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BODIES OF WATER: DESIGNING RESILIENT DIVE TOURISM THROUGH UNDERWATER SCULPTURE

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BODIES OF WATER: DESIGNING RESILIENT DIVE TOURISM THROUGH
UNDERWATER SCULPTURE

BY

RENNIE MEYERS

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF

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OF
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ABSTRACT

As marine ecologies at global and local scales respond to the manifold impacts of global climate change, so too must the dive tourism industry adapt to new ocean dynamics. To be resilient in the face of ongoing change these adaptations are necessarily local, environmentally aware, and systematic. On Lanzarote, a volcanic island at the northern end of the Canary Island archipelago, tourism developers have long claimed a particular skill in implementing environmentally aware, adaptive tourism infrastructure projects on land. At the peak of package tourism development in the 1960s, Lanzarote's tourism board invested in César Manrique's particular brand of Modernist art-ecotourism. Thirty years later UNESCO designated Lanzarote a Man and Biosphere Reserve, celebrating the landscapes specifically highlighted by this socio-ecological synthesis. The development of Lanzarote illustrates how ideas of art, ecology, and value can cross oceans and alter environments.

Now, with the installation of an underwater sculpture museum qua artificial reef called the *Museo Atlántico*, these Anthropocene tourism projects extend below the ocean's surface. Using environmental history, participant observation, and ethnographic methods over a combined four months of field work between Lanzarote's summer seasons in 2016 and 2017, this thesis details the ideals, policies, and aesthetics that underpin Lanzarote's tourism infrastructure. Specifically, it interrogates the ways in which the *Museo Atlántico* contributes – or fails to contribute – to the resilience of coastal development on this arid, alien island. Without considering artificial reefs like the *Museo Atlántico* as development, conservation-motivated infrastructure installation can undercut the public review processes central to resilient design in the Anthropocene.

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INTRODUCTION: Resilient Dive Tourism in the Anthropocene

When I first visited the *Museo Atlántico* in the summer of 2016, the team of artists and government officials responsible for the installation had just submerged the first set of sculptures on site. (Due to a delay in permitting and limited by a protected bird breeding season, the *Museo* installation was split into two parts over the course of the year.¹) The sculptures were immaculate. Barely under water for a few months, I could still see the painstaking detail etched into the cool concrete: the stitching on a sneaker, eyebrow hairs, crow's feet crinkling at the corner of a closed eye. After all the chaos common to the beginning of a dive – wrangling rental gear as the staff yell and tease each other, lumbering on to the boat with my Italian dive buddy as she scrapes together her rusty English, the blissful lull in conversation as the motorboat roars and we jet to the site clenching our gear – under the surface of the water it is quiet. The statues are silent. I can almost hear my heartbeat through the heavy exhalation of bubbles. Like me, small schools of fish are exploring the labyrinth of sculptures, foreign objects. I find a small nudibranch, catch a sea of garden eels duck below the sand. The *Museo Atlántico* is alive, hosting tourists and schools of fish, cultivating algae and a specific politic. Its installation has economic, political and material consequences, altering the seafloor to a specifically human, designed end as an explicit project of the Anthropocene.

¹ Parsi, “Deep Dive.”



Figure 1: A man-made lagoon used for dive training on the Western shores of Playa Blanca, Lanzarote. Photo by Author.

Under thirty feet of crystal clear seawater in the coastal waters of Lanzarote, neither natural nor unnatural, an army of humanoid figures redefine the seafloor. The *Museo Atlántico*, a public art installation commissioned for the northernmost Canary Island, Lanzarote, by the Centros de Arte, Cultura y Turismo (CACT), is considered the latest immersive environmental tourism installation in a series of projects highlighting Lanzarote's ecology. Pioneered by architect and artist César Manrique, Lanzarote's tourism brand draws attention to a local environment once perceived to be too arid and desolate to be of value to locals, let alone any number of tourists. Manrique was a staunch advocate for land preservation and protested the overdevelopment of Canarian coastlines, opting instead for boutique and state-managed installations that emphasized the landscape. His near-prescient environmentalism uniquely combined tourism and environmental art in the early 1970s to highlight and protect Lanzarote's surreal landscape along with the adaptive measures locals developed to live on this volcanic desert island. Now, CACT promotes its new development, the *Museo Atlántico*, as an evolution of this tourism brand or what some scholars of global climate science call

the Anthropocene, an epoch where humans can influence geologic processes and when environmental issues are global in scope, source, and solution.

Using striking sculpture, innovative construction methods, an environmental ethos, and the marine environment itself, artist Jason deCaires Taylor hopes to raise global awareness by redefining the importance and audience of artificial reefs. In a series of ‘underwater museums’ in development across the globe, Taylor sinks humanoid sculptures under the ocean’s surface where they are visited by dive tourists and marine organisms alike. Each museum is unique and specific, both in content and ecology. The *Museo Atlántico* is his biggest installation yet, a “curated” multi-sculpture dive site that touches on the refugee crisis, smart phones, narcissism, childhood, and climate change, while simultaneously (Taylor claims) acting as an ecologically and economically productive artificial reef.²

The Anthropocene, an epoch in which human activity has the capacity to alter geological processes, simultaneously incites a sense of responsibility for environmental degradation and, for some, inspires new tactics for growth in business and development.³ In an era of global climate change, terrestrial and marine ecologies alike adapt or fail to adapt to new material conditions like temperature and acidity; in the Anthropocene, conservationists, developers, and local government officials seek new strategies to live and grow in changing environments and their related economies.

² deCaires Taylor, “Threats.”

³ Dr. Amelia Moore has established a framework for analyzing development and tourism in the Anthropocene, which “enables conceptual anxieties, productive contradictions, research opportunities, and entrepreneurial actions; it enables actors to configure an increasing amount of thought and action in the name of anthropogenic sustainability” (Moore, 2015, p. 4); see Moore, “Anthropocene Anthropology”; Moore, “Climate Changing Small Islands”; Moore, “Islands of Difference”; Moore, “Tourism in the Anthropocene Park?”

