SINGULAR ECOLOGIES: DESIGN INTERVENTION AS AN EXPERIENTIAL INTERFACE IN WILD SITES

A CREATIVE PROJECT
SUBMITTED TO THE GRADUATE SCHOOL
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE
MASTER OF LANDSCAPE ARCHITECTURE

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MUNCIE, INDIANA

MAY 2016
ACKNOWLEDGEMENTS

This work would not have been possible without the guidance and support of a generous and brilliant committee. I would like to thank Andrea Swartz for her incomparable critiques, devoted time, and vibrant character; Rob Benson for his unending wit, youthful enthusiasm, and committed interest; and my lovely committee chair, Carla Corbin, for her immense intelligence, creativity, unbounded rigor, patience, and focused attention. Additionally, thanks to Susan Tomizawa for edits and reviews.

Thanks to Miran Day, Scott Kuchta, Janice Shimizu-Coggeshall, Jody Rosenblatt, and the Department of Landscape Architecture for formative projects, challenges, and opportunities. Thanks to John Taylor, Dan Mason, and Peter Rea for taking the time to provide firsthand site interpretation.

Graduate school would be far too lonely without good friends-- I would like to thank all the wonderful people I met in Indiana for keeping it fun; special thanks to Natalie Broton, Carter Gordon, Maggie Weighner, Nicole Rebeck, Dan Eisinger, the Arts Hikers, and my studio mates.

Finally, thanks most of all to my mother, Judy, for taking me to marvel at forests, watching me fish, and paddling the canoe before I could hold the paddle. This project is dedicated to my late father, John, who gave me my love for wild places, and taught me to read a map.

CONTENTS

ACKNOWLEDGEMENTS i
CONTENTS ii
LIST OF FIGURES iii - vi
PREFACE AND DEFINITIONS vii - xii
INTRODUCTION AND LITERATURE 1 - 22
WILDNESS: MYTHS, TRENDS AND THE CALL TO DESIGNERS 15 - 22
FIELD STUDY: ARTS HIKE 23 - 52
CASE STUDIES: WILDNESS AND DESIGN 53 - 80
SITE STUDIES 81 - 158
INTRODUCTION 81 - 84
RHYTHM: MINGO NATIONAL WILDLIFE REFUGE 85 - 114
site and introduction 85 - 98
design proposal 99 - 112
thoughts and conclusions 113 - 114
FLOAT: PINHOOK BOG 115 - 140
site and introduction 115 - 126
design proposal 127 - 139
thoughts and conclusions 140
FIRE: COOPER FARM 141 - 158
site and introduction 141 - 147
installation 148 - 156
thoughts and conclusions 157 - 158
FINAL THOUGHTS 159
REFERENCES 161 - 165
<table>
<thead>
<tr>
<th>image</th>
<th>description</th>
<th>page number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1</td>
<td>participants at the trailhead</td>
<td>24</td>
</tr>
<tr>
<td>Figure 2</td>
<td>embarking onto the Peninsula Trail</td>
<td>24</td>
</tr>
<tr>
<td>Figure 3</td>
<td>Portraits</td>
<td>26</td>
</tr>
<tr>
<td>Figure 4</td>
<td>the Arts Hike route, hand-drawn by Tom Trail</td>
<td>28</td>
</tr>
<tr>
<td>Figure 5</td>
<td>map of the Arts Hike route</td>
<td>28</td>
</tr>
<tr>
<td>Figure 6</td>
<td>Carter sketching on Day 1</td>
<td>30</td>
</tr>
<tr>
<td>Figure 7</td>
<td>Carter manipulating pine needles for an intervention on Day 2</td>
<td>30</td>
</tr>
<tr>
<td>Figure 8</td>
<td>Lines, Natalie Broton</td>
<td>34</td>
</tr>
<tr>
<td>Figure 9</td>
<td>Rock Study 1, Michael DePrez</td>
<td>34</td>
</tr>
<tr>
<td>Figure 10</td>
<td>Jetties, Emily Meer</td>
<td>35</td>
</tr>
<tr>
<td>Figure 11</td>
<td>Pebble Study, Michael DePrez</td>
<td>36</td>
</tr>
<tr>
<td>Figure 12</td>
<td>Needle Study, Michael DePrez</td>
<td>36</td>
</tr>
<tr>
<td>Figure 13</td>
<td>Log Study, Maggie Weighner and Natalie Broton</td>
<td>38</td>
</tr>
<tr>
<td>Figure 14</td>
<td>Log Study 2, Maggie Weighner and Natalie Broton</td>
<td>39</td>
</tr>
<tr>
<td>Figure 15</td>
<td>Stance, Carter Gordon</td>
<td>39</td>
</tr>
<tr>
<td>Figure 16</td>
<td>Nap Study, Toni Berning</td>
<td>40</td>
</tr>
<tr>
<td>Figure 17</td>
<td>Zig-Zag, Natalie Broton</td>
<td>41</td>
</tr>
<tr>
<td>Figure 18</td>
<td>Frames Study, Emily Meer</td>
<td>42</td>
</tr>
<tr>
<td>Figure 19</td>
<td>Untitled, Anna Hooker</td>
<td>44</td>
</tr>
<tr>
<td>Figure 20</td>
<td>Untitled, Anna Hooker</td>
<td>44</td>
</tr>
<tr>
<td>Figure 21</td>
<td>Sun Study, Maggie Weighner and Emily Meer</td>
<td>45</td>
</tr>
<tr>
<td>Figure 22</td>
<td>Shadows and Scale, Maggie Weighner</td>
<td>46</td>
</tr>
<tr>
<td>Figure 23</td>
<td>Tangle Study, Toni Berning</td>
<td>48</td>
</tr>
<tr>
<td>Figure 24</td>
<td>Atmospheric Study, Toni Berning</td>
<td>49</td>
</tr>
<tr>
<td>Figure 25</td>
<td>Needles, Maggie Weighner</td>
<td>50</td>
</tr>
<tr>
<td>Figure 26</td>
<td>Needles, Maggie Weighner</td>
<td>50</td>
</tr>
<tr>
<td>Figure 27</td>
<td>Piasecki's joinery</td>
<td>58</td>
</tr>
<tr>
<td>Figure 28</td>
<td>Stone River</td>
<td>59</td>
</tr>
<tr>
<td>Figure 29</td>
<td>Piasecki working</td>
<td>60</td>
</tr>
<tr>
<td>Figure 30</td>
<td>stonework between roots</td>
<td>60</td>
</tr>
<tr>
<td>Figure 31</td>
<td>stonework details</td>
<td>60</td>
</tr>
<tr>
<td>Figure 32</td>
<td>granite sculpture by Ann Hamilton</td>
<td>62</td>
</tr>
<tr>
<td>Figure 33</td>
<td>sculptural wall divides the park into two distinct settings</td>
<td>63</td>
</tr>
<tr>
<td>Figure 34</td>
<td>playground at Teardrop Park</td>
<td>63-64</td>
</tr>
<tr>
<td>Figure 35</td>
<td>the ice wall</td>
<td>65</td>
</tr>
<tr>
<td>Figure 36</td>
<td>star trails as seen above Star Axis</td>
<td>68</td>
</tr>
<tr>
<td>Figure 37</td>
<td>the structure, nestled into the mesa</td>
<td>70</td>
</tr>
<tr>
<td>Figure 38</td>
<td>Star Axis from a distance</td>
<td>70</td>
</tr>
<tr>
<td>Figure 39</td>
<td>looking up the star tunnel</td>
<td>71</td>
</tr>
<tr>
<td>Figure 40</td>
<td>the hour chamber, daytime</td>
<td>71</td>
</tr>
<tr>
<td>Figure 41</td>
<td>the hour chamber, polaris situated in the apex</td>
<td>71</td>
</tr>
<tr>
<td>Figure 42</td>
<td>on top of the solar pyramid</td>
<td>72</td>
</tr>
<tr>
<td>Figure 43</td>
<td>Pamperis Cape before</td>
<td>74</td>
</tr>
<tr>
<td>Figure 44</td>
<td>Pamperis Cove after restoration</td>
<td>74</td>
</tr>
<tr>
<td>Figure 45</td>
<td>steel walks above fragile site vegetation</td>
<td>75</td>
</tr>
<tr>
<td>Figure 46</td>
<td>the entrance to Cap de Creus</td>
<td>75</td>
</tr>
<tr>
<td>Figure 47</td>
<td>zig-zagging corten rails over bare rock path</td>
<td>76</td>
</tr>
<tr>
<td>Figure 48</td>
<td>lectern and rock formation</td>
<td>77</td>
</tr>
<tr>
<td>Figure 49</td>
<td>lectern silhouettes</td>
<td>77</td>
</tr>
<tr>
<td>Figure 50</td>
<td>the only standing Club Med building</td>
<td>78</td>
</tr>
<tr>
<td>Figure 51</td>
<td>Monopoly Marsh</td>
<td>82</td>
</tr>
<tr>
<td>Figure 52</td>
<td>Mingo National Wildlife Refuge local context map</td>
<td>86</td>
</tr>
<tr>
<td>Figure 53</td>
<td>Mingo glacial patterns and landform</td>
<td>87</td>
</tr>
<tr>
<td>Figure 54</td>
<td>patterns of human use</td>
<td>88</td>
</tr>
<tr>
<td>Figure 55</td>
<td>canals, marshes, and water control structures</td>
<td>90</td>
</tr>
<tr>
<td>Figure 56</td>
<td>Mingo Wilderness Area and design study location map</td>
<td>94</td>
</tr>
<tr>
<td>Figure 57</td>
<td>canal 10</td>
<td>95</td>
</tr>
<tr>
<td>Figure 58</td>
<td>mirrored trees</td>
<td>95</td>
</tr>
<tr>
<td>Figure 59</td>
<td>the existing boat launch</td>
<td>96</td>
</tr>
<tr>
<td>image</td>
<td>description</td>
<td>page number</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Figure 60</td>
<td>existing boat launch (2)</td>
<td>96</td>
</tr>
<tr>
<td>Figure 61</td>
<td>paddling pauses and starts</td>
<td>97-98</td>
</tr>
<tr>
<td>Figure 62</td>
<td>existing conditions plan</td>
<td>99</td>
</tr>
<tr>
<td>Figure 63</td>
<td>proposed conditions plan</td>
<td>100</td>
</tr>
<tr>
<td>Figure 64</td>
<td>design proposal character and form</td>
<td>101-102</td>
</tr>
<tr>
<td>Figure 65</td>
<td>site section A - A1</td>
<td>103</td>
</tr>
<tr>
<td>Figure 66</td>
<td>site plan</td>
<td>104</td>
</tr>
<tr>
<td>Figure 67</td>
<td>sounds</td>
<td>105-106</td>
</tr>
<tr>
<td>Figure 68</td>
<td>echo chamber concept</td>
<td>107</td>
</tr>
<tr>
<td>Figure 69</td>
<td>cross sections along portage</td>
<td>107</td>
</tr>
<tr>
<td>Figure 70</td>
<td>perspective of portage</td>
<td>108</td>
</tr>
<tr>
<td>Figure 71</td>
<td>materials plan</td>
<td>108</td>
</tr>
<tr>
<td>Figure 72</td>
<td>the cypress send off</td>
<td>109</td>
</tr>
<tr>
<td>Figure 73</td>
<td>embarking on the paddling trail</td>
<td>110</td>
</tr>
<tr>
<td>Figure 74</td>
<td>gravel grid plan</td>
<td>111</td>
</tr>
<tr>
<td>Figure 75</td>
<td>gravel grid assembly</td>
<td>111</td>
</tr>
<tr>
<td>Figure 76</td>
<td>gravel grid cross-section</td>
<td>111</td>
</tr>
<tr>
<td>Figure 77</td>
<td>sculptural cypress feature</td>
<td>112</td>
</tr>
<tr>
<td>Figure 78</td>
<td>site section B - B1</td>
<td>111-112</td>
</tr>
<tr>
<td>Figure 79</td>
<td>Tupelo and Cypress</td>
<td>114</td>
</tr>
<tr>
<td>Figure 80</td>
<td>Pinhook Bog aerial view</td>
<td>116</td>
</tr>
<tr>
<td>Figure 81</td>
<td>location map</td>
<td>117</td>
</tr>
<tr>
<td>Figure 82</td>
<td>existing site and trails</td>
<td>118</td>
</tr>
<tr>
<td>Figure 83</td>
<td>the Valparaiso Moraine and kettle lakes</td>
<td>120</td>
</tr>
<tr>
<td>Figure 84</td>
<td>cross sections of historic peat accumulation</td>
<td>121</td>
</tr>
<tr>
<td>Figure 85</td>
<td>cross-section of current condition of peat mat</td>
<td>122</td>
</tr>
<tr>
<td>Figure 86</td>
<td>existing boardwalk</td>
<td>124</td>
</tr>
<tr>
<td>Figure 87</td>
<td>existing entry gate</td>
<td>125</td>
</tr>
<tr>
<td>Figure 88</td>
<td>a muddy, wet area where the boardwalk is sinking</td>
<td>126</td>
</tr>
<tr>
<td>Figure 89</td>
<td>proposal, as cross-section</td>
<td>127-128</td>
</tr>
<tr>
<td>Figure 90</td>
<td>the modules over Pinhook Bog</td>
<td>129-130</td>
</tr>
<tr>
<td>Figure 91</td>
<td>cross-section perspective of the floating module</td>
<td>131</td>
</tr>
<tr>
<td>Figure 92</td>
<td>exploded axon of bolt assembly</td>
<td>132</td>
</tr>
<tr>
<td>Figure 93</td>
<td>plan and elevation</td>
<td>132</td>
</tr>
<tr>
<td>Figure 94</td>
<td>cross-section perspective of solid module</td>
<td>133</td>
</tr>
<tr>
<td>Figure 95</td>
<td>exploded axon of bolt assembly</td>
<td>134</td>
</tr>
<tr>
<td>Figure 96</td>
<td>plan and elevation</td>
<td>134</td>
</tr>
<tr>
<td>Figure 97</td>
<td>cross-section perspective of the sunken module</td>
<td>135</td>
</tr>
<tr>
<td>Figure 98</td>
<td>plan and section</td>
<td>136</td>
</tr>
<tr>
<td>Figure 99</td>
<td>exploded axon of assembly</td>
<td>136</td>
</tr>
<tr>
<td>Figure 100</td>
<td>walkway terminus design</td>
<td>137</td>
</tr>
<tr>
<td>Figure 101</td>
<td>elevation of the entry gate design</td>
<td>138</td>
</tr>
<tr>
<td>Figure 102</td>
<td>interacting with bush blueberry</td>
<td>139</td>
</tr>
<tr>
<td>Figure 103</td>
<td>overgrown sunken module</td>
<td>139</td>
</tr>
<tr>
<td>Figure 104</td>
<td>prairie burns at Cooper Farm</td>
<td>142</td>
</tr>
<tr>
<td>Figure 105</td>
<td>hot shop process to produce glass objects</td>
<td>144</td>
</tr>
<tr>
<td>Figure 106</td>
<td>scale study models of the structure</td>
<td>145</td>
</tr>
<tr>
<td>Figure 107</td>
<td>Cooper Farm prairie map and installation site</td>
<td>146</td>
</tr>
<tr>
<td>Figure 108</td>
<td>a tripod frame</td>
<td>147</td>
</tr>
<tr>
<td>Figure 109</td>
<td>finished structure in the snow</td>
<td>148</td>
</tr>
<tr>
<td>Figure 110</td>
<td>one of two lashings</td>
<td>149</td>
</tr>
<tr>
<td>Figure 111</td>
<td>installation from the end of the trail</td>
<td>149</td>
</tr>
<tr>
<td>Figure 112</td>
<td>suspended glass and frames</td>
<td>150</td>
</tr>
<tr>
<td>Figure 113</td>
<td>glass and snow</td>
<td>151</td>
</tr>
<tr>
<td>Figure 114</td>
<td>grouping and snow</td>
<td>152</td>
</tr>
<tr>
<td>Figure 115</td>
<td>scales</td>
<td>153-154</td>
</tr>
<tr>
<td>Figure 116</td>
<td>looking up</td>
<td>155-156</td>
</tr>
<tr>
<td>Figure 117</td>
<td>Professor Rob Benson examining glass</td>
<td>158</td>
</tr>
</tbody>
</table>
Aim and Significance
This creative project aims to determine why wilderness and wildness are important concepts for landscape architects, and how designers should address wildness as a site context and an experiential condition. For the purposes of this project, wilderness is a perceived and subjective condition antonymous to developed landscapes, and wildness is a defining phenomenological characteristic of wilderness. Wildness can be perceived where wilderness is not recognized; in other words, the world has more opportunities to experience wildness than wilderness. In order to explore human thought and perceptions of wilderness and wildness, and consequent implications for environmental designers, this project was directed by two admittedly broad questions:

1) When, where, and how do people experience or recognize wildness?

2) How does built intervention affect human perceptions of wildness?

The premise for this project lies in a body of scholarly discourse related to the history of wilderness in America, the subsequent problems posed to environmentalism, and related issues in contemporary design. The main objective of this project is to understand how design might address and/or implement wildness, as both a site condition and as an experiential device, in order to shift dangerous prevailing land ethics.

Assumptions
My bias is shaped by years spent visiting wild landscapes at home and across the world. Professionally, I worked in trail building and maintenance, interpretation, exotic species remediation, and as a backcountry guide. It has never been difficult for me to appreciate wilderness or to convince myself that it needs protection. I believe that spending time in wild places generates appreciation and curiosity for the natural world.

This project proposes permanent human interventions within wild ecological communities. I believe that there should be vast areas of wild land left undeveloped—without trails, without roads, without wells, without buildings, etc. Built interventions, including those shared as case studies and those proposed in the Site Studies section, can diminish the ecological integrity of their wild sites; however, I also believe that landscape architecture has the potential to foster meaningful experiences of wild places, and that the negative ecological impacts of human interventions are oftentimes outweighed by their positive impacts on human behavior toward the environment. Wild places can promote better understanding of ecological systems and heightened respect for wildland. This project operates under the assumption that permanent structures in wild places can provide positive outcomes by protecting wildlife and providing access to people who may not otherwise experience unmanaged landscapes.

