varying periods out of water and during the neaps tides, days of uncover. Table 5.3.1 records the distribution, similar to all sites, of invertebrate and plant life in the defined zones of the littoral, demonstrating the progressively richer habitat of the lower zones that are more often covered by the sea.

Table 5.3.1  Littoral Zone Visual Observation Distribution

<table>
<thead>
<tr>
<th>Supralittoral Zone (including fringe) - higher</th>
<th>Upper Midlittoral Zone</th>
<th>Midlittoral Zone</th>
<th>Infralittoral Zone (including fringe) - lower</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Crustaceans</strong></td>
<td><strong>Algae</strong></td>
<td><strong>Algae</strong></td>
<td><strong>Algae</strong></td>
</tr>
<tr>
<td>• barnacles</td>
<td>• Crustaceans</td>
<td>• Anemones</td>
<td>• Anemones</td>
</tr>
<tr>
<td>• crabs</td>
<td>• barnacles</td>
<td>• Ascidians</td>
<td>• Ascidians</td>
</tr>
<tr>
<td><strong>Lichens</strong></td>
<td><strong>Molluscs</strong></td>
<td><strong>Crustaceans</strong></td>
<td><strong>Crustaceans</strong></td>
</tr>
<tr>
<td><strong>Molluscs</strong></td>
<td>• gastropods</td>
<td>• barnacles</td>
<td>• barnacles</td>
</tr>
<tr>
<td>• gastropods</td>
<td>• - snails/whelks</td>
<td>• crabs</td>
<td>• crabs</td>
</tr>
<tr>
<td>- snails/whelks</td>
<td>- limpets</td>
<td>• Bryozaons</td>
<td>• Bryozaons</td>
</tr>
<tr>
<td>• limpets</td>
<td>• Chitons</td>
<td>• Corals</td>
<td>• Corals</td>
</tr>
<tr>
<td>• chitons</td>
<td>• Bivalves</td>
<td><strong>Echinoderms</strong></td>
<td><strong>Echinoderms</strong></td>
</tr>
<tr>
<td>• bivalves</td>
<td>• Echinoderm</td>
<td>• sea cucumbers</td>
<td>• sea cucumbers</td>
</tr>
<tr>
<td><strong>Echinoderms</strong></td>
<td>• sea stars</td>
<td>• sand dollars</td>
<td>• sand dollars</td>
</tr>
<tr>
<td>• sea stars</td>
<td>• sea stars</td>
<td>• sea stars</td>
<td>• sea stars</td>
</tr>
<tr>
<td><strong>Annelids</strong></td>
<td>• urchins</td>
<td>• urchins</td>
<td>• urchins</td>
</tr>
<tr>
<td>• worms</td>
<td>• Molluscs</td>
<td>• Molluscs</td>
<td>• Molluscs</td>
</tr>
<tr>
<td></td>
<td>• gastropods</td>
<td>• gastropods</td>
<td>• gastropods</td>
</tr>
<tr>
<td></td>
<td>• - bivalves</td>
<td>- bivalves</td>
<td>- bivalves</td>
</tr>
<tr>
<td></td>
<td>• - snails/whelks</td>
<td>- snails/whelks</td>
<td>- snails/whelks</td>
</tr>
<tr>
<td></td>
<td>• bivalves</td>
<td>• bivalves</td>
<td>• bivalves</td>
</tr>
<tr>
<td></td>
<td>• Annelids</td>
<td>• Annelids</td>
<td>• Annelids</td>
</tr>
<tr>
<td></td>
<td>• worms</td>
<td>• worms</td>
<td>• worms</td>
</tr>
</tbody>
</table>

Each of the sites though, has a range of specific aspects, an abundance, or dearth of species or evident patterning. Table 5.3.2 provides a comparative overview of these observed differences.
### Table 5.3.2 Patterns of Similarity and Variation within the Five Sites

<table>
<thead>
<tr>
<th>Features</th>
<th>Ross River Mouth</th>
<th>Rowes Bay</th>
<th>Point Pallarenda</th>
<th>Saunders Beach</th>
<th>Geoffrey Bay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topography</td>
<td>• low sandy beach • some sandy/muddy areas • sand bars always evident as the tide ebbs through narrow channel • abundant and various forms of sand ripples • becomes wide beach area at low tide.</td>
<td>• little sandy areas, except toward corner near main beach • muddy • sand areas toward infralittoral zone • very small amount of sand/mud ripple formation • wide, muddy/stony shore only revealed at very low tides</td>
<td>• narrow, fine sandy upper beach • muddy sand at infralittoral • extreme low tides reveals abundant and various forms of sand ripples and very wide flat shore • the widest of all sites</td>
<td>• wide, flat sandy smooth beach to infralittoral zones • fine loose sand in high areas • small to medium amount of sand ripple formation around creek mouth and in low tides • creek dictates changes in mouth area</td>
<td>• sandy upper zones • course coral sand in western corner • some fine sandy/muddy areas at low tides • very small amount of sand/mud ripple formation</td>
</tr>
<tr>
<td>Mangrove</td>
<td>• medium sized mangroves mostly supralittoral zone, • some small in mid zone • at least 4 different varieties</td>
<td>• small mangroves mainly in corner position of midlittoral zone • variety of mangroves</td>
<td>• few, small mangroves mainly in little creek near old breakwater</td>
<td>• medium to large mangroves in creek area</td>
<td>• very little mangrove • very small plants in gully run out areas</td>
</tr>
<tr>
<td>Shore Vegetation</td>
<td>• no natural shore trees • landscaped along port road edges of shore</td>
<td>• no natural shore trees • residential road edges along shore • pathway</td>
<td>• low scrub and low vegetation to boulderied shore edges • thin natural bush on Cape hill</td>
<td>• natural Casuarina trees fringing the upper shore • medium natural bush receding inland • light high shore vegetation</td>
<td>• Casuarina trees fringing the upper shore • semi landscaped • road and residential parallel to beach</td>
</tr>
<tr>
<td>Geology</td>
<td>• rocky granite shoreline in areas • small areas of stone rubble to upper mid-littoral • introduced rocks for shore stability</td>
<td>• short, steep rocky shore • predominately stone rubble to lower littoral zones • introduced rocks for shore stability</td>
<td>• natural steep rocky granite shoreline to upper mid littoral</td>
<td>• no rocks or stony rubble • shore leads onto low bush •</td>
<td>• main beach clear of rock • steep granite boulders fringe both outer sides of bay down to infralittoral zone</td>
</tr>
</tbody>
</table>
### Table 5.3.2 continued  Patterns of Similarity and Variation within the Five Sites

<table>
<thead>
<tr>
<th>Features</th>
<th>Ross River Mouth</th>
<th>Rowes Bay</th>
<th>Point Pallarenda</th>
<th>Saunders Beach</th>
<th>Geoffrey Bay</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coral Structures</strong></td>
<td>• only tidal wash up</td>
<td>• few in infralittoral</td>
<td>• very few revealed at</td>
<td>• only tidal wash up</td>
<td>• large variety • hard &amp; soft in infralittoral –</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• individual forms</td>
<td>extreme low tides in</td>
<td></td>
<td>• integrated varieties</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>infralittoral zone-</td>
<td></td>
<td>spreading to the shelf</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• individual forms</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Crustaceans</strong></td>
<td>• large groups of Soldier Crabs feeding balls at low tides • variety of small</td>
<td>• variety of small crabs</td>
<td>• variety of small crabs around rocks</td>
<td>• large population of small ghost crabs and</td>
<td>• variety of small swimmer crabs at low tides</td>
</tr>
<tr>
<td></td>
<td>crabs, red/black, green/purple &amp; brown around rocks • hermit crabs in a range</td>
<td>with a predominate species – blackish</td>
<td>• different crab varieties in low tide</td>
<td>other tiny crabs along</td>
<td>• hermit crabs in low tides</td>
</tr>
<tr>
<td></td>
<td>of shells; • small swimmers crabs in</td>
<td>• few hermit crabs</td>
<td>rocks</td>
<td>beach</td>
<td>• barnacles on rocks</td>
</tr>
<tr>
<td></td>
<td>tidal pools • small barnacles on stone</td>
<td>• small barnacles on stone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>rubble of higher shore line • yabbies</td>
<td>rubble</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Echinoderms</strong></td>
<td>• medium amount of sand dollars</td>
<td>• small brownish sea stars under rubble as</td>
<td>• feather stars at lowest tides</td>
<td>• small sand feeding greenish sea stars</td>
<td>• sea cucumbers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the tide recedes</td>
<td>• sea cucumbers</td>
<td></td>
<td>• blue sea stars</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• live sand dollars at lowest tides</td>
<td></td>
<td>• few live sand dollars</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Molluscs</strong></td>
<td>• whelks • snails</td>
<td>• whelks • snails • small</td>
<td>• shells (bivalves)</td>
<td>• many different shells (bivalves) • whelks •</td>
<td>• shells (bivalves)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>amount of limpets • razor shells</td>
<td>• whelks • limpets</td>
<td>snails</td>
<td>• whelks</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5.3.2 continued  Patterns of Similarity and Variation within the Five Sites

<table>
<thead>
<tr>
<th>Features</th>
<th>Ross River Mouth</th>
<th>Rowes Bay</th>
<th>Point Pallarenda</th>
<th>Saunders Beach</th>
<th>Geoffrey Bay</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Other Invertebrates</strong></td>
<td>• blood worms</td>
<td>• few anemone only at lowest tides</td>
<td>• few different anemone at lowest tides around rocks</td>
<td>• worms in driftwood</td>
<td>• anemone in infralittoral</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• few sponges</td>
<td>• small amount of sponges</td>
<td>• sponges</td>
<td>• sponges</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• ascidians also in the infralittoral</td>
<td>• ascidians in infralittoral</td>
<td></td>
<td>• ascidians in upper to lower infralittoral</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• bryozoans</td>
<td></td>
<td></td>
<td>• bryozoans</td>
</tr>
<tr>
<td><strong>Algae</strong></td>
<td>• little evidence, mainly small wash up</td>
<td>• small amount of seagrass seen at lower tides</td>
<td>• Halimeda • large amount of seagrass at lowest tides • various green • brown</td>
<td>• mainly tidal wash</td>
<td>• various algae</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• small mount of various green • brown • red</td>
<td>• brown • few red</td>
<td>• small amounts evident at lowest tides</td>
<td>• brown</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• green • red</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• tidal wash also</td>
</tr>
<tr>
<td><strong>Tidal Flotsam</strong></td>
<td>• variety of sea jellies; • small visible amount of shells (bivalves)</td>
<td>• small mount of regular-varied</td>
<td>• variety of sea jellies, • small amount of shells (bivalves) • algae varied-Halimeda, brown</td>
<td>• variety of sea jellies; • many different shells (bivalves), • swimmer crab carapaces, • whelks, • algae, • sponges</td>
<td>• variety of</td>
</tr>
<tr>
<td></td>
<td>• swimmer crab shells • whelks • large amount of mangrove flotsam at tide lines</td>
<td>• sea jellies</td>
<td>• brown • sponges • bryozoans • urchins • seagrass • other marine life</td>
<td>• sponges levels – • storm wash out • large trees/branches • other marine debris • largest amount of flotsam of all sites</td>
<td>• sea jellies</td>
</tr>
<tr>
<td></td>
<td>i.e. seeds/pods • leaves • some human discard</td>
<td>• corroded and encrusted shells • baramcle d bivalve shells • swimmer crab shells • sponges • whelks • human discard • accumulated over time</td>
<td></td>
<td>• sponge levels – • storm wash out • large trees/branches • other marine debris • largest amount of flotsam of all sites</td>
<td>• shells (bivalves)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• whelks</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• sponges</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• algae varied-Halimeda</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• brown, green &amp; red</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• seagrass</td>
</tr>
</tbody>
</table>
A cross link in the invertebrate species is evident in all sites even though each site had prominent quantities and varieties. These spaces abound with snails, crabs, barnacles, worms, sand dollars and a multitude of other creatures and plant life that slither, scurry, glide, wiggle, burrow and insert themselves into place. These smaller inhabitants become an index of place; a detailing and declaration of place, as well as its very foundation.

Although each site evidenced a similarity in both invertebrate and plant life some species were not evident at some sites. The mouth of the Ross River was the only site to have soldier crabs but showed no evidence of sea stars, sea grass, corals, sponges, urchins, ascidians, anemone, bryozoans or the varieties of algae evident in all the sites except Saunders Beach. Sea stars were found at Saunders Beach (as detailed/pictured earlier) and the occasional washed up urchin yet was also devoid of anemone, ascidians, corals, sea grass, sponges. This site however, was the only one to show two kinds of sand dollars – although one species (Langanum depressum Lesson) was merely as a test (deceased shell), found in the tidal wash up.

Patterns of placement can be observed through the apparent distribution of the particular life and geological forms at each of the sites and the zones of the littoral space. The predominant granite geology of the place particular is a component of the larger rock formations of the shorelines down to the minute particles that constitute the sand. Patterns can be seen in the habitat preferences of the various life forms within the littoral zonal sections; for example, many creatures like barnacles, limpets, chitons or snails with their clinging powers are found covering exposed rocks, with the algae they feed on and in process support,
creating visual linear striations. The arrangement of the flotsam that is distributed
to the tune of the flow and heights of the sea tides also creates visual harmonies
in each site.

The physical dynamics of the macro and micro manifestation of place are
interpreted through the observations and connections attained through personal
experiencing and the emotional sense of place. Added to the form and object
that can be observed and by which each place is recognizable, the artist/traveller
develops a personal association. Through a simultaneous consciousness an
analysis is gained through a combination of the dominant structures and forms,
the movement, placement, magnitude and diversity within each place – which are
described as motifs and signatures of place. The natural complexity that makes
each unique derives from these characteristics of place, through symmetries
expressed as radial, bilateral, spiral, spherical, meandering and branching; all
patterns of nature’s dynamics thriving in these small spaces of time and
movement. These symmetries of nature are basic patterns recurring in the littoral
zones and repeated by disparate materials and life forms – both animate and
inanimate. For example, the many varied spiral growths of the shells of
gastropods and their movement patterns are demonstrated again the travelling
patterns of a sand dollar, the feeding patterns of chitons on rocks, the horizontal
curl of waves duplicated in the vertical vortexes and eddies of the sea, from the
growth forms of corals to that of the colonies of tiny bryozoans, the microscopic
forms of foraminifera and radiolaria, or the coil of a feather star arm or its cirri, to
the geometric principles of growth (phyllotaxis).of the mangrove branch and leaf
arrangement. The repetition of nature’s habitual and defining patterns is evident
again and again.
Table 5.3.3 highlights the idiosyncratic interpretation of these visible repeating shapes of **subjects** and **objects** as **motifs** and **signatures** of **place**.

**Table 5.3.3 Comparative Visible Motifs and Signatures of Place Across Sites**

<table>
<thead>
<tr>
<th>Place</th>
<th>Inanimate</th>
<th>Animate</th>
<th>Plant</th>
<th>Dynamic Forming Patterns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mouth of Ross River</td>
<td>• multiple variations of sand ripple patterning and undulating sand bars</td>
<td>• solder crabs • blood worms • gastropods • sea</td>
<td>• mangrove pods, roots &amp; leaves, algae</td>
<td>• meandering</td>
</tr>
<tr>
<td></td>
<td>• crab feeding ball patterns • shell forms • marine creature trace</td>
<td>jellies</td>
<td>covering on rocks and mangroves</td>
<td>• branching</td>
</tr>
<tr>
<td></td>
<td>• wave and cloud patterns</td>
<td></td>
<td></td>
<td>• swirling</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• spherical</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• spiralling</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• cylindrical</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• conical</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• radiating</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• triangular</td>
</tr>
<tr>
<td>Rowes Bay</td>
<td>• multi-hued cobblestone patterning • worm casings • shell forms • wave</td>
<td>• sea stars • barnacles • gastropods • crabs •</td>
<td>• mangrove leaves, roots, algae covering</td>
<td>• pentagonal</td>
</tr>
<tr>
<td></td>
<td>and cloud patterns</td>
<td>limpets • sponges</td>
<td>debris, rocks &amp; mangrove</td>
<td>• radiating</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• spiralling</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• close packing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• conical</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• meandering</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• triangular</td>
</tr>
<tr>
<td>Point Pallarenda</td>
<td>• multi-textured patterned and coloured boulders • sand patterns • shell</td>
<td>• feather stars • urchins • anemone • chitons •</td>
<td>• algae – Halimeda and various other</td>
<td>• radiating</td>
</tr>
<tr>
<td></td>
<td>forms • trace patterns • wave and cloud patterns</td>
<td>barnacles • limpets • bryozoans • gastropods &amp;</td>
<td>species; brown, green,</td>
<td>• spiralling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>egg casings • sea jellies • sand dollars</td>
<td>sea grass</td>
<td>• cylindrical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• sponges</td>
<td></td>
<td>• triangular</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• pentagonal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• close packing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• meandering</td>
</tr>
<tr>
<td>Saunders Beach</td>
<td>• sand patterns • crab feeding ball patterns • shell forms • wave and</td>
<td>• sand feeding sea stars • barnacles • variety</td>
<td>• driftwood, beach vine • brown &amp; green</td>
<td>• meandering</td>
</tr>
<tr>
<td></td>
<td>cloud patterns • trace patterns • cuttlefish shells</td>
<td>of shell forms • sand dollars • gastropods •</td>
<td>algae</td>
<td>• branching</td>
</tr>
<tr>
<td></td>
<td></td>
<td>crabs, sea jellies</td>
<td></td>
<td>• spherical</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• pentagonal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• radiating</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• cylindrical</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• triangular</td>
</tr>
<tr>
<td>Geoffrey Bay</td>
<td>• sculptured granite boulders • coral rubble • wave and cloud patterns</td>
<td>• variety of corals • anemones • bryozoans •</td>
<td>• algae – various patterns &amp; colours</td>
<td>• hexagonal</td>
</tr>
<tr>
<td></td>
<td>• nautilus • shell forms • cuttlefish shells</td>
<td>limpets • sea cucumbers • gastropods •</td>
<td>brown, green &amp; red</td>
<td>• close packing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>sea stars • crabs</td>
<td></td>
<td>• spherical</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• radiating</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• octagonal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• pentagonal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• cylindrical</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• triangular</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• meandering</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• spiralling</td>
</tr>
</tbody>
</table>
The smaller creatures and plant life become examples that integrate place and the residue of their being and the tracks of their interaction with their lived space, mould each place, every day through the physics of growth, form, movement, contact and disintegration.

The semantics of describing the colours of the littoral zone create a codec for the artist in which memory becomes visualized through the symbolic connection between object, form, hue and a characteristic impression of site – a visual extension of the limits of language, thus forming a paradigm for a personal connection with place and object through the use of implied and applied colour/subject/object associations. Through this continued connection with each site, it was inevitable that an association of object and number would also occur as, to look at a sand dollar or sea star, one cannot but be aware of its pentad formation and hence be conscious of the number five. The threeway cracking, branching and joining of algae, corals, bryozoans, limbs and leaves, and as an extension of the Fibonacci sequence, and the indication of the Golden Ratio that proliferates in the littoral zone – the nautilus shell, the varied growth and colour patterns of gastropod shells, to the phyllotaxis growth distribution. The bivalve shell of a gastropod with a mirror image of itself within itself duplicates as the number two. The decapodan reality of the crab species signifies the number ten, while the close packing formations of coral and barnacles display the hexagonal properties of the number six. The singularity of the individual mangrove roots or the lone entity found along the shore highlights the unique character of each site and each creature and form noticed. Following the demonstration of the concrete patterns of each place, Table 5.3.4 indicates the artist/traveller’s perceptual interpretation of the personal place colours, the feel – the ambience, and the
personal observation of the mathematical code displayed or evoked within each
place.