In dialogue with Political Ecologist Aletta Biersack,⁴ Anthropologist Amelia Moore argues that this epoch requires new understandings of “collectivity and responsibility”, whereby “engaging the discourses and processes enabled by the Anthropocene idea...transform[s] practices of life and work, knowledge produced about place and space, infrastructural aesthetics, and the evolving language available for subjectivation.”⁵ In this context, environmentally oriented actors hope that design solutions might simultaneously mitigate ecological impacts and encourage environmental stewardship of fragile offshore environments like coral reef communities.⁶ Tourism developers, alternately, can now “rearticulate” fears of global anthropogenic change manifested by the Anthropocene as strategic opportunities to develop “greener” mass tourism. Ironically occupying more space and requiring more resources, these tourism ventures leverage tourist and government concerns around global climate change while creating “projects and imaginaries that stem from ideas about global environmental change to accumulate more space for tourism.”⁷ The *Museo Atlántico* is one such project.

This thesis describes the ecological, political, and economic consequences of the *Museo Atlántico* ’s installation in Lanzarote’s waters using ethnography, participant observation, and semi-structured interviews to better understand the social relationships of artificial reefs. Artificial reef installation is by no means a new phenomenon: shipwrecks, coastal revetments, and haphazard infrastructure have long

⁴ Biersack and Greenberg, *Reimagining Political Ecology*.

⁵ Moore, “Anthropocene Anthropology,” 28.

⁶ For general movements in social design for purported environmental good, see Chen et al., “Social Design”; Fisher, *Designing Our Way to a Better World*; Simonsen et al., *Design Research*. For preliminary work on dive tourism, coral conservation, and design, see Meyers, “An Aesthetics of Resilience.”

⁷ Moore, “Selling Anthropocene Space,” 3.

been deployed to attract fish or reinforce shorelines. Deployment of artificial reefs as recreational objects, however, is a new and rapidly proliferating global phenomenon. It leverages consumer concern for threatened ecosystems like coral reefs alongside existing tourism and ecotourism economies to create new, “hybrid,” development infrastructure. The *Museo Atlántico* illustrates how a recreational artificial reef project deploys its conservation or restoration components to overcome development or management obstacles. Considered to be more than a tourist attraction (as it is promoting or protecting the environment) and lacking the measured environmental standards of a formal conservation project, “hybrid” or “green” infrastructure cannot be regulated exclusively as either a conservation project or development infrastructure.

The entangled motivations and interpretations of the *Museo Atlántico* installation have clear consequences for Lanzarote’s regulation, politics, and human and non-human lives. Untangling those motivations, consequences, and steps forward in coastal management is a necessary project for a student of Marine Affairs tasked with making “theoretical and applied contributions to socially just, ecologically sound, and sustainable human-environment interactions” in the coastal margin.⁸ Symbolically, the *Museo Atlántico* champions social justice by using local community residents as models to enhance public participation, but through this research it became apparent that there was little public consensus about how the *Museo* was conceived, approved, and installed. Conceptually, the *Museo* is designed to enhance “empty” coastal shallows as an artificial reef, but there has been little public science that demonstrates these submerged sculptures have their intended ecological effect

⁸ The mission statement for University of Rhode Island’s Department of Marine Affairs, hosted online.

without compromising existing eelgrass beds. So, how sustainable – both ecologically and socio-politically – was the *Museo Atlántico*?

The *Museo Atlántico*



Figure 2: "The Raft of Lampuseda" by Jason deCaires Taylor and his team (Photo used with permission of Jason deCaires Taylor Studio) and the "Raft of Medusa" by Théodore Géricault (Géricault, Théodore, *The Raft of Medusa*, 1818, Musée du Louvre, Paris. Accessed September 31, 2018).

There's no way to avoid confrontation with the sculptures at the *Museo Atlántico*, it seems: bluntly symbolic, they're designed for interpretation and engagement. Taylor is concerned with human rights and the refugee crisis – migrants often arrive on straight to Lanzarote's shores straight from Morocco by boat – so he recreates 19th Century French Romantic painter Théodore Géricault's famed "The Raft of Medusa" with the bodies of refugees instead of survivors of a wrecked frigate (Figure 3). He calls his reinterpretation, where the bodies of unnamed refugees from an unnamed state drape over the sides of an inflatable dinghy, the "Raft of Lampuseda" after an Italian island whose tourism industry clashed with a massive militarized police force assigned to deal with a migrant influx.⁹ It's a stark image at the very beginning of the dive, and emotionally jarring – most dive briefings only describe the statue as a piece on the "tragedy of the migrant crisis," leaving the refugee subjects anonymously and inaccessibly memorialized at the bottom of the ocean.

⁹ Kirby, "Why Tourists Are Shunning a Beautiful Italian Island."



Figure 3: "Desconectado" by Jason deCaires Taylor (Photo used with permission from Jason deCaires Taylor Studio).

Just around a bend Taylor takes on the narcissism and ignorance of the general public regarding, it is implied, the refugee crisis, shaving the faces off a couple proudly taking a “selfie” while oblivious to the refugees adrift in the background. In “Desconectado” (Figure 4), Taylor has expressed concern about social media narcissism and the migrant crisis in interviews and social media. These sculptures exactly express his concerns and demonstrate his sense of global crisis. Most troubling, though, is perhaps the phenomenon of divers pausing to take their picture with the couple, eyes bright with the light of the flash and bubbles rising rapidly, like snow falling in reverse. Your time to contemplate the structures is limited, and divers snag a picture and move on. “The Raft of Lampuseda” is left behind, migrants forgotten once again. At the end of the dive there is no information about ways to address the crisis at a local, regional, or global level, no information about the types of

displacement that have incited nationalism across Europe and the Globe. You're left to your own inquiry as the dive master urges you on to the "Rubicon," tapping her palm to ask how much air you have left.

Taylor's most expansive sculpture is "Crossing the Rubicon," an army of cell phone-obsessed people walking towards a "point of no return" symbolized by a giant wall with one small door (Figure 5). People of all ethnicities and ages are wrapped up in their own worlds as they effectively walk off a cliff. Divers hover near the figures and move past these particularly ghostlike and condemned citizens. The wall itself is odd for Taylor – the thick pillars with vines linking them together are highly stylized and geometric, a step away from the detailed cast concrete sculptures he is globally recognized for. It marks one of his first forays into massive semi-interactive sculpture that divers can move through themselves with a certain amount of skill, which he will repeat with his "Coralarium" project in the Maldives (2018) and an undisclosed "Noah's Ark" project slated for 2019. These objects encourage the dive tourist to play and engage in a way they can't with the humanoid sculptures as "art" that tourists are asked not to touch.