Finally, modern design is encouraged to be universal: that is, provide access to disabled and impaired people. In order to preserve fragile site contexts, wheelchair accessibility was not addressed where existing developed conditions were inaccessible to wheelchairs.

Scope and Delimitations
The scope of this project, insofar as defining wilderness and wildness, does not venture far beyond theory, culture, and design. This study contends that wilderness and wildness are subjective concepts: the most useful way to explore their meaning and relevance for design is through art, experimentation, and firsthand experience in wild places. The author does not possess an advanced knowledge of biology or ecology, and consequently, scientific methods of describing or defining wilderness and wildness are beyond the intent and scope of this research.

The design proposals in the Site Studies section were limited by time and seasonality. Design process was carried to as far a level of detail possible in the allotted time and given the available site data and scope of design problems. Additionally, these projects were largely explored during winter. Limiting perception of phenomenological site character to winter is not ideal, and undoubtedly, site assessments missed some important site characteristics familiar in warmer seasons. It was not possible to visit the sites during other seasons, given the timeframe of the project.

Sections
The work of this project is divided into four main sections called Introduction and Literature, Field Study: Arts Hike, Case Studies: Wildness and Design, and Site Studies. The four sections were completed chronologically relative to their sequence in this document. Each section built on the work of the preceding section and informed the work of the following section.
The Introduction and Literature and its sub-section Wildness: Myths, Trends, and the Call to Designers trace a body of discourse with relevance to wildness, wilderness, and design. The section begins with a brief history of the conservation movement in the United States and the theories and writers who guided that movement, including John Muir and Henry David Thoreau. This history culminates in the establishment of the National Wilderness Preservation System, largely influenced by the work of Aldo Leopold. Wildness: Myths, Trends, and the Call to Designers introduces problems with the wilderness movement as they are identified by writers and designers such as Cronon, Spim, Howett, and Berry. This sub-section establishes relevance for contemporary designers by outlining landscape architecture’s relationship with wildness—especially problems that inadvertently arise when designers practice in wild places.

The Field Study: Arts Hike documents an informal, but intentional, study group which assembled in November 2015 to creatively assess and respond to the characteristics of the Charles C Dean Wilderness Area in southern Indiana. The broad objective of the hike was to better understand wildness as a site character. Primarily, the Arts Hike illustrated the effectiveness and importance of deeply contemplative, creative, and rigorous site analysis for designers operating in wild places, especially to identify phenomenological qualities which are not obvious through typical site visits and analysis. Further, the informal study culminated in a useful list of themes and ideas which informed design proposals in the Site Studies.

The third section, Case Studies: Wildness and Design, is a collection of four intentionally-brief, subjective reviews of design projects within pre-existing, restored, or constructed wild contexts. Each project was included because it celebrates human craft and ingenuity in and through the context of wildness. The projects are discussed through the use of key themes identified by the author. Building on the work of the Arts Hike, the case studies informed design solutions in the Site Studies section of this project.

The final section of this Creative Project is titled Site Studies. The studies are design scenarios and solutions identified by the author for three sites: Mingo National Wildlife Refuge, Pinhook Bog, and Cooper Farm. The design studies are opportunities to test and further explore the themes, methods, and definitions identified by the three preceding sections. Two of the Site Study projects culminated in hypothetical drawings and models which will not be implemented; the project at Cooper Farm culminated in a built, but temporary installation on site.

This project has relevance to all designers practicing in wild places or intending to restore or create wildness.

Literature highlights the importance of understanding the messages design intervention conveys, or fails to convey, with bearing for society’s treatment of the environment. The Arts Hike introduced methods and outcomes of more thoughtful, physical site assessments. The case studies outline opportunities to improve perceptions of design intervention in wild landscapes. Finally, the Site Studies applied the methods and theories introduced in the three preceding sections. The design proposals and built installation demonstrate outcomes of thoughtful site assessment and design objectives which strive toward multi-sensory, experiential landscapes.

Definitions

The clarity of this written work is limited by vaguely defined terms and conditions. In fact, better defining concepts like wilderness, wildness, and nature for the use of designers is one objective of this project. However, for the purposes of clarity, it is necessary to define how the author uses several terms and what the relationships are between them. Relative to this project, these definitions are not concrete: they are tested and challenged throughout the following sections of this project. Additionally, it is important to note that writers cited in this literature review may have their own definitions of the following terms—this project attempts to generalize and surface commonalities and differences between influential scholars, but unfortunately, some misrepresentation relative to individual theorists is unavoidable. The following terms are defined in order of their importance to this project.

Wildness: Wilderness is best defined through the use of a spectrum allowing degree and intensities in lieu of absolutes; places never touched by humans define one end of the spectrum and completely civilized cities define the other end—“from the primeval to the paved,” (Nash, 1982, p. 6). In this document, wilderness generally refers to an area where permanent human intervention is not obvious or perceptible, and where humans either purposefully or unconsciously relinquish control over land to natural systems and patterns. This project recognizes those wilderness areas federally-designated under the National Wilderness Preservation System as wilderness, but it also considers some areas wilderness which are not federally recognized.

Wildness: Wildness is the defining phenomenological characteristic of wilderness, but it is not exclusive to wilderness. Wildness is multi-sensory; it is comprised of varying, but identifiable and unique sounds, smells, and textures; to a human, wildness is a display of ecological complexity. Wildness is perceived where landscapes or organisms reach a high level of their biological potential: they are undomesticated and their character is defined by interconnected webs of non-human forces. However, human impacts do not always
wilderness by the United States through the National Wilderness Preservation System. Wherever applicable, wilderness areas are referred to by their specific names. Two federal wilderness areas noted repeatedly in this document are the Mingo Wilderness and the Charles C Deam Wilderness.

Nature/natural: Nature refers to an object, landscape, or situation people do not perceive to be fully processed or constructed by humans. Nature is comprised of organic matter and the majority of its distinguishable character is a result of forces which would exist without humans. For instance, nature exists in gardens and parks as plants and soil, and it is tended and partly shaped by people, but the nature in gardens gets most of its shape, color, smell, and other characteristics from pre-existing genetic composition, organic material and nutrients, and climatic systems.

Wild nature/place/ecologies: Wild nature differs from other nature by existing in the form of balanced, native ecological communities with equal or higher objective value to wildlife than to humans. Wild nature is contiguous, patterned, systemic, diverse, and valuable to natural science researchers and students. Wilderness is always comprised of wild nature, but wild nature is not exclusive to wilderness: some human intervention has negligible impact on the integrity of ecological communities. Parks and other designed landscapes can be wild where the design intent is to restore or preserve ‘native’ plants and patterns in communities simulating pre-settlement conditions.

Park: Park refers to an area of public land which is designed and planned, managed, and, in places, constructed for the purposes of recreation. The author does not use the term park to refer to wilderness areas. Wilderness areas can and do, however, exist within parks. Mainly in this document, park refers to publicly-managed national, city, and state parks. Importantly, iconic national parks like Yellowstone and Yosemite were enormously popular and largely defined America’s wilderness identity from their establishment through the early 20th century, but the wilderness character of America’s national parks was gradually degraded as park planners made developments to accommodate recreational use. Yosemite National Park at the outset of its establishment, for instance, much more closely resembled a wilderness than it does today. Some writers including Nash refer to national parks before and during their establishment, as wilderness (1982).

Wilderness area: Wilderness area refers to contiguous areas of public land which are federally designated as
INTRODUCTION AND LITERATURE

Wilderness is coming of age. Recent scholarship places wilderness as an apex of human thought—is nature better with or without us? Wilderness is at once idolized and abused, preserved and exploited. In federally designated areas, wilderness exists ironically—"untrammeled" by man—where tens of thousands of hikers, hunters, canoeists, and recreationalists come to tramp, and sometimes trammel, each year. In undesignated areas, wilderness may exist in unlikely places, at risk of development, and in spite of surrounding trends in the built environment. Environmental designers, in increasing frequency, are employed to do what the first American settlers probably would never have imagined—to reclaim and restore native ecologies in developed places. Indeed, there is something relatable or admirable in wild nature which inspires us at least to try to treat it with care: conservationists beginning with John Muir, Frederick Law Olmsted, and Henry David Thoreau won the establishment of the National Park Service; emparked lands within State conservation systems, the BLM, and the USFS followed. Since the Wilderness Act of 1964, over 100 million acres of land have been federally designated as American Wilderness Areas. Federal recognition and protection of wilderness across the United States was an immediate and poignant recognition of both humanity’s potential to destroy wild nature, as well as the humility and connection to it that humans living on a wild planet are capable of.

Lovers of wilderness often find it difficult to describe what makes a wilderness lovely. Fundamentally, wilderness is dangerous and inhospitable to humans. Travelling through wilderness can be cumbersome and uncomfortable. But every year, people in the millions visit wilderness areas throughout the United States. It could be, and has been argued, that wilderness is essential to the human psyche—humans need to be, at times, alone in wild places to rehabilitate and recreate (see Louv, 2008). For many, wilderness recreation is therapeutic: restorative for the body, mind, and soul. Humans did, after all, have access to wilderness in abundance for the first few hundred-thousand years of our existence. Early humans learned to live in and with the wilderness around them. Wilderness is an ancient component of our species’ identity, which shaped our evolutionary and cultural history.

In order to establish a theoretical base for this project, it was necessary to trace the shifting perceptions of wilderness over time, especially within the United States and among the more famous writers and influential historical figures. A major theme of this creative project is that wilderness is difficult or impossible to define, but it is impossible to discuss wilderness and contemporary theory without understanding the word, its roots, and its meanings. The word wilderness has roots in Teutonic and Norse languages, where the root “will” described something free-willed and uncontrollable (Nash, 1982). From the root emerged “wild”, meaning lost and unruly, and finally “dēor” was added to denote a wild, undomesticated animal (Nash, 1982). “Ness” acts as a descriptor; it implies some distinct qualities or character. Wilderness, then, originally described the qualities of unruly, dangerous or foreboding wild animals and the landscapes they inhabited.

The close tie between wilderness and dangerous wild animals is apparent in Beowulf, where the wilderness describes a “region whose dank, cold depths... harbor foul creatures that prey on men,” (Lopez, 1978) Negative meanings of wilderness persisted through the 18th century: the wilderness was dangerous, barren and desolate. The nearest synonym was a wasteland. Biblically, wilderness was a place where humans were tested. Christians throughout history understood wilderness as a landscape of struggle: Jesus tested his devotion to God over 40 days in the desert wilderness, Moses wandered the wilderness for forty years with his people, and Adam and Eve were banished from the Garden of Eden and driven into wilderness (Cronon, 1995). The first command given by God to humans in the Bible is to, “Be fruitful and increase in number; fill the earth and subdue it. Rule over the fish in the sea and the birds in the sky and over every living creature that moves on the ground,” (New International Version, Gen. 1.28). Throughout most of our history, humans considered wilderness a landscape to conquer. Wilderness was a frontier.

Wilderness as the ‘sublime’ existed before and after the idea of a wilderness frontier; frontierism largely defined 17th and 18th century sentiments towards the New World. Manifest Destiny was the 19th century call to Americans to reach out and conquer the West, and the western wilderness was hard-won— in the process of pushing westward settlement, Manifest Destiny fueled the decimation of American Indians, as well as war with Mexico. White Americans, during the 19th century, seemed to follow the trajectory of their European ancestors, called to conquer the wilderness in order to build a global empire.
“In wilderness,” Henry David Thoreau famously postulates, “is the preservation of the world,” (1914). Kenneth Olwig, in *Landscape, Nature, and the Body Politic*, provides the full quote (it is almost invariably shortened), “The West of which I speak is but another name for the Wild, and what I have been preparing to say is, that in Wilderness is the preservation of the World.” According to Olwig, those words, firstly, were a nod to the frontierism and Westward conquerors of the previous century (as cited in Olwig, 2002, p. 184).

Olwig argues Thoreau meant to preserve the potential of westward progress where “the raw material of life” that is stored in wild western nature can be harvested, meant to preserve the great Western wilderness (p. 183-186). Thoreau implies that wilderness is a resource, and exploitation demands a preservation of resources to be harvested later, if and when future generations take their share.

Thoreau also urged Americans “to preserve the elixir of wilderness by emparking some of it as a place where the nation could re-create its natural potentiality,” (as cited in Olwig, 2002, p. 188). The “elixir” Thoreau referred to was the brand of forest elixir northwestern Europeans emerged from: “The Americans are the legitimate inheritors of the civilization of the northwestern Europeans, who also drew their sustenance from the forests: ‘it was because the children of the [Roman] Empire were not suckled by the wolf that they were conquered and displaced by the children of the northern forests who were,” (p. 186). Civilization, to Thoreau is “nourished” by the wilderness it seeks to conquer, and civilizations survive “as long as the soil is not exhausted”, but the fittest empires are shaped by the power of wild forces, existing unimpeded by peak civilization (p. 186).

Thoreau, and other romantics during the late 19th century, diverged from the prevailing notion of wilderness as a place where humans do not belong—the Romantics wanted to belong in wilderness; thus, Thoreau built his famous cabin on Walden Pond. The Romantics saw the challenges presented by wilderness as an opportunity to grow and thrive. Primitivists carried this idea further, believing that man belonged in wild nature and wild-men possessed extraordinary strength, intelligence, and sexual prowess (Nash, 1982). Wilderness to the Romantics was sublime, powerful and spiritually-moving. Henry David Thoreau experienced terror and immense awe as he summited Maine’s tallest peak, Mt. Katahdin: “It was vast, Titanic, and such as man never inhabits. Some part of the beholder, even some vital part, seems to escape through the loose grating of his ribs as he ascends... She does not smile on him as in the plains. She seems to say sternly, why came ye here before your time? This ground is not prepared for you.” (as cited in Cronon, 1995, p. 74).

The concept of wilderness as something essential to mankind, something to be preserved, is deeply American and directly inspired by ideas emerging from Romanticism. During the late 1800s, wilderness escaped association with fear and Biblical evils: it became a fixture of spirituality and a place where some people felt close to enlightenment (Cronon, 1995). “Romanticism,” to Nash, created “a climate of opinion in the new American nation in which wilderness could be appreciated,” (1982, p. 67). Americans felt that their newly-won freedom from European control called for a fresh national identity, and Americans were proud of their wilderness, believing it to be better than the few wild places remaining in Europe (Nash, 1982). Romantics including Thoreau and landscape painters like Thomas Cole and Albert Bierstadt celebrated America’s natural features through art, directly leading to the founding of America’s first national parks. ‘Emparked’ wilderness manifested in Yellowstone as America’s first national park in 1872. Other vast areas of iconic, wild landscape covered much of the western United States, and in the 1800s, those places were gaining popularity as tourist destinations. The cultural conditions established by the Romantics primed America for its conservation movement.

The endearing hero of Yosemite National Park, John Muir, lived for wilderness: “I care to live only to entice people to look at Nature’s loveliness,” (as cited in Nash, 1982, p. 129). Wild nature was sublime and spiritual, “where life’s inner harmonies, fundamental truths of existence, stood out in bold relief,” (as cited in Nash, 1982, p. 126). Muir was deeply religious, and to him, wilderness represented a perfect creation of God. Forests were “temples,” and “wild nature was replete with ‘Divine beauty’ and ‘harmony,’” (p. 124-125). Muir so adored his Yosemite “temples” that he advocated protection through the use of military force, stating that “one soldier in the woods, armed with authority and a gun, would be more effective in forest preservation than millions of forbidding notices,” (as cited in Olwig, 2002, p. 205). Muir, by contemplating how best to manage visitors to his beloved Yosemite, was identifying what was really valuable there, for him: solitude (Olwig, 2002). Ironically, he sought to preserve Yosemite as a national park primarily as a place where people could return to the purity of wild nature—“Climb the mountains and get their good tidings,” but he had a distaste for the overcrowded valley in Yosemite at the time and feared the damage people could cause (as cited in Olwig, 2002, p. 205). Muir urged the United States to protect Yosemite from fires and crowds of
sheep and people as a public park (Nash, 1982), but, by climbing the rugged peaks and roaming solitarily through the forests of Yosemite, Muir embodied a wilderness lifestyle which most Americans would not adopt themselves. Actually, Muir stood out— and later caused a split in the conservationist movement— for condemning any development in pure and wild nature (Nash, 1982). Muir famously called the advocates of a dam in Hetch Hetchy Valley “temple destroyers, devotees of ravaging commercialism, [who] seem to have a perfect contempt for Nature, and instead of lifting their eyes to the God of the mountains, lift them to the Almighty Dollar,” (as cited in Nash, 1982, p. 161).

Conversely, Frederick Law Olmsted sought to preserve Yosemite as a public park with scenery to rival English landscape gardens. Olmsted was charged in 1865 to prepare a report and make management recommendations for America’s new wild park. His views, according to Spirn in her essay Constructing Nature, were “frankly anthropocentric,” (1995, p. 92). Olmsted felt that Yosemite should be preserved because “to be in a place surrounded by ‘natural scenery’ promoted human health and welfare,” (as cited in Spirn, 1995, p. 92). He attested, largely based on first-hand experience as someone suffering from “nervous ailments” that “contemplation of natural scenes of an impressive character” promoted physical and mental health by relieving the mind of “purpose” and the stress it incurs as a result of daily life working in an urban environment (as cited in Spirn, 1995, p. 93). Additionally, to Olmsted, the designer of New York’s Central Park, America required a landscape identity, and especially one which would contrast the British trend toward privatization: for Olmsted, Yosemite not only represented the opportunity for an American landscape identity founded, uniquely, in wild scenery rivalling the pastoral landscape gardens of England, but also for an American park system of democratic “people’s parks” open to the public (Olwig, 2002, p. 199).

Olmsted wanted to use the American park system to distance our national identity from that of England where landscape parks were the privilege of a “very few, very rich people,” (as cited in Olwig, 2002, p.199).

Olmsted foresaw the emergence of a national park system, which might preserve wild places for use by the public; he also predicted that the parks would be hugely popular: “that within a century millions of visitors would come to Yosemite each year,” (as cited in Spirn, 1995, p. 93). His prediction raised important management concerns, which he included in his report for California’s Congress. The report never reached the legislature, having been rejected because of conflicting financial interests (p. 94), but Olmsted’s predictions were uncanny: Yosemite drew over 4 million visitors in 2014 (National Park Service, Yosemite Park Statistics).