Table 5.3.4  Comparative Perceptual Motifs, Signatures and Numbers of Place

<table>
<thead>
<tr>
<th>Place</th>
<th>Colour Associations and Interpretations</th>
<th>Synchronicities and Ambience of Space and Place</th>
<th>Interpretive Number Associated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mouth of Ross River</td>
<td>• cobalt &amp; azure sky blue • sand ochre &amp;umber • sea green, • mangrove cadmium &amp; leaf green • cobblerstone burnt sienna &amp; raw ochre • silt grey • sea oxide green • algae green/brown • soldier crab blue • crab shell green, black, purple &amp; orange • barnacle grey &amp; umber • sea shell white</td>
<td>• an encompassing sensitivity with the contradiction of capriciousness and stability • calm within a bustling perimeter</td>
<td>• 1, 2, 3, 4, 5, 6, 10 • the Fibonacci sequence &amp; Golden Ratio Φ</td>
</tr>
<tr>
<td>Rowes Bay</td>
<td>• cobblerstone red • granite grey • granite terracotta • granite brown • sea star brown • mangrove leaf green • mud green, grey &amp; brown, • sea green • sea cerulean • seagrass green • sponge red, orange &amp; blue • shell brown, • snail grey &amp; magenta • sky cobalt/azure/blue • mangrove yellow • algae green/brown • algae red, • algae black • barnacle grey &amp; black, • ascidian blue • sea oxide green</td>
<td>• an enclosed sensitivity with nook and cranny sentiment • filled with the old • the oldest feeling site • where time seems slower</td>
<td>• 1, 2, 3, 4, 5, 6, 10 • the Fibonacci sequence &amp; Golden Ratio Φ</td>
</tr>
<tr>
<td>Point Pallarenda</td>
<td>• granite sienna, ochre, black, grey, brown &amp; terracotta, • sea green • sea cerulean • mud brown • sand ochre • ultramarine blue • barnacle white, brown &amp; grey • jelly fish blue, sienna &amp; white, • shell white, pink, brown, grey &amp; black, • Halimeda white &amp; green • algae brown &amp; green • ascidian beige • anemone purple, green &amp; blue • sea grass green • feather star grey &amp; orange • bryozoan white &amp; pink</td>
<td>• a vibrant personality, • changing to languid at the reaches of the lowest tide • the youngest feeling site</td>
<td>• 1, 2, 3, 4, 5, 6, 8, 10 • the Fibonacci sequence &amp; Golden Ratio Φ</td>
</tr>
<tr>
<td>Saunders Beach</td>
<td>• sand ochre &amp; umber • sea green sea • sea cerulean • mangrove green • sea vine green • Casuarina green • silt black • sky cerulean &amp; blue • driftwood grey • sea star green &amp; white • sea shell white, pink, brown &amp; sienna • sand dollar grey, brown &amp; white • algae green &amp; brown • crab blue, purple &amp; orange • barnacle grey • surf white</td>
<td>• a melancholy personality • exuding a peaceful wistfulness • a mystery yet with expansiveness of promise</td>
<td>• 1, 2, 3, 4, 5, 6, 10 • the Fibonacci sequence &amp; Golden Ratio Φ</td>
</tr>
<tr>
<td>Geoffrey Bay</td>
<td>• granite boulder grey and brown • sea aqua, • sea cerulean, • sand beige, ochre • silt green, grey • sky cobalt • bleached coral white, • hard coral rose, brown, lilac, orange, green &amp; sienna, • sea star blue • shell white, brown &amp; sienna • soft coral beige &amp; white • oyster grey • snail black &amp; brown • pumice grey • surf white • crab brown &amp; turquoise</td>
<td>• a staid, reticent character • reluctantly revealing its cache of vibrancy and diversity</td>
<td>• 1, 2, 3, 5, 6, 8, 10 • the Fibonacci sequence &amp; Golden Ratio Φ</td>
</tr>
</tbody>
</table>
One cannot enter the space where the land and sea meet without experiencing strong sensory stimulation and communication, perhaps also tuned by previous personal histories and experiences. As noted, each place offers simultaneous perceptions; each site has similarities – sand, marine life and debris, tidal seawater – yet each site stimulates a different perception and spatial orientation. After the initial intake of the vista, walking around each of these sites, what can be described as a type of tunnel vision begins to occur, where the strip of land and sea takes hold and mesmerizes the observer and singular interest is paid to the smallest of forms while being aware of the multiplicity supported by each zone. This narrowing of focus at the same time is paradoxically balanced by the effect created by the outward vista of immense space and uncontrolled freedom the sea exudes, evoking a sense of being liberated and carefree. This tangible sense of awareness is counterbalanced again by one's ability to feel a peaceful aloneness on the fringe of a large city. To one side lies the accoutrements and infrastructure of the built suburban life but, the beach traveller becomes oblivious to these – they are unconsciously tuned out.

5.4 Issues of Sampling and Documentation of Sites
The on site processes detailed in Table 5.4.1 was put in place as an organizational framework. Samples of sand, plant, animal (invertebrate) material and water were taken from each site. In the case of animal material, except in the case of small pieces of sponge and ascidian, no live creatures were taken from site – on the occasion of finding a recently deceased animal, a section was taken for microscopic viewing.
Table 5.4.1 On Site Processes

<table>
<thead>
<tr>
<th>On Site Processes</th>
<th>Sampling Frames</th>
<th>Known and Expected Aspects</th>
<th>Unexpected Observations</th>
<th>Serendipitous Discoveries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site visits</td>
<td>daily for week one, then weekly visits to each.</td>
<td>tidal influence on obtainable observations – weekly visits more flexible after 4 weeks. Contact with sites needed to be extended beyond the five months anticipated.</td>
<td>time plans not strictly necessary, as tidal times became directive.</td>
<td></td>
</tr>
<tr>
<td>samples collected</td>
<td>various objects from site – algae, corals, sand invertebrate shells, water.</td>
<td>inexhaustible amount of sample possible for collection – selectivity controlled.</td>
<td>sea stars and sea jellies. Unidentified forms – deceased invertebrates and algae.</td>
<td></td>
</tr>
<tr>
<td>Photography</td>
<td>the best way to undertake a journey of place. 1000s of photos taken of each place as was expected.</td>
<td>this became the most important form of reference. Unending variations in sand patterns. Unusual amount of overcast days during photographing period.</td>
<td>an extension of the hand and eye. The changeability of the sites -different each visit.</td>
<td></td>
</tr>
<tr>
<td>Sounds recorded</td>
<td>the ambient sounds of each site had similarities and difference</td>
<td>process interfered with site interaction; became a later focus– needed technical help; more sophisticated sound equipment needed. Wave resonance predominated.</td>
<td>when isolating sounds of place they become more noticeable in themselves.</td>
<td></td>
</tr>
<tr>
<td>expert input</td>
<td>site visits and discussions with local scientists.</td>
<td>identification of various material/objects not always easy.</td>
<td>each scientist develops a personal, aesthetic interest in natural place through their work within.</td>
<td></td>
</tr>
<tr>
<td>diary entry</td>
<td>comments on site, drawings of noted forms, patterns and intuitive thoughts.</td>
<td>diary entry sometimes interfering with the interaction with place.</td>
<td>each site could project a different personality almost each visit.</td>
<td></td>
</tr>
</tbody>
</table>

One notes where the large is minimized and the small is maximized a different perspective and appreciation of form, subject, object and, their relationship to the place in general is shaped. This is parallel to the notion of the quintessential Japanese aesthetic of the body/landscape relationship embracing the concept of the wabi-sabi – the beauty of things imperfect, impermanent, and incomplete through attention to the minor and the hidden, the subsiding and the tentative, the fragment and the whole (Koren,1994). Richard Powell (2004) summarizes this wabi-sabi as the nurturing of all that is authentic by acknowledging three simple realities: nothing lasts, nothing is finished, and nothing is perfect. This is nature
in its *pure* state, not just the majestic, spectacular, enduring beauty that represents the Western appreciation of *places*, but where the structure of an eroded shell is as important and amazing as the beauty of a living coral structure. When viewed from the wider overall perspective the similarity of all five sites – their “beachness”, their marine juxtaposition and formation was evident. Even the smaller, more intimate spaces within are viewed as vivid microcosms composed of comparative objects within these spaces. These objects are experienced through all the senses and more than the immediate visual display. They are the feel of the gritty, loose sensation of the sand, the wetness and coldness of the ocean, the hard, textural form of the shells, the soft, smooth, or brittle composition of the algae, the particular smell, pressure and temperature of the sea breeze, the sounds of water crashing and crabs clicking – all combining the *gestalt of place*.

It is difficult to fathom how the senses of smell, taste, hearing and touch structure our environment as Tuan (1977:21) notes, “… [we] lack a varied vocabulary to present olfactory and tactile worlds.” However we seem to have fewer problems with the visual, the pictures, diagrams and words that reflect our interpretations. We can describe a place verbally as quiet or noisy, use words for the sounds we hear, like the roar of the sea, but the sea does not always roar, birds do not always squawk or sing. We are limited in both noticing and attempting to characterize the elements of sounds yet much less do we seem aware of the taste, smell and touch of a place. A photo will express the *look* of a place and its *sounds* can be recorded though they will be separate entities unless they have synchronism. The *odour and taste of place* are given to the immediacy of their experience – the salty flavour of the sea, or indescribable aroma combined from
living and dead marine beings – and left to remembrance, as it cannot be recorded or reproduced.

The recording of ambient sounds however, began to interfere with the natural interaction between the artist/traveller and the nuances of place. This was mainly because the very act of recording necessitates an awareness of the process, and thus dictates the isolation of sound in an attempt to gain a better recording. The recorded sound becomes separated from its place of hearing, as the concentration of it is tuned to its travel or identification. On the other hand, the recording of these external sounds also yielded a sharper consciousness of some individual facets: the rumblings of local motor traffic; the actual difference of the sound of waves pertaining to the configuration of each place as well as the dictates of weather and the recognition of the cries of different birds as they flew overhead. These sounds which are often muted or become ignored, as other the senses take control are part of the overall experience yet almost indifferent to it. This keener awareness is an acknowledgement of what we tend to exclude as a result of the visual focus we seek, or which tends to have dominance. Sound, like odour, taste and texture, seems to be relegated to the periphery or blends into the whole. Yet, without the uniqueness of each of these sensate components, our experiences of place would be much weakened or altered. Short recordings of sound were captured as a component and used to contribute to the characterization of each location.

Littoral zones are prolific gatherers of many objects, including unwelcome flotsam and jetsam from boats and other human actions yet each of these sites, over the time of contact, showed relatively little of this intrusion. A sense of the typical
was soon recognized, where each site displayed particular objects which regularly collected in certain areas within each. Although a commonality of certain forms and species showed in each site, examples of the particular, or lack of were noticed.

Plate 5.4.1 shows an example of the specimen collecting process and the different sized containers for the gathering of samples which were then taken to the studio for further analysis. Larger objects were stored in boxes and underwent a similar procedure.

Plate 5.4.1 Samples of place – specimens in containers

The samples consisted mainly of coral, sand, sea water and invertebrate tests – mollusc/gastropod shells, sponge, bryozoan and sand dollar tests, crustacean carapaces, worm casings – as well as algae, stones and driftwood, mostly found along the tidal wash line. Occasionally more individual discoveries, such as urchin tests, a dead crayfish, feather star or sea cucumber were made. Relics of
the sea, these finds are not always residents of the littoral zones within each site but drifters that are directed into these places to rest and ultimately form the components that construct these sites. An analogy can be seen in the transitory nature of modern human movement where the currents of life set people adrift, to land and settle in different places and contribute to that society.

The next five images – Plates 5.4.2 to 5.4.6, are collected examples from each of the five sites, showing differences and similarities. All samples have a correlation in the majority of invertebrate and plant variety they support and all have definite balances of individual species.

Plate 5.4.2  Objects of place – Mouth of Ross River – Site N° 1
Plate 5.4.3 Objects of place – Rowes Bay – Site N° 2

Plate 5.4.4 Objects of place – Point Pallarenda – Site N° 3
Plate 5.4.5  *Objects of place* – Saunders Beach – Site N° 4

Plate 5.4.6  *Objects of place* – Geoffrey Bay – Site N° 5
5.4.1 Photography Of Place

There was no preconceived idea of what or how to photograph each site. This was in order to allow each day to be a venture in action, reaction and interaction. Detail of the descriptive nuances of each site, creating patterns of place, became evident with more contact, and each site held particular fascinations. Thousands of photos were taken over the months of the data collection phase, with both good and unfortunate results, all forming the sense of place and the artist’s/traveller’s response. The digital camera is very forgiving of inaccuracy through the freedom and choice of quantity and permitting the total focus to be on the subject – not on the F-stops or aperture settings of the camera. The camera becomes just an extension of the eye, not an articulate tool which is sensitive to the experience of its user. Thus, allowing photographs to become vignettes or detached scenarios with an emphasis on cause and effect taking place in time, whilst also existing on their own terms. The spontaneity of the camera lens can be deemed more reliable than the artist’s eye in information gathering and recording within a given time period. The artist’s eye though tuned by awareness and always roaming, seeking the inspirational, aesthetic communication between subject/object and viewer, can also be mired by the influx of information gathering to which all humans are subjected to. Without a narrowing of focus, the finer detail can be missed.

The visual surprise of an unexpected angle as in Plate 5.4.7, makes significant imagery of the seemingly mundane allowing the photographic response to place challenge notions of scale and perspective. By isolating the parts of the whole and distorting this scale or perspective, photography can transcend simple recording.
Plate 5.4.7  Sand balls left from feeding sand bubbler crabs (family Ocypodidae, genus *Scopimera*, species *inflata*) – Saunders Beach (C Miles, 2005)

Each photograph becomes a response to the *external qualities of place* - to something perceived outside the self; from the tiniest of unknown, normally unseen creatures to the larger more obvious ones, and each *place* abounds with its share of individual subjects.

The diminutive aspects of *place* can be a difficult subject to capture – the closer the camera is to the subject, the shallower the depth of field, and movement is exaggerated at close range. Capturing an image of small crabs (Plates 5.4.8 and 5.4.9) is difficult, as they are both timid and fast but make expressively worthwhile subjects.
Plate 5.4.8  Soldier Crab – Mouth of Ross River, C Miles, 2005

Plate 5.4.9  Hermit crab (*Clibanarius taeniatus*) – Geoffrey Bay, C Miles, 2005
Appendices F and G shows the final selection of images exhibiting this photographic response to place. The use of the captured temporal image highlights the emergent patterns of life, form and place by allowing the opportunity to absorb what is easily missed by the fleeting glance. The notion of photographs as a visual diary reintroduces the researcher and the qualities of the medium into the research process. That is, such a diary is a self-reflexive and media-literate chronicle of the researcher's entry, participation in, and departure from the field (Prosser & Schwartz 1998). The images generated within this paradigm are acknowledged to be the unique result of the interaction of the researcher/artist/traveller with a specific impression using a particular medium at a precise moment in space and time.

5.4.2 Sound of Place

A voice recorder was initially taken to site to record ambient sound, and comments on place however, for this researcher (as formerly stated), the was realized that the approach interfered with the commune of place and the artist/traveller. The process of operating the machine as the vocal observation of place redirects immediate and sustained observation when connecting with place, interrupting the direct contact and sensory absorption that is desired, thereby creating a rational, removed construct of place rather than an intuitive connection. Sound is an integral part of place and is absorbed as part of the whole in the interaction, hence when a concerted effort is made to isolate the sounds of place, another domain is visited – a personal view perhaps. The recorder was abandoned after the first four weeks due to this disruptive aspect as well as the inferiority of the sound recording device. Sound then became a subject of later focus in terms of experimenting with different available technologies – i.e., a DAT
recorder and digital video camera. The video camera ultimately became the preferred recorder which, ironically, had not been considered a choice for visual recording. The still image is personally considered a more poignant expression of a subject. The still image, by isolating the subject/object, brings a defined focus where attention and reflection can be directed and centred whereas the moving, flowing image distracts from a studied concentration and allows for broader input. This is contrary to the interpretation of the sounds of place where an isolated tone or pitch expresses little in the way of describing a scenario or eliciting an informed response. The language of sound, like that of touch, operates expressively within time through the course of movement from particular source.

A digital video camera used with a directional microphone proved to be the most successful device and, by visiting each site at various times of the day, ambient sounds from each of the sites were recorded. The recorder was placed in an area to gain maximum sound intake and left to record sample periods of 30 minutes or more. The sound of the waves gently rolling onto the beach or conversely crashing into the shore became a perpetual backdrop to the other sounds of life in these spaces. The sounds of sea and land birds were captured as they flew over, vocally expressing their connection to the recording areas; the clicking sounds of invertebrates – crabs, worms etc – buried or hidden within the exposed zones, with an occasional rumble of a passing truck or whine of a travelling dinghy. The sounds obtained were edited and each place’s sound was separated into a file to accompany the visual images of that place. Sound, when isolated from a synchronization of the time and movement flow of place, becomes
a separate entity. Yet, when juxtaposed with the still image, it remerges as a factor of place, and is again particular to that place.

5.4.3 Diaries of Place

The visual diary was used to assist in locating, reviving, and unravelling the narrative and patterns of place. This was accomplished by using layers of field observation within a sequence of abstract images of linear structure – simple contours – mixing realistic and stylized form, small traces of collected materials, present and recorded or remembered experience, added with rough calculation. The diary, in absorbing the personal selective perspective of the artist, is an eclectic description of the quality of place and the interest it evoked.

The five diaries – one for each site – were used not only for a visual characterization of place but were helpful in conveying and actualizing the artist’s sensibilities toward an individual interpretation of place. This is not to say that each visit brought forth an influx of meaningful flow between the observer and observed. Some days – and this is where human changeability and sensitivity can intrude – the communicative flow to the page was minimal, and the connection to place was transposed through the camera or simple uninterrupted observation.

Substantive accounts in a diary represent a chronological account of the events that have been, or interpretations of these. Supplementing the written diary with additional materials, including diagrams or photographs, provides a means of summarizing situations in which the researcher has been involved and reveal in graphic form the pattern of personal interaction and spatial relationships of place.
To many artists the use of the diary may be almost essential, but this is a personal form of expression and record; for this artist the diary was not the main repository.

What tended to evoke more meaningful personal memory was the collected remnants of these places – the broken shell, the unidentified algae-like plant, the small piece of worm eaten wood, the crab, carapace, the urchin test. This is maybe because this artist is predominately influenced by the tactility of the subject; indeed the handling and rehandling of these objects becomes the active recreation of a haptic experience. What also stimulates immediate reconnection to past experience is the photographic image of each site and its capture of objects and subjects therein.

Plates 5.4.10 to 5.4.14 display diary entries from each site which detail a more productive flow between artist and place.
19th March - 11:30

Tide mostly out - calm, hardly any breeze
No Jupiter crab out yet!

19th March

A grey day! Grey and colours flecked with drizzle have gradually
washed out the mangles

Sound patterns chaotic, patchy

Phararri - with no Maurice

Mangrove roots - at least 5 species

Mangroves relative of mangroves of all about 90-50

Shark wells in the sand

Sandy mussels washed up on Tavune

Some sandhoppers washed up on Tavune

Phararri - with no Maurice

Plate 5.4.10 Diary Entry – Mouth of Ross River
13th Feb  Calm, clear, dry day 5:30pm
Tides out but just reaching the mid cobbles
need to come at a
really fast walk!

Tiny crabs
DARK GREEN
GRAY

NERITA ?
no, think they are
Planaxis Scalatic

Feroxisthes elongatus? (relative)

Sounds to be 3
Species of mangrove
a peaceful feeling
no one here.

A good atmosphere
in a feeling of
space within
enclosure

Lots of life here - snails (many
mudshoepies), tiny crabs (under rock)
evacuated debris
algaes

gentle breeze, Cryptasteria
Asteroidea
Pentagona (Murke-Tarschel, 1946)

Look many photos

Three little
Sea urchin and swimming are eating
algae from the rocks uncovered.
Granite
cobble stones
Varied colors on algae
Haliina (a few areas)
a lot of algae here

Water patterns
Little red algae covered small
mounds through
long thin - small
roots

Brilliant flowers of
duckweed

Plate 5.4.11 Diary Entry – Rowes Bay
Plate 5.4.12 Diary Entry – Point Pallarenda
June 16th, Nice Day

Tide coming in - not very low today.

Lots of tide pool patterns radiating patterns

Crab ball patterns

Lots of debris washed up on high tide mark

Sea stars, domes, and other small objects

Spinal shell, logarithmic, and other objects

Mound of small branches

Feeding hawks all along upper beach.

plate 5.4.13 Diary Entry – Saunders Beach
Fri 19th Aug - No Tide 1:00 + 2:30

All the reef is steep, poised in a variety of different corals

Hard Coral hexagonal forms

Radiating bushy form

Bubble Coral (Brown)

Light packing of layers to hexagonal structure

Mushroom Coral

Reticulation

Meanders Branching

Plate 5.4.14 Diary Entry – Geoffrey Bay
5.4.4 Analysis of Microscopic Magnitudes of Place

The observable magnitudes of place may dominate the perceptions of place, pattern and form but the hidden magnitudes, when revealed expand an understanding of the almost infinite minutiae of place. To facilitate this appreciation, samples taken from each site were selected for further viewing through various microscopes. As outlined in section 4.4.1 the process of learning to operate the different microscopes allowed the further application of the scientific filter.

Having access to both microscopes and scientific mentoring was imperative to the experience and understanding of place. Use of the high power microscope involved learning how to cut specimens into thin sections before observation. Optical, or light microscopes use refractive lenses to focus light into the eye or another light detector. The controlling of light, backlighting/frontlighting and the use of colours and dyes in histology tissue sections assisted the understanding of the magnification and depth of field limits associated with the different microscopes. Preparing slides, operating the compound microscope and recording the images onto video tape were invaluable in comprehending and viewing the patterns within forms that these tools can expose.

Specimens of rock or shell are too thick to be sectioned and viewed by transmitted light, so they are observed by the light reflected from their surfaces.
Plate 5.4.15 provides an example of the lower magnification of a whole object – a gastropod (Nerita polita) shell from Rowes Bay.

![Plate 5.4.15 Gastropod shell (Nerita polita) from Rowes Bay – magnified x10](image)

When observing a specimen by transmitted light, light must pass through the specimen in order to form an image. The thicker the specimen, the less light passes through. The less light that passes through, the darker the image. Therefore, the specimens must be thin (0.1 to 0.5 mm). Organic samples such as tissue and plant fibre are prepared by slicing them thinly and positioning them between glass slides for viewing at different magnitudes – Plate 5.4.16 and 5.4.17 demonstrate the results of using this procedure.
Plate 5.4.16 Back lit view of algal cells *(Boergerenia forbesii)*—Geoffrey Bay, magnified x100

Plate 5.4.17 Cross section view of algae *(Halimeda)* from Point Pallarenda magnified x50

Viewing specimens is one process but recording the resultant image requires another. For centuries scientists have been using the *camera lucida* to illustrate what is seen through the microscope lens—attached to the microscope, the image is reflected onto a surface as an aid to drawing. Modern technologies in
photomicroscopy now incorporate a digital camera attached to the microscope, which transfers the image to a computer program. This process would have been the ideal way to analyze the samples but access was restricted so an alternative method was discovered through experimenting with a personal digital camera. By photographing directly into the eyepiece of the microscope the image in the lens is recorded. Plates 5.4.16 and 5.4.17 are images taken by this method while Plate 5.15 is a taken with the attached camera; normally a superior method compared to the hand held experimental manner, but the ability to capture the image of the magnified object without sophisticated technology was satisfactory.