Figure 4: "Crossing the Rubicon" by Jason deCaires Taylor (Used with permission from the Jason deCaires Taylor Studio).

Up until this point, the *Museo* has in some ways felt less surreal than absurdly human. The objects of the artists critiques – social media and narcissism, global unrest, the refugee crisis, and more – are all social issues with no explicit connection to the marine environment. Swimming over, through, or around this absurd wall in the middle of the ocean (walls mean very little to fish, or currents) you arrive in a hybrid paradise. Schools of fish pool around humanoid dancing cacti. Scorpionfish peer out from the spikey fronds of a palm tree. A gyre made of a tumble of human bodies in near-death repose is well-guarded by triggerfish, and a horned child-narcissus stares into a mirror that only reflects the opaline ocean surface (marred by the occasional diver). The only aberration in this multispecies fantasia is a playground, swings, see-saw and all, enjoyed by be-suited businessmen. A trope often found in Taylor's work,

the heads of the see-saw are those of pumpjacks, “horse-heads” to support the pistons that extract oil and gas. It is the only set of sculptures that suggests the root of the problems Taylor symbolizes in the many statues of the *Museo Atlántico*. As I begin my ascent up the mooring line back to the dive boat, back to shore, I am surrounded by a school of small yellow grunts, Roncadores, their heads, bodies, tails all flashing together into each other. It’s impossible to make out the whole fish. When we surface the usual quiet that comes after a dive feels heavy, minds full and bodies tired. Everything implied in the *Museo*, its network of ideas and symbols and aspirations, skates around the actual presence of the tourist, who they are and why they attended *Museo* and what to do next; no discernable head or tail.



Figure 5: A map of Taylor's major installation by the author, with installations marked in yellow.

Artificial Reef Tourism in the Anthropocene

A growing global conservation phenomenon, artificial reefs like the *Museo Atlántico* underwater sculpture installation participate in a long history of designed interventions in the marine environment. Underwater sculpture installations have a threefold impact on the restoration and conservation of impacted marine ecosystems:

first, they systemically alter diver behavior, removing pressure from natural reefs while also providing a novel dive experience;¹⁰ second, they aim to cultivate an awareness of human responsibility and vulnerability connected to marine ecosystems through diver interaction and social media;¹¹ third, the sculptures (made of the same pH neutral dense concrete successfully used on Reef Balls™)¹² ostensibly provide substrate for coral and the growth of coral biomass. In this sense, artificial reef ecotourism acts as a nexus between the putative conservation of environmental resources and a multibillion dollar dive industry invested in creating worlds of experience – worlds increasingly destabilized in our changing climate.

Dive-associated tourism alone generates anywhere from about 2 USD to 1 million USD per hectare per year depending on the accessibility of sites and intensity of tourism development.¹³ The Professional Association of Dive Instructors (PADI), the world’s largest dive training organization, has certified at least 30 million people to dive worldwide, adding over 900,000 new certifications per year since 2001.¹⁴

¹⁰ Leeworthy, Maher, and Stone, “Can Artificial Reefs Alter User Pressure on Adjacent Natural Reefs?”; Ehrenfeucht, “Artificial Coral Reefs as a Method of Coral Reef Fish Conservation.”

¹¹ In the “Wider Benefits” component of Taylor’s site, it notes, “Jason deCaires Taylor’s works reached an audience of over 1 billion over the past 10 years, opening a virtual portal or window to the underwater realm...Many of the sculptures are aimed at opening up debates about our relationship to our seas, the Anthropocene and highlighting our inherent apathy or denial.” deCaires Taylor, “Threats”; deCaires Taylor, “Artificial Reefs”. .

¹² Almost any kind of concrete can be used in the construction of Reef Balls. However, additives are necessary to strengthen the balls and make them suitable for the growth of marine life. Ordinary concrete has high pH levels due to calcium hydroxide in the mixture. The addition of microsilica reduces the pH level to about 8.3, which is the average pH of sea water and extends the expected life to least five hundred years. Without this feature, organisms that are resistant to the high pH level will colonize the Reef Ball and set up defense systems to inhibit the growth of other marine life forms thereby disrupting the order of natural settlement. You can read the specifications here: <http://rbfdevsite.com/concrete-specs/>

¹³ “Reefs at Risk Revisited | World Resources Institute.”

¹⁴ Lew, “Scale, Change and Resilience in Community Tourism Planning” PADI is notoriously protective of its consumer data as the largest dive certification organization. More comprehensive independent quantitative data collection on dive certifications and trends in consumption is absolutely warranted and would make for an excellent PhD. .

Given an increased interest in nature and environmental appreciation in the dive industry,¹⁵ and the rapidly growing accessibility of remote coral reef areas due to new budget airlines and proliferating tourism infrastructure,¹⁶ diving in coral environments has become a highly significant component of the international tourism market.¹⁷ The dive industry itself is a problem for marine ecological health; as the industry expands, the substantial socio-economic and environmental costs of the industry become more explicit.¹⁸ Dive tourism exerts local and global pressures on the environment through the practices of SCUBA diving and emissions from air travel. This continued degradation of coral reefs has led to global concern over the future of reef-based tourism.¹⁹ Yet scuba diving is still considered a marine ecotourism activity²⁰ because it supposedly demonstrates mainstream ecotourism principles: scuba diving is nature-based, provides environmental education opportunities, and can be sustainably managed.²¹

But to what extent do these “environmental” installations truly live up to these claims, and to what extent are they just attempts to capture a share of a growing market? Ecotourism, the fastest growing sector in the tourism industry since the mass popularization of environmentalism in the 1980’s, brought in \$77 billion in revenue globally in 2009.²² It has pushed itself to the center of travel consumer consciousness

¹⁵ “Reefs at Risk Revisited | World Resources Institute.”