Nearly a century after Yosemite Park was founded, the forester and famous American conservationist Aldo Leopold successfully established a basis for wilderness conservation largely in terms of the American right to recreate in wild places. When Leopold published his widely quoted opus, A Sand County Almanac in 1949, almost 30 national parks had joined Yellowstone and Yosemite in America’s west, Appalachia, the Everglades, Great Lakes, and in Hawaii (nps.gov). Leopold made important distinctions between wilderness and parks—Leopold especially felt that roads diminish the integrity of wildland for the purpose of backcountry recreation by accommodating crowds and degrading opportunities for solitude. As early as 1925, Leopold feared that, “there will soon be no place left for the wilderness hunter whose recreation comes from getting out into a wild roadless area,” (ed. Brown and Carmony, 1990, p. 155).

To Leopold, “wilderness is the one thing on earth which was furnished complete and perfect” (1925, ed. Brown and Carmony, 1990, p. 160). As a ‘perfect’ ecology, wilderness to Leopold was necessary for studying and teaching. Leopold was a scientific man, but more so than some of his contemporaries, in touch with social values and the inevitable ignorance of economics to the ethics of land use. Early in his career, Leopold realized that American economics was dangerous for wild land, because wild land had no monetary value unless it was exploited. In A Sand County Almanac, he stresses that a vast shift must occur in land ethics— “What conservation education must build is an ethical underpinning for land economics and a universal curiosity to understand the land mechanism. Conservation may then follow.” (Leopold, 1966, p. 187).

Leopold was a forester— he did not condemn resource use; he argued for wilderness conservation in terms of human use, or recreation. Leopold advocated backcountry hunting, because through it, “civilized peoples” preserve “the wild roots” of their cultural heritage (Leopold, 1966, p. 195-196). Especially when he was young, Leopold was interested in forestry primarily at the level of game management and recreation. In “The Wilderness and Its Place in Forest Recreational Policy,” Leopold defined wilderness as “a continuous stretch of country preserved in its natural state, open to lawful hunting and fishing, big enough to absorb a two weeks’ pack trip and kept devoid of roads, artificial trails, cottages, or other works of man,” (1921,
ed. Brown and Carmony, 1990, p. 148). Hunting, for Leopold, elicited an understanding and respect for wildlife. To Leopold, wilderness was, principally, humanity’s teacher—similar to other admirers of wilderness including Theodore Roosevelt and Thoreau, Leopold attested that recreation in wild nature was essential to the development of a physically and mentally healthy human being. Additionally, Leopold may have recognized that wilderness recreation partially offered an anthropogenic reason for wilderness recognition and conservation.

**Wilderness Act**

Leopold was almost solely responsible for the federal protection of America’s first designated wilderness area, the Gila Wilderness in western New Mexico. Ultimately, his efforts and the efforts of others, notably including Howard Zahniser, Bob Marshall, and Harvey Broome led to the creation of the Wilderness Act of 1964, signed by Lyndon B Johnson, who remarked, “If future generations are to remember us with gratitude rather than contempt, we must leave them something more than the miracles of technology. We must leave them a glimpse of the world as it was in the beginning, not just after we got through with it,” (wilderness.org). Wilderness, according to the act is defined as:

> “an area where the earth and its community of life are untrammled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practical its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.” (United States Congress, 1964).

The Wilderness Act of 1964 created the National Wilderness Preservation System and immediately protected 9.1 million acres of wildland under federally-defined management policies. Since then, over 100 million more acres have been added to America’s wilderness system. Arguably, the most evident and immediate result of the Wilderness Act was the emergence of the wilderness recreation movement, and subsequent crowds of people in wilderness areas. The 1960s and 1970s saw a dramatic rise in backpacking as a commonplace leisure activity, as well as backcountry hunting, fishing, climbing, and canoeing. Nash describes “four revolutions” which “contributed to... the overrunning of the woods,” (1982, p. 317). The intellectual movement established a philosophical basis for the protection and appreciation for wilderness. An equipment revolution occurred as a result of WWII; technology like nylon, plastic, and aluminum made backcountry recreation easier, more affordable, and more enjoyable. The transportation revolution, according to Nash, may be the most consequential: “it can be argued that the piece of technology with the most devastating effect on the American wilderness was the family automobile,” (p. 318). Finally, the information revolution was the proliferation of widely accessible guidebooks and maps—previously, wilderness travel required a hired guide or firsthand knowledge.

As wilderness recreation gained popularity, wilderness managers struggled to keep wilderness areas looking pristine. Evernden, in his book _The Natural Alien_, states that “the most common element in the outdoor experience has become other people... Some professionals privately admit that the best way to destroy a natural area is to make it a park,” (1985, p. 8-9). Evernden traces an important shift in wildland valuation through the course of American history, and one which largely started with Leopold. Recreationalism provided conservationists the capitalist ammunition to replace “the old emotional environmentalism” by saying “all that needs to be said about the mountain – and saying it with numbers,” (p. 9).

Outdoor recreation persists today, largely defining the contemporary wilderness identity. This is not surprising, considering the management principles guiding the Wilderness Act—it’s main purpose was to preserve the character of wild places, with the underlying assumption that “primitive” and “unconfined” recreation would have little to no detrimental impact on its “natural conditions.” The Wilderness Act does not permit natural resource exploitation or commercial use, except by scientific prospectors and recreation services and only insofar as they preserve the “wilderness environment.”

**Criteria Toward a Definition**

Despite its increased popularity and attention since the American Romantic movement, and importantly...
after the creation of a distinct federal land jurisdiction, an agreeable, objective definition of wilderness seems unachievable. The variety and scope of wilderness biodiversity, history, scale, and human influence within the National Wilderness Preservation System is enormous. To Nash, wilderness is a noun which functions as an adjective (1982, p. 1). Thus, it is difficult to define wilderness because it is a landscape typology defined less by quantifiable or objective criteria than on perception and character.

Even objectifiable criteria which seem consistent, like the absence of structures or people, are indefinite in the designation of wilderness areas. For example, some wilderness areas have a history of human settlement; the Charles C Deam Wilderness in Indiana circumvents the permanent structure rule with multiple wilderness areas carved out by roadways.

For Nash, the most useful way to define wilderness is through the use of a spectrum (1982, p. 6). Wilderness is a condition, and in its purest form, human presence is non-existent. The spectrum concept is effective because it allows for subjectivity and relativity. Many people, considered wilderness purists, argue that almost no pure wilderness exists in the modern world, making the traditional definition of wilderness useless unless it is describing an antiquated condition. Accepting that wilderness no longer exists however is, if not depressing, problematic because it devalues areas carrying the designation and those which might achieve the designation.

Alas, even the importance of a concrete wilderness definition is questionable. Part of the allure of the word may be its inherent mystery—to Nash, it’s "ness," (1982, p. 1). Historically, wilderness is a mysterious place, fitting a mysterious, ambiguous definition. However, the criteria implicated in the wilderness spectrum are important and useful to discuss as indicators of wilderness purity, or value.

It is helpful, then, to lay out the criteria used to distinguish wilderness areas from other wild areas, especially as they appear in the Wilderness Act of 1964.

Absence of Humans

Most dictionaries define wilderness as "uninhabited" or "uncultivated" land, making human absence the most important indicator of wilderness purity (Merriam Webster Online). Human presence is presumably perceived as permanent residency; the irony of human absence in a wilderness is that many Wilderness Areas, especially in the lower 48, experience unlimited visitation, and in peak season during long weekends, popular wilderness areas can feel crowded.

Frequently, as with Leopold and in the Wilderness Act, wilderness is associated with solitude: specifically, having "outstanding opportunities for solitude or a primitive and unconfined type of recreation," (United States Congress, 1964, p. 1). The ability to be alone anywhere is exceedingly difficult as populations expand and cities and suburbs become more crowded. Wilderness, then, preserves a landscape where humans ‘escape’ to be alone or among selected friends. Absence of other people is related to other criteria, especially scale.

Management

Wilderness areas are managed by either of four federal entities including the National Fish and Wildlife Service, the National Park Service, the Bureau of Land Management, and the National Forest Service (The Wilderness Society, 2004). Each land system operates with its own criteria for management and designation; differences in management strategies generally reflect the overall goals of each land management system.

Management, in theory, keeps the wilderness wild, and it sets wilderness areas apart from parks and other natural areas. Wilderness is managed for a very specific type of recreation—wilderness recreation requires space for solitude and minimal or no human development. Wilderness areas do not contain formal camping areas, playgrounds, bathrooms, showers, or other amenities associated with natural areas like state parks. They usually do not contain visitor centers (exceptions include the Charles C Deam Wilderness and Fire Island Wilderness).

Wilderness management, in a sense, is minimal management. Wilderness management’s primary objective is to preserve an existing condition; according to the Wilderness Society, it “is largely a question of managing human use and enjoyment of wilderness,”(2004, p. 41). While many humans may feel that they are in a wild forest while they are not in a wilderness area, they are unaware that State and National Forests are actively managed for productivity of timber, game, and recreation. Management in areas other than wilderness areas
usually includes prescribed burns, selective harvesting, and regular trail maintenance. Those areas further differ from wilderness by containing roadways and permanent structures. In a wilderness, it is assumed that human touch is absent from the management plan—the wild is appropriately unkempt and uninterrupted.

In contemporary wilderness, managing visitation is probably the most important function of ‘land’ management. According to Nash, “it is not wilderness but people who need to be managed,” (1982, p. 320). People have the ability to destroy a wilderness by ‘loving it to death.’ Automobiles and technological advancements in gear and transportation infrastructure since the 1940s caused a massive increase in wilderness visitation. The increase in visitors brings rampant soil erosion, conflicts, and litter, among other problems, which rangers today are tasked with managing. Of course, the trouble is that wilderness, in the history of Olmsted’s optimistic view of a national system of public park land, is and should (according to many) remain public. In many areas, however, rangers create cap limits on visitation by issuing permits or staffing gates.

The Wilderness Act provided a way to protect ‘true’ wilderness; in a sense, it is an active land management strategy within a broader framework, as well as a particular land management strategy in its own right. It takes an enormous (and increasing) amount of political energy to establish wild land as a federal Wilderness Area—energy at least as comparable to the energy it takes to physically manage a non-wilderness. The Wilderness Society estimates that over 100 million acres of wild land in the United States are, as of yet, undesignated and should be (wilderness.org). Non-profits like the Wilderness Society and the Sierra Club lobby the American political environment in order to raise awareness for conservation and wilderness issues and add more acreage to the wilderness system.

Scale
Discussions of scale regarding wilderness contend that larger wilderness is ‘purer’ wilderness. Large acreage is an important identifier of wilderness because a distinct reason for the existence of wilderness is the ability to be alone in a wild place. As the human population grows, and the popularity of wilderness recreation continues to grow, greater areas of wilderness are required to accommodate the increase in visitors. This is immensely difficult to achieve though, because the Earth’s surface is a finite mass of land, and a growing population requires more space to live and grow food. Throughout human history, population growth results in a loss of undeveloped land.

The ability to feel alone in a wilderness is dependent on population density, accessibility, and scale. In other words, a small wilderness can feel crowded if it is close to a city. Large wilderness areas, especially multi-million acre wilderness areas in remote regions of Alaska, offer unmatched opportunities for solitude. The Wilderness Act of 1964 stated that a wilderness should contain “at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition,” (p. 1).

The largest wilderness within the National Wilderness Preservation System is the Wrangell-Saint Elias Wilderness with 9,078,675 acres within Wrangell-Saint Elias National Park in Alaska. The largest wilderness area outside of Alaska is Death Valley Wilderness, with 3,099,770 acres in Death Valley National Park, California. The smallest Wilderness Area in the United States is Pelican Island Wilderness in northern Florida, at 5.5 acres. The average size of an American Wilderness Area, including those in Alaska, is 142,653 acres. (www.wilderness.net/NWPS/fastfacts). Obviously, the range of acreage within the Wilderness system makes the use of scale to define a wilderness extremely questionable, if not ignored—at least by facilitators of the Wilderness Act.

Again, Leopold defined wilderness as “a continuous stretch of country preserved in its natural state... big enough to absorb a two weeks’ pack trip,” (1921, ed. Brown and Carmony, 1990, p. 148). Leopold’s definition is useful because of its focus on human scale and use. The primary, contemporary function of American Wilderness Areas is to accommodate use by recreationalists. However, it is difficult to find a more subjective definition of scale than “big enough to absorb a two weeks’ pack trip;” in fact, it is arguable that Leopold’s own Gila Wilderness, at 872 square miles, is not large enough to accommodate a through-trip of that length, according to modern backpacking standards, without considerable twists, loops, spurs, and bends.

Permanent Structures
It is useful to make a distinction between permanent structures and the presence of humans, although the two criteria seem (and are) closely-linked. Human structures, as a landscape element, denote at least a
The Wilderness Act prohibits permanent development within wilderness areas by stating that “there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area,” (p. 4) Special provisions are made for some commercial uses, like guiding services, as well as scientific prospecting for the purpose of research (pp. 4-5). In areas where pre-existing functions should continue, some structures, like airstrips, are allowable. As areas protected largely for recreational use, almost all wilderness areas contain some relatively permanent sections of trail and oftentimes accompanying bridges, signs, etc. New trails, user-created trails, and new bridges are usually prohibited or discouraged in wilderness areas. Additionally, trail markers and signs are largely absent from Wilderness Areas, except at crucial junctions. Travel via map and compass is encouraged, according to Wilderness Watch, because “map reading, compass, and orienteering skills promote a closer relationship to the land,” (2015).

**Biodiversity**

For Leopold, a primary function of wilderness conservation was to preserve areas of intact wild nature where students of forestry and ecology could best understand the ‘land mechanism’ (Leopold, 1966). Although it is not discussed specifically in the Wilderness Act, biodiversity plays a crucial role in the ongoing designation of wilderness areas, as well as wild land conservation under other distinctions, especially those administered by the US Fish and Wildlife Service. Contrasting anthropocentric methods of preserving wilderness largely employed by recreationalists, rare and disappearing species of wildlife offer a different scope of leverage toward conservation. Biodiversity is only discussed broadly, as “ecological, geological, or other features of scientific, educational, scenic, or historical value.” Beginning with Aldo Leopold, conservationists recognized the importance of wilderness to provide grounds for teaching sciences and stewardship and for scientific discovery. Biodiversity, as a subject rooted in scientific language, would seemingly offer more objective and quantifiable criteria to distinguish a wilderness area from other natural areas. However, the range of biodiversity within existing designated Wilderness Areas varies as much as scale or the scope of human presence.

**Conclusions**

We will never have a concrete definition of wilderness, and the criteria we use to understand it are inconsistent. Still, each of the criteria listed above offer important clues to understanding the way humans perceive and define wilderness, and its predominant character, wilderness. Defining wilderness is difficult because of its cultural maleability and its subjective nature, but in spite of its ambiguity, wilderness has had a measurable historic impact on American culture, and significantly, American landscape architecture was founded by Olmsted, at least partly, with America’s wilderness identity in mind.

Wilderness was the springboard of the environmentalist movement in the United States; Americans first protected national parks and then wilderness areas because they learned to appreciate America’s wild landscapes through the Romantic era of art and thought. In the same way Leopold recognized threats to a special and rare form of American landscape, the future of America’s wilderness identity lies in our ability to recognize important, threatened wild places and adapt the conservation movement to shifting cultural conditions.
**Wildness: Myths, Trends, and the Call to Designers**

The National Wilderness Preservation System ‘feels good’ as a conservation tactic and upholds Leopold’s vision for wild places where recreationalists might find better opportunities for solitude and special forms of backcountry travel. It is no minor achievement that so much of the United States is protected from development, and that Americans have the opportunity to observe and study ecosystems with minimal human impact. The history of wilderness, though, and the theoretical basis for its existence, are troubling: the core problem with wilderness, as identified by Cronon, Olwig, and Sprin, to name a few, is its inherent dichotomy. Wilderness is a landscape antonymous to developed, or human, conditions. Wilderness, to Leopold, is “the raw material out of which man has carved the artifact called civilization,” (1949, ed. Brown and Carmony, 1990, p. 241). Humans may belong in wilderness as visitors, and visiting wilderness might be beneficial for their physical and mental health, but many people believe wilderness is better off without us— that “wildness is the one thing on earth which was furnished complete and perfect,” (p. 160).

The most striking example of the dichotomy in wilderness is that when Americans first endeavored to create ‘wilderness’ parks like Yosemite, in many cases they first had to remove the people inhabiting it. To Olmsted and Muir, the potential for a wilderness preserve at Yosemite was limited by the presence of both American Indians and settlers within the valley (Olwig, 2002, p. 206). Olmsted was appalled by the tribal practice of burning Yosemite Valley. The indigenous people in Yosemite burned the valley in order to encourage game productivity and to make travel and hunting easier. When the Yosemite natives were displaced, Yosemite Valley overgrew and the pastoral scenery Olmsted cherished was lost (p. 206-208). More recently, settlers in Appalachia were subjected to upheaval following national park designations: when Shenandoah National Park was established in the 1930s, at least 500 families were removed from their mountain homes (Horning, 2001). Within the Great Smoky Mountains National Park, 1200 people lived in Cataloochee valley until its designation in 1910 (nps.gov).

In each case, inhabitants were displaced primarily to establish public parks— in the case of Cataloochee Valley, 18th and 19th century buildings were left standing (nps.gov). The objectives of wildland procurement and designation are more frequently to establish national parks and forests than to restore or preserve true wilderness, but in parks and wilderness areas, non-recreational development and land are considered two separate and incompatible systems— the same pattern is identifiable at other scales. We call landscapes rural or urban, developed or undeveloped, natural or cultural. This binary is problematic and imprecise. To landscape architect and writer Spirn, “calling landscapes ‘natural’ and others ‘artificial’ or ‘cultural’ ignores the fact that landscapes are never wholly one or the other,” (Spirn, 1995, p. 111).