A major problem in observing specimens under a microscope is that the images do not have enough contrast. This is especially true of living things (such as cells), although natural pigments, such as the green in leaves, can provide good contrast. One way to improve contrast is to treat the specimen with coloured pigments or dyes that bind to specific structures within the specimen. Different types of microscopy have been developed to improve the contrast in specimens. The specializations are mainly in the illumination systems and the types of light passed through the specimen. For example, a darkfield microscope uses a special condenser to block out most of the bright light and illuminate the specimen with oblique light, much like the moon blocks the light from the sun in a solar eclipse. This optical set-up provides a totally dark background and
enhances the contrast of the image to bring out fine details – bright areas at boundaries within the specimen.

Electron microscopes, which use a beam of electrons instead of light, are designed for very high magnification usage. The Scanning Electron Microscope (SEM) examines the surface of bulk objects by scanning the surface with a fine beam of electrons and then measuring reflection. Plate 5.4.18 shows the SEM in use; with the vacuum chamber on the left and the screens on the right for focusing and operating the magnification where the image is digitally captured and transferred to a computer program.

Plate 5.4.18 Scanning Electron Microscope – JCU

Electrons, which have a much smaller wavelength than visible light, allow a much higher resolution. The main limitation of the electron beam is that it must pass through the vacuum as air molecules would otherwise scatter the beam;
specimens have to be coated with liquid gold to facilitate the reflective process; specimens need to be dry (living material is not viewable); while more expensive and time consuming this is nevertheless a revelatory technique. Specimens for viewing included plant, invertebrate casings and remains, mineral, and unidentified material. These samples chosen from the variety of material collected from each site. The selection process relied on the personal artistic sensibility rather than the scientific, which directed a decision to take elements from the sites that spoke either of individuality or piqued curiosity.

Thirty samples were prepared overall – six from each site. Small sections (e.g. a piece of shell, sand, algae) were adhered to stubs and coated with platinum. The individual site specimens processed were:

**Site 1 (Mouth of Ross River)**
- soldier crab carapace (*Mictyris platycheles*)
- cuttle fish shell
- sand
- shell piece (unknown)
- gastropod shell
- crab claw piece

**Site 2 (Rowes Bay)**
- granite sand
- sponge
- bryozoan (smaller branching)
- crayfish antenna
- red algae (*Liagora*)
- barnacle
Site 3 (Point Pallarenda)
- urchin test
- bryozoan (lace coral)
- unidentified plant/animal material
- brown algae (*Padina*)
- *Halimeda* (algae)
- feather star cirri

Site 4 (Saunders Beach)
- green algae (*Flabellum*)
- sea star (deceased)
- plant material (unidentified)
- sand dollar (Echinoderm)
- sponge (compact)
- limpet shell

Site 5 (Geoffrey Bay)
- ascidian
- coral sand
- bryozoan (larger branching)
- hard Coral
- brown algae (*Sargassum*)
- unknown deceased creature (later identified as sea cucumber - *Holothurian*)

The prepared stubs as shown in Plate 5.4.19 were placed into the vacuum chamber of the microscope and scanned separately – the higher the magnification of the sample the smaller the area viewed. Each process could easily exceed one hour in order to observe different sections of the small specimen piece which often left one with the knowledge that there was more to be revealed in each but, since access to the SEM was restricted so too, was the viewing time per sample.
Learning to operate the SEM could be described as effectively combining photographic procedures – entailing depth of field, focus, contrast and brightness – which, again, is similar to other microscopy/photomicrography methods. Reasonable proficiency was gained only after hours of use which lead to the realization that samples needed to be reviewed as improved ability was able to uncover hidden forms previously overlooked.

One of the obvious characteristics of the SEM is that images can only be in a grey scale - no light means no colour. This was not seen as a negative by any means; indeed it was a bonus because it showcased form and pattern rather than colour which can sometimes dominate pattern and form.

Beyond the revelations of light microscopes, the SEM exposed a more intimate vision of structural pattern and form from the small sample pieces, e.g., where a

Plate 5.4.19 Sample stubs for SEM
closer look at a sand-dollar – Plate 5.4.20 – became a wondrous journey, traversing the vital structural formations of organic growth.

Plate 5.4.20 Sand Dollar test (Arachnoides placenta), approx. 3cm dia. – collected from Saunders Beach

Plate 5.4.21 shows a small section (approx. 0.7cm) of a similar sand dollar collected from Saunders Beach, magnified x100, displaying the intricate crocheted-like delicacy of its formation.

Plate 5.4.21 Underneath section of Sand Dollar test – magnified x100
Even at this low magnification a beautiful pattern is shown that is not evident to the unaided eye. As the magnification is increased (Plate 5.4.22) another realm is entered, where the internal, three dimensional structure is revealed, and the patterns of other forms are exposed – the tiny ovoid shape of a diatom showing in the circled section.

![Plate 5.4.22 Sand Dollar section – magnified x1000](image)

As the magnification is again increased, other forms are revealed – Plate 5.4.23 presents another diatom shape. If the magnification is continued, the depth of field becomes so small that the focus blurs and the object is again unseeable. Higher magnification brings the recognizable and the unknown into view, combining the familiar and the mysterious, revealing the unknown and undisclosed as identifiable form.
Plate 5.4.23  Diatom revealed within the Sand Dollar test section
– magnified x1200

5.5 A Corollary of Place

The précis of this personal interaction and documentation of place offers a
narrative of this unique experience which goes beyond the confines of previous
understanding and influences. The hypothesis that the use of the scientific filter
through the fresh eye of the traveller could exert a powerful effect on the artist’s
perception and understanding of place is manifest, and provides a strong
narrative basis for the aesthetic analysis.

The overlaying of the emotional and aesthetic journey of the artist/traveller
gained through a concerted interaction and focusing on different magnitudes of
place produced a change of perspective and promoted an intimate engagement
with this chosen environment. Through a path of simultaneous perception, the
miniature and hidden detail have been acknowledged along with the observable as a description of place. In essence, the research has demonstrated that:

- actually and superficially, places are differentiated one from the other, by the combination and balance of often common factors which are further revealed by careful research,
- multiple techniques are necessary to respond to different subjects revealing outcomes which integrate into a fingerprint of place;
- the use of the scientific filter has proved successful in facilitating an observation of place and leading to enhanced appreciation, especially at the micro level;
- observation of the dynamics and subjects of a natural place and its inhabitants have the power to bring greater affinity to the observer; to the extent that,

Throughout this study, a sense of each of these places was manifested in a real, profound sense that could be utilized by the artist to create an embodiment of place through the symbolic expression of an art practice.

The rich experiential data gained give fortunate chance to vernissage the experience and collections of place and decide which will be given distinctiveness. The littoral place is more than a landscape or a seascape, more than meets the eye, more than the artist’s, traveller’s, or scientist’s interpretation. Yet the task is to take the forms, pattern, colours and spaces observed and to now compose them as appreciative art works.
Figure 5.5.1 provides a schematic impression of the filtering process, from new data to aesthetic interpretation and artistic production.

![Diagram of filtering process]

**Figure 5.5.1** Filtering from Data to Artistic Synthesis

The data collected through the processes described in this chapter and manipulated through the series of steps illustrated above, yielded the raw material for the artistic synthesis, described in the following chapters.
CHAPTER 6 – Process Toward Practical Product

6.1 Simultaneous Perceptions

Using figure 5.5.1 as a model, this chapter charts the transformation of collected data into art works, by setting out in detail the reasons for and processes behind the decision to produce each work. The quantity of information gathered in the research period of contact and exploration with five places is so vast that the task of filtering, narrowing and channelling this into a communication from artist to audience presented inevitable dilemmas. Initially this was more an issue of the decision of what and how to choose from the data set and appropriate media or format to portray this personal salience of place. Given that there is never a single way to express or to depict the discoveries, emotions, or sensations that have played an integral part in the journey of place, the artist now has to choose how to confirm these artistic realizations, in order to express what is sometimes indefinable and uninscribable.

The simultaneous perceptions of the experiences of the traveller engaging with local place, and the artist looking more deeply into the constructs of place through the filters of science are now coalesced in artistic practice. The powers of simulation to evoke desirably undistorted experiences of a place offer a chance to intensify perception of those experiences.

6.2 The Artist’s Codec

Dominant themes, impressions, keys to the definition of place – and its
representation – lie in the harmonies and patterns of recurrent structural and underlying arrangements. These are fractal, geometrical, mathematical, and the basic proportions that underlay all the tiers of magnitude. If the mystery of nature is the force behind scientific interest, it is no less the artist’s driver. The dynamic harmony of the natural world described through the scientific languages is coded descriptions of symmetries – spatiotemporal and physical. The morphomatics of nature’s mathematics (after Stewart, 1998), the golden ratio evident in natural growth, the fractal and bifurcation systems, of which all show a basic beauty, underlies the structure of each place.

Extracting and extrapolating from the data of place, a particular recurrence of evocative coding of pattern and form created a personal codec in response in which every act of knowing brought forth another view of that place. The littoral zone conveys to the artist not necessarily the classical interpretations of the beautiful, sublime or the picturesque, but more of the conscious beauty of Primitivism, where simplicity and complexity reflect a complicity that demonstrates the principles of creation while also highlighting the ecology of humanity’s need to take heed and connect with the natural elements of the world.

As a multi-media artist working with tangible place, the inclination was to bring the personal essence of these five sites into the gallery space. This entailed the designing of works that would reflect not only the artist/traveller’s journey
through these spaces but the personal discoveries and intuitive connections that
developed during the course of the study. The basic arrangement of the body
of works was produced as two and three dimensional compositions defining the
recurring patterns, forms, objects and subjects that articulated a response from
the artist. Therefore the expressions of motif and signature, form, pattern,
object, subject, symmetry, trace, collection and wabi-sabi became definitions
that constantly return to recount this experience. These words became symbolic
as a language used to narrate place and were then applied to the art product as
physical delineations of the research.

From each site a particular form, pattern, object or subject was chosen to
become the Motif for that site. These Motifs were to be reproduced as three
dimensional sculptures or installation works as the main signifiers of each place.
Also from each site, a selection of forms, patterns, objects and subjects were
chosen as representative Signatures (as biographic place). These were
gathered from the collected and analyzed data – photographic, micrographic,
biogeographic, geographic or eccentric. Other works were designed to convey
the similarities and/or differences of these places through either a transposition
or juxtaposition within a work, combining elements from all of the sites.
Basically the works comprised:

- the reinterpretation of the subjects of place as collected objects of
  place – the wabi-sabi of place, moulded and re-presented as
  objects of meaning; a cabinet of curiosities as objects of interest.

- photographic and photomicroscopic images capturing the realities
  of place – the visible and the unobservable forms and patterns.
• a personal perception and selection of particular Motif and Signature, Symmetry, Pattern and Form to represent individual and collective place through two dimensional montage watercolour works and a number of small sculptural and installation works.

6.2.1 The Naming Code

The naming of the works had particular import, and was integral to the conceptual basis of the works. All artworks were named with ratio numbers as well as descriptive titles, while the definitions of Motif, Signature, Pattern, Form, Trace, Object and Subject again operate as communicators. The ratio connection was significant beyond just simple numerics, and each name included the ratio as a simple mathematical metaphor for the quantity and basic quality that motivated or shaped the work. As the Shorter English Dictionary (2002) explains, the term ratio in the language of mathematics and science is “the relationship of two magnitudes…as determined by the number of times one contains the other”. Further, the fundamental connection of numbers in the physical construction of nature itself (Stewart,1995), as well as in the actual meaning of the word ratio where it quantifies 1. the reason, the rationale, 2. the sense, and in the language of philosophy – ratio cognoscendi 3. that in the virtue of which knowledge of something is possible (Shorter Oxford English Dictionary,2002).

6.3 Objects and Subjects of Place – Place as Subject and Object

Objects and Subjects are intrinsic to the make-up of place and are often the first encountered; thus the samples of place became objective descriptors of each
place and time. Whether tidal flotsam or individual components of place, each site delineates a temporal display where a performance is played through the contrasting acts of vital animation and the statically stated debris of past lives, all encapsulating an energetic yet simultaneously serene scene. The objective images and collections of place were signified through four fundamental techniques:

1) the moulding and casting of samples/specimens of place – the symbolic object and texture of place.
2) the immediate capture of the photographic image – the visible patterns; the qualia of place.
3) the image capture of the microscopic subjects and objects of place – the hidden patterns; magnitudes of place.
4) the demonstration of these objects as curiosities in their own right – the existent forms of place; the wabi-sabi awareness.

6.3.1 Symbols of Place
A seemingly chaotic, never ending medley of marine shapes wash onto the littoral stage, although mostly sloughed and discarded calcified tests/skeletons of the smaller subjects of place, these forms are place, and their acknowledgement through representation was deemed essential. Many of the collected samples from each site were transformed into epimorphic representations of the collectibles of place. Their reproduction in plaster as casts of casts or cast offs of place was a poignant expression of these smaller symbols of place – exemplified in Plate 6.3.1.
Plate 6.3.1 Symbols of Place – samples of collected objects of place (plaster casts)

The reconstruction of these collections as artefacts of the research journey into place and the repositioning of them as objects of art in the contrasting repository and space of a coffee table – Plate 6.3.2 (5:4 Squaring the Five – Resting Place) – speaks of the human desire to collect and display.

Plate 6.3.2 Setting for 5:4 Squaring the Five – Resting Place, C Miles, 2006

Figure 6.3.1 takes the diagrammatic outline mirrored in Plate 6.3.2 which became the symbol for the revisiting of the five sites within the place particular,
pertaining to their connection, yet completeness, as *individual places* and their placement within a regional area.

![Diagram](image)

**Figure 6.3.1** Diagrammatic Expression of *Squaring the Five*

The work 5:4 *Squaring the Five – Resting Place* (Plate 6.3 2) is a symbolic emulation of the theatre of imitation between art and nature that the cabinet of curiosities represented. Taking from the narrative of the Surrealists theme of incongruous juxtapositioning, by framing a reference to the organized domestic and the unruly natural, this work seeks to espouse the human connection to experienced space, and the human need to arrange their lived environment.

The conferring of central significance to the cast off shells and skeletons, many just fragments – *the wabai-sabi* – found in place, and presented to the viewer as the precious accumulations of the individual’s journey through *place*, thereby allowing each viewer to see and touch what the *traveller* has experienced. The objective was to bring the aesthetic memory of the *qualia* experience into the space of constructed familiarity. This dialectical appropriation of *place* began to form representational connotations which gave direction to the naming of the final exhibition of the works (detailed in section 7.4:253). A square coffee table
was transformed into a receptacle of place; with five, square, clear Perspex boxes made to hold the cast replicas of each of the five sites, displaying the similarity and difference contained in each site. The whiteness of the plaster (and the table) was chosen as a tabula rasa to equalize selections and sites through the basic qualities of neutrality and uniformity that associations of whiteness can bring, while counterpoised as pieces of high importance in the experience of place.

6.3.2 Curious Collections

A convergence between the art product and the art of natural place was created by the decision to display various samples and remnants from the five sites in the form of a personal cabinet of curiosities – Plate 6.3.3

Plate 6.3.3 Detail of Cabinet of Curiosities

By including containers with samples of place (e.g., sand, small crab carapaces and their feeding balls, shells algae, sponges etc.), the SEM specimen stubs and small sculptured replica fossils of the littoral zone, place, process and
product become integrated as an artistic awareness of the connectivity and symbolism of form, pattern and the gathering instinct. This work demonstrates that the small, the insignificant, the cast off or broken relic of a crab or gastropod shell, shape not only place itself, and the homes and bodies of its subjects and objects but, the fundamental stimuli of the artist and scientist.

Included in the cabinet were small sculptures – Plate 6.3.4 – depicting simulated fossils of microscopic forms of foraminifera, radiolarian and the calciferous Halimeda – symbolic forms of place cast in stone and bronze.

Plate 6.3.4 Example of small sculptures - Fossils of Place, C Miles, 2006

6.3.3 The Qualia Experience

The significance of the visual journey taken through the lens of the digital camera may not be as immediately apparent as the journey of haptic experience engaging the physical senses and mind of the traveller, which allows for an immediate experience of place – qualia sensations (our personal reality). But the stored images of the camera reclaim something of that reality which is often relegated to memory, and is therefore of the past. Although the two dimensional
photographic image cannot elicit sensations of texture, sound, temperature, taste or odour, it can evoke memory-stored sensory signals that in turn stimulate emotions of qualia and therefore sensate experiences. To induce the feeling of being there that is documented through the artist/traveller’s photographic diary, a slide show of images from each of the sites was created (500:5 Images of Place – see section 7.11:284-285, also DVD images in Appendix G). The recorded and edited sound from each place was also integrated into the work to enhance the experience, as discussed in section 5.4.2:188-90.

6.4 Microscopic Reductionism
The objects and subjects of place viewed through the various microscope processes became the expanded imagery of place which gave access to the vision of strange universal realities; with the elemental supremacy of simplicity conferring a complexity and coherence of beauty and symmetry that mathematical and scientific equations, formulae and models often reduce to testable singularities through the reduction of their parts. While armed with the morphologic, taxonomic descriptions and explanations of form, structure and distribution, the artist is able to re-evaluate, even if paradoxically, draw from, and ultimately extol these unseen, sometimes inconsequential forms of place, thereby encapsulating a glimpse of the recursive simultaneous pattern layering of the microcosmic material world yet, still see them as structures of place.
Digital images, now as much a part of art as they are of science, can present to the artist an ideal rather than a reality; conveying an interconnectedness, a principle of place through the associations of present, past, the imaginary and the known, the tangible and the intangible, the visible and the unseen of space, time and place. The SEM images gained from the samples of place became, to this artist, representative of the journey into place, of time spent exploring, through sea, sand, amongst rocks, creatures live and the skeletons of those long gone. The four hundred plus images obtained from the samples collected from the five sites underwent an aesthetically based selection process based on whether the forms or patterns within, the clarity or composition of the image directly evoked a novel or aesthetic response. The amazing patterns and structure of the miniature generated a feeling of awe, of magnificence and smallness of self that is difficult to characterize. Indeed, some images shouted their amazingness, giving a sense of privilege that may be taken for granted in the scientific world but just had to be included in this artistic journey of place.

As a majority of the images gained from the samples from each site were also found to have a general distribution within the place particular, some were conceptualized as metaphors for the building blocks of all the sites – a leit motif of the place particular – and, as such, were presented together. Plate 6.4.1 (1:100 Postcards from Place) exemplifies how these images were placed together alluding to, and creating in visual form, the idea of foundational
structure and pattern underlying all places – the micro that underlies and constitutes the macro.

Plate 6.4.1  SEM images, *Detail of 1:100 Postcards from Place*  
(a foundational structure)

Postcard sized to convey a journey into unknown territory, the vision is one through the filters of a tourist travelling through a new space by an unaccustomed mode of transport (see Appendix E for all images).

Plate 6.4.2 presents a selection of digital SEM images (to become *1:20 Magnitudes of Place*); four images from each site were printed in A4 landscape format to denote a vista of the *miniature of place*. The exhibited pattern of placement for these images was, again, a foundational formation yet also indicative of an idea of missing spaces. Spaces, obliquely referring to the allusive, the unknown and the unknowable of *place*, such that the *traveller* will not have a chance to visit this time through as the constricted filters of time and circumstance often allow – as is the case for this research period; what is seen
or seeable represents a chance experience defined by the chaotic way of nature and situation

Plate 6.4.2 SEM images – example of 1:20 Magnitudes of Place

One microscopic example of place – a small section of a sand dollar (see Plate 5.4.20) from the echinoderm phylum with pentagonal symmetry became the motivation for 1:9 Lacing Five (see section 7.5.4:261 for final work). This sand dollar, while actually collected from Saunders Beach where they are most prolific, is also local to the place particular and found in all sites in varying numbers. The pentagonal symmetry is easily evident on its upper surface but the underside pattern requires magnification for a detailed view, so it was this side that became representative. The intricate delicacy of these remarkable pentagonal creatures brings to mind a three dimensional crocheted doily; representing the construct of form and object, the supporting interlacing of being and the connectivity of and to nature.
By overlapping and joining nine single SEM images together, a larger than A0 sized composite was created to simulate a sense of magnificence for the minutiae of the miniature. This was a *qualia* image, just as the viewing of this small piece of a small creature of nature’s patterning brought the freshly vivid sensation of amazing veracity to the artist.

### 6.5 Motifs and Signatures of Place

Each site is a monument to itself, yet each displays, through different magnitudes, particular and similar motifs. The combination of elements leads to the identification of *motifs* and *signatures* that were chosen to define each site. The impetus behind the choice of *motif* and *signature* is described first and then detailed later.

As a multi media artist, the encapsulating of a motif or signature was a manifold, many layered process. The decision to produce a number of major sculptural and installation pieces, and a body of two dimensional works was made at the planning stage approach but, as is the nature of an evolutionary process, variations of original projections needed to be modified in ways to reflect changing perceptions and logistical realizations. Each of the sites yielded a variety of discoveries that were chosen as a personal representation of the macro and micro. For each of the five *sites/places* within the *place particular*, a sculptural/installational *motif* was complemented by a two dimensional montage of other *signatures* of that place. Because of the manifest similarities across the
five locations within the *place particular* the additional works become linking *signatures* to all researched sites.

Nature’s descriptive dynamics, experienced through the magnitudes of human perceptual discrimination and filters of the scientific model, displayed definitive forms and patterns. The patterns of each of the five *places* were created by a parallel weaving from their micro into macro tapestries, with *genera* of forms – spirals, spheres, radiations, meanders and branching, triagonal, pentagonal, square, hexagonal, spherical, conical, circular, and cylindrical - a colloquy of *motifs and signatures* which became metaphorical descriptions of the five places within the *place particular*. Once a pattern or form of *place* was identified and chosen, there remained the issue of how to represent the essence of this *leit motif*. The need to evoke in the viewer the impact these forms had on the personal perspective of the artist consequently directed the decision to reproduce these forms basically as they were seen yet in a more symbolic, sometimes more abstract manner. The ability to represent what is known or knowable from another viewpoint is where the artist begins to transcribe the idea into reality.