¹⁶ Harriott, Davis, & Banks, 1997

¹⁷ Dimmock, 2007; Garrod & Gössling, 2008

¹⁸ Davenport & Davenport, 2006; Dodds & Graci, 2010

¹⁹ Andersson, “The Recreational Cost of Coral Bleaching — A Stated and Revealed Preference Study of International Tourists.”

²⁰ Garrod and Wilson, *Marine Ecotourism*; Cater and Cater, “Marine Enviroments.”

²¹ Sorice, Oh, and Ditton, “Managing Scuba Divers to Meet Ecological Goals for Coral Reef Conservation”; Stolk, Markwell, and Jenkins, “Artificial Reefs as Recreational Scuba Diving Resources,” 332.

²² EBSCO 2009, citing Allen et. al.

and raised questions about its regulation from international regulatory agencies and operators alike.²³ At best, ecotourism encourages cognizant travel and the development of sustainable infrastructure in areas of the world that otherwise could not access sufficient resources to conserve the environment. At worst, it appropriates the experience and aesthetics of environmental stewardship without promoting socially and environmentally sustainable values and helps capitalist modalities of exchange proliferate rampantly across the globe with disgraceful social and environmental consequences.²⁴

Artificial reef tourism is an attempt to bridge the gap between the destruction of coral habitats (caused by direct contact with tourism or anthropogenic climate change) and the tourist experience. Artificial reef researchers have rigorous but inconsistent parameters for what counts as an artificial reef, with definitions describing a “submerged structure” of “human origin” that is “deployed on the seafloor” to “influence physical, biological, or socioeconomic processes related to living marine resources.”²⁵ More contentious is whether the deployment was “purposeful” and “mimics the characteristics of a natural reef.” Certainly, and increasingly, artificial reefs are a type of “modified space” capable of supporting wildlife populations commonly thought to reside in unmodified or “natural” settings.²⁶ Tourism researchers continue to investigate artificial reefs as a study of diver preference, to the extent that some claim the type of artificial reef (its material,

²³ Honey 2008.

²⁴ Orams 1995; Brockington et al. 2012.

²⁵ Stolk, Markwell, and Jenkins, “Artificial Reefs as Recreational Scuba Diving Resources.”

²⁶ Lawton, “Modified Spaces.”

appearance, complexity, cost) critically alters its recreational use.²⁷ Most studies note diver preference for large shipwrecks, which are marginally considered artificial reefs (they might not be “intentionally deployed”).²⁸ Artificial reefs are aesthetically engaging, can be conveniently located for diver access unlike a natural reef, and can be used as dive training sites without impacting the marine environment.²⁹ They create new markets in the dive tourism industry, Stolk et al. note, as the “positive feedback from divers about their experiences at artificial reef sites and... the opportunities that arise from related tourism development spur the deliberate creation of artificial reefs around the world.”³⁰ Stolk et al. continue to explain that we must better understand diver preference and satisfaction in artificial reef diving experiences to adequately plan for sustainable tourism and recreation in the future, circumventing the disastrous development so often affiliated with rapid, unplanned tourism.

For ecotourism to be truly sustainable and not mere destination branding that encourages overdevelopment,³¹ it is crucial to evaluate artificial reef tourism projects like Taylor’s museums early in their implementation: what are the motivations of environmentalists and artists funding these projects, and do they align with the social and ecological outcomes of an installation, actual or perceived? To what extent does diving at these modified sites alter divers’ perceptions of the marine environment, and

²⁷ Milon, “Artificial Marine Habitat Characteristics and Participation Behavior by Sport Anglers and Divers”; Kirkbride-Smith, “The Economic, Social and Conservation Benefits of Recreation-Orientated Artificial Reefs”; Ramos et al., “The Usefulness of the Analytic Hierarchy Process for Understanding Reef Diving Choices.”

²⁸ Garrod and Wilson, *Marine Ecotourism*; Morgan, Massey, and Huth, “Diving Demand for Large Ship Artificial Reefs.”

²⁹ Shani, Polak, and Shashar, “Artificial Reefs and Mass Marine Ecotourism.”

³⁰ Stolk, Markwell, and Jenkins, “Artificial Reefs as Recreational Scuba Diving Resources.”

³¹ Moore, “Islands of Difference” See also Destination Anthropocene: global change science, international tourism, and the rebranding of small island space in *The Bahamas*, Moore (2018).

in what ways? What imaginaries – of a dying planet, or of a pristine environment restored by human hands – are invoked through the aesthetics of artificial reef infrastructure, and to what end? These aesthetics and imaginaries are contingent products of power relations and situated in a specific place and time: in this case, the Anthropocene. Artificial reef projects like the *Museo Atlántico* are an attempt by the dive tourism industry to become more resilient to complex (climate) change.

Interdisciplinary resilience scholar Kevin Hillmer-Pegram proposes a framework for resilient dive tourism systems that calls for further research on socioeconomic changes in the local dive tourism industry and the ways dive operators respond to those perturbations to maintain their resilience.³² Political scientists Grove and Adey demand social scientists pay closer attention to the ways in which resilience, in this case resilience in the face of anthropogenic changes that include climate change, is aestheticized and performed.³³ As an infrastructure development meant to provide a paradigm-shifting dive tourism experience, the *Museo Atlántico* conscripts the human and non-human, the social, and the political to perform precise roles in developing a more resilient dive tourism industry.

³² Hillmer-Pegram, “Understanding the Resilience of Dive Tourism to Complex Change.” He describes, for the US Virgin Islands, how lack of support from the larger social–political system, the recent US economic downturn, and an invasive fish species disturbed the local industry. Sources of resilience include dive operators’ formation of self-advocating organizations, recognition of an inexperienced and increasingly frugal client base, and local contributions to environmental protection.

³³ Grove and Adey, “Security and the Politics of Resilience: An Aesthetic Response” They argue that “Paying attention to the aesthetic dimensions of resilience can thus help highlight ethical and political questions that might otherwise be passed over... [that an] , attention to the aesthetics of resilience recognises that resilience has no constitutive power of its own: it produces its diagrammatic effects only to the extent that it is able to appropriate affective relations and direct their force towards the production of a world of complex systems and the precarious subjectivities that inhabit these worlds.” In other words, that if the performance of resilience, as a type of design aesthetic or set of norms, reproduces the static norms of governance that resilience planning is supposed to preclude. See also Meyers, “An Aesthetics of Resilience.”