The displacement of settlers and Native Americans to preserve parks and wilderness from non-recreational use, when put into context and explored over time, seems even more selfish when the place receives thousands or millions of visitors each year. Homes, farms, sawmills, and other marks of human settlement, which may have stood as strong examples of balanced socio-ecological communities, were effectively erased. Where settlements are considered incompatible with recreational use and people are removed, the history of a place and the relationship humans shared with it is lost. This social injustice, coupled with the profound duality somewhat preserved, if not embodied, by wilderness designation and cultural upheaval, might be causing more harm than good. While it is widely agreed that forests and landscapes without permanently residing people should exist, especially among environmentalists, the traditional notions of ‘pure’ and, according to Olwig in Landscape, Nature, and the Body Politic (2002), ‘idolized’ wilderness are probably holding environmentalism back.

**Idolization: Displacing Culture and Human as Ruin**

Wilderness idolization is glorifying a landscape which humans, by definition, cannot inhabit. Consequently, wilderness idolization perpetuated cultural displacement; in its early years, the American wilderness movement was not far disconnected from racism. As wilderness gained popularity in the early 1900s, indigenous people (‘the noble savage’) were admired for their ‘primitive’ way of life, and “the American male was suffering from over-civilization,” (Nash, 1982, p. 152). Thus spawned primitivism. To primitivists, ‘living off the land’ hunting and gathering resulted in better health, sexual prowess, and intellect (pp.152-156). Consequently, primitivists inadvertently directed the racist misconception that indigenous people did not develop or use technology or agriculture, and that they were better off because of it. Many American
Indians depended on subsistence farming rather than hunting and gathering: according to VanDerwarker, Wilson, and Bardolph, the Mississippians who extensively settled the Illinois River valley began using maize agriculture as primary sustenance beginning around A.D. 1100 (2013, p. 162). The primary consequence of displacing native peoples (and white settlers) was a misunderstanding and loss of their knowledge of the land: the lessons they learned through centuries of trial and error, the same lessons people are learning today.

Idolizing wilderness and romanticizing the culture of indigenous people blinds primitivists to their own reality. Cronon states in *Uncommon Ground*, “the dream of an unworked natural landscape is very much the fantasy of people who have never themselves had to work the land to make a living,” (1995, p. 80). Deprecating agriculture promotes the misconception that humans act out of nature’s order when they work land: that a “return to the tabula rasa that supposedly existed before we began to leave our marks on the world,” a restoration of the lost wilderness, would redeem humanity and provide us with all of our worldly needs (p. 80).

The most troubling problem congruent to wilderness idolization, and stated similarly by many, is that if human action degrades wildness, and humans are only capable of earth’s destruction, we fail to recognize human responsibility, our potential, and our respective role in ecosystems. To Cronon, “Only people whose relation to the land was already alienated could hold up wilderness as a model for human life in nature, for the romantic ideology of wilderness leaves precisely nowhere for human beings actually to make their living from the land,” (1995, p. 80). Wilderness idolization detracts attention from environmental and social problems in homes and cities, where people actually live.

Developed land is ubiquitous; while it necessitates natural resource exploitation, it also provides social welfare and rich cultural significance. Suggesting that humans return to a wilderness lifestyle neglects positive aspects of civilization like medicine, art, and education, and it diminishes the gravity of critical environmental issues outside of wilderness areas. To Cronon, wilderness idolization negates ‘problems of occupational health and safety in industrial settings, problems of toxic waste exposure on ‘unnatural’ urban and agricultural sites, problems of poor children poisoned by lead exposure in the inner city, problems of famine and poverty and human suffering in the ‘overpopulated’ places of the earth—problems, in short, of environmental justice,” (1995, p. 84).

Effectually, according to the lauded writer and poet Berry in his collection of essays called *Home Economics*, absolutism is most dangerous in the sense that we decide either to use or not use nature, not how to use it properly and respectfully (1987, p. 139). Wilderness preservation vitally depends on responsible resource use outside wilderness areas. Berry broadens the scope of wilderness and views the earth as a single environmental system, an island of wildness within the wilderness of the universe and comprised of countless organisms, in which humans hold formidable power and consequent responsibility to control their impact. Humans depend on the earth for sustenance, and other living organisms within earth’s biotic communities depend on humans not destroying the integrity of earth’s systems. Berry does not believe that there are too many humans, nor does he believe that civilization is wrong; he enjoys culture and comforts.

Berry is, above all, frank and realistic about the state of environmentalism and the direction it needs. Poorly-crafted products and poorly-farmed land are the cause of environmental degradation— not resource exploitation. Exploitation, for humans and all living creatures, is unavoidable. To use resources smartly, respectfully (of both other humans and other organisms), and with measured self-restraint is the most imperative shift that humans, collectively, have not made. To Berry, we must use less, and we must make better things. “Good forestry begins with the respectful husbanding of the forest that we call stewardship and ends with well-made tables and chairs and houses, just as good agriculture begins with stewardship of the fields and ends with good meals,” (1987, p. 144).

Deprecating agriculture and forestry while idolizing wilderness oversimplifies resource dynamics: it does not hold farmers and craftsmen accountable for their roles in the preservation of earth’s resources. Berry rightly believes that resource accountability and respect for the land best preserve wilderness, not solely the emparkment of wildland.

Spirn, in her essay “Constructing Nature: The Legacy of Frederick Law Olmsted,” argues that humans must better understand both how they negatively impact systems and how they positively change ecological systems. Spirn posits that every landscape, including wilderness, is a construct of culture: ‘All landscapes are
constructed. Garden, forest, city, and wilderness are shaped by rivers and rain, plants and animals, human hands and minds. They are phenomena of nature and products of culture.” (1995, p. 113, italics included in original text).

Spirn’s mission in “Constructing Nature” is to recognize environmental designers, specifically Olmsted, for their larger contributions to, and their potential within society. Beginning with Olmsted, landscape architects have operated within a vital middle ground between total resource exploitation and non-use (1995, p. 112). Good environmental designers understand their negative impacts and their potential. In Olmsted’s case, he constructed a forest at the Biltmore Estate and the first man-made wetland at the Boston Fens. His legacy, however, and his intent to broaden the functions of landscape architecture failed. Today, visitors do not recognize Olmsted’s constructed landscapes as design intervention—according to Spirn, Olmsted “disguised the artifice, so that ultimately the built landscapes were not recognized and valued as human constructs,” (1995, p. 111).

It is likely that the wilderness movement during Olmsted’s lifetime enabled him to design naturalistic landscapes; it is just as likely that wilderness perceptions after Olmsted’s lifetime contributed to the perception that his landscapes were not man-made. Spirn’s argument is that the positive ecological impacts of environmental design should be perceptible and appreciated. Design which demonstrates the positive potential of human craft could restore the middle ground between exploitation and non-use—smart use, as the right place to be.

Nature as Object: Unilateral Beauty

According to Howett in “If the Doors of Perception Were Cleansed”: Toward an Experiential Aesthetics for the Designed Landscape,” the problem with landscape architecture, as it has largely been practiced since Frederick Law Olmsted founded the profession, is that it is predominantly scenographic (1993). Howett presents an original and compelling critique on modern design, especially its derivative and uni-sensory use of aesthetics. Olmsted “used the same devices of enframing, repoussoir, screening, and focusing that had been the stock-in-trade of eighteenth century English practitioners creating ‘prospects’ to enliven the walks and drives through the parks surrounding country houses,” (1993, p. 64). Those design values aimed for “a precious oasis of rural scenery” rather than “an extension of the city’s educational or cultural functions,” (p. 64). Parks in Olmsted’s lifetime, and defined in large part by his practice, functioned as escapes from stressful city life: they provided quiet, restful landscapes for contemplation and admiration.

Olmsted did not fully adhere to any aesthetic style, but Howett argues that his affection for English landscape garden styles, and his strong intent to frame views and design landscapes as objects for contemplation, established a social underpinning and expectation for design which prioritizes the way a place looks. Howett posits that scenographic values were not limited to Olmsted’s lifetime: they persist in environmental design today. “(Designers) are still so much under the sway of this post-Renaissance tradition, so culturally predetermined to look at landscape design through its lens, that it is difficult to recognize that it is an arbitrary, not an absolute, aesthetic system,” (Howett, 1993, p. 66). “Few arts in modern times,” Howett states, “have been so conservative,” (p. 65).

Scenographic values unintentionally enforce the dichotomy of humans and nature, culture and wilderness. Setting up landscape as an object (or scene) and humans as subject (or actors), defined by Howett as “Cartesian subject-object dualism,” “(distances) us physically and spiritually from a world in which we are actually immersed,” (Howett, 1993, p. 66). This argument echoes Berry and Cronon’s arguments that humans cannot healthily separate themselves from nature—that we cannot live without the wild natural systems of the earth and the survival of earth’s systems depends on our responsible use of resources. Howett addresses the role of landscape architects and environmental designers also suggested by Spirn, in occupying a middle ground, building relationships between people and ecologies through the aesthetic and experiential values implicit in design work.

Howett proposes an alternative to dualistic, uni-sensory, or scenographic design conventions—experiential aesthetics. She argues that an “authentic experience of place,” based on an exercise she practices with environmental design students, involves “a much more complicated set of circumstances” than a “view” or a “setting”; an experience of place is “rich in specific sensory and psychological details... ambiguous or elusive in logical significance,” (p. 67). Howett concludes, “to abjure the sterility and blandness that characterize so much of contemporary landscape architecture, the forms we devise need to express the realities of the nature
of a place that run counter to conventional notions of the pleasing, the tasteful, the beautiful—even, perhaps, the comfortable—just as our experience of nature in ‘wild’ places confronts our expectations and keeps us vitally alert and attentive to where we are,” (p. 69).

Design intervention which immerses humans into a localized ‘ecology,’ where people may deeply sense and appreciate the place’s singularity—could effectively blur the divide between humans and nature. If wildness makes us “alert” and “attentive to where we are,” then building more wildness, or at least an appreciation of wildness, into contemporary design could begin to answer Leopold’s call for conservation education to “build... an ethical underpinning for land economics and a universal curiosity to understand the land mechanism,” (1966, p. 187). Re-immersing humans in wildness—making humans aware of their role in ecology—and building curiosity for the land mechanism will be immensely challenging: Leopold states that, “the problem... is how to bring about a striving for harmony with land among a people, many of whom have forgotten there is any such thing as land, among whom education and culture have become almost synonymous with landlessness,” (p. 195).

To put the culture back into land, and to blur the divide between humans and nature, a new land ethic must dismantle the traditional notion of wilderness as an object and humans as the subject in a drama of landscape conquest. For designers, in order to meet this objective, new aesthetic models and design approaches are needed. To Howett, this call is “for design ideas... (which create) opportunities for intensely vivid and immediate encounters with the natural world,” (Howett, 1993, p.69).

Why Wildness: Toward a New Aesthetic

“Immediate encounters with the natural world” also provide what Cronon considers the root of our appreciation for wildness in everything. Cronon, in *Uncommon Ground*, argues that wilderness is dangerous “only if we imagine that this experience of wonder and otherness is limited to the remote corners of the planet, or that it somehow depends on pristine landscapes we ourselves do not inhabit,” (1995, p. 88). Cronon uses a metaphor of a tree to communicate the importance of wildness to the goal of environmentalism: a tree in the wilderness is a part of a greater web of ecological dynamics, but it is at its core no different than a tree in a garden. The power of the tree in a wilderness, though, is that it could inspire us to appreciate, and care more deeply for, the tree in the garden, and ultimately, the wildness which surrounds us everywhere on earth (p. 88). To Cronon, “learning to honor the wild—learning to remember and acknowledge the autonomy of the other—means striving for critical self-consciousness in all of our actions,” (p. 89). If we see the beauty of wildness in our backyards, in our streets, in our cities, and in our own bodies we might recognize the importance of protecting and caring for the wildness of everything.

Howett believes that environmental designers should adopt an experiential aesthetic to replace the scenographic heritage of landscape architecture: studying wildness, understood as a powerful phenomenon felt in wilderness, may be a useful way to understand experiential aesthetics. The character and experience in wilderness has inspired generations of passionate environmentalists; for design to be aesthetically and experientially meaningful, wildness is an important landscape character for designers to understand and implement. Wildness both in wilderness areas and in cities might “build a universal curiosity to understand the land mechanism”; and finally, appreciated and employed by environmental designers, design which embraces wildness could shift the prevailing land ethic from one of unchecked use to one of humility, respect, and care.

The task for designers, then, is to immerse site visitors in wildness at every scale and to foster wonder and respect for land systems. Additionally, designers must use resources smartly and prudently, incorporating thoughtful, well-practiced, and culturally-rich craft and highlighting the human potential to make positive changes. Spatial design which places humans intimately within a localized ecology, and makes them feel that their culture is a part of it and a part of a greater, global ecology, is a necessity. Immersion in wildness can inspire deep curiosity about the human role on Earth, how the landscape functions, and, ultimately, how best to treat our planet.
FIELD STUDY: ARTS HIKE

This project considers wildness a valuable site character which is felt most in wilderness and which inspires wonder and curiosity for landscape. Wildness, however, is difficult or impossible to objectively define. If designers are to more sensitively address wildness, preserve or construct it, and ultimately immerse their site users into it, they must understand it better. In order to better understand the phenomenological character of wildness (for the purposes of this project), nine art and design students gathered in November 2015 to hike, think, and create at the Charles C Deam Wilderness Area near Bloomington, Indiana. The broad objective of the hike was to creatively respond to the characteristics of the forest.

This informal, voluntary hike was partly inspired by an artists’ residency program called “Summit on a Summit” originating in Brooklyn, New York at the School of Making Thinking. The School organizes the annual hike over five to eight days along Long Path in the Catskill Mountain Park, upstate New York. Over the course of the hike, participant artists creatively engage with their surroundings and share their thoughts about the forest and expression. The hike invites spontaneity, participation and collaboration, original thinking and self-exploration (theschoolofmakingthinking.com).

This project’s Arts Hike utilized a similar format as the School of Making Thinking, but Arts Hike had somewhat more deliberate objectives. While hiking, making, collaborating and discussing, Arts Hike participants considered the following questions, introduced during a briefing meeting:

1) What is the contemporary wilderness experience?
2) Does wilderness necessitate an absence of humans?
3) How do human senses change in a wilderness?
4) What forest characteristics are not explicable and how can they be communicated?

Because of a wide number of variables and intentional open-endedness, Arts Hike started with few preconceptions and very broad goals. As a field study, the hike was useful for this creative project: it produced unexpected but useful themes and ideas regarding wilderness and human perception, and it partly inspired site designs in the final Site Study section of this project.
**Participants**

Engaging artists and designers to open-endedly explore and respond to a wilderness setting allowed firstly for a more open and honest or candid study method. Omitting the use of a survey, interviews, or other question-response formats avoided outcomes which might be over-simplified or products subject to the survey writer or interviewer’s bias. Also, as discussed earlier, wildness is more of a subjective perception than an identifiable, objective characteristic. To study wildness required open-ended, spontaneous, responsive, and visceral methods. Artists are usually observant, subjective, deliberate, and responsive; they are very skilled communicators.

The study required a group of about five participants who were practiced artists or students of art or design. Open-call posters were displayed in art galleries, art and design schools, and art stores in Muncie, Indianapolis, and Bloomington, Indiana. Only about fifteen artists responded to the posters, and only nine actually participated (Figure 3).

The participants were primarily visual artists: three were architecture students, four were landscape architecture students, one was a graphic design student, and one was a student of photojournalism. All of the hikers were between the ages of 18 and 22. Interestingly, none had backpacked before.

![Portraits, Michael Deprez and Natalie Breton](image)

**Figure 3: Portraits, Michael Deprez and Natalie Breton**
Site
The Charles C Deam Wilderness Area was selected as the site for Arts Hike mainly because it is a federally designated Wilderness Area, it is easily accessible, and because it does not require any usage fees for overnight hikers. The Wilderness Area was federally designated in 1982 and comprises 12,472 acres (wilderness.net). It is managed by the US Forest Service, and is a part of the Hoosier National Forest in southern Indiana. The Deam Wilderness is within a 20 mile drive of Bloomington Indiana and within 80 miles of Indianapolis. Consequently, it receives heavy visitation by primarily hunters and hikers.

The Charles C Deam Wilderness Area is an ironic wilderness for several reasons. Firstly, it was predominantly agricultural land until very recently (within the last 50 years) by farmers. According to wilderness.net, "81 farms dotted the area, every ridge was planted in corn or hay, and 57 miles of roads traversed the higher ground." Constructed pine groves, a consequence of reforestation efforts, comprise a large portion of the Wilderness, planted in straight rows. Lake Monroe, the northern border of the Wilderness Area, is a reservoir constructed in 1965. Along the bank of the reservoir, a cobblestone beach was installed (presumably) to prevent erosion—the beach is notable because it is the most popular camping location within the Wilderness Area and a landmark feature. Finally, a wide gravel road traverses the Deam Wilderness from east to west. Technically, permanent roads are not permitted in wilderness areas, but the rule was 'sidestepped' by officially designating two separate wilderness areas north and south of the road.

The Deam Wilderness features over thirty miles of hiking trails: this hike was conducted over 5.3 miles of the Peninsula Trail. The hike was an 'out and back' route, giving artists the opportunity to undertake larger projects in the same location over two days, and to perform reconnaissance on the first day for places to work the second day (Figure 5).
Three days before leaving to hike, the author hosted a briefing meeting for participants. The briefing meeting introduced basic wilderness theory and leave no trace principles, and discussed some precedents of artwork in wild places. On the day of the hike, hikers were provided all the camping gear and food they required for the trip. They were permitted to bring materials to construct, draw, photograph, etc., provided that they did not intend to leave any materials in the woods. Most artists brought sketchbooks and cameras, some brought fishing line and tools for sculpting, and one hiker brought a toy baby doll.

The hike left the Wilderness Area trailhead at 11 am on November 7th. The first day, participants focused on visceral experiences—the group stopped often and limited the time spent in any single place. This was for two reasons. Limiting the time spent stopping ensured that the group would reach their destination before nightfall. Second, focusing on visceral experiences allowed participants to approach the setting the first day with open minds and to have time to “settle in” to an environment they were unaccustomed to.