### 6.5.1 The Signature Series

The *Signature Series* became the expression of the artist’s choice and interpretation of nature’s codes evident in each site. These five works – one for each site – were a representative montage of patterns gathered and selected
from the repertoire of visible, tactile and haptic experiences and the many digital and microscopic images sampled from each site. For example Site One – the Mouth of Ross River, Plate 6.5.1, includes the magnified details of salt crystals; the external shells from molluscs, barnacles and crabs; the tracks and traces of resident annelids (segmented worms), crabs and snails and the predatory birds searching for them; the meandering patterns of sand and sea; the vegetation patterns of the root and leaf system of its mangrove ecosystem; the cobblestone debris that is scattered in a confined area; the patterns of sea jellies that were displayed along the beach for a short period; and the patterns of a crab carapace and the living patterns of the little blue soldier crab and their traces which are particular to this place across the time sampled.

Plate 6.5.1  1. Signature of the Mouth of Ross River, C Miles, 2006

These select microscopic and visible objects of each place were executed in watercolour and pen, but deliberately without any formal design mapping, to allow the freedom of process that has become a personal style for this artist. These signatures of each site were selected and arranged in a montage to
create a *composite of place* where forms overlap and no one object is considered more important or representative of *place* than another. This is counter to the deciding factor of the overt, particular pattern, or *motif*, chosen as the *sculptural representations of place*. This was a difficult process as the hesitancy to make a small selection from a broad spectrum obviously restricts and maybe be seen as conclusive. The chosen shapes, patterns and traces were selected as an idiosyncratic view, as forms that evoked a special response to the *elements of place* and portrayed in a personal, stylistic method to give theatre to an example of this *place*, displaying elements of their paradigmatic composition. These *signatures of place* were drawn from various spaces/magnitudes – the microscopic, panoramic and the in-between – and brought to awareness through the collected/analyzed data, reduced to *codes of place* through a more subtle approach. *Codes* and harmonies of nature and the human epistemological languages – mathematics, physics, science and aesthetic appreciation – used in their deciphering, thus become more perceptible.

Choosing the conventional landscape format to compose a *design of place* was an intentional decision to juxtapose the conservative and the unorthodox in contraposition as a *view of place* organized by different magnitudes and thus to create a frame of reference for each *place* and its *coded patterns*. The method of implementation was a significant dynamic in the preparation of the *view of place*. The use of the watercolour medium was designed to convey the aqueous
nature of the littoral zones, and the fluidity of place in the nature of its ever changing, ever moving mutability. Paper was the natural fibre used as grounding for the process of re-forming nature’s imagery with essentially natural elements – water (the stuff of life), minerals and plant fibre, all substances of place and places. The actual water used for these watercolours was a fundamental ingredient in the construction of a montage of place. At each of the sites, seawater was collected to use as the water supply for the work, thereby bringing a tangible, real element of each place into the appositional narrative. While this is counter to the conservatorial methods of conventional art practices, the very nature of place and this artist’s perspective of each of these places as a temporal, flowing one rendered it an appropriate symbolism.

As much of what structures a place lies within the invisible scales, place is just as mysterious as it is known. Much lies still unknown and perhaps unknowable in our world and, within the marine space, a large expanse of minute organisms is yet to be discovered. As seawater is the vehicle for a magnitude of the minuscule components making up each place, it is the knowledge that, by using the water of each place, a mysterious element is brought into each composition - where the beautiful patterned shells of diatoms or other planktonic forms may actually lie within each depiction of place yet cannot be seen without the application of scientific tools. The method of application used with the watercolour and the pen overlay is significant in the process and symbolism of these works. While there was an initial decision in the placement and design of
the individual forms within the composition, the colours were applied in a very
loose mode, allowing random happenings to occur as the water and pigment
flowed across the paper surface. This process allowed for a chaotic description
of the original sketch to be brought again to order with the overlaying of the
contours of the pen, as they follow wherever the edges of colour lead. As the
section enlarged in Plate 6.5.2 shows, the pen was controlled and directed by
the final lay of the tonal variations, producing a topographical mapping of the
chaos/order process used. Colour was excluded in the representation of one
form within the composition – Plate 6.5.3 – and the pen was used to reduce this
form to a mapping, a focus, highlighting the pattern within form.

Plate 6.5.2 Detailed section of watercolour and penwork
Plate 6.5.3 Detail of plain penwork

These works are not allegorical; they do not try to speak of happenings, nor of setting a scene of *place*; yet, in their configuration, they allude to traces of movement – the casting of shadow, the connection of *inhabitants* to their *place* purely by their being. They are like a rough *draft of place*, in that they attempt to register a *quality of form, in time and space in place* though virtual placement within the rectilinear confines of another space; a space that is devoid of background interference, not intended to displace these *patterns of place* but to highlight them as arbiters of *place* in their own right.

6.5.2 Meanders and Branching

The repetitive flow formations of the horizontal shore – examples shown in Plates 6.5.4 and 6.5.5 – meandering and branching as they create the separate lines and curves of each *particular place*, resonate with more than the trajectory of sea and sand.
Plate 6.5.4 Sand patterns (A), meandering and branching, C Miles, 2005

Plate 6.5.5 Sand patterns (B), meandering and branching, C Miles, 2005

These natural basics are seen again and again in the higher magnitudes of clouds, the large swells, waves and ripples of the sea, to the minute growth structure of shells and other invertebrate tests, to human brain convolutions and dendritic coursing, to the travelling, hunting and feeding patterns of many creatures of place as in Plate 6.5.6.
Plate 6.5.6 Meandering tracks of a gastropod – sea snail

These patterns suggest the profound reverberation of the pulsing rhythm of the animate and inanimate world, of the fractal quality of the formation of a substance through the interaction of another, over time, and the feedback to the observer’s thought processes; which also wind, fade, reform, divide to continue again directionally until the interruption of another energy, which draws attention to a different aspect of form of place. They act as a prototypical form of each place, each bespeaking of individualism through the topographically evident patterns of self-organizing sand ripples – like a palimpsestic slate, to be refashioned with a constantly different display each tide, each day.

Through the hundreds of photos taken at each site, the recurring pattern of the meandering traverse sand dunes provided evocative descriptions of each of the five sites, and the reviewing of these images educed their constancy as a primordial signature of the littoral zone. They are descriptors of the universality of these enduring places where the physical laws of nature create a poetic visual
metaphor for the creative construct in the human mind, and they needed an audience other than the solitary *traveller*.

The decision to display the images of 4:5 *Flow, Contact, Time & Space in Place* – Plate 6.5.7 – as a collective essence of *place* was driven by their power of expression as a recurring, but ever different, symbolic pattern in which their variation, yet similitude, is expressive of the fluidity, multiplicity, continuity yet *changeability of all place and being*.

![Image of patterns](image)

**Plate 6.5.7** Example of 4:5 *Flow, Contact, Time & Space in Place*

The individual format chosen for the images was the square, taking them out of the landscape format of the rectangle (the extending qualities of the horizontal) to the centring, grounding focus of the equal space, where four indicates the stable, the solid; the four elements (water, earth, air and energy), each of which
is elemental to the formation of these patterns. The overall compositional pattern of placement was again the adopted configuration of Figure 6.3.1 (p:216) (signifying the overall concept of *squaring the five* expressed earlier) – bringing the five into being as an acknowledgement of the regenerative forces of *nature and place*, and the artist’s awakening to these findings.

### 6.5.3 Sculptural Motifs of Place

Five sculptural/installational *motifs* were conceived and produced to signify a particular resonance emanated by each *place*. These were directed by evidenced pattern, structure and symmetry that had significance not just to the site but to the artist, as evocative *codes* of awareness. While these traverse dune patterns form on the sands of all the sites, and understandably all littoral zones, the display of flowing sand in *Site One - the Mouth of Ross River* was a vital, prominent feature and dominated the decision for this as the *motif* for the site – represented as the art work *10:1 Meandering Place*, Plate 6.5.8 (see also Plate 7.2.1).

![Plate 6.5.8 Detail of 10:1 Meandering Place (fibreglass, marble)](image)

**Plate 6.5.8** Detail of *10:1 Meandering Place* (fibreglass, marble)
The naming of this work describes not only the physical meandrine forms that shape *place* but the ratio of one form to another in their descriptive geometry – ten pieces, one form – *one place*.

Repetition, one of the identifiers of pattern, is what establishes these sand ripples, endlessly changing but constantly being. They are different from the three dimensional geometric formations of Platonic, Euclidian or Newtonian mathematics and speak of the geophysiological, four dimensional mathematical perspectives of Bernhard Rienmann (1826-66), Henri Poincaré (1854-1912), the fractal ordering of Mendelbrot (1983) and Briggs (1994), the symmetries of Weyl (1980), Hahn (1998), the pattern formation of Ball (1999), and the living nature of Goethe, which he saw as fundamentally aesthetic. The beauty and mystery of these forms lies in the complexity of the occurrence of their simple configuration where no two individual forms are ever exactly alike but all are yet recognizable as the same formation.

No two tides will ever produce the same design but will remain constant in the method of production and fundamental result. Although most beaches will have some form of sand rippling no two beaches have the same topography, which dictates the occurrence of these effect-depictions of flow and contact. Such forms were most outstanding at the Mouth of Ross River. These universal forms are reminiscent of the river and sea flow itself, and the ubiquitous meandering, branching life flow of all systems-animate or inanimate. Although symmetry can
be seen as the principle of aesthetic beauty and pattern, repetition produced through the contact of physical energies in motion and time may be a more basic component of the forming of symmetry itself.

This work was to be displayed in an elevated, vertical position, which directed the choice of material used, and the conclusion to use fibreglass as the structural basis for this work had more than a single definer. The lightness of the fibreglass shell allowed larger forms to be constructed while retaining strength and flexibility. This lightness also permitted the form to be hung easily in the raised position and not require major anchoring. Once the design of this work was completed, the individual forms were modelled in clay, then overlayed with clear polyester resin and fibreglass matting – to allow light to pass through more effectively. The finish layer of small, translucent, white, crystalline pieces of marble and quartz was chosen both for the aesthetic reason of covering the unattractive surface of the fibreglass and for the symbolic connection of the compositional properties that actually form the sands of the littoral zone. The skeletons of invertebrates (corals, molluscs etc) and algae (Halimeda etc) that live within these zones, and contribute to the building of the layers of beach sand are constituted of the mineral calcium carbonate – the same composition as marble. Quartz, which consists of silica, forming 90 per cent of the earth’s crust, also adds to the shaping of the sands of these places). From the breakdown of large granite boulders to the shells of microscopic, planktonic sealife (diatoms, radiolarians, foraminifera etc) existing since the Jurassic period
(Kooistra & Medlin, 1996), calcium carbonate and quartz is the *substance of place*. Quartz has been used for millennia for its symbolic qualities. It is the most common material identified as the mystical substance *maban* in Australian Aboriginal mythology and has been found regularly in passage tomb cemeteries in Europe in a burial context, e.g., Newgrange, Carrowmore in Ireland (Lawlor, 1991; [http://en.wikipedia.org/wiki/Quartz](http://en.wikipedia.org/wiki/Quartz), 07). The Irish word for quartz is *grian cloch*, which means "stone of the sun". The light refracting and reflective properties of both of these minerals was also a reason for their choice, given the intention was to allow the internal lighting to show through subtly.

The complementary feature to this work – Plate 6.5.9 – was the mirror image pattern of sea salt crystal projecting out on to the floor space, creating a mirror, or bilateral symmetry. The intrinsic qualities of salt/sand which compose and code these patterns of *form and place* became representative of the transmutable/permanent concept of nature and, in particular, the littoral zone.

![Plate 6.5.9 Detail of reflected (mirror symmetry) floor pattern (sea salt crystals)](image-url)
Plate 6.4.10 shows similar patterns which are produced quite differently. As previously observed, the residual sand balls of the small sand crabs that inhabited various beaches display sometimes elaborate creations and while patterns of meandering and branching, they are also radiating patterns by much of which nature is structured. Including the patterns of movement; where from the central space/place at/in which the journey begins. They evoke happenings, displaying new configurations each tide, each day, where the imagination can picture these evasive little creatures leaving the trace of their existence and survival.

Plate 6.5.10 Feeding patterns of crabs – traces of radiating, meanders and branching, C Miles, 2005

Trailing intricate displays of action, time and direction, they are everyday journeys made and recorded through the patterns left. While also traces in time, space and the interaction of different bodies, these feeding patterns were analogous to my own journeys to each site, extrapolations of individual treks in time, space and place – from home base to site and back – and became the motif for Site Four – Saunders Beach (represented as 1:5 Traces of Space,
Place & Time, Plate 6.4.11 – see also Plate 7.2.4), where they are displayed in abundance.

Plate 6.5.11 Detail of 1:5 Traces of Space, Place & Time (polystyrene, ceramic sand)

6.5.4 Symmetry – Bilateral, Mirror Image

The chosen motif for Site Two – Rowes Bay, was initiated by a view through the SEM – where the higher magnifications of the tiny forms of diatoms (unicellular algae) were illuminated – Plate 6.5.12 – and later lead to their transformation as an artwork – Plate 6.5.13, 1:100x5 Clarity of Place (see also Plate 7.2.5).

Plate 6.5.12 SEM image of diatoms
Plate 6.5.13 Detail of 1:100x5 Clarity of Place
(moulded polyester resin)

Diatoms are one of the most common types of phytoplankton and, most are unicellular, although some form chains or simple colonies. Showing a wide diversity in form, these remarkably patterned algae were viewed in samples taken from most sites, but were seen in multitudes on an algae sample from the Rowes Bay site - algae on algae, yet the comparative size difference was huge. These tiny forms, perhaps one of the most prolific, yet unseen inhabitants of place, with their complex silicon, glasslike tests/shells, were the pinnate, bilaterally symmetric variety, and are among the most beautiful objects which can be examined with the microscope – prompting the decision to choose these shapes as a motif for this site. Five different shapes were modelled and reproduced in a transparent resin alluding to the knowledge of these minute plant forms bringing a clarity of place, easily overlooked perhaps, but important components of the space and ecology of local place and the wider world.
6.5.4 Pentagonal Symmetry

The characteristic of *penta* (five) became a recurring factor for the artist and a choice as *motif of place*. Five, and the pentagon-pentagram system, with the relativity of their symmetry presented an omnipresence in each site, each visit. This pentalogue was maintained through the awareness of the choice of five sites for the study, experienced through the five physical human senses which became tuned to the dynamics of the sand dollars, urchins, sea stars - the echinoderm symmetry. This connection reached further into the aesthetics of the physical structuring of molluscs and other shelled creatures with their logarithmic spirals, to the eddies in the air and sea, and the curls of its waves, explained through the mathematical composition of the Golden Ratio, of Phi, and the Fibonacci rhythms of nature, which have long fascinated artists philosophers and scientists, and which have become more personally evident in the littoral zone. As Schneider (1995) points out, five is the quintessence of nature, and linked to mathematical infinity. Pentagonal symmetry is symbolic of life and regeneration and has long connections with spiritual and artistic creativity, and so five became a *paradigmatic motif of place* and the study.

Plates 6.5.14 and 6.5.15 represent two such discoveries that gave inspiration to a representative artwork. The former is an SEM image of a *cirrus*, one of the anchoring arms of the feather stars, and the latter a magnified view of sea star *podia* (feet). They were the stimulus of the *motif* for *Site Three - Point*
Pallarenda – Plates 6.5.16, 6.5.17 and 6.5.18 (4:10 Forming Place – further detailed in section 7.5:256,273,275).

Plate 6.5.14
SEM image of feather star cirri

Plate 6.5.15
Magnified image of sea star podia

Plate 6.5.16
Detail of cirri influence
(4:10 Forming Place – resin)

Plate 6.5.17
Detail of podia influence
(4:10 Forming Place – ceramic)

This work is a contrast of opposites, of the anchoring and movement processes through which these creatures operate, perceived softness and hardness, depicted by black and white, smooth and textured, patterned and plain, transparent and opaque complementation. It expresses the ever flowing,
moving, spiralling, unfurling forms that comprise these littoral zones, the feather star itself and its place of residence – Point Pallarenda.

Plate 6.5.18 Sectioned detail of 4:10 Forming Place
(polyester resin, fibreglass, sand)

This work is a composite work comprising the four black column structures and ten white ceramic podia-like forms. The choice of four relates to the square (four horizontal directions, four seasons), with the structural configuration of five sides – the pentagon – again connecting the pentad form of the echinoderm and the number of sites within the research group, and the hands that produce. The upper forms of the columns curve in a progressive move toward a logarithmic spiral with a height ranging from 133 cm to 146 cm – simulating movement, while the vertical base evokes a secure hold. These four cirri-influenced upper forms
graduate from a translucent grey to opaque black. The ten ceramic pieces also exhibit a sense of movement through a configuration of varying height (from 25cm to 52cm) and pose (see Plate 7.5.3:256 for final composition).

The image in Plate 6.5.19 became the impetus for the definitive motif of Site Five - Geoffrey Bay; where an unknown object sample was viewed through the SEM to reveal these wonderful forms. Unknown to the artist, the scientist is able to identify them as holothurian spicules – the internal structure of a sea cucumber, which is also a member of the echinoderm family. Plate 6.5.20 is a detailed view of the artwork reproduced from the influence of these forms; carved out of polystyrene foam for lightness.

Plate 6.5.19 SEM image of Holospicules (internal structure of a sea cucumber – Holothurian)
6.6 Patterns of Place

*Place* is made up of and viewable from many magnitudes and observation from afar will display a different perspective. Though the access to the distant view of *place* is limited and also gained through sophisticated technologies – satellites or aircraft – expanses in space encompass many magnitudes themselves, and their inclusion was aimed to complement understanding. The satellite image – Plate 6.6.1 – offers a macro perspective and brings all of the sites into a composite view of the *place particular* – in the wider format; while the aerial image – Plate 6.6.2 – of each site demonstrates the individual patterns illustrated at this lower magnitude presented in the square format (the focused view).
Plate 6.6.1 Satellite image of the contact site/places within the *place particular* (www.bom.gov.au/weather/qld/townsville)

Plate 6.6.2 Aerial photos of individual sites (previous.townsville.qld.gov.au/landinfo/aerial_products.asp)
The last work described is a culmination of the simplification of a particular form/object/subject selected from each site and reinterpreted into a pattern representation of each, then brought together as one of all five places – Plate 6.6.3 (5:1 Patterns of Place). This work combines the meanders and branching, radiating, spiralling, circular, etc. aspects of form by which each place is structured, depicted as basic flat pattern – reducing forms of place to patterns of place. The use of the square format is again indicative of the squaring the five concept.

Plate 6.6.3 5:1 Patterns of Place, C Miles, 2006 (acrylic)

This chapter has described how the tangibles and intangibles of place were translated into artistically mediated material representations. What remains is their placement and presentation in the public arena.
CHAPTER 7 – The Exhibition

7.1 From Process to Presentation

This chapter documents the processes involved in presenting the aesthetic and conceptual outcomes of the research. The decisions behind choosing the venue to exhibit the works are addressed foremost before a pictorial catalogue of the individual works is presented. The placement of the artwork within the context of the gallery space and individual conceptual rationale is then explained, finishing with the associated publications.

Structuring an exhibition commences as a conscious planning process which, although embryonic, begins and develops in conjunction with the underpinning research and the consequential artwork synthesis. The creative phase simultaneously evolves with the presentation planning and the placement design begins once the decision of venue is made. The choice of the exhibiting venue is paramount to deciding how the works can be best presented by the artist and received by the viewer. Interpretation however, will not always be the same for each observer yet the potential of a work can be influenced by its placement.

7.2 One Space in Place of Another

Apart from the issues emanating from art as process versus art as product, the delivery mechanism for process and product is often not simple for the contemporary artist. Beyond the rhetoric of display, the fundamental concern is nevertheless about taking the artist’s work into a broader arena; this relies
heavily on the traditional gallery system, although increasingly there are alternative gallery formats like project spaces and, artist co-ops offer stimulating avenues for art presentation. Often though, artist initiated alternate spaces, regardless of their original intentions to reconceptualize art, are either short lived in tenure or paradoxically wind up gradually blending into what seems to work – the gallery space. The bringing together of the ideas, sentiments and the material symbolism of the artist’s conceptual journey is easily accessible within the public space, which becomes, in this case, a surrogate for natural space – a constructed place which will now accommodate the aesthetic response to *natural place*.

The questions of “how art should be presented?” and “what is a venue for art?” confront the artist with each body of work produced, and there is not always a clear or simple answer. The contemporary interior composition of the gallery/museum – the white cube – is based on the neutrality of the available space. White walls, angles and controlled lighting that will not compete with exhibited works, where art is autonomous to the space – often autonomous to life itself. They are aspects of this so called *neutral* white space which actually exerts control over how the work may be viewed. The architect Jun Aoki (2001) observes that

> We create space to fit requirements. This means that space will anticipate activity which will be done there. But nobody wants his or her activity to be bound by space. … Some artists think that their work can make space. For them the work is autonomous. And some artists think that space makes their work. For them, the work is site-specific. This is a problem whether work is prior to space or space is prior to work. And
there can be no conclusion. White cube galleries can fit autonomous works well. But it cannot fit site-specific works well. It manages to fit site-specific works because a ‘white cube gallery’ remains to be a room. It remains to be a space with its size, proportion and light condition. And it is bound by a floor, walls and a ceiling. The space is limited. A ‘white cube’ is a space, which has a neutral character and at the same time remains to be a room, which means that the ‘white cube’ is a compromise (Aoki, 2001:2-4).