Tourism Infrastructures and Imaginaries

The *Museo Atlántico* 's success is contingent on support from Lanzarote's local government, which justified the project both as an investment in tourism infrastructure and an extension Lanzarote's historic commitment to environmentally sensitive design. Archipelagic regions like the Canary Islands, consisting of small islands and extensive marine territories, have very specific policy, planning and development requirements from tourism development to freshwater desalination plants.³⁴ These socioecologies are "aquapelagic," defined by:

"human presence in and utilization of the environment...which wax and wane as climate patterns alter and as human socio-economic organizations, technologies, and/or the resources and trade systems they rely on, change and develop in these contexts. In this sense, aquapelagos are *performed* entities."³⁵

The *Museo Atlántico* is one such infrastructure performed entity, connecting Lanzarote's land and sea, connecting the Canaries to "the rest of Europe", and expanding the jurisdiction of the tourism board below the sea surface. Once exclusively regulated as part of Lanzarote's marine territory, protected under the United Nations Law of the Sea and marginally included in the island's UNESCO Man and Biosphere Reserve protections, the *Museo Atlántico* represents the extension of the tourism board, CACT, into marine governance, protection, and global conservation efforts. This part of the way in which the aquapelagic state has to configure its marine

³⁴ As Dr. Moore and others argue, islands have long been conceived of as laboratories for new visions of the world and "are continually remade to fit this vision" of utopianist experimentation. At the same time, the islands became laboratories precisely because they were often subject to global networks of colonialism and globalization that altered island ecologies and economies. Lanzarote is no exception. (Moore, *Destination Anthropocene*, forthcoming, 11-12.)

³⁵ Hayward, "Aquapelagos and Aquapelagic Assemblages."

zones as “elements of an imagined national space and then translate this imagination into marine borders that could be nationally and internationally recognized.”³⁶ The *Museo Atlántico* is an even more literal aquapelagic intervention, connecting Lanzarote to a global dive tourism industry dominated by actors from the Global North and performed through global media.

At this point Taylor’s work constitutes a global phenomenon, an aquapelagic network of submarine infrastructure that redefines ocean space and marine ecology as much as it redefines marine tourism and ecotourism. Taylor deploys his distinct symbolic vernacular in different coral reef and marine ecosystems across the world, uniting these sites with his sculptural style, his unique political symbolism, and his brand (see a map of his installations above, Figure 6). Brian Larkin calls for a more attentive anthropology of the “poetics of infrastructure” that depicts how such networks and “forms of infrastructure can offer insights into other domains such as practices of government, religion, or sociality.”³⁷ Taylor’s structures are thus an excellent vantage from which to study Anthropocene infrastructure because they create a network of underwater concrete sculptures, a network of transport as Taylor and his assisting artists move from site to site, a network of dive tourists, and a network of tourism organizations dedicated to the maintenance and promotion of these expensive installations. They also rely on previous colonial networks of transport, power, and exploitation: could the *Museo Atlántico* exist were the Canaries not a territory of Spain, or the Ocean Atlas built in the Bahamas were they not once a colony of Britain? Would Taylor have access to exclusive resort sites in the Maldives

³⁶ Hayward, 4.

³⁷ Larkin, “The Politics and Poetics of Infrastructure,” 328.

without vestigial power dynamics of imperialism, colonialism, and Eurocentrism?³⁸

While Taylor focusses on the “technical” function of his installations as artificial reefs in major interviews,³⁹ Larkin points out that infrastructures equally “need to be analyzed as concrete semiotic and aesthetic vehicles oriented to addressees” that “store within them forms of desire and fantasy and can take on fetish-like aspects that sometimes can be wholly autonomous from their technical function.”⁴⁰ This is particularly true of Taylor’s work as he claims status and exemptions for his sculptures as art installation *and* infrastructure.

While participating in global networks of capitalism, imperialism, and Eurocentrism, Taylor argues that his work is an environmentalist project at the local level. Furthermore, the actual symbolic content clearly manifested in his sculptures is *critical* of capitalism, narcissism, imperialism and globalism, and yet each of these processes enable some aspect of Taylor’s work to exist in the first place. His sculptures manifest what Ocean Science Anthropologist Stefan Helmreich calls “gaiasociality” where we, the public, are “exhorted not to think of our individual connection to a population, not to our genes, but to the planet’s ocean and to Gaia” as a part of a call to “reorganize [our] relations with the ocean.”⁴¹ Taylor and enthusiasts for his work see these installations as little less than a silver bullet, repairing the rifts between environmentalism and (mass) tourism by inspiring public engagement with the ocean. While technologically the *Museo* is meant to restore or reinvigorate the

³⁸ Hall and Tucker, *Tourism and Postcolonialism* I am referring to the “*Museo Atlántico*” in Lanzarote, Canarias, the “Ocean Atlas” in Nassau, The Bahamas, and Taylor’s newest installation, the “Coralarium” at the Fairmont Maldives Resort in Sirru Fen Fushi.

³⁹ Cué, “Interview With Jason DeCaires Taylor”; Taylor, *An Underwater Art Museum, Teeming with Life*.

⁴⁰ Larkin, “The Politics and Poetics of Infrastructure,” 329.

⁴¹ Helmreich, *Alien Ocean*, 11.

seafloor environment, it is also an “excessive fantastic object” (a la Larkin) that Taylor hopes will inspire tourist imaginaries of other, more hybridized and sustainable worlds as much as awe in its assumed ecological function as an artificial reef.⁴²

As a paradoxical anti-capitalist development project, the *Museo* manifests a modernist faith in infrastructure. The project calls upon a sense of agency and hope evoked by technologies like infrastructure that historians of (post)modernism Mrazek and Berman call an “enthusiasm of the imagination,” or an “imaginative richness...ready to turn in on itself,” respectively.⁴³ Berman describes how, in their pursuit of all-encompassing technocratic design and dissolution, (like the way the *Museo* attempts to remedy ecological and social deficiencies caused by anthropogenic climate change through further investment in development) modernist infrastructure projects become a “maelstrom of perpetual disintegration and renewal, of struggle and contradiction, of ambiguity and anguish.”⁴⁴ Where, quoting Marx, “everything is pregnant with its contrary” and where, quoting Octavio Paz, modernity “survives from one day to the next: it is unable to return to its beginnings and thus recovers its powers of renewal.”⁴⁵ Reliant upon the growth and colonization of marine species on the sculptures, the participation of dive tourists compelled to witness Anthropocene art, and the extension of Lanzarote’s governmentality to the seafloor, the *Museo* is an Anthropocene infrastructure project asked to undo itself by inspiring a global environmentalist ethos.