Within 20 minutes, day one, participants stopped to sketch and write notes. Three to four groups formed, with everyone hiking with at least one other person, with the exception of one participant who preferred her time alone. The collective elected to camp in one of the artificial pine groves, near Lake Monroe. Everyone arrived at the campsite before nightfall. After dinner, the group held an informal, open campfire discussion, marking observations made throughout the day.

One of the observations during the campfire conversation was that when we stopped for longer periods of time alone or without talking, we made our deepest insights. In response, on the second day, the group chose to do the opposite, and focus on ‘contemplative’ experiences and projects: to stop less and to spend a longer period of time in one or two places. Participants spent more time hiking alone in order to think more deeply and to make careful observations. The progression from visceral experience to contemplative experience proved effective: artists on the second day knew which sites they wanted to return to, and they produced exceptionally focused and insightful work. The Arts Hike group returned to the trailhead at 4:30 pm on November 8th.

After the trip, the work was displayed in a gallery exhibit in the College of Architecture and Planning at Ball State University. Participants each wrote a short statement to display beneath their work. The responses were especially useful in understanding each artist’s perspective and intent.
The Arts Hike group made and shared its most important discoveries during the campfire discussion. The discussion clearly guided or influenced the work of the artists the following day. In order to provide context for the outcomes of the field study, the themes discussed during the campfire are listed here:

1) The varying ecological communities along the trail, perceived by the artists, appeared as thresholds. There were distinct moments of change in the natural landscape patterns. Read over the course of the hike, the patterns were rhythmic punctuations which frequently preceded a change in hiking pace or mood.

2) The quality of light over the course of the day changed and at times appeared unnatural, as if it was glancing off a building or casting a shadow over a sidewalk. Artists noted that sunlight and the sky are universal elements, appearing and behaving mostly the same way in forests and cities.

3) The artists noted that during lunch and other breaks, they found themselves looking for places to rest which would accommodate their needs and their body shapes and sizes. Resting, then, became a moment of finding exactly where we physically fit into the forest.

4) A similar discussion occurred about human scale in wilderness and the way human perceptions are limited by our size, senses, and body movements.

5) Regarding the other groups of people using the Wilderness Area, artists agreed that they could easily tell why people were travelling in the woods and, to an extent, what they were doing. Gear, overheard conversations, age, and relative speeds indicated the intent and character of each group or individual.

6) A couple of the artists noted that the sounds in the woods, alone, were incredible, and especially the common sounds like wind, crunching leaves, and birdsong. Artists regretted not having a way to capture or share the sounds.

7) A short conversation started regarding the campfire, and fire as the human place in ecology. We noted that humans prescribe fires to manage natural areas, and that fire is considered the first act of domestication. Fire, in a sense, is the wildest, most primal product of culture. In many ways, fire breaks the dichotomy between humans and nature.

8) One participant noted that, “nature favors disorder.” Artists agreed that humans use order to make sense of the landscape—we calculate symmetries, patterns, and geometries in nature and those facets of ecology largely define our understanding of natural processes. Additionally, humans see beauty in symmetry and organization. Perhaps our most telling contribution to Earth’s landscape is our introduction of massive organized and symmetrical geometries.

9) We discussed order relative to design and our small discoveries and curiosities throughout the day—it seemed that nature’s unpredictability, what we perceived as disorder, made our favorite moments in the Wilderness Area possible. In a sense, the disorder facilitated our curiosity, exploration, and discoveries. Design, we contended, favors order for ease of construction and understandability. To us, it seemed that the innate beauty of nature was lost in environmental design when the designs were too controlled or managed, lacking an element of dynamics and unpredictability.

10) Throughout the day, none of the artists saw a person belonging to a racial minority. Wilderness and national parks are notoriously white, and this troubled our group (Nelson, 2015). We also discussed wilderness accessibility related to people with disabilities and people with financial strains. We considered these issues some of the most difficult to address, understand, or discuss regarding wilderness.

11) Finally, our group wondered what made us stop throughout the day. It was clear that our best discoveries and best moments happened when we took the time to pause and sit or stand, silently observing our surroundings. The designers in our group wondered how to make people pause in landscape—how to facilitate moments of pause and reflection.

During the second day of the hike, and seemingly responding to the conversation during the campfire, the artists produced the majority of their work. The themes they explored were fairly consistent, and their work can be discussed through four main topics: order/disorder, human scale, time and light, and form and materiality. Quotes near the images were included here with permission; they are segments of the written statements included in the gallery exhibit. Unless otherwise noted, images were provided by the artist.
**THME: ORDER/DISORDER**

Almost immediately the second day, artists began to construct “order” from the “disorder.” The responses were quick and instinctive— it was agreed that ordered pattern and linear geometries were something immediately recognizable as human. The interventions did stand out; the juxtaposition of human order and natural ‘disorder’ comprised an immediate response to the character of wild place. Artists commented that the pieces felt like dialogues: extremely dependent on their site context in order to be recognized as human gestures.

Most of this work was done on a cobble beach along Lake Monroe, on the northwestern tip of the peninsula, the terminus of the peninsula trail. Lake Monroe is a constructed reservoir: an artificial northern boundary to Indiana’s only federally-designated Wilderness Area. The cobbles may be native to Indiana, but were probably installed to prevent soil erosion on the bank.

The interventions introduced contrasting order and geometry, but the work largely ignored the natural order of the ecology around it: for instance, the physical and chemical processes that shaped the rocks to consistent coarseness, size, and color. That minimal human intervention, which is relatively quick and expends little energy relative to natural process, is so stark in a wild landscape suggests that the human version of order is a somewhat ignorant oversimplification of order: natural order is more complex, varied, and productive.

*Figure 8 (top): Lines, Natalie Broton
Figure 9 (bottom): Rock Study 1, Michael DePrez*
"I realized as I took a step back to see what I had created, that I had not denied the disorder, but highlighted it. These pieces, in context, became a way to capture the beautiful mess of nature that would not have been apparent in a normal photograph."

Michael DePrez
**Theme: Human Scale**

Day 1 was spontaneous and energized. Artists spent most of the day hiking and taking brief breaks to joke, eat, and explore interesting landscape features like hollows, rotting logs, and upland ridges. Throughout the day, socializing and living by a primal agenda to walk, eat, and sleep, we found ourselves looking for places to, very literally, “fit in.” We invariably stopped for breaks under tall stands of trees with gentle slopes (relative to a human) and, preferably, appropriately scaled and arranged logs for sitting and conversing.

The second day, several artists explored the concept of human scale by interacting with deadfall which had either been cut and cleared away from the trail, or was beginning to biodegrade—rotting and following the contours of the forest floor. The artists positioned and observed the human figure relative to wild objects and processes, especially where the human figure best ‘fit,’ proportionately to the forest.

Artists used their bodies to measure natural spaces. Limited by their reach and their strength, as well as what they could see, artists discovered ways to frame views with materials found on site, and inspired by the natural patterns and anomalies around them.

The human body introduces its own geometry, context, and movement to existing ecology. We are efficient walkers, and observant thinkers and tinkerers. We are limited by our shape, size, strength, flexibility, and senses. Our strengths and weaknesses comprise our ability to perceive and respond to wildness: our perception of the Deam Wilderness was just one version of the forest among countless other organisms'.
Figure 14 (top): Log Study 2, Maggie Weighner and Natalie Broton
Figure 15 (bottom): Stance, Carter Gordon

Figure 16: Nap Study, ink on paper, 9” x 12”, Toni Berning
"I was intrigued by the natural framing, and how it seemed that the wilderness was making room for us..."

Emily Meer
**Theme: Time and Light**

Time in the forest is measured by light and shadow. Anna Hooker commented on the limiting nature of time: long shadows meant that the day was passing by, and it was soon time to return to work. Maggie Weighner and Emily Meer aimed to race time, capturing the shape of a shadow with sun-bleached driftwood, before the day rushed it away...

In a way, time defines the contemporary wilderness experience. Leisure time accommodates recreation and provides opportunities for experiences in wild place. Those without free time, especially people under financial pressure, may have fewer opportunities to enjoy the forest, but consequently, may value their time there more. Alternatively, longer periods of time in wild places foster deeper connection and understanding.

The following images differ in their respective feelings of movement and dynamics. Anna Hooker’s images evoke static moments, stuck in place. The shadows appear stark, cold, and uncomfortable—like jail bars or obstacles. Maggie Weighner and Emily Meer’s *Sun Study* evokes a sense of urgency: at any moment, the shadow will shift, and the very ephemeral effort spent to trace its shape is expended time made visible.

“Sunsets through the trees are beautiful, but also signal that the day is nearly over, and that it’s time to return home. The barred pattern that they create even made me think of the strict boundaries that are faced by those engulfed in classist struggles.”  
*Anna Hooker*
"More than anything else, the very physical experience of time made this place wild. I relied on shadows, shifting views, and temperature to track time."

Maggie Weighner
Theme: Materiality, Shape, and Form

Every artist addressed materiality, shape, and form in some way, but the essence of these projects is the recognition and illumination of a deeply site-specific atmosphere or aesthetic condition, and the nature of materials within the space. The work is an attempt to reveal something about the unique character and variation within natural thresholds. At a glance, the forest appears monotonous and consistent, but time and observation reveal infinite variation, allowing for unpredictable moments and experiences.

Maggie Weighner’s work was a response to the character of fallen pine needles caught over beech branches in the understory: delicate golden forms precisely fit around twigs and branches. The intervention exposes the shape and consistency of the needles, each in bundles of two to four.

Toni Berning’s drawings are form studies of the chaotic, tangled character of fallen vines and branches. Toni’s consistency in medium and textures made infinitely complex and aggregated forms legible— the composition on the opposite page reads like a score, drawing the gaze from the elegant curves in the center to the edges and corners, where the tangle blurs, distorts, and ends.

Figure 23: Tangle Study, ink on paper, 9” x 12”, Toni Berning
Figure 24: Atmospheric Study, ink wash on graytone, 18” x 24”; Toni Berning

“*These pieces study the relationship between space and texture... I was most intensely focused on the gnarled nature of the plants in the wilderness.*”

Toni Berning

Figure 25 (top): Needles, Maggie Weighner
Figure 26 (bottom): Needles, Maggie Weighner
Conclusions
The Arts Hike field study harvested useful themes and ideas regarding humans and our relationship with wildness. It also produced exciting work and pulled several design students away from their computers and into a healthy experience outdoors.

Probably the most important lesson learned from Arts Hike, with relevance to this project, is that the phenomenological characteristics of wild places are not obvious, and they are difficult to define. But in order to preserve and highlight the qualities of wild places that make them captivating to humans, designers must understand them. Arts Hike illustrated the effectiveness of intentional, creative, physical, and contemplative spatial experiences. Environmental designers are taught to perform a formal site analysis prior to completing design work on a project, but they do not always spend sufficient time on a site before building an intervention to ascertain its specialness and singularities—it’s phenomenological character. Arts Hike proved that designers are very capable of deep observation and creative responses to site materiality, shapes, scale, and atmosphere.

The School of Making Thinking notes that walking was important to a number of historic art and philosophy figures (theschoolofmakingthinking.com). Within the context of this creative project Henry David Thoreau, Frederick Law Olmsted, Aldo Leopold, and John Muir were all avid hikers and spent long periods of time in the backcountry, oftentimes alone. Walking is a physical connection to and experience of place. Especially when it is done alone, walking fosters contemplation.

If Arts Hike were considered a site analysis method, it would arguably have bearing for designers in every spatial context, wild or developed. The designers and artists participating in Arts Hike responded to felt and perceived site characteristics which cannot be easily measured—a sense of place. Creative and physical site studies like Arts Hike could help designers to avoid solutions which are placeless, heavy-handed, or insensitive to existing site character.
CASE STUDIES: WILDNESS AND DESIGN

Design and wildness have a complicated relationship— inherently, if wildness is an undeveloped or uncontrolled condition, then human intervention reduces its integrity. Alternatively, designed landscapes can be interpreted as wild. In some cases, a distinction between wild and constructed landscape is difficult to make— according to Spirn, “calling some landscapes ‘natural’ and others ‘artificial’... ignores the fact that landscapes are never wholly one or the other,” (Spirn, 1995, p. 111). Spirn illustrates that landscape architects have proven the ability to create landscapes which are perceived as pre-existent. At Biltmore and the Boston Fens, Olmsted restored an abused forest and constructed a series of wetlands, respectively, where visitors today do not recognize built conditions (Spirn, 1995). Olmsted’s agenda was nationalistic and anthropocentric. Today, landscape architecture education urges students to emulate or preserve existing conditions in the interest of reducing resource consumption and stormwater runoff and to establish functionally-resilient plant communities.

Landscape architecture today, partially contrary to Olmsted’s objectives, rarely addresses wildness directly for its experiential qualities— especially in the sense that built interventions could improve the experience of a wild place. If Spirn is correct that Olmsted’s failure is that his landscapes are not recognized as human constructions, and consequently, society does not understand its ability to positively transform landscape, then built work must present human intervention as impactful and positive (1995). If Howett is correct that most contemporary landscape architecture upholds a human-nature dichotomy, then built design work must better represent-- and interpret-- our relationship with ecology (1993). Thus, this project endeavors in part, to understand how humans perceive and interact with wildness through the interface of designed intervention.

The following four projects were selected as case studies because they present thoughtful human craft and ingenuity in and through the context of wildness. The objective of these case studies is to highlight methods or thought processes— guiding philosophies and principals practiced by designers and artists working in wild areas or utilizing wildness as an experiential condition. These case studies are brief and narrow in focus. Each of these projects are well-published: content is included in this document only if it is either an original observation by the author or an important point to make with relevance to the overall goals of this project.

OVERVIEW

The first project in this series of case studies functions as a statement that human craft is a natural force. Jon Piasecki, in an essay for *Topos* 79 about his project *Stone River*, posits landscape architects are losing touch with materiality, and consequently they are widening the perceived separation between humans and nature (2012). Piasecki is a master stone mason, an artist, and a landscape architect. “Machines are essential, and some disconnect between design and fabrication is inevitable, but this essay and my project openly question if our fascination with the virtual over the actual, with design over build has gone too far,” (Piasecki, 2012, p. 57).

*Teardrop Park* in Battery Park City, New York is a relatively small park within a vast urban context. Nonetheless, Michael van Valkenburgh and Associates succeeded in crafting a place rich with the wildness and complexity of much larger wilderness areas. To Anne Raver of the *New York Times*, van Valkenburgh, “returns earth mounds, glaciated rock, ice and flood plains to cities that forgot they had them,” (2003, p. F1). The consequence is a landscape where humans are staged not as observers, but as actors, choreographed through sequences of landscape scales and experiences, accentuated by intelligent craft and meaningful aesthetics.

*Star Axis* is the work of an artist: Charles Ross. Relative to this research, Ross raises questions regarding the perceived scale of wildness, and thus of spatial experience. Built of granite blocks and carved from a desert mesa, *Star Axis* occupies a relatively small space within the New Mexico’s desert, but the project is effectually a spatial experience of the cosmos, the movements of the Earth and of the universe. According to *Architectural Record*, “grand yet somehow intimate, *Star Axis* roots us firmly in the stark beauty of earth, sky, and stone,” (2005).

Singular Ecologies Case Studies: Wildness and Design
The Tudela-Culip Restoration Project in Cap de Creus on the Catalan coast delicately reestablished the most significant historic, ecological, and cultural functions of a singular site in the Mediterranean. The design team, represented by EMF Landscape Architecture, Girona, Spain and Ardevols Associates Consultants, Barcelona, Spain, deconstructed an abandoned vacation retreat with a strictly prescribed requisite to restore the integrity of the site’s rare habitats (EMF Landscape Architecture, 2012). In the process, the team excavated important cultural meaning of the site’s geologic features for local communities and renowned artists like Salvador Dalí.
Design which transcends the human-nature dichotomy is work at once rich with human presence and ecological vibrance: John Piasecki’s project Stone River is a rich demonstration of that balance. Piasecki is a landscape architect, an artist, and a specialist in stone joinery—the ASLA jury who awarded him for his project, Stone River, described his work as “timeless” and a “religious experience,” (Piasecki, 2012, p. 57). Piasecki posits that his stonework is a meditation on fusion: “In a fused nature and culture we lose our privileged status and become essential participants in a larger nature,” (p. 58).

Piasecki cites site-specificity as a strong component in his process: “by joining my project into the surrounding woods with great sensitivity, I am working to heal, in a small way, the rift between culture and nature that is intrinsic to our modern relationship to the land,” (p. 57). For Piasecki, Stone River is a statement that materials are the interface between culture and nature, and that losing a sense of materiality and craft, separating design and build, is dangerous for landscape architects because the act of building is what keeps us intimately engaged with the natural world (Piasecki, 2012).
Stone River would not be possible without a deep understanding of the ecological context. Piasecki holds a degree in forest ecology and possesses a professional understanding of stone and its cultural history. Stone River traces a remnant grid of stacked stone walls laid by early settlers, which Piasecki cleaned, partly restored, and (in places) repositioned to accommodate his new path (Clifford and Houston, 2009). Piasecki placed each of Stone River’s mica schist slabs according to its immediate surroundings: “That’s a blackberry. It was alive before and I treated it with respect. It stayed because it was alive. I moved this thing this way a little bit to keep it there. It’s an engagement with nature as opposed to a reference or representation of something,” (Rehak, 2012, p. 62).

To build Stone River, Piasecki moved 400 tons of stone into place using a small cart and hand tools. Piasecki describes his stone joinery as a fusion: by ‘fusing’ stones together, he functions in a way similar to natural physical forces. He endeavors to communicate through his seamless and (as nearly as possible) perfect work that humans are a force: nature is powerful and humans are powerful; together, culture and nature are capable of distinct and earthly beauty. Piasecki’s stonework answers Spirn’s call to designers not to hide their art. Art and craft at Stone River are central; the path is woven into and through its forest context. The project is fused to the woods; Stone River moves in one piece as the ground heaves and swells with the seasons (Clifford and Houston, 2009). Piasecki feels that through his craft, culture is fused to the woods (Piasecki, 2012).
Teardrop Park is a useful project to study the relationship of design and wildness in terms of objectives, aesthetics, and context. Just two blocks away from Ground Zero and surrounded by high rises, Teardrop Park introduces wild character in a site which is the antithesis to a wilderness area. The project is a success because at Teardrop Park, wildness is not misrepresented or misplaced like in other urban work pursuing a naturalistic aesthetic—it is artfully abstracted. Natural elements or materials are recognizable as human intervention, and every design element is expertly crafted. Like Stone River, this project presents positive, artful human presence in a natural landscape.