Compromise is what artists do, as they have to make choices as where the presentation of their work will receive optimum exposure but which may sometimes not address the entire concept of their work. The nature, quantity and size of the work may dictate entirely whether the work is exhibited in a purpose made art space (white cube) or a characteristic space (site specific) or there may be flexibility for choice. Surrounding elements will affect the placement and meaning of created objects in some way, and have to be taken into account to achieve a suitable perspective for the artwork.

7.3 Choice of Venue

In deciding on the appropriate space in which to exhibit the works, several objectives and choices were considered and, while a site specific space might seem ideal to exhibit work that articulates natural place, bringing pertinent atmosphere, the logistics militated against this. The littoral zone as an exhibiting space itself would have been particularly evocative but, as all five sites were of equal importance, the reality of physical distance between each, and the practicality of permits, the costs of security and promotion, rendered this impossible. The reality is that the body of work produced from this study did not
lend itself to the ephemeral qualities of a single *plein-air* site, a reality which lead to the decision to present these works within the gallery system.

The available spaces; the exhibiting time frame permitted; the physical structure of the available gallery spaces – floor coverings, wall contours etc., and the volume of audience traffic, were all central aspects to consider. As a regional area, Townsville does not have many conventional or contemporary spaces from which artists may choose. Given the nature of the works, the exhibiting area needed to be large, with uncarpeted flooring, hanging points and a flexibility that allowed for various installation techniques, as well as good accessibility for the artist and the viewing public. Three main public gallery spaces exist; The Townsville Council operated space – The Perc Tucker Regional Gallery, the contemporary space – Umbrella Studio, and the Thuringowa Council space – Pinnacles Gallery.

The planned time for exhibiting the works was mid 2006 and, as is generally the case, the proposal process has to be commenced well in advance – in this case, nearly two years before the proposed time – each gallery’s calendar needing to be scheduled. Table 7.3.1 sets out the key criteria detailed above and compares the available gallery spaces in terms of these. A star rating system is used to indicate the extent to which the criteria are met by each potential space, five being the highest level.
Table 7.3.1 Criteria for Exhibiting Space Selection

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Perc Tucker Regional Gallery</td>
</tr>
<tr>
<td>Time availability</td>
<td>**</td>
</tr>
<tr>
<td>Nature/Adequacy of Space</td>
<td>*</td>
</tr>
<tr>
<td>Hanging Points</td>
<td>**</td>
</tr>
<tr>
<td>Installation Compatibility</td>
<td>*</td>
</tr>
<tr>
<td>Flooring</td>
<td>*</td>
</tr>
<tr>
<td>Access</td>
<td>*</td>
</tr>
<tr>
<td>Costs</td>
<td>*</td>
</tr>
<tr>
<td>Public Awareness</td>
<td>******</td>
</tr>
<tr>
<td>Rating</td>
<td>14</td>
</tr>
</tbody>
</table>

As is clear from table 7.3.1, Umbrella studio rated highest overall. Whilst the Perc Tucker Regional Gallery is acknowledged as the most central and publicly known space, the available exhibiting area was too limited to accommodate the
entire proposed body of work and also the carpeted floor restricted the planned installation works. Pinnacles Gallery was the space chosen for my 1999 Honours interactive exhibition – *A Touch of Seeing – a scent of sound*, and familiarity with its configuration and size made it conducive to present this body of work but, as it was relocating and consequently closed for a long period, including the proposed exhibiting time, it was automatically excluded as a choice. Other than these main spaces, the James Cook University’s Vincent Gallery and the privately operated Flinders Gallery are the only other viable operating gallery spaces available in Townsville. Flinders Gallery – a commercial gallery – which aims for an exclusive clientele was not only an insufficient space but also could not accommodate installation techniques. While Vincent Gallery did meet most of the criteria, it is an isolated and almost unknown space to the general public and hence was not ideal.

Galleries have to be accepting of the vagaries and invasive methods that contemporary works employ in their placement of installation works, and Umbrella Studio was the one site that offered the main requirements with the most flexibility for the installation procedures. Although not a perfect space in itself, the availability of the whole space, its dark wooden flooring, numerous hanging possibilities, large movable wall and its central position gave it an edge that rendered it the most desirable of the options.

Umbrella Studio, not the built contemporary, neutral, white cube, is a former commercial building (50s style), with an old bank vault, wooden floors, large
glossed frontage, split levels and exposed modern air-conditioning ducting. No space can be totally neutral and will add its own particular character. This can distract from the works or it can be used to contribute to the character of the exhibition. By using the space itself to layer meaning with the artwork, a more integrated element was sought. Exposed to the view of the main street external to the gallery – through full glass frontage – the work had the potential to be extended to the outer space, not autonomous, and yet, not site-specific, bringing art inspired by local natural place into the arena of local constructed place.

7.4 The Exhibition Title

The naming of an exhibition is a challenge for the artist to communicate the essence of their work within a few words. Often this evolves over time. Many different possibilities came to mind i.e., Milestones of Sights & Sites; Patterns of Place; Patterns of a Local Underworld - the “underworld”, referring to the hidden microscopic forms of place, and the covered areas of the littoral zone. The decision to use the number five as the lynch pin for the title was based on a number of reasons and was chosen to convey layered meaning. Firstly, the five sites placed within the local area – the place particular – involved in the study were then brought together into the single space of the gallery. Secondly, the term squaring in the context of a personal meaning encases all five and brings them into focus for the artist and the viewer. This connection, of squaring, has the meaning of coming to terms with – the revisiting and refinding of place – by taking a much closer look at and in the macro and micro levels of place, as well
as alluding to the scientific connotation of the *gridding/squaring* of a site. The use of gridding in the scientific method is carried out in a precise way, where the area to be looked at is sectioned off into a grid and each section is looked at carefully but, as the artist is not emulating the scientist, this *gridding* was played out in a loose and hypothetical way. The sites, being visited numerous during the study period, were repeatedly travelled, and thus is where the similarity to the scientific is meant - the *sifting of place* to discover the hidden. Scientists sift the sand and water samples within the gridded study space and view the various materials through particular microscopes and, in a fundamental way, this is where the *artist/traveller* has ventured.

5 *Squaring the Five – milestones & magnitudes* became the final choice for the exhibition title. The co-title *milestones & magnitudes* also has many layers of meaning. *Milestones*, a word which includes the artist’s surname when separated as *Miles-tones* is a personal play on the connection of the artist and artistic representation, furthermore *miles* as in a journey; *tones* as in the composition of colour mood and light. *Squaring the Five – Milestones and Magnitudes*, is intended to convey and cover, especially for the artist, the complex and multifaceted meanings of place; the interactions of *person and place* – the memories and experiences and interpretations; the complexity of nature and the human view – the measurement and ordering of it – the many levels/scales/layers of *place and our place in it*. A more detailed rationale for this title is also included in Appendix C.
7.5 The Artworks

Plates 7.5.1 – 7.5.19, presented in five sections, constitute the work displayed in the exhibition. Appendix H contains additional visual depictions of these works place within the gallery space.

7.5.1 Motifs of Place

Plate 7.5.1 10:1 Meandering Place, C Miles, 2006
(2x2x2m – fibreglass/marble/salt)
Plate 7.5.2  8:13-5 All 4 One, C Miles, 2006 (3x2.5x2mpolystyrene/acrylic/plaster)

Plate 7.5.3  4:10 Forming Place, C Miles, 2006 (3x1.5x1m-polyester resin/fibreglass/ceramic/sand)
Plate 7.5.4  1:5 Traces of Space, Place & Time, C Miles, 2006
(2x3x.04m-polystyrene/ceramic sand)

Plate 7.5.5  1:100x5 Clarity of Place, C Miles, 2006
(2x.5m polyester resin – 100 pieces)
7.5.2 Signatures of Place

Plate 7.5.6 1. *Mouth of Ross River Signature*, C Miles, 2006
(1250x865mm – watercolour/pen)

Plate 7.5.7 2. *Rowes Bay Signature* C Miles, 2006
(1250x865mm – watercolour/pen)
Plate 7.5.8  3. *Point Pallarenda Signature*, C Miles, 2006
(1250x865mm – watercolour/pen)

Plate 7.5.9  4. *Saunders Beach Signature*, C Miles, 2006
(1250x865mm – watercolour/pen)
Plate 7.5.10  5. Geoffrey Bay Signature, C Miles, 2006  
(1250x865mm – watercolour/pen)

7.5.3 Collections and Objects of Place

Plate 7.5.11  5:4 Squaring the Five – Resting Place, C Miles, 2006  
(900x900x410mm – wood/Perspex/plaster)
Plate 7.5.12  Cabinet of Curiosities, C Miles, 2006
(glass cabinet with various materials)

7.5.4 Magnitudes of Place

Plate 7.5.13  9. Lacing Five, C Miles, 2006)
(1200x800mm – montaged SEM digital image)
Plate 7.5.14  1:20 Magnitudes of Place, C Miles, 2006
(20xA4 SEM digital images)

Plate 7.5.15  5:100 Postcards from Place, C Miles, 2006
(100 postcard SEM digital images)
7.5.5 Patterns of Place

Plate 7.5.16 5:1 Patterns of Place, C Miles, 2006 – 1030x1030mm – acrylic)

Plate 7.5.17 5:1:5 Patterns in Place, C Miles, 2006 (satellite and aerial images)
Plate 7.5.18  4:5 Flow, Contact, Time & Space in Place, C Miles, 2006
(4000x2500mm – digital images)

Plate 7.5.19  500:5 Images of Place – looped slideshow of digital images
7.6 The Invitation

While the design of the invitation could have been left to the gallery to produce without much input from the artist, it was considered very much a part of the artist’s concept and artistic standpoint. The designing and printing of invitations and catalogues is limited by economic considerations for the individual artist yet an efficient design should relate specifically to the concept. Plate 7.6.1 shows the final draft of the double-sided invitation (produced on Office Publisher) displaying the numeral five within the square border – *squaring the five*. A photograph of sand ripples – as a *logo of place* – was mirror imaged for the front and back spaces (side a).

![Plate 7.6.1 The Invitation – side (a) and (b)](image-url)
A mirror reflected image was also used as background for the inside invitation information (side b). This image was taken from the work (10:1 Meandering Place) with the transparency reduced to allow legibility of the text. The use of these two images, one photographed on site – Saunders Beach, and the other an interpretive work (motif for the Mouth of Ross River), contrasted the natural meandering and branching patterns of nature through which many disparate materials have formative consequences. The top right-hand corner of the front was cut, turning it into a five sided form reflecting the pentagon and square when folded – Plate 7.8.2. A copy of the invitation is included in Appendix D.

Plate 7.6.2 Invitation – Folded Square

7.7 The Catalogue

The image used for the invitation was also the front page image of the catalogue. This picture came to symbolize for the artist not only a patterned dynamic of nature, but an embodiment of the place that is the littoral zone. In
keeping with the concept of squaring the five the catalogue was also designed along these parameters. Plates 7.7.1 & 7.7.1 show the cover, back and inside of the catalogue.

Plate 7.7.1 Catalogue Cover Page and Back Page with Sponsorship

Plate 7.7.2 Catalogue Inside – opened out
The concept was retained by printing both sides of an A2 sheet and double folding to produce the symbolic square – with the excess cut off. An eight page spread was produced, with the artist’s statement, acknowledgements and CV on the reverse side of the front and back cover. The catalogue inside opened out displayed the exhibition works through the thematic pattern, *squaring the five* – the five within the four – Plate 7.7.2. The central diagonal square depicts abstract images of the black and white installation works.

The nature of installation works being that they are often not finished until actually installed, making the photographing of finished pieces difficult, especially for catalogues, as these have to be designed and printed a reasonable time before the setting up of the exhibition. The result is that this catalogue could not include all the works in their entirety. An example of the catalogue is included in Appendix D.

### 7.8 Artist’s Statements

Though an artwork does have self expression, each observer will bring to it an individual perspective and the elements that create meaning and impetus for the artist may often not be clear. Artist’s statements are designed to convey to the gallery audience a sense of the artist’s course. The catalogue statement can sometimes differ slightly from the artist’s gallery statement, as in this case. Catalogues become take-away versions of an exhibition and, as such, there is a need to detail and depict as much as can possibly fit within the limited space
that is available. The Gallery space permits another avenue for further expressing the rationale governing the works. The two statements below are presented so as to demonstrate their different form yet parallel concept.

**Catalogue Statement:**

**Artist’s Statement**
A connection to place is becoming increasingly more difficult in modern affluent societies. The tides and currents of our life wash us into place like shells on a beach. Yet how well do we get to know the places of our times? Place is more than meets the eye. Place is macro and micro, inside and outside, animate and inanimate, existing in different time and space scales, and for all that a connection with place is perhaps fundamental to our equilibrium, we tend to ignore, or not notice, most of what surrounds us. A closer look at place through the eyes of Nature can only enhance understanding and connection., and as Henry Thoreau, one of the founders of environmentalism from the 19th century believed, the world can be revealed in our own backyard if only we give it our proper attention.

**Squaring the Five – Milestones & Magnitudes**, is a refining and refining of my connection with 5 sites in the Townsville region; the Mouth of the Ross River, Rowes Bay, Point Pallarenda; Saunders Beach, and Geoffrey Bay – all significant to personal temporal events yet, all undiscovered in many ways.

The nexus of land and sea is a special place – magnetic and mysterious, where myriad forms and patterns abound, where a human connection is inherent, where innate curiosity and the desire to admire and collect is in its element. This is the place that has been inspirational in this body of work, where the algae and invertebrates of the sea rule and position themselves in an eternally changing display that Nature exhibits for our benefit – if we take time to notice. Yet much of what exists in place is unavailable to be seen with the limits of our vision. If we ignore most of what can be seen, how can the unseeable be of interest?

The beauty of the unobservable is often only available to scientists through the instruments of their vocation. Accessing these instruments and the language of science reveals even more of the wonders of Nature. The physicist Richard Feynman remarked on how understanding a flower scientifically can only enhance our appreciation of it – and so have I discovered. By learning why and how Nature produces her patterns has only magnified my sense of awe of their existence.

The elemental forms and patterns of nature share a common language, creating harmonic principles. Orders of magnitude, dynamics, geometry of form, symmetry, Nature’s number – the Fibonacci sequence; the golden ratio, are all human terminology, and whether separated as science, mathematics, physics or art, all combine in our understanding and observation of Nature’s tapestry.
Which tends to conform to basic formulae, of which, spheres, spirals, cylinders, meanders, branching and radiating patterns, hexagonal packing and 3 way separation are favourites. Flow, contact, position and time also combine as main ingredients to repeat patterns and form. In seemingly disparate material, animate and inanimate, everywhere we look.

The text of the interpretative wall panel, though similar, is by comparison less personal and dealt more with the theoretical and specific geographical facets of the project.

**Umbrella Studio Gallery - interpretive wall panel:**

5 **squirting the five – milestones & magnitudes** is a visual dissertation into the harmonics of Nature and placement - an idiosyncratic perspective of pattern and form through a connection with, and discovery of, place. Pattern is how we recognize object and place. Place is where and how we connect and remember the temporal events of our life. Place and memory become synonymous. Yet how well do we get to know the places of our times? What are the patterns of a particular place? Memories are subjective, and we are only aware of a very small fraction of what resides within a particular place.

It is from the perspective of defining place and its component forms and patterns that this body of works has germinated. As Henry Thoreau, one of the founders of environmentalism from the 19th century believed, that the world can be revealed in our own backyard, if only we give it our proper attention. (Schama, 1995)

Place in relation to this exhibition is the Townsville region – where the land and water meet. Place also defines the locations, the specific sites I have been working in. Five sites were chosen from the Townsville area, all accessible and well known - the mouth of Ross River, Rowes Bay, Point Pallarenda, Saunders Beach and Geoffrey Bay. By revisiting these places and discovering some of the patterns and form within, and beyond the world of normal visual and tactile perception, a better understanding and connection with these places is advanced. The nexus of land and sea is a special place – a place where humans feel safe on terra firma yet are drawn to the mystery of the unknown or the unknowable of the sea. As Albert Einstein once said, the most beautiful thing we can experience is the mysterious; it is the source of all true art and science.

It could be presumed that the arbiters of the beauty of pattern and form lie within the realm of our familiarity. But the human visual perspective is very limited and the majority of beauty of pattern and form is hidden from us in a world of the miniature. It seems we tend to value only the larger forms of Nature as worthy art subjects, yet there is an immense gallery of invisible or hard to see wonders.
that can astound us with their complexity of structure – sights mostly reserved for scientists.

All surfaces, living or not, embody some form of pattern, in terms of texture, form, marking, colour or movement, the variety seems endless. Ethereal formations in the above blue expanse reflected in the wrinkled, temporal skin of the sand and the rhythms of the sea - blueprints for Nature and riddles of morphology – are patterns of place that evolve from a few organic shapes and physical motions that are visible almost everywhere we look. Nature plays favourites in the art of visual form, of which, spheres, cylinders, spirals, meanders, branching and radiating patterns and shapes are dearest.

The mathematical archetypes of Nature, Art and Science share a common bond, they also share a common language with our thought processes. At the same time simple and complex, symmetry, pattern and geometry are a constructed language used to interpret our environment, which in turn regulate the relation that joins the organic and the inorganic, our sensibilities, our thoughts and actions; that reciprocally unites Nature and Culture in the human psyche.

The seeking and recognition of pattern and form is perhaps innate in humans. All discovery, whether scientific, technical, artistic or philosophic, has been the result of pattern observation. Scientific investigation and artistic experiment and representation remain strategies through which we search for comprehension and significance in Nature and our placement within it. (ref: Stevens, 1974; Schama, 1995; Schneider, 1995; Wilson, 1996; Ball, 1999)

7.9 Media Communications

The Umbrella Studio Gallery incorporates a practice of community awareness in its exhibition program which includes media releases and statements for local and interstate publications – the Townsville Bulletin, The Sun, Artlink, and reviews of the exhibition become a branch of public awareness. Interviews with local students of journalism from James Cook University interested in gaining experience in the arts reviewing process, as well as Gallery and radio talks were given. The media release and reviews are included in Appendix I.
7.10 Plan and Placement Possibilities

While Umbrella Studio was the final site chosen, there were nevertheless various constraints within the gallery space which had to be considered. Figure 7.10.1 presents a diagram of Umbrella Studio showing the configuration of the gallery – the grey indicating untenable areas. A large area to fill, it is divided into two distinct spaces, with a short set of stairs each side at the back of the lower Main Space giving rise to the upper level Access Space. An area of the wall in the upper space, shown in the figure to the left of the reception desk is hidden from view by the stairwell exit on the left of the gallery – leading to the downstairs work and storage spaces. The reception desk, centred against the upper back wall, was a component that was not removable, and the small vault room (the old bank vault) to right of the reception desk on the upper level also created its own separation of the upper space.

The major walls of the Main Space have extruding concrete columns – indicated as (a) in the diagram. These interrupted the wall flow in a major way, and two floor to ceiling columns just in from the main entrance also divide the lower space. Contrary to the advantages of visual accessibility from passing traffic, the glass front of the gallery could have constituted an interior distraction, with the glare of daylight entering as well as the motion of this local urban interface possibly posing disruption.
Figure 7.10.1 Umbrella Studio Plan
The upper level was distanced somewhat from the lower area and, indeed as such, is often used as a separate exhibiting space, with only a very small area in the right hand corner directly visible on entering the gallery space. The challenge was to work with these problems and to interlace them into the design concept.

7.11 The Exhibition – The Placement of the Works

Exhibitions function to tell narratives – in this case the account of my investigations of place. The body of work was consciously produced to reveal facets of place through the combination of multimedia – sculptural, installation, digital photographs of place and magnitude, two dimensional works, looped digital images of place and needed a variety of presentation requirements. By working with the problems of this complicated gallery space and turning them into advantages, this gallery, if not an ideal space, helped to represent this multilayered view of place. The removable wall was positioned in the lower main space – partly to obscure the metal hand-rail that ran along the upper section between the stairs, and even though this created a further separation of the area, it was not intended to indicate a dissonance or hierarchy between the lower and upper level works but primarily to gain a wall for the central placement of a major sculptural work. Figure 7.11.1 shows the final placement of the works within the space. My journey as an artist now becomes the journey of the viewer.
Figure 7.11.1 Umbrella Studio Plan & Diagram of Artwork Placement
By bringing the outside inside and the unseen manifest, the following passage is a tour through the exhibition and endeavours to bring the reader into the gallery space by looking through the mind of the artist.

To engage the viewer on entering the gallery space the centrally placed work – 10:1 *Meandering Place* (Plate 7.11.1) was installed on the removable wall. These meandering elevated forms, juxtaposing the horizontal sea salt mirror image transcribed onto the gallery floor, were placed to draw the viewer into the gallery by bringing the eye toward a centrally displayed work.

![Image of 10:1 Meandering Place](image)

**Plate 7.11.1 10:1 Meandering Place, C Miles, 2006**
– centrally placed

The viewer enters the gallery space with two large sculptural works placed either side of the entrance – 8:13-5 *All 4 One* (on the left facing in) – Plate 7.11.2, and 4:10 *Forming Place* (on the right) – Plate 7.11.3. First awareness is directed to
these larger three dimensional *motif* works, symmetrically placed within the main space.

Plate 7.11.2 4:10 *Forming Place*  
C Miles, 2006 (front of the gallery)

Plate 7.11.3 8:13-4 *All 4 One*  
C Miles, 2006 (front of the gallery)

These three works (Plates 7.11.1-7.11.3) indicate some of the levels the artist is functioning through. The viewer is then directed through the varied interpretations and levels of *place space*.