⁴² Larkin, “The Politics and Poetics of Infrastructure.”

⁴³ Mrázek, *Engineers of Happy Land: Technology and Nationalism in a Colony*, 166; Berman, *All That Is Solid Melts into Air: The Experience of Modernity*, 23.

⁴⁴ Berman, *All That Is Solid Melts into Air: The Experience of Modernity*, 15.

⁴⁵ Berman, 35–36.

The relationships and ontologies borne through Anthropocene infrastructure act across species, phyla, and matter. Paradigms like multispecies ethnography and New Materialism demand a new sensitivity to types of non-human agency that shape the world just as Stephan Helmreich’s “life forms” and “forms of life” mutually create each other.⁴⁶ The social sciences have increasingly focused on how human–non-human mutual ‘becoming’ redefines, undermines, or perpetuates the status quo to create our current moment.⁴⁷ In dialogue with the emergent Anthropocene era, New Materialism has become the methodological framework that emphasizes the existence of objects like infrastructure and the non-human and their capacity to shape global networks and histories, on their own and in their interactions.⁴⁸ For example, Jane Bennett describes ‘thing-power’, the recognition that matter can make connections and define outcomes.⁴⁹ In the case of Lanzarote and the *Museo Atlántico*, conceptual frameworks like the Anthropocene and New Materialism are able to diagnose both the conditions for the creation of this sculpture project and, potentially, the terms and outcomes of tourist visitation there.

This study of underwater sculpture will contribute to New Materialism’s evolving understanding of the relationship between aesthetics, imagination, politics, experience, and biology. The *Museo Atlántico* not only depicts hybridity in its sculptures symbolically, but as it is incorporated into the marine environment it must

⁴⁶ Helmreich, *Alien Ocean*, 6–8 “Life Forms” are the units of life at the center of “Forms of Life,” the social networks, institutions, and infrastructure designed around that life. Helmreich is particularly concerned with microbes as the “Life Form” of the early-aughts, sampled across vast seas by oceanographers to all sorts of ends.

⁴⁷ Haraway, D. J. *When species meet*; Bennett, J, *Vibrant matter: A political ecology of things*; Hathaway, M, Wild elephants as actors in the Anthropocene. In *Animals in the Anthropocene: Critical perspectives on non-human futures* (p. 221).

⁴⁸ Tsing et al., *Arts of Living on a Damaged Planet*.

⁴⁹ Bennett, *Vibrant Matter*, 354 Her work modifies Latour’s Actor-Network Theory structure.

be colonized by marine flora and fauna to act as an ecological force as intended. Taylor's sculptures are designed to be colonized, with ridges and textures that encourage algal and coral settlement,⁵⁰ but colonization can only happen through the action and agency of those organisms. Taylor's sculptural work may focus on themes of human agency to effect both environmental change through engagement and environmental disaster through complacency, but it also demands that the non-human invest in the *Museo* just as the tourism board developers did. A New Materialist approach, long embedded in methods deployed by environmental historians and crystallized by anthropologists and political ecologists, expands our ethnographic awareness to the very actions of fish, algae, and sea current upon the *Museo* and its visitors and vice versa.

Methodology and Procedures

To holistically address issues of artistic intent, public perception, and marine ecosystem governance concerning artificial reefs, I conducted a mixed-methods exploratory case study of Jason deCaires Taylor's *Museo Atlántico* installation in Lanzarote. Installed over the course of two years off the southern shores of this small Canary Island, the *Museo Atlántico* is a multi-sculpture, "curated" dive experience managed by the local tourism board and visited by certified dive tourism operators and their clients. This research follows up on a preliminary and semi-formal study of the *Museo* I conducted in June and July 2016 with a full ethnographic exploration of the installation in June and July 2017.

⁵⁰ Taylor, *An Underwater Art Museum, Teeming with Life*.

During the summer of 2017 I conducted ninety-one total interviews, fifty of which were full-length semi-structured interviews that explored larger concepts at work in the *Museo* and forty-one of which were anonymous rapid response surveys of divers at a popular dive site to collect issue-oriented data quickly and with minimum response burden. There are no records listing the divers on Lanzarote, so stratified random sampling of these groups was not possible. Instead, interviews were opportunistic, as exhaustive as possible, and as inclusive as possible of all demographic groups. Interviewees were identified via recommendations from local contacts, approaching individuals at dive shops, and requesting the contact information for additional individuals at the end of each interview in what is termed a snowball sampling technique.⁵¹ All divers were fluent or nearly fluent in English, and a Spanish translator was available if necessary. Conducted during the holiday season, this research most likely captured the experience of tourists on summer vacations.

Of the semi-structured interviews conducted with the artist, his manager and publicity staff, and the local tourism board officials, participants provided key insights into the ways in which art industry elites think about morality and ethics in art, the “global” community, and the potential for works of art to shape public perception of environmental issues. Simultaneously, I conducted structured interviews with dive tourists and dive operators before and after visiting the site at over fifteen dive shop locations. While I regularly visited one dive shop over the two visits to have a more longitudinal understanding of the *Museo*’s impacts, I wanted to dive with multiple

⁵¹ Bernard, *Research Methods in Anthropology*.

dive shops and distribute my allocation of dive funds across professional outlets for the sake of equity.