The client asked Michael van Valkenburgh and Associates to construct a park between four residential high rise buildings, prioritizing opportunities for play with landscape character reminiscent of the Catskill Mountains. The Battery Park City Authority (BPCA) CEO Tim Carey’s vision “was that those four buildings would be like hills and you would get this experience of walking through a glen in the Catskills and feel closeness to nature,” (Hines, 2007, p. 97). The project is also notable for its compromise with concerned parks authorities and lawyers: the wild character Michael van Valkenburgh achieved is not readily accepted where the primary concern in play areas is safety. A multi-disciplinary design team featuring engineers, nature play experts, artists, master stonemasons, landscape architects, and architects, as well as careful collaboration and planning with local residents and the BPCA made the project possible (Berrizbeitia, 2009). Precise physical modeling, consultation with experts and guidebooks, and the implementation of new soil technology made the park safe, wild and whimsical.
Teardrop Park is a contrived natural experience: the soil is constructed, artists and craftspeople assembled the stone features, and sun patterns are dictated largely by surrounding buildings. In order to emulate the experience of a wild place in an urban park, Michael Van Valkenburgh and Associates designed variations in scale and volume to create the spatial complexity of wildness (Berrizbeitia, 2009). A stacked stone wall, the centerpiece of Teardrop Park, divides the park into two distinguishable scales: one of openness and relaxation and one of lively interaction and play. Notably, hiking through the Catskills offers a similar phenomenon of scales, differentiated by the intimacy and quiet of hollows and open, sunlit summits and meadows.

Sandstone boulders, selected especially for climbing and play, frame a steeper-than-typical slide and a water feature. The boulders are large enough to effectively recall natural landscapes, but are arranged to define space, rather than to resemble natural forms.

Both play and physical movement between the two scales comprise the spatial experience at Teardrop Park: to Van Valkenburgh a park “should activate the imagination through experience,” (Raver, 2003, p. F9).
The 168 foot long stacked bluestone wall at Teardrop Park achieved an objective Michael van Valkenburgh had for twenty years: “going into a park and finding a frozen wall of ice,” (Raver, 2003, p. F-9). In wild places, visitors are confronted by seasons, but winter is the least neglected, or else it is completely dangerous. The contrary is true, however, for much of contemporary landscape architecture. In winter, beds of annuals are vacant, perennials are cut, branches are bare, and the experience can be inhospitable and monotonous, lacking the wonder and dynamics that seasonality affords in wild places. Van Valkenburgh embraced seasonal change by planting radiant varieties of sumac for autumn color (also negotiating minimal sunlight availability) and by integrating ice into the landscape as a feature. During the summer, the bluestone wall trickles water and is partly covered in moss, similar to natural gullies in the Catskills. In the winter, the wall is draped in ice formations.

The impact of the rock wall, to Erik de Jong, “is as with the planting, a wall that presents the civilized and the wild, transforming nature into art and art into nature,” (Berrizbeitia, 2009, p. 182).
The Wilderness Act and Leopold suggest that wilderness is partly defined through scale, but the scales are inconsistent and boundaries are perceived (see p. 11-12). For Cronon and Gary Snyder, humans are surrounded by wildness everywhere (Cronon, 1995, p. 88-90). Charles Ross, the creator of *Star Axis*, presents wildness at its largest scale by tracing astronomic patterns. Charles Ross defines humans as “the interface between the earth and the stars,” (Korp, 1997, p. 121). Ross first saw the connection between people, earth, and stars when he used a prism to record solar burns, “which he created by focusing sunlight through the prism onto wooden planks that he changed daily,” (p. 120). After one year of recording the burns, Ross realized that the burn marks “formed a single line that curled itself into a double spiral,” and he “had unwittingly made a graphic record of the sun’s movements throughout the year,” (p. 120). Since that experience, Ross’s work invariably explores human perception of the cosmos. His work is intensely site-specific, positioned exactly according to astrological patterns.

Ross’s fluency in site specificity is especially well-demonstrated by his staggering effort, *Star Axis*. *Star Axis* is an ongoing project in the New Mexico desert nearing completion (staraxis.org). Eleven stories high and 1/10th mile across, *Star Axis* is an architectonic sculpture that positions visitors inside the trajectory of the earth’s axis, framing stars and astrolonomical patterns (staraxis.org). Like the observatories of many ancient cultures, *Star Axis* frames earth/star alignments. Ross remarks: “Each element of *Star Axis*, every shape, every measure, every angle, was first discovered by astronomical observation and then brought down into the land – star geometry anchored in earth and rock,” (staraxis.org).

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Figure 36: star trails as seen above *Star Axis*, note the solar pyramid’s silhouette at bottom center
image source: aeon.co
SITE CONTEXT: IMMEDIATE AND PERCEIVED

Star Axis occupies a small desert mesa in New Mexico where Ross features immediate context, terrestrial geology, and the immensity of the universe through calculated form, site, and material. Star Axis was constructed with granite blocks by Ross, within an excavated opening in the mesa. Each component of the structure is precisely calibrated to star and sun patterns: “the approach to building Star Axis involves gathering a variety of star alignments occurring in different time scales and allowing them to form the architecture,” (staraxis.org).

Visitors to Star Axis experience a primal and surreal glimpse into cosmic systems. Undoubtedly, they feel a connection to earth and stars—this was only achieved through Ross’s obsessive understanding of site and astronomic patterns. Ross’s work questions wildness in terms of scope and context. Although a site visitor is occupying a tiny part of earth’s surface, they discover locality relative to the universe. By allowing extra-terrestrial forces to guide the form of the structure, Ross immerses visitors into an extra-terrestrial experience.

Star Axis demonstrates the opportunity for design to frame wildness as a boundless, universal context. Ross also proves our ability to calculate, understand, and convey complex natural phenomena legibly through built intervention.
Sequence

*Star Axis* reveals its cosmic scope through a sequence which visitors must exercise curiosity and observation to understand. Ross’s clear sequential composition is an exceptional example of design which is revelatory but not too overt. Ross uses highly intentional programming to direct visitors through carefully calculated gestures toward the stars. *Star Axis* is comprised of “five sequential components: the star tunnel, equatorial chamber, solar pyramid, shadow field, and the hour chamber,” (designboom.com). Despite its intentional programming, *Star Axis* retains a sense of mystery and artifact, omitting signage or interpretation.
Restoration, in landscape architecture, is a ‘wildness’ overlay. Restoration oftentimes involves the introduction of new elements—soil and flora— which emulate a pre-existent ecological situation. Conversely, EMF Landscape Architecture’s Tudela-Culip restoration project is an exercise in erasure. “It proposes ways to choreograph on-site visitors into a narrative that stimulates the culture in nature in an innovative approach to finally question whether erasing and voiding is just as valid as filling in and adding,” (asla.org). The project was grounded in the idea that a natural site’s character and significance would emerge if designers exercised humility and restraint. “The project’s goal was not to build or un-build a landscape, but to conceive the conditions for its experiencing,” (asla.org).

While “erasing” Club Med, a private vacation retreat abandoned in 2003, the design team actually restored Cap de Creus’ more important historic cultural function as a place for contemplation, curiosity, and creativity. “... the designers walked more than 200km on site, took and studied more than 15,000 images, and received up to 50 specialists in different fields related to nature restoration, in search for ways to optimize deconstruction, nature dynamic reclamation, and social valorization,” (asla.org). Ecological and cultural sensitivity were given equal priority on a site embodying the spirit of a wild place. “In giving priority to nature over human settlement, the Catalan administration poses a new understanding of the leisure landscape of Cap de Creus, inviting for a more transient human presence,” (jury comment from the European Landscape Foundation Triennial, quoted on asla.org).
Restrain

EMF embraced the drama of Tudela-Culip’s landscape by minimizing their hardscape intervention. Where hardscape elements were required for safety or wildlife protection, they were implemented with airy and linear, but artful form. The team used a hierarchy of paths and hiking routes, denoted either by paved roads, sidewalks, catwalks, or guardrails over alternating rocky and scrubby terrain. The forms are restrained— they direct attention toward the wild character of the context while providing basic functionality.
Wildness and Culture

Only one building from the previous vacation retreat remains: EMF chose to prioritize the threatened ecology of Tudela and to re-establish the cultural significance of the cape before it was privatized. The wind-shaped whimsical rocks at Cap de Creus have captivated local villagers for centuries. The coastline and its geologic features gained fame through the Spanish surrealists including Marcel Duchamp, André Breton, and Salvador Dalí. “All of them spoke about Tudela and some even worked (here) using the site as inspiration,” (Ybern, 2012, p. 27). The Tudela design team chose not to specifically name the features or what historically occurred there, but recognized each of them with Corten lecterns, including cutout silhouette shapes of the most iconic formations.

“The EMF and AA teams understood the need to construct a new perception of the place and to foster a new relationship between its austere landscape and visitors... it meant moving from a tourist’s clamour... to the individual who truly wanted to feel a part of the place,” (Ybern, 2012, p. 27). EMF’s interventions provide visitors the opportunity to interpret Tudela’s wildness not by design or over-interpretation, but through the singular features of the landscape.
Conclusions

These Case Studies collectively illustrate the potential of design which is thoughtful in the way it stages humans in sites with pre-existing, restored, or constructed wild character. For the purposes of the following Site Studies section, these precedents offer guidelines and methods for addressing wildness as a site character through materials and form and with sensitivity to cultural context.

Piasecki demonstrated with Stone River that when humans exercise expert craft and attentiveness to existing spatial characteristics, design work does not seem out of place or fully apart from its pre-existing context. He implores landscape architects to practice with better understanding and appreciation for human materials and process. Piasecki is a virtuoso of stone: by surfacing the raw beauty of his natural material and fusing it almost seamlessly through the forest, Piasecki created something jurors called spiritual—his work is rich in thought, form, and process, but it is dependent on its context and does not aesthetically overpower the experience of the forest.

Through Teardrop Park, MVVA achieved the character of wild places on a small site in a deep urban context, arguably proving that it can be done, to the satisfaction of a client, anywhere. MVVA successfully created (or re-created) wildness where it was virtually non-existent. Both hard and softscape materials are mostly natural, but MVVA’s work is obviously man-made. The sculptural walls are expressions of human craft and form; they are not contrived representations of nature or considered ‘biomimicry.’ The stone forms at Teardrop Park are much more visually-heavy than Piasecki’s Stone River, but they stand appropriately in a much different context.

As a terrestrial link to the cosmos, Star Axis illustrates the complexity of wildness regarding its contextual scale. According to Gary Snyder and William Cronon, wildness can be felt at any scale: from seedlings between the cracks of a sidewalk to the enormity of the night sky (1995). Star Axis proves that wildness does not have boundaries. For designers, Ross demonstrates that every site has a spatial relationship with wildness; in other words, wildness always exists in context. Ross also demonstrates the crucial role of rigorous site analysis and understanding natural systems—in the case of Star Axis, Ross’s analysis was conducted tirelessly over the course of years, and it traced astronomical charts compiled over millennia. Ross’s work shows that designers can achieve incredibly precise and artful responses to existing conditions simply by endeavoring to deeply study places, through work both on and off-site.

At Tudela-Culip, EMF Landscape Architecture proved the importance of careful site observation balanced with clues from local history. EMF re-surfaced the cultural importance of a wild site by restoring its ecological function and introducing sensitive, minimal hardscape intervention. The hardscape at Tudela-Culip is beautifully executed, again demonstrating the importance of material selection and use. Most importantly, EMF made wildness relatable by imbuing it with cultural meaning. Through the use of the silhouette lecterns and observation platforms, EMF placed visitors as viewers, but also as participants in a cultural history. At Tudela-Culip, visitors craft their own meanings for rock formations, contributing to the narrative of a rare place with incredible ecological and cultural significance.

These projects demonstrate the importance of craft, materiality, scale, context, and socio-ecological analysis to design which is addressing wildness as an experiential site character. In each of these precedents, human place in the landscape is well-defined and celebrated. Human intervention is deliberate, artful, obvious, and well-executed. Most importantly, each of these precedents provide an interface for visitors to have an intimate, multi-sensory, and vivid experience of wild nature.
SITE STUDIES: INTRODUCTION

The preceding literature and introduction, Arts Hike, case studies defined a broad set of issues and approaches toward solutions. The problem is that American culture considers intervention and wildness as antonymous. However, interventions which involve people as participants rather than destructive guests, sensitive to human perception and scale as well as the singular character of wild places, challenge the human-wilderness dichotomy and heighten awareness, respect and curiosity for our relationship with land systems everywhere.

In order to test and apply the approaches and concepts identified through the preceding sections, three wild sites were chosen for design studies. As stated previously, it is generally assumed that human intervention opposes conditions of wildness—these projects challenge a human-wilderness dichotomy by proposing sensitive interventions which preserve and highlight the experience of wild places. The design studies address each site’s character and ecological significance as singularities--design issues, goals, and limitations were defined for each site by the designer, following intensive visits and research.

Referring to the singularity of each site means latent and phenomenological character--its specialness and significance to the human visitor, as well as its importance in broader spatial, temporal, ecological, and cultural contexts. For the following projects, singularity for each site was determined through time spent on site from the seat of a kayak (Mingo National Wildlife Refuge), hopping over puddles (Pinhook Bog), and during a prescribed burn (Cooper Farm). Each of these proposed designs introduces something new in terms of material, form, and experience to the sites. It is not implicit that these interventions are better than existing conditions or structures: only that the proposed designs might offer a different, more complex and evocative experience. If and where implemented, success would be measured in terms of...
heightened awareness and curiosity.

Two projects exist only in drawings and models. The third project was a temporary installation. Before beginning the design process for each site, the following overarching guidelines were established congruent to the findings in earlier sections of this project:

1) Wildness as an experiential aesthetic: wildness is felt and undefinable, multi-sensory and complex.

2) Design intervention should be perceptible and foster curiosity for ecological contexts. Design should avoid explicitly revealing ecological functions and characteristics, as interpretive signage might.

3) Design should curate original, creative, and respectful human craft and forms.

4) Site assessments should begin with memorable and intimate, physical experiences of place.

The first site for this project’s design studies is in the Mingo National Wildlife Refuge, where an alternative boat launch is proposed to replace an existing launch as the entrance to the Mingo Wilderness paddling trail. The proposed launch intends to attenuate the threshold between fast paced automobile travel and the slowed, rhythmic travel of canoe and kayak paddling. Sound and rhythm are the major themes at the new Mingo launch: visitors participate in the auditory landscape of Mingo, contributing their own voices, footsteps and paddle strokes to the existing chorus of birdsong, wind, and water.

The second site is Pinhook Bog, a rare “true bog” managed as part of the Indiana Dunes National Lakeshore. The proposal would replace the existing plastic floating boardwalk there with a series of three boardwalk modules which respond to changing conditions under-foot. The ecology at Pinhook Bog is one of accumulation and gradual, slow, and predictable change. From the surface of the floating peat mat, the natural history and changing ecology of the bog are hidden. The proposed boardwalk intends to invoke soil ecology underneath by responding to its density, deflecting under weight of people.

The final site is the prairie at Cooper Farm Field Station, where biology and natural resources students at Ball State University study fire ecology and prairie habitat management. In this design study, fire was explored as a productive interface between humans and wilderness. Without intensive human management and prescribed burns, the prairie at Cooper Farm, as it is, would not exist. The design exploration at Cooper Farm culminated in a built installation, titled Prairie Lens, where hot-worked studio glass suspended from abstracted ‘tipi’ frames transforms the image of the prairie beyond.

The studies are experimentations. Design was used as a method for understanding places, ecologies, and human perception. While it is arguable that many wild places are best without built interventions, these studies operate under the pretense that human constructions can act as strong interfaces between humans and ecology, fostering vivid learning experiences. The design proposals and installation are valuable primarily as samples of design concepts for wild places—products of thoughtful site analysis, interpretation of wild context, and intervention which is sensitive to site character and human perception.
**Threshold: Mingo National Wildlife Refuge**

Mingo National Wildlife Refuge is a managed wildland near Puxico, Missouri (figure 52). The refuge contains 21,592 acres of managed forests, open marshes, and the Mingo River. It is bordered east, north and south by farmland producing soy beans, corn and rice, and to the west by the foothills of the Ozark Mountains (figures 53 and 54). The National Fish and Wildlife Service manages Mingo primarily to preserve and restore remnant bottomland hardwood habitat and as a resting area for migratory waterfowl. Besides its critical function as habitat for a diverse group of organisms, Mingo is a human-orchestrated hydrologic system, and the heart of its otherwise developed watershed. It is well-loved by hunters, birders, and boaters, containing exceptional Cypress and Tupelo, rare waterfowl and eagles, marshes, canals, and vast public forests full of character and life.