The concept of *motifs of place* was central to the five sculptural works placed within the lower main space which also included the positioning of four of the two dimensional watercolour drawings – the *signatures of place*. The decision to place these four framed works (detailed in Figure 7.11.1), numbered one – *Mouth of Ross River* – through to four – *Saunders Beach*, was governed by the separating element of the evenly spaced concrete columns. To balance the wall space only four of the signature works could be positioned on the two facing walls of the lower space between the columns. The fifth signature work – representing *Geoffrey Bay* – was displayed on the right of the upper level
alluding to its physical distance from the mainland sites. This separation was necessary to balance the five works although, by keeping the mainland works together this distancing was not intended to convey any division or hierarchy of these places.

The viewer, after being drawn into the space by the three main sculptures and then lead to the two dimensional works along either side of the gallery, was channelled to the last two motif works which were placed on either side of the lower gallery near the steps – guiding the viewer into the next level. Plates 7.11.4 and 7.11.5 show how these two installation works were deliberately designed to integrate into the space; requesting the viewer to seek them out, as does the traveller within the littoral zone, by becoming aware only through a more careful observation of what comprises place. 1:5 Traces of Space, Place & Time (Plate 7.11.4), the physical mapping of the journey, travels around the angle walls and positioned signs – features that are components of this internal built space – like tracks indicating the negotiations of the artist/traveller through the external spaces of place, where there are obstacles always ready to distract.
Plate 7.11.4  1:5 Traces of Space Place & Time, C Miles, 2006
(travelling through space and place)

Plate 7.11.5  1:100 Clarity of Place, C Miles, 2006
(flowing up the steps)

The positioning of 1:100 Clarity of Place (Plate 7.11.5) along the edge of the
stairs may seem incongruous but this placement was a deliberate mimicking of
how these minute subjects (diatoms) tend to cover the objects they come in contact with. Simulating the fluent interconnection of objects and subjects of place; where the consideration of a symbiotic and interactive relationship became an extension of place. This work, in the act of travelling itself suggests the directional flow of the exhibition and guides the viewer up into the next level; a dichotomic yet parallel theme of place. This space and its exhibits seek to show another aspect of place, not a division but, an evidence of real place through different magnitudes, scales and viewpoints.

Acting as the transition, the fifth signature work – 5. Geoffrey Bay Signature, is first encountered, with the patterns of place shown in Plate 7.11.6 representing the artist’s interpretation of the forms of place simplified into a two dimensional pattern.

![Plate 7.11.6 Entrance to the upper level of the Gallery](image)
The exhibition name is positioned on the back wall of the upper level – visible from the entrance yet not intrusive as it fits into a recessed section of the wall. *Objects of place*, transformed into the *collectibles of place* – *5:4 Squaring the Five – resting place*, in the corner position, conveys analogy to the coffee table conversational piece displaying evidence of the *artist/traveller’s* extrapolative path. This work thus alludes to the concept underlying the art production and exhibition title, the experiencing of *objects of place as art* and the human habit of collecting and treasuring.

From the upper level the back of the removable wall was the space used to display the small photomicroscopy prints as *5:100 Postcards from Place* – Plate 7.11.7.

![Plate 7.11.7 5:100 Postcards from Place, C Miles, 2006 (positioned on the rear of the removable wall)](image-url)

The viewer then moves from the smaller postcard sized images of the *hidden patterns of place* to the large poster format of *9 Lacing Place* displayed
alongside stepping formation of 1:20 Magnitudes of Place – Plate 7.11.8. A DVD of the microscope images is included as Appendix E.

**Plate 7.11.8** – The juxtaposition of the magnitudes, objects and patterns of Place

The aerial and satellite images – 5:1:5 Patterns in Place – positioned above the glass cased Cabinet of Curiosities occupy the same wall. From the black and white foundational images of the SEM, the view is zoomed out to the higher magnitudes of the colourful satellite and graphic demarcations of site and place, all factual depictions of place, and descriptions of the manifold and recurring patterning by which it is constructed – the surrealist composition of the real. By positioning the Cabinet of Curiosities (Plate 7.11.9) in this area, the tangible narrative of the artist/traveller’s experiences is juxtaposed with the microscopic and macroscopic aspects of place through a contrary scaling which invites the
viewer to dwell on these various magnitudes of place. This was deliberately set
up in anticipation of generating an interplay between the actual, observable,
collectible, recordable with the intangible, unseeable, interpretable, and
creatable. Various small objects, i.e., crab feeding balls and other littoral debris
collections were added or gradually exchanged in the cabinet during the period
of the exhibition. This was done to suggest the littoral place as an ever
changing, continuing process inviting a physical progressive observation of
place and its objects.

Plate 7.11.9 Cabinet of Curiosities

Partly concealed by its placement around the corner on the unseen wall,
blending into the space, yet filling it, 4:5 Flow, Contact, Time & Space in Place
(see Plate 7.5.18:264 & 7.11.8) brings the colour and pattern of all five places
into a united space. By using the thematic pattern of *squaring the five* – the five
within the four – this subject and arrangement was intended to encourage the viewer to observe and discover the taken-for-granted magnificence of place and pattern, forever changing, forever the same. An early consideration was to print these images in black and white respecting the nature of the SEM images and which thus would have projected a different understanding. However, the use of colour brings another dimension of place into the gallery and the photographic simile. Appendix F gives a more comprehensive display of these sand patterns, though not in this symbolic configuration.

In selecting the Umbrella Studio gallery to exhibit the works, the small box-like room at the rear of the gallery’s top level was considered a positive attribute. The old battered metal door is able to be ignored as the darkened room creates its own atmosphere. Previously used for small installation works, this old vault was turned into a small theatre for the viewing of the artist/traveller’s photographic experience of place; with a projecter installed and the walls painted black to bring focus to a rectangle of white screen and its projected descriptions and patterns of each of the five sites. Here the colour image of real place is restated again in the photographs of 500:5 Images of Place presented in this theatre of place – Plate 7.11.10. The looped playing time of 55 minutes invited the viewer to spend time in place, to stop, rest and see these five sites as they were revealed to, or drawn out by the artist/traveller. The confined space projects the images and sounds of the littoral zone, immersing the viewer in a
time space that allows the poignancy of *local place* to surround. The images which represent this work are included in Appendix G.

![Plate 7.11.10](image)

**Plate 7.11.10  500:5 Images of Place, C Miles, 2006**
( looped digital show of place inside the theatre vault)

In summary, the two levels of the gallery became analogous to the dual approaches and manifold aspects the artist has undertaken and been exposed to throughout the study – the levels of awareness of *place*; the unfamiliar filter of
the *scientific paradigm*; the fresh eye of the *traveller*, the seen and unseen. This multilayering is demonstrated through the creation and presentation of the artistic outcome – the concrete, tangible practical response which complements the abstract, conceptual and digital.

The utilization of the space was directed in a way that would exemplify my approach to the *conundrum of place* – its individuality and sameness – with the endeavour to make, as far as possible, the gallery space echo my own journey in a way that suggested a comparable path to the viewer. The intention was to draw awareness to the unseen or overlooked on entry, and by exposing the viewer to these works, influenced by forms normally below the threshold of visible scale or awareness, thereby bringing them to wider prominence. Through these travelling, static, forms, colours and patterns of *place*, implied and exposed, a different way of viewing the *dimensions of place* through the association of *motifs and signatures*, the *idea of place* can be foot printed.

The final experience that was intended to both meld the sites and paradoxically to declare their separateness was the immersive environment of the tiny theatre, where the colour image and sound of unquestionably unique locations and *objects and subjects of place* ran together to declare their unity in diversity, however subtle and however focused.
So in essence, the artist’s intention was to bring various *levels of place* into a culmination of awareness, and through this a venue, to expand the *actual face of place* that all can recognize which is often opposed to the unknown yet knowable elements hidden from consciousness. Hence, particularizing an understanding of *place* as a *complexity of magnitudes*; both tangible and abstract. The final presentation of the exhibition is recorded on DVD and included in Appendix H.

**7.12 The Exhibition Opening and Associated Events**

The opening night of the exhibition – Friday 12 May 2006 – was attended by over one hundred people – including scientists, artists and general public. Patrick Filmer-Sankey, the then director of Townsville Reef HQ – the marine aquarium, opened the exhibition. Mr Filmer-Sankey, a marine biologist, has formerly worked in managing roles at the Museum and Art Gallery of the Northern Territory, the Newcastle Museum and Art Gallery and the Australian Museum in Sydney. In choosing Mr Filmer-Sankey to open the exhibition, the intention was to bring science, the local marine place, and art together. Prior to the opening night, the artist and Mr Filmer-Sankey met periodically to discuss the concept and progress of the artwork. The opening night itself is best captured by the video recording in Appendix H. Reviews of the exhibition together with visitor comments are included in Appendix I.
During the exhibition period of May/June 2006, the artist gave three gallery floor talks open to the public. The first was incorporated into the state-wide *Museums Alight!* celebrations. Coordinated by Museum and Gallery Services Queensland, *Museums Alight!* celebrates International Museum Day and acknowledges the contribution of Queensland’s museums and galleries to our rich and dynamic culture. The local TAFE art students attended the second talk under the direction of art teachers Donna Foley and Jenny Mulcahy, where a walk through the exhibition and discussion about the concept behind each work and the practical processes and decisions of production. A large group from DEEWR (the Department of Education, Employment and Workplace Relations) organized through the coordinator Bernadette Boscaci attended the third talk. Promoting awareness of the gallery talks and exhibition, a radio interview with the local station 4TTT brought the artist’s standpoint to a broader audience.
CHAPTER 8 – Analysis and Evaluation of the Study

8.1 Overview of the Research

To the extent that each person can feel like a naturalist, the old excitement of the untrammeled world will be regained. …I offer this as a formula of re-enchantment to invigorate poetry and myth: mysterious and little known organisms live within walking distance of where you sit. Splendor awaits in minute proportions (Wilson, 1984:139)

This chapter analyzes how the aims of the research have been addressed in this exploration of the five selected sites within the place particular. Through this experiential journey, equipped with the filter of the scientific paradigm, a heightened consciousness of each site’s unique character was gained. Thereby, developing a dialogue with place, where subject, object, pattern, rhythm and form – the visible, typically invisible and generally unnoticed – lead to a construction of place.

Given that the use of the scientific filter was essentially exploratory, it was not possible to predict its likely efficacy as a strategy for artistic connection with place. Previous practice had evidenced a strong association with the marine environment yet this proved to have been insubstantial by comparison with the micro/macro connectedness afforded by the scientific filter. In reality, the study’s aims were exceeded by the filter’s application and, as a result of this process, the view of place and its effect on my art practice is far richer than anticipated. Not only was a personal relationship with each place and the place particular established, but the study also resulted in a deeper understanding of the nature of placedness and natural processes as well as the role of science as
a narrative towards holistic understanding. It is clear that, although the creative process will always be directed by the individual artist’s sensibilities, a deeper and different understanding of the subject has the potential to engage more powerful argument in a broader dialogue which, in turn, affects the nature of the art product.

In the case of this research, the adoption of the scientific filter opened up the opportunity to determine the extent to which the personal experience, the often unrecognized or unexamined epistemological framework, and the internal influences of the artist, drive, shape and/or limit the individual connection to the subject and, correspondingly, the artistic response. These conclusions represent a growth from the initial proposed direction of the research which was the revealing of patterns of place within the selected littoral spaces in order

...to integrate a natural interest with a scientific perspective to produce an individual artistic conception and production which relates to place, space and the marine environment (Miles, 2004:15).

Table 8.1.1 aligns the research implementation process with the stated aims of the study as well as giving a basic evaluation of the methods and developments of the research with a more detailed appraisal of the key findings in section 8.2. It is, of course, common in research such as this for initial assumptions to be found lacking in depth and hence to lead to richer ground.
<table>
<thead>
<tr>
<th>What Did I Set Out To Do?</th>
<th>What I Implemented?</th>
</tr>
</thead>
<tbody>
<tr>
<td>• To explore the idea of place within the place particular – Townsville</td>
<td>• The navigation of five local places over a period of 10 months by spending time</td>
</tr>
<tr>
<td>• To discover their uniqueness and significance in our increasingly placeless world.</td>
<td>within – through sensate experience.</td>
</tr>
<tr>
<td></td>
<td>• A look at these places with the fresh eye of the artist/traveller to investigate</td>
</tr>
<tr>
<td></td>
<td>the interface of place thereby gaining a personal awareness.</td>
</tr>
<tr>
<td>• To deliberately experiment with a different epistemological perspective – the</td>
<td>• Looked at these five local littoral places through the lens of scientific</td>
</tr>
<tr>
<td>scientific filter – as a means to construct a consciousness of place.</td>
<td>decoding and filtered a perspective of these places that nature’s patterns</td>
</tr>
<tr>
<td>• To use this method to interrogate the intersection of the impersonal natural order</td>
<td>revealed.</td>
</tr>
<tr>
<td>and the intense personal connection with place.</td>
<td>• Used the epistemology of science to gather an objective view of place to</td>
</tr>
<tr>
<td></td>
<td>incorporate with the personal subjective construct.</td>
</tr>
<tr>
<td>• To gather data from the journey to develop a creative response to local place and</td>
<td>• Assembled a physical and intellectual compilation of place by the use of</td>
</tr>
<tr>
<td>environment through a more objective understanding of object, subject and form of</td>
<td>various recording and collecting methods – visual and audio.</td>
</tr>
<tr>
<td>place.</td>
<td>documentation, accounting, sampling.</td>
</tr>
<tr>
<td></td>
<td>• Informed not only an artistic synthesis, but a personal and objective connection</td>
</tr>
<tr>
<td></td>
<td>with place.</td>
</tr>
<tr>
<td>• To look at the unfamiliar magnitudes – the micro and macro aspects of place – with</td>
<td>• Used the tools of science – various microscope/photomicroscopy methods -</td>
</tr>
<tr>
<td>the unfamiliar analytical tools of science to discover their uniqueness through the</td>
<td>to understand the composition of these places.</td>
</tr>
<tr>
<td>experiential journey of the individual artist/traveller searching for a connection with</td>
<td>• Developed an attachment to these places through the process and observation that</td>
</tr>
<tr>
<td>local place.</td>
<td>this deeper knowledge of the complex configurations and magnitudes of place</td>
</tr>
<tr>
<td></td>
<td>shaped within.</td>
</tr>
<tr>
<td>• To discover what the aesthetic patterns of nature and place reveal to the artist and</td>
<td>• Transposed sentiments – codes, motifs and signatures of place – into artistic</td>
</tr>
<tr>
<td>how they will better inform an art practice.</td>
<td>signifiers.</td>
</tr>
<tr>
<td></td>
<td>• Created representations of place in the substitute form of the art product,</td>
</tr>
<tr>
<td></td>
<td>thereby transforming a previous art practice that separated subject/object from</td>
</tr>
<tr>
<td></td>
<td>its place or placement.</td>
</tr>
<tr>
<td>• To use this new knowledge to produce and to present this response in the wider public</td>
<td>• Presented these coded works in a solo public exhibition.</td>
</tr>
<tr>
<td>arena and the broader dialogue of people and place — through a specific art/local place</td>
<td>• Represented this study through public talks, and instigated an understanding of</td>
</tr>
<tr>
<td>focus.</td>
<td>local natural place and its connection and importance to the personal and universal.</td>
</tr>
</tbody>
</table>
8.2 Key Findings

Four central conclusions emerge from the research, which are subsequently discussed in more depth.

- **Results and Effects of the Filter Application**
  This experiment with an unfamiliar lens has demonstrated that the individual's perception of *place* has the potential to be altered by the particular filtering tool applied. This altered perception which resulted from the synergy between the *artistic* and *scientific* conjunction brought with it an awareness that had a direct impact on the *artistic synthesis* and efficacy for the viewer.

- **The Experience of Place**
  A profound understanding of *place* comes through using the intellect, imagination and the senses – *real experience*. Art and science are both valuable paradigms for the *exploration of place* and in conjunction reveal infinitely varied elements.

- **The Shaping of Place**
  *Place exists*, place is *real*. A closer look at *place* can have strong potential to bond the enquirer, cultivating an awareness of our inclusion in the wider picture through the *shaping of place* and our responsibility to the *local*, and therefore the *global*.

- **A Consciousness of Place**
  *Place* is important to us all. Though it will be what we make it, and a deeper engagement with it brings the realization that we cannot divorce ourselves from it – it is in us and we are of it. Re-engagement with it brings a *personal placement* and societal benefits – which develops a particular *consciousness of place* and connection to it.
8.2.1 Results and Effects of the Filter Application

During the course of this research the intrinsic relationship between the individual and place (in this case, local natural place) was personally demonstrated to be integral to the continual modifications of sensory stimulus (sensate experience) encountered in the external environment. This indicated to the researcher that the physical and emotional connection to place requires a conscious rethinking and replacement within the context of the self and the local natural place. This conscious rethinking yielded a revaluing of local space and is what influenced and directed the artistic synthesis. Hence the process had concurrent influences where the personal perspective of placement promoted the artistic perception of place, and vice versa, thereby directing both the arts practice and analysis of place.

The adoption of the scientific filter developed a different consciousness that enabled a dialectic feedback loop for the artistic representation of the nature and mathematics of form and pattern through an understanding of the natural structuring of place and the human connection to it. The filter did have a powerful effect on my perception and changed my view of these places and, consequently how and what I saw, a change reflected in the art product. The methodology of adopting a particular filter to observe place was a particularly significant underpinning which not only characterized the view but revealed hidden aspects, perhaps only manifested through the use of this filter. Previously I had centred on subject purely as object thus negating its
relationship to *place*. This study has been strengthened by the decision to assume the *scientific paradigm* as a filter through which objectively to recognize and infer a wider social association through the patterns nature reveals as an internal and external *composition of place*.

The assumption of the scientific perspective was an invaluable tool in the appreciation and understanding of the dynamics of form, growth, pattern as well as the interconnection of systems, contributing to a deeper realization of the nature of how, why and what comprises *place*. To be able to express, however idiosyncratically, a *character of place*, from the basic observable patterns, from the external view recorded by the photograph to the minute hidden form revealed by the microscope, informs not only the artist, but signifies a wider communication of the importance of *local place*, and the mirror it holds to our understanding of *placement*. While the minutiae of *place* could not be identified without the individual applying a fine tuning lens, there are many lenses that can be applied to view *place*, which would in turn reveal different *aspects of place* not covered in this research.

This finding is important in that it deliberately and systematically demonstrates, albeit quantitatively, the degree to which the often unexamined mental and experiential *baggage* pre-determines eventual artistic outputs. The most obvious consequence of assuming the *scientific filter* was that it materially altered the *way* I saw the environment with which I was engaged and, beyond

294
doubt, had a number of results that significantly affected the nature of the art produced even though the artistic techniques basically remained the same.

Though intense contact with these areas of local place, aimed to address deeper personal meanings and place-specific symbolic value, this study, through the application the filter lens, evaluated the psychometric properties of place attachment. The measure of which captured to an extent the emotions and feelings I began to form for these places. By building on previous efforts – or lack of – this study enabled an examination of the validity and generalizability of place attachment through object, subject and place, which gave dimension (place identity) to attachment. In contrast to previous methods of being the convergence of artist/local gave meaning to these particular places and their validity as one who inhabits these familiar spaces, which is important for understanding the choices and decisions people make during their lives. It was also made clear that in neglecting contact with local place indifference, if not detachment, to these spaces is formed. The places people live often acquire special emotional significance and the quotidian interaction that occurs in these settings is what creates attachment to place. This place attachment refers to the emotional connection that I was able to form to these physical locations due to the meaning given to a site as a function of its role as a setting for experience. A range of thoughts, beliefs, attitudes and behavior as well as feelings was evoked through this experience of place. Thus, place attachment involves an elaborate interplay of emotion, behaviour, cognition, visual methodology in
reference to place, all of which creates a history with these spaces. For without a valid history real attachment is difficult.

8.2.2 Artistic Synthesis

One of the underpinning reasons for the research was to question and re-vitalize my approach to and level of understanding of local place and my art practice. A key outcome of this study has been the delineation of the importance and plasticity of the artist’s pre-existing world view in influencing the character of the artist’s work. This repositioning of awareness is demonstrated by the effect this knowledge had on my arts practice and is manifested in three main areas:

1) It led to a wholly new way of seeing the subject.

2) It populated the view with the hitherto unseen.

3) It placed the work in an entirely novel context for the artist, thus opening new avenues.

The journey of the practical artistic result not only extends the ability of the artist to respond to the given subject matter by melding discoveries with concepts and technologies, but it also allows future conceptual possibilities to develop. The orchestration of the solo exhibition broadens not only these capabilities but extends potentialities, and brings the personal conversation into the wider social dialogue.

Although the use of patterns – marine forms in particular – had been a previous focus in my art practice, I realize now – through the lens applied to this research,
that the understanding and awareness of local forms/patterns and their placement was a much less than complete one. The carefully planned and orchestrated observation of the magnitudes of place lead to a deeper perception of how these patterns, forms and subjects compose place and thereby shaped, not only my connection to place itself, but my interpretation of it. This interpretation is demonstrated through my artworks of place, which became an expanded understanding of the constitution of these natural places.

In using the dual eye of the artist/traveller, the familiarity of place – which (as a dislocated local) had been muted and rendered unreceptive to particular aspects – facilitated a fresh objectivity to the armoury of awareness that the patterns and forms would normally attract in the artist. This objectivity opened the door to a therapeutic renewal (after Nye, 1998) and facilitated careful attention to experiences of place, leading to a regeneration of personal and artistic connection to these local places.