At these shops, visitors were asked to: describe their experience of the site; list themes they took away from the content of the sculptures; describe and justify how the site is “natural” or “artificial” and define their terms; describe their experience of the site in juxtaposition to other dive experiences; choose words that best describe their relationship to issues of sustainability before visiting the *Museo* (i.e. “Which of the following words best describe your feelings about environmental issues as a whole?: etc. etc.”), and describe their understanding and potential concern about climate change; describe the prevalence of environmental themes in the artwork (i.e. “Did the installation make you think more about: climate change, plastic waste and garbage, marine biodiversity, social media, future generations, etc.”). Other questions were included depending on how involved the participant was in the *Museo Atlántico* project, and whether or not the participant was a resident of Lanzarote.

The rapid response survey was conducted at Playa Chica, the most regularly used departure site and dive site for visiting divers, over the course of five three-hour survey sessions. Divers were asked seven questions: their nationality, age, certification level, how many times they have visited Lanzarote, how they would describe diving on Lanzarote, and whether or not they had dived the *Museo Atlántico*. If they said no, I asked why. If they said yes, I asked for their response to the site. These forty-one anonymous surveys were analyzed to better understand dive site preferences for divers who were not already about to dive the *Museo Atlántico* and helped situate semi-structured interview responses from divers for a better understanding of the breadth of

experiences and backgrounds that divers bring to their dives on Lanzarote. This analysis focuses on the qualitative analysis of these data.⁵² Every diver is a willing participant in a booming global dive industry and understanding divers as agents in that industry is crucial for understanding the successes and pitfalls of resilient dive tourism infrastructure projects.

Artificial Reefs: Development for the Anthropocene

Lanzarote's dive tourism industry, adapting to a changing global economy, population, climate, and politics, looked back to the island's early relationship with land art and saw sea art. It saw an opportunity to be a complete dive location in the region and on the planet, attracting European dive tourists away from a troubled Middle East while drawing on the island's unique environmentalist brand curated by artist and architect César Manrique in the 1970s in a way other nearby locations could not. Extending the political and aesthetic power of land art below the surface, the local tourism board called upon Jason deCaires Taylor to create an installation that would revitalize the local tourism industry while simultaneously remaining true to the environmentalist ethos Manrique promoted. Manrique, however, saw his site-specific installations as a way to regulate tourism infrastructure and protect vast areas of purportedly barren volcanic soil from development. The *Museo Atlántico* claims not just to protect the marine environment but *enhance* it through human intervention on the seafloor. This

⁵² Originally, I intended to utilize CACT's proprietary survey data collected for almost every diver to visit the *Museo* with accredited dive tour operators, which encapsulates a small range of responses to the *Museo* since its inception in early 2015. These data include diver profiles (nationality, age, dive certification status) as well as general ratings from those divers about their experience of the site (Did they like their experience? How hard was it to dive at this site? Would you dive there again? Etc.). I decided that was outside of the scope of this thesis and encourage future students to compare my quantitative and qualitative results.

thesis demonstrates the ways in which artificial reef projects like the *Museo*, when promoted more as conservation efforts than tourism development, exploit local environments and subvert local public participation processes with little impact on the tourists disconnected to this specific marine space.

To do so, Chapter One outlines Lanzarote's early environmentalist legacy and eco-art tourism brand through an environmental history of development on the island. César Manrique, born on Lanzarote and a working artist, returned to the island after training in Madrid, New York, and Japan to find development projects rapidly proliferating across the arid volcanic island after desalination infrastructure expanded the carrying capacity of the island. Many developers considered the volcanic terrain too alien for foreign tourists to appreciate and in need of amenities like large hotels to generate tourism revenue. Manrique instead considered the alien landscape and the local, sustainable agricultural practices cultivating that unique and worth uplifting, an attraction rather than a distraction. I argue that this is one example of an "art island" tourism phenomenon, where islands are perceived to be particularly designable, brandable units of tourism consumption, that ultimately helped developers justify the *Museo Atlántico*'s development in 2015.

Chapter Two compares the intended use and benefits of the *Museo* as promoted by the artist and developers and perceived by dive tourists and professionals. Promotion materials as well as interviews with the developers and artistic staff list perceived environmental impacts of climate change as well as the predicted outcomes – educational, political, and ecological – of the *Museo* intervention in Lanzarote's shallow coasts. We see that the *Museo* is transformed into a restoration project by

rhetoric as much as by the (unmeasured) bioaccumulation on and around Taylor's sculptures. Diving into the participant observation and interview outcomes of fieldwork in and around the *Museo*, this chapter describes the ways that dive tourists and professionals actually understand the *Museo* and respond to its messaging, despite the intent of the artist and developers. The *Museo*'s installation has expanded Lanzarote's dive economy and enhanced the quality of life for dive professionals more than it has altered dive tourists' relationship to the marine environment or climate change or enhanced the local marine environment. As a catalyst for economic development, the *Museo* has been relatively effective; as a tool for cultural change, there is little concrete for divers to take away from the *Museo Atlántico* (despite all the concrete now sitting at the bottom of the ocean).

Chapter Three describes how, in the context of the development policies and plans for the island, the *Museo Atlántico* undermined public process and faith in Spanish democracy while branding itself as yet another eco-art installation rather than a tourism development project. Local community activism disrupts the easy implementation of the *Museo* project. The marine life of the *Museo* disrupts the intended or easy use of the installation, emphasizing the multispecies negotiations and actions increasingly characteristic of the Anthropocene. Together, these chapters argue that artificial reef installations must be considered exclusively as development before they are treated as conservation projects, insisting that any intervention in the environment – even in the Anthropocene – requires due public process.

CHAPTER 1: Art Islands: Branding and Preservation of Island Aesthetics in the Canary Island Archipelago



Figure 6 - La Grúa de Babel (2000, Fundación César Manrique)

“Lanzarote is like an unframed, unmounted work of art and I hung it and held it up for all to see.” - César Manrique

Many visitors to Lanzarote say that touching down on the volcanic island feels more like landing on the moon. Surrounded by crisp, clear cerulean seas that attract divers from across the European continent, the red-grey island once called “the land that is all ochre” in the indigenous Guanches tongue rises up as a series of previously volcanic peaks streaked by black earth. While a majority of visitors to the island take up package tourism experiences bound to the coast, biking and wine enthusiasts visit the island for the dark volcanic soil that supports rare breeds of white wine grapes endemic to the island; locals have been farming with these unique permaculture and

slow food techniques since settling the island four centuries ago.⁵³ Equally embedded in the landscape are the designed social spaces of local artist César Manrique, part of a decades long project to elevate the status of the local environment from desolate and arid to a surreal, ecologically important, and aesthetically unique tourism destination.