**History and Management**

Mingo’s current condition is a consequence of glaciation, climate, and human use. Frederickson, Nelson, and Heitmeyer, in their 2006 report *An Evaluation of Ecosystem Restoration and Management Options for the Duck Creek/Mingo Basin Area of Southeast Missouri*, provide an excellent natural and cultural historic account of the changes in the Mingo Basin and the establishment of the refuge. Between 14,500 and 18,000 years ago, the Wisconsin glacier began an eastward migration, carving river channels and plains toward the Mississippi River’s current path. The glacial retreat left a ridge, called Cowley’s Ridge, spanning north and south from central east Arkansas to Mingo (figure 53). Mingo is a 28,000 acre basin between Cowley’s Ridge to the east, alluvial fans to the northeast and southwest, and the Ozark Mountain foothills to the west. Because of its low relative elevation, the basin is much wetter, warmer and more humid than surrounding uplands, making it an ideal condition for marshlands, mesic prairies, cypress-tupelo, and bottomland hardwood swamps (Frederickson, Nelson, Heitmeyer, 2006).
Figure 53: Evident glacial histories and landform

Figure 54: Floodplains, uplands, and patterns of human use
Until as recently as the late 1800s, the bottomland forests characteristic of Mingo covered the extent of the Mississippi River's floodplain in southern Missouri (Frederickson, Nelson, Heitmeyer, 2006). Until they were displaced in the 1700s, groups of American Indians including the Osage travelled to Mingo, which is named after a tribal sect of the Iroquois, "seasonally to hunt and plant small areas of crops," (p. 25). The braided channels and plains of southeast Missouri are rich with alluvial soils which farm exceptionally well, but the swamps of the region resisted development until railroads and roads made travel possible in the 1870s and 1880s (p. ix). Rapidly until the Great Depression, the biodiverse bottomland forests of the Mississippi's floodplains were harvested for timber—most of the forests were cleared by 1915—then drained for row crops (p. ix). Some of the bottomland hardwood forests of the Mingo basin remained intact, but not because settlers recognized their ecological value—"the Mingo Drainage District spent over $1 million in an attempt to make the basin farmable and by 1920 a system of seven north-south ditches and four intersecting lateral ditches were constructed to drain water from the basin into the St. Francis River," (p. ix). If it were not for the Great Depression and insurmountable engineering challenges, it is quite possible that Mingo National Wildlife Refuge would never have been established—the Mingo Drainage District became insolvent in the 1930s when landowners could not pay taxes, and consequently, drainage efforts were never completely successful. Discussions to establish Mingo as a National Wildlife Refuge started in the late 1930s, and Mingo Wildlife Refuge was officially created in 1944, as part of the Migratory Bird Treaty Act (p. x).

Initially, the refuge was scarred by years of heavy timber harvesting, ditch construction, and infrastructure development—within the basin, 6,000 acres of old growth bottomland hardwood forest were lost between 1880 and the present (Frederickson, Nelson, Heitmeyer, 2006, p. 42). Reforestation efforts and careful management of water levels made possible by the matrix of canals, dams, and spillways built to drain the marshes have allowed parts of Mingo to be partially restored, albeit as a human-controlled ecosystem rather than a naturally fluctuating one (p. 30-42) (figure 55). Today, the refuge is managed for recreational use by humans—hunting, boating, birding and hiking are encouraged. The refuge contains three overlooks above Monopoly and Rockhouse Marshes, one boardwalk trail through an exceptional stand of cypress and hardwoods, seven boat launches, several hunting blinds in the marshes, five parking areas, and several footbridges.

In order to maintain the refuge as a rest area for migratory waterfowl, the United States Fish and Wildlife Service (USFWS) simulates natural flooding patterns within the Mingo Basin. Using ditches and water...
control mechanisms including stoplogs, dams, spillways, and gates (figure 55), the USFWS floods Mingo’s marshes seasonally during winter and spring, and lowers the water level during summer (Frederickson, Nelson, Heitmeyer, 2006, p. 49-51). Raising the water level in winter and spring allows migratory waterfowl to rest during their winter and spring migrations. Lowering the water level in summer promotes herbaceous plant growth. Additionally, the USFWS maintains several ‘moist soil units’ where native wetland plants and grains with high food value are encouraged for waterfowl (Frederickson, Nelson, Heitmeyer, 2006, p. 33). The moist soil units sit over former farmland, and they are successful in providing food for wildlife, but USFWS biologist P. Rea notes that a large number of migrating waterfowl use the farms around Mingo as a primary food source, especially favoring nearby rice fields (personal communication, January 8, 2016).

Mingo is significant for its biodiversity and especially for its value to endangered waterfowl. Mingo’s seasonally flooded ecosystems favor wildlife which is “long-lived and highly mobile” as well as omnivorous (Frederickson, Nelson, Heitmeyer, 2006, p. 21). Many species of waterfowl use Mingo as a resting area during winter migration patterns; mallards and wood ducks comprise the largest migrant populations. Fish, amphibians, and reptiles are generally permanent residents in Mingo’s basin, while mammals and birds are seasonal visitors (p. 21). "The diversity and abundance of fish, amphibian, reptile, invertebrate, bird, and mammal species in Bottomland Hardwood ecosystems [like Mingo] is among the greatest of any ecosystem in North America," (p. 21).

While Mingo’s primary value is as a wildlife refuge, it has a rich history of human recreational use in its short time as an established park. Hunting, fishing, birding, hiking, and boating are the most popular activities. Allowable activities vary seasonally—for instance, boating on the marshes is disallowed during winter months to allow waterfowl to rest during their migratory routes. Hunting permits and tags and fishing basket limits also vary seasonally. Camping and gasoline powered boat motors are not permissible anywhere within the refuge (fws.gov).

Mingo National Wildlife Refuge contains 7,730 acres of federally designated wilderness: the Mingo Wilderness (fws.gov). This south and western portion of the refuge contains high-value bottomland hardwood forest along the Mingo River and ditches, as well as Monopoly Marsh. The Mingo Wilderness is primarily accessible via boat; an established paddling trail winds through 5 miles of the Mingo River and adjacent canals. Alternative routes provide unimpeded access to Monopoly Marsh and Rockhouse Marsh.
MinGo Wilderness Trail

The Mingo Wilderness, at 7,730 acres, comprises about one-third of Mingo National Wildlife Refuge. The only paddling trail in Missouri is a choose-your-own path style boating route through the bottomland hardwood forests, Cypress-Tupelo communities, and marshes characteristic of Mingo (figure 56).

The official paddling trail navigates through the heart of Mingo—roughly following the course of the Mingo River. The trail begins along the southwest bank of the Mingo River, in a section characterized by a wide (40-200 ft.) channel punctuated by wholly Seussian Tupelo and Cypress trees, mirrored over still water not covered in duckweed (figure 58). The banks are stabilized by low-lying herbaceous plants and bottomland hardwood species—colors and character vary significantly seasonally. The river begins to narrow as it nears canal 10. Big swaths of cypress groves and shrubby midstream bars, navigable in higher water levels, frame the canoe route and reward exploration and curiosity. Where the river intersects canal 10, the trail turns south into the Kentucky Slough, which completes the loop back to the Mingo River. The Kentucky Slough is a narrow and intimate watery passage heavily populated by grasses and lily pads; it is completely vibrant with swamp wildlife. The confluence of the Kentucky Slough and Mingo River is an exceptional spot—spacious, yet enclosed and still.

Alternate routes include travel up to Monopoly Marsh along canal 10, and travel north and south along canal 6. Monopoly Marsh is a unique ecosystem in Missouri. The marsh is immense; in winter, bald eagles and numerous waterfowl take advantage of abundant trophic base, and shelter among sculptural seed heads and dormant grasses. In spring and summer, the marsh is full of charismatic insect life, lilies, and songbirds. The canals are a remnant of human history at Mingo—glaringly human geometry in an otherwise wild ecology. Paddling the canals at Mingo is an incredible experience. At the turn from the Mingo River into canal 10, perspective fades the horizon to infinity (Figure 57).

Humans are one of the only year-round visitors at Mingo, and we introduce our own distinct rhythms to the landscape. Canoeists and kayakers at Mingo create unmistakable audible patterns, contributing to the existing chorus of birds, wind, and water. As a paddler pushes a canoe down the Wilderness paddling trail, barred owls, woodpeckers, and wood ducks echo erratically but melodic over the still water. Canoe and kayak paddling is altogether "other," without being out of place—paddle strokes, alongside 'nature sounds,' are conversely rhythmic, syncopated, and dynamic. Paddling sounds build with deliberation and fade during moments of discovery, rest, or fatigue; aggressive or persistent paddling is punctuated by breaks to look and

Figure 56: Mingo Wilderness, the design study site, boat launches, and the Mingo Wilderness paddling trail
wonder (figure 61). During moments of intense paddling, boaters have limited audio-visual peripheries; the sound of rushing water overwhelms the sounds of wind and wildlife. From the seat of a canoe or kayak, the experience of Mingo can be interpreted as a dialogue between humans and a wild place. Sound provides a medium through which visitors can interact with wildness: the composition is a patterned and balanced multi-sensory landscape.

To access the wilderness area, visitors pass Mingo’s Visitor’s Center and proceed down Bluff Road towards a gravel road along Mingo River. There are two boat launches along the road, as well as benches and small bank-fishing access points. The primary access to the paddling trail is a small concrete boat launch at the terminus of the gravel access road where there is also a privy, parking space, and signage (figures 59 and 60). This primary access boat launch area is the site for the first design exercise, which proposes an alternative boat launch to act more formally as a threshold and gateway to the paddling trail beyond.
**Design Goals and Objectives**

The proposed boat launch addresses the broader experience of sound patterns and rhythm. The sounds of people paddling along Mingo’s river, canals, and marshes—a human rhythm, exists alongside the natural rhythms produced by wind, water, and wildlife. Within the narrative of this project, rhythmic dialogue between humans and wildness is an opportunity for connection between humans and wildness—where people not only experience wild nature, but hear their place in it. Human impacts here are not negative—smooth paddling rhythms are enjoyable to watch and listen to.

The primary goal of the proposed boat launch redesign is to construct an audio-visual landscape ‘prelude’ to the experience on the paddling trail. The design will be successful if visitors notice the sounds they make while carrying a boat to the water, and while launching it into the river.

The following design objectives guide goals of the project:

1) Address the trail head and boat launch as a threshold and landing experience: material and form should slow visitors down, encouraging them to listen and look.

2) Attenuate the launching experience and favor kayak and canoe users by establishing a portage to replace the existing ‘back-in,’ automotive-centric scenario.

3) Address the launch and portage as a continuous formal gesture with a gradual grade change and similar material and formal languages.

4) Propose alternatives to the existing parking and signage to better-define conveyance and the arrival sequence.

5) Construct or ‘impress’ a legible rhythmic pattern through subtle form.

6) Choose materials based on locality, safety, durability, longevity, and audio-sensory characteristics.
Figure 62: aerial photo of existing conditions at the project area

Figure 63: proposed site plan including grading

EXISTING

- concrete boat launch
- pit toilet
- small parking area
- gravel road

PROPOSED

- cypress send off
- echo chamber portage
- gravel access road
- trailer and bus parking
- car parking

contour interval = 1'
Figure 64: design proposal overview and character
Site Plan

The proposed plan for the boat launch includes three major features: the parking and arrival area, the portage, designated the Echo Chamber, and the launch, designated the Cypress Send-Off. As stated above, the formal site gesture is meant to be continuous to promote a fluid arrival, portage, and launch experience. The fluid sequence and simple, linear form focus attention on the context and the audio-sensory experience of a portage.

The site design includes a new grading strategy, which redistributes the existing grade change to reduce the change at the river. The existing grade on site is roughly 1% to the edge of the concrete launch, and about 15% from the launch to the river. Along the Echo Chamber, the proposed grade is 4%. The proposed grade for the Cypress Send-Off is 9%.

The existing parking area accommodates approximately 3 vehicles and 1 vehicle with a trailer. The new parking and arrival area accommodates up to 4 vehicles without trailers plus 2 vehicles with trailers (figure 63). The design retains the existing looped terminus design, but it is relocated about 100 feet south of its original location. The proposed parking and terminus would be constructed of the same aggregate material as the existing terminus and other gravel roads within the refuge. Parking is located on the opposite side of the terminus loop from the entrance to the portage to maintain a clear and open entrance, without the visual obstruction of vehicles or overcrowding near the signage. The signage kiosks are relocated to the periphery of the entrance of the portage, on either side of the Echo Chamber walls (figure 66). From the entrance of the Echo Chamber, the walk to the water’s edge is between approximately 115 and 125 feet depending on the water stage.

Figure 65: site section A - A1

Figure 66: site plan showing major features
There are three ways visitors experience sound at the proposed launch. While walking along the Echo Chamber Portage, visitors hear the sound of their feet crunching and patting over gravel. As they enter their boats and shove off, the sound of gravel and cypress cut-offs rushing under their hull and of water swishing behind their paddles defines the first moments of their trip. Finally, voices of humans and of wildlife—especially birds—echo through the forest and over the water. The design facilitates human sounds while preserving the sounds of surrounding wildlife. Suet feeders and owl boxes could encourage habitation by (pleasantly) noisy barred owls and woodpeckers.
**Echo Chamber Portage**

The Echo Chamber Portage is a 106' long (along the path's center) varying gravel surface with 2" cypress dividers. The dividers are spaced by varying distances, primarily representing the length of an average person's stride, or about 2.5'. In some places, spacers are intentionally missing from the pattern (figure 71). The portage is defined on either side by stained concrete walls. At the entrance of the Echo Chamber Portage, the walls function like curbs, at about 6" in height, with the top edge flush with existing grade. The foot path along the Portage and into the Cypress Send-Off is sunken below grade to varying degrees. The walls are formed at an angle (Figure 68) to reflect the noise of walking feet upward, to be heard by the traveler along the path. The curvature of a canoe, carried overhead during a portage, deflects sound waves back toward the ears of boaters, completing the ‘echo chamber’. The angle and height of the wall gradually builds and contracts along its length, and the opposite is generally mirrored on the facing wall. Where the walls reach their maximum height of 18 inches, they are formed as rectangular seat walls.

Figure 68: Echo Chamber Portage concept with sound wave representation

Figure 69: Cross sections along the Echo Chamber Portage

Figure 70: Echo Chamber Portage perspective toward the Cypress Send-Off

Figure 71: Echo Chamber Portage materials plan
**Cypress Send-Off**

The Cypress Send-Off is the boat launch proper. It is defined by two walls which meet the Echo Chamber Portage at a wide angle and are made of the same stained concrete material. A sloped area of 1-2 inch mixed color river rock aggregate, held in place by a customized gravel cup grid (figure 75) facilitates a smooth launch and prevents erosion. Across six rows aligned with the start of the canoe trail, 4 x 4 cypress cut ends fill holes in the gravel cup grid, lying flush with the aggregate. The cut ends reduce friction and make a 'smoother' and softer noise against the hull while shoving off a canoe or kayak. The gravel and cypress boat launch is 39' from the end of the Echo Chamber, to the end of the gravel base. Where the rows of ‘cutoffs’ meet the water, spaces in the grid are filled with longer 4 x 4 x 5’ cypress members. This cypress feature is largely a sculptural, gestural guide toward the paddling trail. Functionally, the members help to prevent boats from drifting into the channel unmanned, and provide a brace to push against for stability when entering a canoe or kayak. Each member is lathed dimensionally to assist boaters in assessing water stages (figure 77). The Send-Off could also be interpreted as an abstraction of cypress knees, which appear throughout the paddling trail.
**CUSTOM GRAVEL GRID**

The custom gravel grid is a modular system designed to hold river rock aggregate in place along the 9% slope of the boat launch. 3.5” x 3.5” x 2.5” square cups provide a mat which accommodates 3.5” x 3.5” x 3.75” cypress blocks and gravel to a depth 1.5” above the cups, flush with the top of the blocks (figure 76).

**SCULPTURAL CYPRESS DEPTH GAUGES**

Where the launch enters Mingo River, 14 3.5” x 3.5” x 4’ cypress members are embedded in the river bottom. This feature assists boaters in reading water levels, provides some stability while entering and exiting boats, and gestures toward the direction of the paddling trail.
Thoughts + Conclusions

Howett discussed problems with design which is uni-sensory or scenographic, placing visitors as landscape ‘observers’ rather than ‘participants.’ The new Mingo launch deliberately opposes scenographic design methods by bringing visitors into audial participation with the sounds of Mingo’s wildness.

The design accomplished the objectives in three ways:

1) Fostering a more multi-sensory recreational experience for visitors: audio-tactile perception is engaged through material patterns and form.

2) Rather than concealing or minimizing design impacts, the primary goal of the launch’s construction is to ground the design in its locality. Materials are place based—Cypress is native to the forest, and concrete is a familiar hardscape element elsewhere in Mingo’s landscape. Concrete stains provide an opportunity to respond to the colors of bottomland hardwood forests.

3) The design separates automobile travel and paddling by replacing the existing pull-up and get-in style launch with an attenuated 145’ portage. The portage provides an experiential threshold and a span of time to listen and ‘settle in’ to the environment at Mingo.

Overall, the proposed launch accommodates human use by providing a stable and durable surface for a portage, and a system to prevent soil erosion and facilitate a smooth canoe or kayak launch. The design also introduced potential new uses, including seating where people can pause and listen to the wildlife around them. The design is ‘fitted’ to human proportions, sensitive to human perceptions and senses, and its form and materiality are distinctly human— the new Mingo launch demonstrates the potential depth of design which considers recreational areas more holistically, as an ecology where humans can experience the audial, visual, and physical conditions of a wild place.

Figure 79: Tupelo and Cypress from the paddling trail
Pinhook Bog, the only ‘true bog’ in Indiana, is among the rarest of ecosystems in North America (McHugh, 2006). Within Indiana, Pinhook Bog— nestled into a pocket between farmland and hardwood forests— is an aberration. Tamarack, bush blueberry, poison sumac, and Sphagnum moss cover a floating mat of peat which has accumulated in this 89 acre stagnant depression over 12,000 years (Wilcox and Simonin, 1988). Among an array of inimitable species, visitors to Pinhook Bog have the opportunity to see wild orchids and carnivorous plants like pitcher plant, bladderwort, and sundew.

Pinhook Bog has been managed by the National Park Service as part of Indiana Dunes National Lakeshore since the National Lakeshore was established in 1966 (Wilcox and Simonin, 1988). It is within the city boundaries of Michigan City, Indiana, occupying a space to the east of Wozniak Road and north of Interstate 90 (figure 82). While managed as part of the larger Indiana Dunes National Lakeshore complex, it is a satellite location about 15 miles away from the larger park on the lakeshore (figure 81). Fewer people visit Pinhook than the popular beaches along the lakeshore, and it is consequently less heavily managed or policed by the NPS.

Pinhook Bog includes a parking lot and two trails: an upland trail through native hardwood forest, and the bog trail, which is confined to a 700 foot length of floating boardwalk accessible via a hiking trail from the parking area (figure 82). The upland trail is open year round to visitors; the bog trail is gated and locked. A NPS ranger accompanies scheduled group tours of the bog spring through autumn. The trail is locked when rangers are not present to prevent rare plant poaching, as in the past large numbers of native orange fringe orchids were removed from the bog by collectors (Dan Mason, personal communication, January 12, 2016).