Having traversed unknown terrains, essentially a journey without a map – an experiment – a multitude of possibilities now present themselves beckoning towards new conversations, new explorations, new techniques, new mappings now accessible in the light of this experience.
8.2.3 Audience Response

The efficiency of the art exhibition in drawing and informing an audience may not be entirely quantifiable with much either unrecorded or unverifiable yet the objective was to encourage awareness and an interaction with the magnitudes and patterns of local place. The feedback from Umbrella Studio and the people who attended the exhibition and talks was extremely positive. A copy of the relevant pages of the Gallery’s Visitor’s Book – Appendix I – exemplifies some of the comments the artist received personally from various avenues regarding this exhibition and its impact; comments such as, “wonderful insight and I will certainly look closer next time I go for a walk”; “I’m going for a walk along a beach with a new sense of vision, thanks”; “…a unique perspective of your surroundings” and, “sensational insight into the hidden pattern around us – and those that we fail to see, I will now see differently” (personal comments). Included in Appendix I are reviews of the exhibition published in the local newspapers, bringing the work to a wider audience. Mandy Wildeheart, writing for the Townsville Bulletin, notes that “this is an artistic interpretation and not a scientific museum display” (Wildeheart, 2006 Appendix I), corresponding with the desired intentions of the artwork and public presentation which, although essentially a personal experience, is nevertheless able to influence the experience of others.
8.2.4 The Personal and Artistic Experience of Place

To the question “can artistic methods help define the idea of place,” the answer is an unequivocal YES. The artistic method is as capable of providing unique insight as a tool of enquiry, as is the scientific method. Both paradigms are processes that follow different yet intertwining methodologies and philosophical paths, both offer experiences of place, and both, in the end, yield testable insights verifiable by repetition, which become chapters in the same dialogue.

I came to see each place as being individually and precisely characterizable through the relative balance of often common features. These infinitely varied elements combined to yield a unique tone for each location and in synergy, a unique personal signature. The experience of place gained by the attention to, and awareness of the local, through contact and intelligent affinity is just as necessary to the idea of identity as the preservation of the national iconic signifier of place – the well known protected landmark or ecosystem. A contemporary personal experience of place has far more potential to extend understanding of it than does any removed account or documentation of it. Art and science offer just two methods to experience place; both are quantifiable and both can be repeated as a process. Yet, sometimes the most common or natural systems are the hardest to study or understand in terms of human interaction. We can speculate about the symbolism or ecological benefits of natural places to the average person but place cannot have real influence unless it is experienced directly at an individual level. Yet, the arrogance of our
egocentricity influences our perceptions, and therefore the worth of place. To study a place as if it were on an artist’s easel or under the scientist’s microscope and detached from its surroundings, is to miss some of its most important meaning. This is the same as trying to understand ourselves disconnected from the influence of our surroundings and our basic need to affiliate with the physical landscape – natural and constructed. Virtual place, although very much a component of modernity, is no substitute for natural real place. To be able see place, feel it, smell it, hear it, pick it up, turn it around, to experience it, brings a realness and connection that cannot be substituted.

8.2.5 The Shaping of Place
If place is real it is often unrealized. However, a closer look at place can act to bond the enquirer, evoking a personal epiphany that cultivates awareness and consciousness of its real shaping and, in turn, our inclusion in the wider ecological picture. This shaping served to crack open the door of my artistic expression. By permitting an awareness of the scale of place through the development of a set of motifs, signatures and symbols, these signifiers have become a personal interpretation of nature’s physical dynamics as illustrative definitions of these places. I became aware of the shaping and structuring elements of these landscapes to which I had previously been insensitive. Through the artistic sensibility, these definitions have found expression as artworks that serve as the external manifestations of my findings, understandings and beliefs but, more importantly, the fresh view actually
became the way in which I now saw these places, and thereby changed my communication with them.

Evidence of the magnitudes of place – from the tiniest microscopic forms, through the visible/tangible field to the macroscopic view of the satellite – brings a connectedness to the global through the local. Yet a universal connection without acknowledgement of the local as a basis for this broader understanding is incomplete. We do not realize our own limiting subjectification of place when we look further outward while disregarding what is essentially beneath our own eyes.

Vernacular spaces have qualities manifested as beautiful or aesthetically appreciated by human attendance, through an interpretation of the essence of nature’s dynamic composition – of which we are intrinsically part. The revelation and recognition of nature’s structuring – the basic patterns, colours and forms and shapes, all displayed in the littoral zones of local place, through the various magnitudes can only enrich personal connection with these places.

Environmental psychologists, naturalists, ecologists, conservationists, scientists, cultural geographers, artists, etc, are contemporary campaigners for the promotion and preservation of natural spaces. Yet, in a nation of history enthusiasts, where everything human has cultural significance and becomes the main focus of preservation, the mundane, local space is often neglected. It
needs to be recognized and acknowledged and added to the argument for awareness and protection. The virtues of popular culture and its trappings, ecology and the exhaustion of natural resources, pollution and the preservation of the bushlands are issues espoused and debated everyday, allowing the ordinary to be disregarded unless it has pressing controversial impact or the individual is threatened with immediate effect.

*Place* is much more than the idea we allow or wish to see and, whatever comparison is used – gestalt, holistic, manifold, we are but one part of its makeup. Yet, without constant elucidation and re-evaluation, we risk *shaping* and mirroring *place* for our own exploitation, without a true understanding of it as an ecosystem that we need to conserve for our own physical and spiritual preservation. This research has shown that *place* is something we personally and collectively cannot do without, though we need to comprehend its individuality and our connection to it in order to see its true value. The process of the artistic response and *shaped consciousness of place* which, while unavoidably a personal response, adds to the accumulation of information that the disciplines of science and the humanities assemble.

### 8.2.6 A Consciousness of Place

With the comprehension that although *place* will be what we make it, it is important to all of us – *place is part of us and we are part of it*. A *consciousness of place* began to develop through the understanding that a superficial exposure
to **place** leads to a necessarily shallow representation. On the other hand, a deep **personal consciousness of place** connected to **real** spaces, with the involvement of human memory and imagination is so complex that it defies a simple characterization. **Perceptions of place** are therefore manifold and each individual will build a personal narrative into an **impression of place**. Yet there are collective ways of looking at **place/spaces** that can transcend these established perspectives. Changing the role and behaviour of viewing, taking time to navigate and investigate the interface of consciousness and experience and to reflect on the view brings an expanded **structure of place** for the observer. Possibly, the contemporary person can at best see themselves as not a person **out of place** but **one of many places**, as Lucy Lippard (1997) suggests – **multicentered**, though this still requires a more in-depth understanding of each **local lived place** – constructed and natural environment – if a more exact sense of **placement** can be attained.

While **travellers** might not fully understand what they see in the **unfamiliar places** they visit, the well equipped person will actively seek insight into the essence of **novel place**. Further, a proper sense of **place** can only be gained through encounter – **time spent within**. The transient gaze will always be lacking a real sense of **place**. Each **place** holds a wealth of unseen elements that only concentrated enquiry will reveal, exposing the trivial, the fragment that speaks just as much about each as does the dramatic form or pattern. Nevertheless, this requires an active and permeable consciousness across the continuum to
allow the interactions from the micro to the macro to flow fluidly so that a *simultaneous view of place* is possible. As Tuan (1974) suggests,

> The fleeting intimacies of direct experience and the true quality of place often escape notice because the head is packed with shopworn ideas. The data of the senses are pushed under in favour of what one is taught to see and admire (Tuan, 1974:146)

This journey through each of these *places* without the new filter of the *scientific paradigm* and the fresh eye of the *artist/traveller* would obviously have been less rich.

The experiment with *place* demonstrates that these littoral zones are small spaces of natural history operating within close proximity to the artifice of the human landscape, which can attract a strong connectedness and elicit powerful environmental awareness. This was done in accordance with the social ecologist John Cameron’s (2007) assertion that a *place perspective* established through a *deepened relationship* based on care and respect is then logically extended to all *places* the deeper one goes. By embracing and cultivating sensitivity to the detail, form, texture, colour, the sounds, taste and smells of individual environments, the sentience of place breaks through collective generalizations to value the uniqueness of encountered spaces within *local place*. The corollary of this expanded personal consciousness demonstrates that the *local natural place* is:

- a transition for new awareness – personally and environmentally,
• an avenue to stretch a capacity for understanding and provoke new accomplishments, creating its own feedback loop – depending on the filters/lens through which it is viewed, thus provoking new accomplishments,

• more than the immediate visual experience of a landscape – it is micro and macro; it is manifold, operating seamlessly,

• an emotional space – which opens a dialogue between the self and the external world; composed of unquantifiable therapeutic qualities; a repository of poignant recollection,

• a vehicle for a personal connection with local natural place/space and a preamble into the broader dialogue of place correlation,

• a gallery of aesthetic pattern and form; a source of continual creative inspiration.

Natural place is a palimpsest with two modes of consideration. As a valuable environment it is either conceived as something to be controlled, possessed, transformed – a dispossessed perspective or, it is a recuperative, nourishing, experience – a connected conscious perspective, a place with shape. It is more than just the visible shape of the landscape as a surface or repository for separate things, “but an engagement with deeper processes and patterns and connections between things” (Davidson, 2006:16).

For the average person to learn first hand to connect with place through the patterns and inhabitants of these spaces, rather than through the substituted researched experience of others, expands an appreciation and understanding to
a far greater extent than the second hand experiences in fictional/non-fictional literature.

8.3 Reflections on the Research

With the benefit of hindsight, certain considerations present themselves as avenues for variation in the methodology of research and artistic production. Although the decision to undertake an engagement with five sites in the study was constructive and revealing, to be able to immerse in a single space would allow greater time to profile a place in a more concentrated manner. However one must recognize that it is never possible to know all there is of a place for, to stand in one position and try to observe, follow or even be aware of all there is in that space – from the tiniest to the largest component – let alone its history and wider connections, is impossible. Yet it is ironic that we can mentally hold an image of the (our) entire world and its history – as a physical, spiritual, cultural and temporal arrangement – yet we have difficulty in knowing much about our own small lived spaces, even of what dwells within our own backyard.

The artistic representation of place can be almost limitless, and the final outcome of this study is understandably an individual response to what is essentially an introduction to place. Here, place was looked at from different magnitudes, and a very small element of its essence was represented by the artwork produced. Various alternative ideas present themselves for the artistic
process to detail place, the methods of which would have given a different perspective yet would still be a patterning of place.

Though we may assume ourselves to be interested and objective observers, we rarely interrogate the colouring lenses we apply, and, by deliberately adopting a new lens, we can establish different stages on which to accomplish deeper understanding. Natural space and place provides an anchor, a grounding, a defence against the dehumanizing aspatiality we induce through our accelerated globalization and virtual realities. By acknowledging the potentially productive affiliation of the artistic paradigm and the scientific paradigm it follows that their intercommunication in conducting a dialogue of place brings a perspective that opens avenues of seeing. The important questions that modern science strives to answer cannot be solved by science alone. This requires the unifying of human knowledge, and the cross fertilization of art and science offers chance to create a feed back loop, where both benefit from each other, and in turn so does all society.

Though the driver of engagement may be different – i.e. scientific, aesthetic, historic, experiential, environmental – and may lead to different practical outcomes, the personal consequence of deliberately setting out to undertake an investigation of place reveals that the bonding which results can be equally strong. At an individual level, the nature of my work was twofold; not only was it
an exploration of the *nature of place* but it was also the means of achieving personal reconnection with *my place* and *my art*.

As an artist this attempt to disturb the meaning of my *connection to place* is difficult to separate from my approach to art as a personal conversation. A rethinking of *place* requires a conversation with it for, without this, there is no engagement, or at least a weakened one through a lack of engagement and therefore appreciation. An association with *place* over a long period of time increases the likelihood of attachment which can also lead paradoxically to the loss of the new perspectives and the eager observation the neophyte or *traveller* might experience. The principal issue is how a *phenomenological experience of place* can be absorbed into ordinary awareness as a continuing consciousness. By applying the objective lens of the *scientific paradigm* to view *place* and to respond to that new vision, the production of art continues the discussion. While simultaneously a parallel dialogue in itself, the individual artwork is a concrete phrase in the *conversation*. As an expression of thought, each piece is a multilayered personal sentence that contains a *subject* (*place*), a *predication* (nature’s patterns), and conveys a *statement* (physical contact and experiential knowledge), yet questions its own understanding – the mapping of a personal journey and connection. The practical product of this research - *Squaring the Five- Milestones and Magnitudes* – gave structure to the artist’s understanding of *place*. This structure will not only inform a continued art practice but awareness and consideration of the individual’s significant *de-egocentricizing of*
place. The exhibition is a declaration that is a chapter for the continuing conversation of person, place and placement.

Behind the polemics of science and art hang the fundamental subject of nature and our understanding of it. Choices and actions involve values. To what extent does any resolution to the issues of global warming and its consequences depend upon the energy crisis, or is it more simply connected to the way societies view local place and their connection to nature? Our sentiment of the places in which we live and therefore the degree of knowledge of, and commitment to and valuation of it, is surely directly influenced by the bond that has been developed by the individual to each lived place. To assemble the whole, the gestalt of place, as one conceived form, including the animate and inanimate forms in their different magnitudes, requires us to see ourselves as a fraction of the whole.

New ideas begin through reconsidering old ones and, places become old through familiarity, though borders are flexible and diffused and communities are always changing and adapting, so does the idea and physicality of place. Places may not be able to stay pristine yet, with new ways of seeing and understanding, a drive to reverse our destructive trends can be set in motion. Globalization, and the spread of the homogenization of space and object, reduces places to quantities of area and value and, resulting in a loss of
valuation. *Quality of place*, where its essence is understood and valued gives command against such loss.

Bringing community awareness through the *art/science* nexus could be a positive direction for renewed *local connection with place*. Community and school programs like *Coastcare* and *Reef Guardian* are currently operating in some coastal – too few – sites to bring a particular awareness to primary school children yet these programs could be expanded by artists and scientists becoming jointly involved, transferring both knowledge and inspiration. These endeavours also need to be extended to other less attractive or popular *subjects and places* for the appreciation of the *ordinary local place* to expand.

Through the littoral zone, as an example of external space, the scientific and the personal become a poetic interplay in ways which point to different awareness, analysis and creative expression. This expression articulates a notion of perception by *living* the *place particular* with a broader understanding of how one knows, or *lives place* at all.

### 8.4 Directions for Future Research

This study has opened many avenues for the researcher to undertake personally yet these also present directions that might be of interest to fellow artists. These directions are not only in the *investigation of place* and our
connection to it but, also the application of different filters to view and understand the pre-existing mind frame:

- One key avenue for further research is the continuation of the analysis and possible quantification (as opposed to the qualification) of the effect of a particular philosophical framework, or filter, and the effect it has on artistic directions. In other words, recognizing that the pre-existing mental furniture of the artist leaves its trace on an artwork, and whether it may be possible to reverse the process through a more informed study of the artwork itself, aimed at gaining insight into the intellectual framework of the producing artist.

- Following on from this direction, how might the deliberate adoption of a different filter, a different epistemological paradigm, for example feminist, Marxist, historical, spiritualist etc. affect an interpretation of place? How might a previously unsympathetic framework change the art and the artist’s perceptions? How much does the individual or the filter direct the result? How might the application of a filter help us critique and understand past artworks and the mindset or placement of the previous artist/authors engaged in a communication with particular place?

- One particular consideration for a different methodological approach would have been the artistic recording of the changes of my perception of place, as the adopted filter acted to affect my view of the subject. Such documentation would detail the various stages of the study as a visual journey of the artist’s evolution.

- This could also be applied to a documentation of the changes of place itself – e.g., tidal movements etc. – recorded from a particular position, each day over a prolonged time period. How much does place change yet remain recognizable as that place? This could also be a separate study on the detail of seasonal variations that place demonstrates.
• particular details or areas could be selected for artistic analysis; where a more focussed view of an object or subject of place is selected for a study designed to expand the aesthetic, creative communication of place, such as:
  – a particular magnitude opened further for representation,
  – a particular species followed through its many phases of life and decay,
  – a variation of pattern/form/shape tracked and compared through different material composition.

• How do/would a range of different artists represent a particular local place through their preferred media? To what extent might there be a collective archetypical form or pattern to be representative of that place?

• How would a group of artists subjected to a common filtering lens artistically represent a particular local place?

• Scientists work with place, and exhibit an aesthetic appreciation to their chosen subject – many are actively artistic. To bring the art and science of local place – local artists, local scientists – together within the local gallery space is a future proposed outcome of this project.

• Could cognitive scientists and artists collaborate in an attempt to quantify the effects of pre-conditioning on artistic interpretation?

To help other artists or authors wishing to connect or re-connect with local place a check list guide in the form of Table 8.4.1 has been set out. The particular lens applied and time spent within being the crucial ingredient.
Table 8.4.1 Exploring the Idea of Place – check list guide

<table>
<thead>
<tr>
<th>Implementations</th>
<th>Practical Considerations</th>
</tr>
</thead>
</table>
| Choice of place/space for connection or research      | • how does this place/space initially relate to the observer/artist?  
• what does the space reveal?  
• how does natural place differ from built place?  
• which is the optimum way to enter a dialogue with this space?  
• why is this space/place important?                                                                                                                                 |
| Spend time within: time as basic educator             | • how to spend this time  
• time as change  
• how has this space/place changed over time?                                                                                                                                 |
| Apply a particular filtering lens                     | • what lenses are potentially available?  
• which lens is suitable to person and place?  
• how might this lens change the perspective of the observer?  
• how might it change the initial perception of this place?  
• how might it change the observer?                                                                                                                                 |
| Discover the uniqueness of chosen place/space         | • look at unfamiliar qualities or aspects  
• compare with other similar spaces  
• view through varying magnitudes/viewpoints  
• look at the smaller and larger aspects of place – animate and inanimate  
• what constitutes the main characteristic/s of this place/space?                                                                                                                                 |
| Collect data                                          | • use varied methods of data collection                                                                                                                                 |
| Use this knowledge to respond to this place/space     | • consider potential response modes  
• which media best portrays a response?  
• does informed awareness deliberate a change in the methods or art practice of the artist?  
• does the accumulated knowledge change how the artist/observer has previously responded to place/s?                                                                                                                                 |
| Future deliberations                                  | • to what extent can the artist/observer respond through varied lenses to this place?  
• how might the observation of this place inform that of other places/spaces?                                                                                                                                 |
A personal direction immediately embarked on after the exhibition in relation to this particular research was a group exhibition – *Plastic, Water & the New White Cube* – curated by the *Riverway Pinnacles* Gallery and shown in July 2006. This inaugural exhibition involved local and interstate artists addressing the particular themes implied by the title. As this new contemporary Gallery is positioned on the banks of Ross River, water and the river environment were predominant themes, expressed through a variety of new technologies and materials. My personal work focused on the river as a *local space/place*. The work, entitled *Tears of the River Totem* was again influenced by particular natural patterns evident in the river and its inhabitants; in this case the lotus plant and the valuable commodity of water itself. This work again sought to express the significance of the small and individual, that comprise the larger milieu.

This research has, in addition, prompted a future venture to be started in late 2008. Still in the proposal stage, this joint project combines the *new eye* of the *traveller* and the familiarity of the *local*. *The Two Rivers Project* is a visual journey down two widely separated rivers – the Ross River of Townsville North Queensland and the South Esk River of Northern Tasmania – similar spaces within different *places*, will be travelled and recorded by the artist and compared for the perceptible affects each perspective and space may evoke within the intellect of the artist open to this variable placement. This project also lends
itself to the application of a different filtering framework, although as yet this has not been definitively decided.

Another avenue being followed as a direction from this research is through the publication of a variety of articles in response to place and the artistic perspective; the aesthetics and importance of local place and our connection to it; the deliberate application of a foreign filter by which to re-see place and, the role that the pre-conditioning of the artist has on the art produced. The accumulated knowledge and discoveries of the individual is still a way to stimulate awareness in the many and the submission of these papers will have the capacity to communicate to a wider community through publication in arts, natural sciences and cultural geography journals.