BOG DEFINITION

Bogs are defined by wetland ecologist Keddy as “a wetland community dominated by Sphagnum moss, sedges, Ericaceous shrubs or evergreen trees rooted in deep peat,” (2000, p. 18). Importantly, flora in bogs is rooted in the peat mat; other wetland types like marshes and swamps may have thin layers of peat, but plants are rooted in hydric soils beneath the peat mat. Bogs are further differentiated from other peatlands like fens and thicket swamps by having a deeper peat mat, higher pH, and no water flow (Keddy, 2000).
Figure 81: Pinhook Bog location and context

Figure 82: Existing site and trail system
When the Wisconsin glacier retreated from northern Indiana 14,000 or more years ago, sediment deposits formed the Valparaiso Moraine stretching along the southern rim of Lake Michigan from Michigan to Wisconsin (Wilcox and Simonin, 1988, p. 82). Along the moraine, the glacier left behind large chunks of ice, forming pockets or basins called kettle lakes (p. 82) (figure 83). The basin of Pinhook Bog “was isolated from regional ground-water flow by sandy-clay glacial till that bounded the entire underside of the original ice block,” (p. 82).

Initially, the lake at Pinhook was “colonized by various aquatic plants, with some sedges growing at the perimeter,” (Wilcox and Simonin, 1988, p. 82) (figure 84). As sedges and aquatic plants died, their remains accumulated in the lobes and sub-basins within the kettle lake, “forming the fibrous, limnic peat layer,” (p. 82). “About 4,200 years (ago) during a cooler period that was also associated with a rise in Lake Michigan levels” *Sphagnum* mosses began colonizing the peat mat (p. 84) (figure 84). Further climatic changes affected precipitation and airflow patterns in the basin; the new conditions accommodated framework *ericad* species like *Chamaedaphne calyculata*. *Sphagnum* and *ericads* provided the basis for horizontal and vertical growth of the upper peat mat and resulted in its closure along edges of the lake. Because *Sphagnum* mats are buoyant, a layer of trapped water formed between the oldest and youngest layers of peat. The *Sphagnum* mat “continued to grow vertically,” pushing earlier accumulations of *Sphagnum* peat further under the surface and building a 1–5m layer of detritus peat,” narrowing the “zone of trapped water,” (p. 84). Today, the uppermost layer of fibrous *Sphagnum* peat is between 1 and 6 feet deep, over a layer of fluid, fibrous *Sphagnum* peat, which reaches a depth of about 15 feet below the surface (p. 81) (figure 85). Eventually, as *Sphagnum* continues to accumulate, the entire mat will close and the basin will be filled with detritus and fibrous layers of peat.

In areas along the peat mat where accumulations are youngest and most shallow, the peat mat floods, forming ponds. Pinhook Bog contains more than fifteen small ponds. Three larger groups or clusters of ponds sit over the deepest lobes of the kettle lake, suggesting “variations in the underlying peat deposits,” (Wilcox and Simonin, 1988, p. 85). The ponds are impermanent, and their boundaries change with levels of precipitation.

The ponds, with varying thickness of the peat mat, comprise a widely fluctuating surface in terms of stability, age, and plant cover. Bladderwort and lily pads occupy flooded areas of the peat mat, while tamarack and
maples only root where the mat is oldest and thickest. For people, the relationship between age and depth means that the peat mat can support the weight of an average human only in places that are either closed or sufficiently thick and buoyant.

**Existing Boardwalk**

The existing floating boardwalk at Pinhook Bog provides a stable surface to support the weight of individuals and groups of visitors. Additionally, the boardwalk directs visitors through the bog, protecting fragile and endangered species from trampling. The boardwalk is constructed with plastic dock floats bolted to a grey-green plastic surface. Unfortunately, the boardwalk suffers either from age or lack of upkeep. In places, it
is sinking into ponds. In other places, peat and Sphagnum are accumulating over the surface of the walk, pushing it down and causing puddles and muddy areas to form (figure 88). Because the surface is plastic and only lightly textured, becoming somewhat slick when wet.

This design proposal would replace the existing boardwalk at Pinhook Bog with a new modular walkway system.

**Design Goals and Objectives**

Pinhook Bog’s ecological singularity is a consequence of its natural history, which is only physically evident through stratigraphic studies of peat layers. Unfortunately, from the surface of the peat mat, where visitors travel, the layers of peat are hidden. NPS guides fill the gap with interpretation, but this project considers the materiality and construction of the boardwalk at Pinhook an opportunity to reveal some of the hidden ecological function.

Walking is a sensory experience—blindfolded, people can still ‘read’ surfaces by relative firmness. This project primarily aims to enhance the sensory experience of walking over Pinhook Bog by exaggerating relative deflection and stability underfoot as visitors pass over alternatively deep, flooded, thin, solid, or saturated areas of the peat mat.

Thus, this intervention explored a modular walkway design guided by the following objectives:

1) Design two or three floating or stationary walkway modules and/or nodes responding to flooded conditions, thin or saturated conditions, and deep or stable conditions of the peat mat.

2) Direct attention downward: create a sense of depth and of buoyancy in order to attract curiosity toward what is under/below.

3) Provide opportunities for more intimate interaction between people and ecology— a more tactile and responsive interface between people, the peat mat, and plants.

4) Propose an alternative to the existing chain link entry gate, considering the materiality and form of the proposed walkway.
Figure 87: existing black chainlink entry gate; the gate is closed and locked unless a NPS ranger is present.
image source: flickr user Clint Midwestwood

Figure 88: a muddy, wet area where the existing boardwalk is sinking
image source: flickr user Clint Midwestwood
Figure 89: a cross section of the design proposal over hypothetical soil conditions.

This design study proposes a modular floating walkway system to replace Pinhook Bog’s existing plastic floating boardwalk. The proposal introduces three walkway modules: a floating module, a sunken module, and a solid module. The modules are each engineered to support a human moving over a spectrum of conditions underneath. This hypothetical cross section of Pinhook Bog illustrates the three proposed modules over their intended below-grade contexts.
**System Overview**

[Figure 90: the modules over Pinhook Bog]

**Solid Module**
- Depth to trapped water: 8 - 14 ft.
- Buoyancy: n/a
- Materials:
  - perforated aluminum
  - 8" x 8" x 6' black locust lumber
  - galvanized bolt/bracket assembly
- Width of deck: 2 ft. 8 in.

**Sunken Module**
- Depth to trapped water: 1 - 14 ft.
- Buoyancy: 11 lbs / sq ft.
- Materials:
  - perforated aluminum
  - polyethylene dock floats
  - galvanized bolt/bracket assembly
- Width of deck: 5 ft.

**Floating Module**
- Depth to trapped water: 4 - 7 ft.
- Buoyancy: 68 lbs / sq ft.
- Materials:
  - perforated aluminum
  - high tech polymer pontoons
  - galvanized bolt/bracket assembly
- Width of deck: 3 ft.
**Floating Module**

The floating module provides access to Pinhook's flooded areas, moat, and ponds. The walk is three feet wide, made of aluminum panels which are perforated to a maximum structural allowance, providing visual access to the water and minimizing weight (figure 93). Each 18 sq ft panel can support the weight of four or five people. The module itself is lightweight and responds to loads, exaggerating the feeling of floating. The hollow pontoons are vacuum formed using a high tech polymer with striated coloration. Reflected over the surface of the water, the layered pattern recalls the layers of peat, trapped water, and clay beneath the upper mat.
**Solid Module**

The solid module accesses mature areas and peripheries of the peat mat where the uppermost layer is fibrous and thick, reaching a depth of at least 8 ft. above trapped water. The module is engineered using standard bog bridge construction methods. Perforated aluminum panels are bolted to 8 x 8 black locust timbers. This module is very stable, and feels firm under-foot to highlight the density of the peat mat. Perforations are graduated in patterns over the aluminum surface, affording moments of pause and discovery.
SUNKEN MODULE

The sunken module both literally and figuratively bridges the gap between flooded areas and solid areas. In some areas of the bog, the uppermost layer of peat is either too thin or too wet for safe human conveyance. This module provides minimal buoyancy and spreads the distribution of loads over each module’s 5 ft wide, 20 sq ft surface. Whether the peat is flooded or unstable, the surface sits flush with grade—perforation patterns provide high porosity on the aluminum panel’s edges, with a gradation toward a meandering 1 foot gap near the center of each panel (figure 98). The ‘pores’ fill with peat accumulation over time to accommodate new *Sphagnum* growth and some herbaceous plants (this page and figure 103).
**Terminus**

The terminus provides a rest area for small groups of people where the walkway ends over solid peat. The walk should end in a special location: the existing plastic boardwalk ends at a charismatic overlook of a quiet pond. The terminus includes two box seats made of black locust. The surface is constructed with solid aluminum panels over 8 x 8 black locust lumber.

**Entry Gate**

The proposed entry gate and fence uses a design language and material palette similar to the walkway modules. Perforated corten panels form a screen that is seamlessly fit into 4 x 4 black locust posts. The fence is 6’ tall with 5’ wide sections. The gate is 3’ wide and includes a laser-etched welcome sign. The redesigned fence is more difficult to climb than the existing chainlink fence, providing better security and appearance.
The proposed alternative design for Pinhook Bog’s floating walk is relatively simple with straight geometric forms and modular components. The simple form and perforated surfaces are intended to direct attention down toward the upper layer of the peat mat and ponds, and outward to the larger ecological context. Visitors would alternatively feel the strength of thick peat under the solid module; the responsiveness of thin or saturated areas; and the buoyancy of pontoon floats where the mat is flooded.

The walk is a constructed interface between people, site and living systems, but responds to both the perception of people and the material conditions of the site. Where the existing floating walk provides even stability and material consistency throughout its length, the proposed walk provides a veritable tactile experience.
**FIRE: COOPER FARM**

Cooper Farm is a property in Muncie, Indiana, operated by the Biology Department at Ball State University. As an outdoor laboratory, the land at Cooper Farm is used for teaching and research. The land includes four distinct ‘ecozones’: developed areas including a homestead and row crops, hardwood forests, early successional shrub-scrub conditions, and tallgrass prairie (J. Taylor, personal communication, February 23, 2016).

The 40 acres of prairie is sub-divided into several plots. Each plot is managed and studied for a different outcome, but all plots are on a schedule of prescribed burning. Burns kill immature woody vegetation and invasive species and preserve mature prairie plants with deep roots (J. Taylor, personal communication, February 23, 2016).

The Arts Hike group discussed fire as a human act of domesticity used to cook food and also as a human act of wildness, through which humans construct or manipulate wild ecology— as in the case of Cooper Farm. The prairie at Cooper Farm is compelling to consider through the frame of wildness as a form of ‘wild’ ecology curated by biologists. Relative to most federally designated wilderness areas, the site is heavily monitored and managed through human intervention. These prairies are relatively new, having only been established on former agricultural land (previously hardwood forest) in the last century. Without human intervention, the prairie wildness at Cooper Farm would not exist (J. Taylor, personal communication, February 23, 2016).

This site study addresses the phenomenon of fire-dependent ecology through the context of another human use of fire: glass. This design study culminated in a built installation constructed with wood, rope, monofilament, and hot-worked studio glass. By juxtaposing elements vastly different in form (prairie : glass) but dependent on the same elemental force as manipulated by humans, this design intervention presents fire as a paradox within the human/nature dichotomy.
Importantly, fire was not used directly as an element of the installation. Actually, it is not obvious through the glass or prairie that either is fire-dependent. This material situation explored another conversation relevant to this project: that intervention is oftentimes imperceptible to varying degrees among people who are not conversant, and consequently designed landscapes are mis-interpreted as wild landscapes.

**Glass Production**

Glass art is a unique and ancient collaboration between humans and several natural elements and forces. Glass is comprised of entirely organic materials, and is found in nature. Glass was the first designed medium investigated during this study: the only starting point or goal of the installation was to suspend glass objects over a path through a small area of Cooper Farm’s prairie. In order to reveal fire-dependence in the final glass pieces that engaged the site, the process used to produce the glass was designed to accomplish two main objectives:

1) The process should keep the glass as hot as possible, using several reheats and finishing with a long fire polish.

2) The forms should distort the image of the prairie behind them, drawing attention outward to the landscape.

The glass objects were produced over three weeks of iterations and experimentation. Each object is intentionally unique—specific shaping methods changed but the speed, use of heat, and tools remained consistent. The author manipulated the glass intentionally but spontaneously. Outside the glass studio, iterations were tested for potential to distort the landscape visually—especially horizon lines.

**Structure Design**

This study process situated glass pieces within a prairie in order to illicit human responses. Producing glass pieces large enough to draw attention in a two to six foot tall prairie would require a glass-working skill level well beyond that of the designer. Instead, it was determined that smaller glass objects would be suspended from a structure built with inexpensive and reusable material. The form of the structure was determined firstly for functionality—the hanging glass needed to be maneuverable and the structure needed to be reliable and removable. Additionally, the structure could not obstruct the view of the prairie through the glass. Finally, the structure needed to be assembled and disassembled on-site by the author.

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*Figure 105: hot-shop process to produce glass objects*
Figure 106: Scale study models for the final structure design. The path is highlighted in teal.

Figure 107: Site map showing prairie boundary and the installation site.
**Structure Design**

The structure design underwent several iterations. The final design solution was a series of five tripod frames constructed with two different types of lashings and 16 ft long 2 x 4 untreated whitewood lumber. The tripod design allowed exceptional flexibility to position the glass. By adjusting the position of the legs, the glass could be moved through any axis without undoing and re-tying knots. Each glass piece was tied to one 2 x 4 using monofilament: a total of 15 glass pieces and 15 2 x 4s. The frames were very stable, staying in place during a snow storm and over the course of two days.

*Figure 108: a tripod frame module*

*Figure 109: finished structure, in the snow with visitors.*
Figure 110: one of two lashing methods.

Figure 111: the installation as viewed from the eastern end of the trail.

Figure 112 (this page): suspended glass and frames.
Figure 113: glass and snow
image source: Carol Blakney

Figure 114: grouping and snow
image source: Carol Blakney
One ulterior intention of the installation was to maintain visual interest through a spectrum of scales and perspectives. From a distance, the tripod frames are a focal point. From ‘inside’ the frames, visitors experienced the glass as lenses, holding and rotating the pieces to watch the image ‘captured’ inside distort and transform. The angular geometry of the installation was also interesting to observe from behind whispy grasses and whimsical seed heads, where the staggered verticality of the tripod frames aligned with the wiry, tall stalks of grasses and forbs.
Figure 116 (this spread): looking up
image source: Taylor Metz.


**Thoughts and Conclusions**

The three site studies each explored phenomenological characteristics of wild places, and each study had an intended learning or experiential outcome for site visitors. This final installation afforded an opportunity to test the relationships between design and wildness, especially regarding design intent and an actual outcome. Addressing phenomenological characteristics of place through design is challenging, and the relationship between intention and reality is almost impossible to test or prove through drawings and scale models.

For this installation, the primary objective was to present fire through materiality and context and establish connections between the use of fire for art and ecosystem management. Based on that objective, the installation may have failed. It was not clear whether the installation fostered curiosity for the processes at work in the prairie and in the glass. Ultimately, visitors responded to the installation with interest in its sculptural character and on the glass pieces. Visitors interacted with the glass pieces by holding and rotating them. The installation did prompt questions about methods of construction, but visitors asked few questions regarding the production of glass, and no one asked about the relationship between the glass and the prairie or why the designer chose to place the installation in a prairie (although this may be because most of the visitors knew the intent before seeing the built work).

Apart from being built, the installation at Cooper Farm differs from the earlier projects by being largely uni-sensory: the experience of the installation was visual. However, occasionally, two pieces of wind-pushed glass would collide and chime in a melodic, fragile way. Additionally, glass is a perfectly smooth texture, and the variation in forms of the pieces were interesting as tactile experiences.

The installation at Cooper Farm was successful as a sculptural landscape element with experiential value. Every visitor engaged the glass in some way. Two visitors stated that the installation was exciting to photograph. The glass pieces also successfully attracted attention to distorted horizon lines, and they responded beautifully to light snow fall. One side point the installation demonstrates is the usefulness and underutilization of glass as a hardscape material in landscape architecture practice. Where it is used with sensitivity to its fragility, glass provides an unobtrusive, interesting human element which is rich with craft and inspires curiosity for ecologies and horizons.
FINAL THOUGHTS

This project demonstrates the complexity and importance of wildness. For designers, wildness is understood best as an experiential aesthetic: a character subjectively felt or perceived, with different meaning to each culture and individual. Perceptions change with social shifts, but wildness in the last century has alternatively inspired conflicts, adoration, exploitation, and preservation. Based on recent literature, perceptions of wilderness must shift; the differences between humans and nature cannot be ignored, but must be challenged. Humans must better understand and appreciate the role they have relative to wildness and the positive environmental and cultural impacts we are capable of. Designers must study wildness—exploring wild places with open minds and alert senses, trusting our own observational skills and spatial sensitivity.

For designers, intelligent, original craft and thoughtful material selection improves perceptions of human impacts. Materials must be long-lived and integrated with place. Form is best when it does not deliberately emulate natural patterns: it should emerge from artful, original creative process. Interventions must establish balanced consideration of ecological fragility, spatial singularity, and human use and perception.

Designers must welcome criticism and share the outcomes, successes, and failures of their work, especially related to intention and reality. Design must have clear objectives—the product of thoughtful and physical site assessments. Objectives must be measurable, but they need not be quantifiable. Designed sites should leave intellectual space for contemplation, self-discovery, and interpretation. Overly-interpretive signage and formulaic design culminates in a pre-determined, weakly-site sensitive built interface, unmindful of the unique character of every place and the unique perceptions of every visitor.

In wild places, human intervention must look and feel appropriate and thoughtful. Wildness and human intervention must no longer seem incompatible; people must understand that wildness is a characteristic not exclusive to wilderness areas—wildness inspires curiosity, respect, and admiration among many for the natural world, and it is achievable wherever there is an opportunity to integrate human presence and complex ecological systems. Where the ecological singularity and value of wild places is recognized, and people understand the value of well-made things and well-loved land, a culture of global stewardship follows.