With the realization that natural place does not articulate clearly all there is to know, it is up to us to seek a two way communication with the spaces and places of our own locale. In the sense “that any landscape is composed not only of what lies before our eyes but what lies within our heads” (Meinig 1979:34), we can, through a determined effort, teach ourselves to re-see and re-feel place, which can confront central issues of displacement. This study demonstrates the power and truth of Meinig’s statement, and the fact that what is in our heads can be changed, altered or empowered by the particular filters/lens we apply to view our world.
The decisive role of the individual in the construct and consequence of place needs to be asserted as an avenue to realize equilibrium in the psychology of placement and its effects on the human psyche and the environment. The challenge is to be able to “look” with the eye of the tourist/traveller yet to “see” through the eye the artist, “understand” through the eye of the scientist, and “feel” through the psyche of the local individual.
Bibliography


Adams, Paul; Hoelscher, Steven; Till, Karen eds. (2001) Textures of Place: exploring humanist geographies, University of Minnesota Press, Minneapolis


Aoki, Jun (2001) Are We Arriving at the Destination of Art Galleries, lecture given at TATE Britain, posted on http://tenplusone.inax.co.jp/aoki_tate/tate.html Accessed 16/04/06

Aerial Photography
previous.townsville.qld.gov.au/landinfo/aerial_products.asp – accessed 27/03/06


Bureau of Meteorology – satellite images
www.bom.gov.au/weather/qld/Townsville, accessed 22/03/05

Burnett, Nancy & Matsen, Brad (2002) *The Shape of Life*, Monetray Bay Aquarium Press, Monteray


Casey, Edward S (2002) *Representing Place: Landscape Painting & Maps*, University of Minneapolis press, Minneapolis


Camazine, Scott (2003) *Patterns in Nature*, [online]

Clarke, David (1996) *Art & Place: essays on art from a Honk Kong perspective*, Hong Kong University Press, Hong Kong

Clifford, Derek (1968) Art and Understanding, Evelyn Adams and Mackay, London

Coleman, Neville (1991) Encyclopedia of Marine Animals, Angus & Robertson, Sydney


Coren, Stanley; Ward, Lawrence; Enns, James (1994) Sensation and Perception, Harcourt, Brace & Co,


Cosgrove Denis (2001) Geography’s cosmos: the dream and the whole round earth, in Adams, P; Hoelscher, S; Till, K (eds.) Textures of Place: exploring humanist geographies, University of Minnesota Press, Minneapolis


Dartnall, Alan J; Byrne, M; Collins, John; Hart, M W(2003). A new viviparous species of asterinid (Echinodermata, Asteroidea, Asterinidae) and a new genus to accommodate the species of pan-tropical exiguoid sea stars. Zootaxa


Davies, Bronwyn (2000) *(In)scribing Body/Landscape Relations*, AltaMira Press. Walnut Creek


Doyle, Kate (2007) *Place Memory and the Creation of Identity*, posted on *Writing Pace: Land, Memory and Place in History*, University of Sydney, [http://blogs.usyd.edu.au/writingplace/general/ accessed], 11/09/07


Erickson, Erik (1968) *Identity, Youth and Crisis*, W W Norton, New York


Florian, Zoltan (1994) *Photomacrography*, James Cook University Press, Townsville


Goethe, Wolfgang von

Graf, Martin (2004) *Form and Space in Perception and Art*  
http://www.mitteleuropafoundation.it/ - accessed 18/7/04


Gussow, Alan () *A Sense Of Place: the Artist and the American Land*, Friends of the Earth,


Henry, Charles (2000) *Linking the Great Pyramid to the Human Form*, Virginia Commonwealth University, Richmond


Howarth, William (2001) *Reading the Wetlands*, in Adams, P; Hoelscher, S; Till, K (eds.) Textures of Place: exploring humanist geographies, University of Minnesota Press, Minneapolis

Hughes, Roland ed. (1990) *Australia’s Underwater Wilderness*, URE Smith, Sydney

Huisman, John (2000), *Marine Plants of Australia*, University of Western Australia Press, Perth


Jones, Paul J (2001) *Segmented Worlds and Selves*, in Adams, P; Hoelscher, S; Till, K (eds.) Textures of Place: exploring humanist geographies, University of Minnesota Press, Minneapolis


Kemp, Martin (1992) *The Science of Art: Optical Themes in Western Art from Brunelleschi to Seurat*, Yale University Press, New Haven

Klee, Paul (1964) *The Thinking Eye*, G Wittenborn, New York


Ley, David (2001) *Landscapes of Dominance and Affection: introduction*, in Adams, P; Hoelscher, S; Till, K (eds.) Textures of Place: exploring humanist geographies, University of Minnesota Press, Minneapolis


Lock, Kevin – Angstrom Art, University of Qld – [www.imb.uq.edu.au](http://www.imb.uq.edu.au) – accessed 3/10/02

Locke, John (1959) *An Essay Concerning Human Understanding*, ed. E A Fraser, Dover, New York


May, Joseph (1970) *Kant’s Concept of Geography and Its Relation to Recent Geographical Thought*, University of Toronto Dept. of Geography Research Publication 4, University of Toronto Press, Toronto


McGreevy, Patrick (2001) *Attending the Void: geography and madness* in Adams, P; Hoelscher, S; Till, K (eds.) *Textures of Place: exploring humanist geographies*, University of Minnesota Press, Minneapolis


http://www.mathmendl.org/chaos/ - 7/8/04


Michell, John (1979) *Simulacra*, Thames and Hudson, London


Monkman, Kitty (1975) *Over and Under the Great Barrier Reef*, The Cairns Post Pty Ltd, Cairns

Monkman, Noel (1956) *Escape to Adventure*, Angus and Robertson, Sydney

Monkman, Noel (1962) *The Quest of the Curly-tailed Horses*, Angus and Robertson, Sydney


Olwig, Kenneth (2001) *Landscape as a Contested Topos of Place, Community, and Self*, in Adams, P; Hoelscher, S; Till, K (eds.), *Texture of Place: exploring humanist geographies*, University of Minnesota Press, Minneapolis


Ranjan Darsh
http://www.princetone.edu/artofscience/gallery/view.php%3Fid=76.htm
– accessed 5/08/05

Read, Herbert (1965) Origins of Form in Art, Thames & Hudson, London


Relph, Edward (1976) Place and Placelessness, Pion, London


Ryder, Roy (2000)


Stehli, Georg (1960) The Microscope and How to Use It


Tuan, Yi Fu (1977) *Space and Place: the Perspective of Experience*, University of Minnesota Press, Minneapolis


Veness, April (2001) *But it’s Not Supposed to Feel Like Home: constructing the cosmopolitan Hearth*, in Adams, P; Hoelscher, S; Till, K (eds.) *Textures of Place: exploring humanist geographies*, University of Minnesota Press, Minneapolis

Voss-Andrea, Julian – www.julianvossandrea.com/Artist/ access 18/07/03


Williams, Christopher (1995) *Origins of Form: the shape of natural and man made things – why they came to be the way they are and how they change*, Architectural Book Publishing Company, Stanford


APPENDIX A

Marine Parks Permit
Marine Parks

Permit

Great Barrier Reef Marine Park Regulations (Commonwealth) Marine Parks Regulations 1980 (Queensland)

The permission/s remains in force, unless sooner surrendered or revoked, for the period:

01/11/2004 to 31/10/2005

Permit No: QN04/021

Permission is granted to

Permittee: Candace Miles
Address: James Cook University
TOWNSVILLE QLD 4811

for use of and entry to zones in the following Great Barrier Reef Marine Park Sections: Queensland Marine Parks as established by the Commonwealth Great Barrier Reef Marine Park Act 1975 and Queensland Marine Parks Act 1982 (the Marine Park):

TOWNSVILLE / WHITSUNDAY MARINE PARK (Magnetic Island Management Area)

in accordance with the details as stated on Part A, and subject to conditions stated in Part B at the reverse side.

Delegate of the Great Barrier Reef Marine Park Authority
Delegated by the Executive Director Queensland Parks and Wildlife Service

Part A:
The purpose/s of use and entry may only be undertaken in the zone/s and location/s described below.

Zones and location/s to which the permission/s apply:

GENERAL USE ZONES - Magnetic Island
MARINE NATIONAL PARK 'A' ZONES – Pallarenda and Magnetic Island

Purpose/s of use and entry authorised by permission/s:

Non-commercial collection of marine invertebrates, algae, sand, mud and water for the completion of a study titled 'Patterns of Place – defining pattern and form in the Townsville marine ecosystem'.

QN04/021 - Page 1 of 3
APPENDIX B

Tidal Patterns of the Place Particular
Townsville – 2005
Tidal Patterns for January, February, March 2005

2005 Tide Height Pattern - January

2005 Tide Height Pattern - February

2005 Tide Height Pattern - March
Tidal Patterns for April, May, June 2005

2005 Tide Heights Pattern - April

2005 Tide Height Pattern - May

2005 Tide Height Pattern - June
Tidal Patterns for July, August, September 2005

2005 Tide Height Pattern - July

2005 Tide Height Pattern - August

2005 Tide Height Pattern - September
Tidal Patterns for October, November, December 2005

2005 Tide Height Pattern - October

2005 Tide Height Pattern - November

2005 Tide Height Pattern - December
2005 Townsville Tidal Pattern

2005 Yearly Tidal Pattern - Townsville
APPENDIX C

Rationale Underpinning the Exhibition Title
The Exhibition Title – *Squaring the Five – milestones & magnitudes*

This additional information further explains the connotation and symbolism underlying the choice of exhibition title. The root meanings of words often evoke greater understanding and connection, bringing an added strength to a name and sometimes even directing the artwork into another realm. This process of looking deeper into the simple or complex word and their use as signifiers of layered meaning has become a personal *modus operandi* which endeavours to express much with the simple or the cryptic. So the dictionary becomes a more consequential reference model for the artist.

The word *square* (from Old French *esquire*, (mod. *équarrre*) + Latin *quadra*) as a noun also brings forth the meanings:

- a) a designated area; an open space; a meeting ground
- b) the product obtained when multiplied by itself
- c) back to where one began (informal) – *back to square one*
- d) face to face; to meet square on.

As an adjective:

- a) also relating to area – a three dimensional area
- b) straight forward, plain, direct, honest; precise, exact
- c) solid, substantial, plentiful
- d) even, tied
- e) having done what is needed, what is unsettled; settle, satisfy

As a verb:

- a) to mark out an area; to make straight, level or even; place accurately in position
- b) to bring to equality; to adjust, settle or balance
- c) to guide or regulate
- d) *in mathematics*: to calculate the number of square units of measure
- e) to win over, conciliate; to fit, accord, agree; conform

Each place is different, even with many similarities, and the components of a place – the small and large features; the physical arrangements; the temporary tidal flotsam, the creatures that live within - are seen as the products of place (the of place). By meeting these products (components) face to face, that is, coming to terms with; being aware of, and discovering again and for the first time, a squaring can take place - an equalizing and comparison can be made. This is in the subjective, personal, as well the objective, material perspective, thus creating a context for the peripatetic artist to connect with local place.

As earlier stated, squaring also has the scientific context in mind. The gridding/squaring that scientists do in the course of work, when conducting research within a site, especially when trying to discover the inhabitants and makeup of a marine space, is done so by first selecting an area to work with. A parallel can be made with the meaning even if an actual gridding was not used in the methodology of this study

Five also represents more than the number of sites that influenced the work. The five is symbolic as a mathematical archetype of Nature and the process of regeneration. The principles embodied by the number five, called the pentad by the ancient Greek philosophers, are manifold. Pentagonal symmetry is evident throughout nature, the human form itself, to the many living forms of animals
and plants and, evidenced through the study, becoming symbolic number and from.

... the Quintessence (‘fifth being’) of nature, encompassing and infusing the four elements – solids, liquids, gases and electronic fire- with the life they cannot create by themselves alone. ...Pentagonal symmetry has long been revered due to its profound insight into living nature and to the powerful psychological hold it has upon people throughout the world. It manifests itself in surprising ways and places in art, crafts, architecture, religion, magic ritual, national icons, and much else that is rooted within us (Schneider, 1995: 97).

The co-title *Milestones & Magnitudes* also has many layers of meaning. *Milestones* which may be connected to the artist's surname when separated as *Miles-tones* is a personal play on the connection of the artist and artistic representation, furthermore *miles* as in a journey; *tones* as in the composition of colour mood and light.

Lexiconic meaning extends these two separate words as:

**Miles** – (from Latin *mil(l)ia* pl. of *mil(l)e* thousand) a unit of linear measure used on land ...and especially at sea (the international nautical mile), theoretically equal to the distance traversed along one minute of a degree of a great circle of the earth
   – a great distance, amount or interval

**Tones** – (old & mod French *ton*) from Latin *tonus* from Greek *tonos*, tension tone from *teinein* stretch) a quality of sound; the effect of colour, light and shade in a painting etc; accent of an area; spirit, character and style


The associated word *Milestones*, has import of an important happening or journey. Originally the word was used to describe the marking of a distance toward a certain place, and the using of this word encompasses all of these meanings in regard to the exhibition name, and the research journey. Each of
the places within the study are local milestones distanced along the coastal front, and also represent milestones of experience in the artist’s life.

The word *Magnitudes* is similarly used to convey multiple meaning – evoking meanings of *great importance, effect or consequence*, which each of the selected places has inspired in the artist. *Magnitudes*, is again affiliated with the use of microscopes during the research; with the geometry and mathematics of form, and is used to highlight the more than forty two different *orders of magnitude* that the physical world is organized into.
APPENDIX D

Examples

Exhibition Invitation & Catalogue
APPENDIX E

Selected Collection of Microscope Images
DVD
APPENDIX F

EXEMPLAR

SAND PATTERNS OF PLACE
APPENDIX G

Looped Digital Images Presented Inside
Umbrella Studio Theatre Vault

DVD
500:5 Images of Place
APPENDIX H

The Exhibition Images DVD

5

milestones & magnitudes

Umbrella Studio Gallery
Townsville

9 May- 12 June 2006

and

The Opening Night DVD
APPENDIX I

Media Release; Exhibition Reviews;
Gallery Visitor Book Comments
Media Release

10 May 2006

Squaring the Five: Milestones & Magnitudes
Umbrella Studio
12 May – 11 June 2006

Opening at Umbrella Studio this Friday night is squaring the Five: Milestones & Magnitudes by James Cook University PhD candidate Candace Miles. In this exhibition of watercolours, photographs and sculptural works Ms Miles interprets nature’s patterns in marine spaces and places by artistically responding to 5 selected Townsville sites.

In her personal research, the artist has focused on the smaller inhabitants of place within her chosen locations: Point Pallarenda, Rowes Bay (near Jezzine Point), the mouth of Ross River, Geoffrey Bay (Magnetic Island), and Saunders Beach.

According to the artist, “the focus of art, from the perspective of nature, is centred on what we see, what is obvious to our senses. Yet, our sensory intake is often limited by immunity to our local environment. In this highly mobile world we tend to ignore most what there is to see and therefore know, about our own places... The majority of life forms lay hidden from our visual field... What of the smaller or unseen elements of place, and their place within the dialogue of art?... Scientists are familiar with the beauty of form, pattern and colour of nature’s dynamics that the different magnitudes of place reveal, and have tended to be overlooked by artists. The place that is Townsville forms a nexus of land and sea that is a special place – where the littoral zones are places humans feel safe on terra firma yet are drawn to the mystery of the unknown or the unknowable of the sea.”

Patrick Filmer-Sankey, Manager of Reef HQ, will formally open the exhibition at 7pm Friday 12 May 2006. Members of the public are encouraged to attend.

Candace Miles will give a free talk about her artwork at 6pm Wednesday 17 May, as part of the state-wide museums alight! celebrations. Coordinated by Museum and Gallery Services Queensland, museums alight! celebrates international museum day and acknowledges the contribution of Queensland’s museums and galleries to our rich and dynamic culture.

For further information or to arrange interviews or photographs please contact Director Anne Donohue on (07) 4772 7817 or e-mail director@umbrella.org.au
Newspaper Reviews

The Townsville Bulletin – Friday 19 May 2006

Galleries – Mandy Wildeheart

Nature’s patterns

E particular love of good bad puns, and Candace Miles has hit upon a subtle one with the title of her exhibition at Umbrella Studio, “Milestones & Magnitudes.” She has done this by changing the font attributes midway through milestones to play on her name and to highlight her interest in found work within the exhibition.

Candace’s presentation is a balanced exhibition of watercolour and pen and paper works and collages, a number of sculptural works and displays, and a silk photograph. She “Integrates nature’s patterns in marine spaces and places by artistically responding to five selected Northern sites.”

Replacing the exhibition title is the under the radar term “Squaring the five, which is more apparent by its symbolic thematic references rather than in words, here and there throughout the exhibition and catalogue.” Candace has scoured a broad number five in order to give it validity or has presented work in groups of five.

The five represents her artistic response to five Northern coastal sites: Point Palmerston, River’s Bay (near Brotch Point), the mouth of Ross River, Geoffrey Bay (Magnetic Island), and SOUND Beach.

The five watercolours are the more blatant expressions of the five theme and they add a major splash of colour against the stark tones to be found in the sculptural work and the repeated natural hues seen in the photographs.

Viewers enter a unique environment when they walk into Umbrella Studio as Candace has used every part of the gallery to fulfill her vision.

It is easy to be captivated by the serenity of the space through Candace’s approach of changing scale to highlight her subject matter, using natural and artificial forms, and by having a limited palette.

The main space has two installations of large sculptural forms either side of the door, one set black, one set white, with another installation on the feature wall, which also extends on to the floor.

Four of the five watercolours are on the walls within the main space, with the last one appearing in the rear project space. Around and above the space leading into the rear space, Candace has installed a set of works on each side.

Once in the back space, viewers are given nearly a sensory overload of photographs, but Candace avoids this by incorporating a rhythmic pattern for their layout. This book section of the exhibition also provides the information for viewers to understand the concept of the works. Included in this area is a work using scientific photographs to map out the five locations, and a range of specimens in a display case that emphasise the marine science references underpinning her concept.

Even the Valet has been used as a mini cinema to project images of her tranquil landscapes.

Back to the marine science references, Candace has connected with a number of scientists and was introduced to scientific instruments and processes to better understand her subject matter in order to link aesthetics with knowledge. She states in her catalogue essay that “accessing these instruments and the language of science reveals even more of the wonders of nature.”

Here awe and understanding of marine forms can be seen quite clearly in the five signature watercolour and pen works where Candace has depicted biologically detailed work in a slightly feebler artistic style. At first glance the works look a little pastiche as the elements in each work are artificially placed within a marmamode composition, rather than being presented in a pseudo marine environment. But Candace’s approach is strongly dictated by design and art principles, and this actually allows for a greater appreciation of her subject matter.

Aotearoa is for a well thought out exhibition and catalogue. This exhibition is a partial fulfillment of her PhD degree at JCU, so she still has the hard yards in front of her to get her thesis compiled before we can call her Dr Miles.

> Milestones and magnitudes are squashed away at Umbrella Studio on June 11.
Blending science and art

NATURE’S patterns in marine spaces and places inspired from twin cities locations are showcased in an exhibition featured at Umbrella Studio.

The exhibition, *Squaring the Five: Milestones and Magnitudes*, by James Cook University PhD candidate, Candace Miles, interprets nature’s patterns in marine spaces through watercolours, photographs and sculptural works.

The interpretations come from an artistic response to five selected local sites including Point Pallarenda, Rowes Bay (near Jezzine Barracks), the mouth of the Ross River, Geoffrey Bay (Magnetic Island) and Saunders Beach.

The artist has focused on vertebrates and marine life found at these locations.

“The focus of art from the perspective of nature is centred on what we see, what is obvious to our senses,” Ms Miles said.

“Yet the majority of life forms lay hidden from our visual field. Scientists are familiar with the beauty of form, pattern and colour that these creations of nature possess, while these smaller subjects have tended to be overlooked by artists.”

The exhibition will be featured at Umbrella Studio at 482 Plinders Street West until June 11. For more information contact the gallery on 4772 7917.
### Page 1.

<table>
<thead>
<tr>
<th>Date</th>
<th>Name and Address</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Candace Miles</td>
<td><strong>5 Milestones + Magnitudes</strong> 12/15/16 - 11/14/16</td>
</tr>
<tr>
<td></td>
<td>Congratulations, beautiful work!</td>
<td>You tell us, Candace. What a wonderful exhibition!</td>
</tr>
<tr>
<td></td>
<td>This is beautiful work as usual, Paula. Did you see Miles?</td>
<td>How can they put on an exhibition like this and make it look so much harder? We share the same affect, so should you also?</td>
</tr>
<tr>
<td></td>
<td>Great show, Candace.</td>
<td>Really can't, but want me to tell you how much I've missed you. I'm a bit of a fan, you know.</td>
</tr>
<tr>
<td></td>
<td>Candace Miles Rocks, Yeah Baby!</td>
<td>Candace I think you must have been a very important woman in her life.</td>
</tr>
<tr>
<td></td>
<td>Candace</td>
<td>What a talent!</td>
</tr>
</tbody>
</table>

### Page 2.

<table>
<thead>
<tr>
<th>Date</th>
<th>Name and Address</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I'm extremely proud of you mum - love Tamara</td>
<td>I'm very proud of you.</td>
</tr>
</tbody>
</table>
### Page 3.

<table>
<thead>
<tr>
<th>Date</th>
<th>Name and Address</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>29 Oct</td>
<td></td>
<td>Hi Candace, yay to see your exhibition. Fantastic!!</td>
</tr>
<tr>
<td>3 Nov</td>
<td></td>
<td>Great way to pass the time while waiting for race to get my keys and get in the car. Cool!</td>
</tr>
<tr>
<td>19 Nov</td>
<td></td>
<td>Hi Candace, this is fantastic! See you on the water from B.</td>
</tr>
</tbody>
</table>

WOW Candace. What a surprise there! Will be great to see you wearing the blue. Find one of our nabs! I suspect! God Bless & please keep creating Jacqueline xx.

I enjoyed this highly - C.B. (Ref. for Nick & Peter, Carol & me, anyone.)

Hi Candace! Brilliant! Go girl! Wendal.

29/11/06 - Spectacular insight and I will certainly be looking closer next time I go for a walk - Good work Candace especially love your forming below - yellowing floor and all for one - Great stuff. Dianne Doctor x

Page 4.

<table>
<thead>
<tr>
<th>Date</th>
<th>Name and Address</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 May</td>
<td></td>
<td>Congratulations Candace - a beautiful experience of text, shape, colour, movement. All those different media worked. Always exciting.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This has been food for my soul. Some photos are glorious. What a wonderful, spectacular, beautiful, perfect and full of majesty splendour - Gay Woodworth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>What a beautiful exhibition - I loved especially the digital photo display - lovely - Pam Grist</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Great use of space for installations, not text by a few of digital work. Love much! Love &amp; beach.</td>
</tr>
<tr>
<td>Date</td>
<td>Name and Address</td>
<td>Remarks</td>
</tr>
<tr>
<td>-------</td>
<td>------------------</td>
<td>---------</td>
</tr>
<tr>
<td>6.6.6</td>
<td>Lots of Lovely Lines (milestones magnitudes) Bella</td>
<td></td>
</tr>
<tr>
<td>8.6.6</td>
<td>The Candace - They are known as Jumbo to face</td>
<td></td>
</tr>
<tr>
<td>9.6.6</td>
<td>The form</td>
<td>Docs</td>
</tr>
<tr>
<td>11.6.6</td>
<td>I really enjoyed this jolly - must see stuff like this before</td>
<td>I got Santa Company</td>
</tr>
<tr>
<td>11.6.6</td>
<td>Well done Santa. - I'd like some to these done only for anyone - never thought about the beach like this before - can engineer</td>
<td></td>
</tr>
<tr>
<td>11.6.6</td>
<td>Glad I got it here before it came down - loved it, great inspiration!</td>
<td>Where will the next one be? Thank you</td>
</tr>
</tbody>
</table>