When modern artist and architect César Manrique returned home to Lanzarote in 1964, the northernmost of the Canary Islands off the coast of Morocco, after a twenty-year sojourn abroad to study modern art, he had returned to an island in flux. Energized by a burgeoning environmentalism acquired abroad and terrified by the already-apparent impacts of mass tourism on this once-barren volcanic island, Manrique quite literally saw an opportunity in the landscape. Manrique and the local tourism bureau undertook a decades long project to rebrand and, more importantly, redesign the island as simultaneously artistic and ecologically unique. The island's tourism board, CACT, has long leveraged these immersive art installations to brand the island, while local conservationists (including Manrique until his untimely death in 1992) used Manrique's projects to establish Lanzarote as the first island site for UNESCO's Man and Biosphere Program in 1993.⁵⁴ This certification requires reserves do more than preserve some genre of "pristine" natural sites, instead requiring that specific areas demonstrate a "strong historic link between man and nature."⁵⁵

⁵³ José-León García-Rodríguez, Francisco J. García-Rodríguez, and Carlos Castilla-Gutiérrez, "Aridity, Desalination Plants and Tourism in the Eastern Canary Islands" Lanzarote is a site of ongoing colonial connectivity and neoliberal package tourism development. Lanzarote was once occupied by the Guanches Maxos clan, described as so thoroughly assimilated or destroyed during Spanish conquest and colonization between 1402 and 1496 that anthropologists struggle to trace early island history. The *Museo Atlántico* is situated within histories of global conflict, not only as a stop-over for the Atlantic slave trade but as a Spanish colony catering to British tourists, who in 2017 have been discouraged from diving in the Red Sea region.

⁵⁴ "UNESCO - MAB Biosphere Reserves Directory."

⁵⁵ Bridgewater, "The Man and Biosphere Programme of UNESCO."

Manrique's art drew attention to the historic, traditional relationship between island residents and Lanzarote's environment, highlighting their agricultural techniques, small physical footprint, and "sense of harmony."⁵⁶

Manrique's work critically frames the relationship between man and nature, this "harmony", as a type of heritage. Manrique grew up on Lanzarote immersed in manual agriculture and with little technological intervention, and often recalled a connection to the landscape reminiscent of Aldo Leopold's land ethic.⁵⁷ These practices remain a respected reference in contemporary life on Lanzarote, recalled in annual ceremonies and performed for tourists in traditional 19th Century field apparel. Manrique's installations were designed to reference historic vernacular architecture and protect Lanzarote's historical relationship to the environment. At the same time, Manrique re-envisioned what humankind's relationship to the environment needed to be in an era of increased industrialization, pollution, and alienation from the earth. He believed that "we are witnessing a historical moment where the huge danger to the environment is so evident we must conceive a new responsibility with respect to the future."⁵⁸ His installations were created to inspire a new land ethic, a new sense of heritage. David Harvey notes that what contemporary society designates as heritage and chooses to protect reflects contemporary ideals and beliefs as much as it connects the past, present, and future of a society.⁵⁹ Manrique's art, designed for and financed by tourism, historicizes Manrique's environmentalism in the name of neoliberal economic development while simultaneously preserving local lands and waters

⁵⁶ Maderuelo, *Jameos Del Agua*.

⁵⁷ Worster, *Nature's Economy*.

⁵⁸ Manrique and Gómez Aguilera, *César Manrique*, 125.

⁵⁹ Harvey, *Spaces of Capital*.

through the Biosphere Reserve program. For heritage scholar Felicity Pickens, this depiction of heritage is emblematic of an Anthropocene ethos where creating heritage can simultaneously “portend a future, gesture towards the past, and condemn so many actions in the present.”⁶⁰ Lanzarote has been designed to look un-designed, from its rugged landscape preserved by Manrique’s land-use laws to the crystal-clear waters prized by divers and made possible by water quality regulation. Now, Lanzarote’s tourism industry must adapt to a changing market and changing climate at the same time. Lanzarote must be re-designed as more resilient for a changing planet.

Today, tour busses shuttle families of tourists from installation to installation, incentivizing road infrastructure development and pressuring the island’s ecological systems. All-inclusive hotels dominate the coast, and ghosts of development projects loom over the desert landscape. Based on data provided by the World Tourism Organization (2004) and Gobierno de Canarias (2005), the Canary Islands alone should be considered to be among the top 20 global tourist destinations, with 9.8 million international tourist arrivals for the year 2004. But within the Canary Islands, almost 70 per cent of all tourism arrivals are concentrated in the two main islands of Tenerife and Gran Canarias.⁶¹ In this context, Lanzarote seeks enough of the market share to support growth, especially in dive tourism.

Dive tourists made up more than twenty percent of the island’s annual visitors in 2015,⁶² and local tourism officials informally reported a two-hundred percent

⁶⁰ Picken, “Making Heritage of Modernity,” 59.

⁶¹ Diaz-Perez, Bethencourt-Cejas, and Alvarez-Gonzalez, “The Segmentation of Canary Island Tourism Markets by Expenditure”; Domínguez-Mujica, González-Pérez, and Parreño-Castellano, “Tourism and Human Mobility in Spanish Archipelagos”; Garín-Munoz, “Inbound International Tourism to Canary Islands.”

⁶² Diving, “Dive Tourism Growing Fast in Lanzarote.”

increase in the last year alone.⁶³ Increasingly, dive tourists seeking new nearby dive sites outside of the tumultuous Middle East dominate island visitation. This increase coincides with the installation of the *Museo Atlántico* in 2016. That March, artist Jason deCaires Taylor installed an underwater "museum" off Lanzarote's coast, intended to promote a mindset of global environmental stewardship and stimulate the local dive tourism economy. While wholly supported by Lanzarote's tourism board, locals question whether or not his work contributes to or corrupts Manrique's vision of planned development and environmental conservation.

Lanzarote was and is one of the first "art islands", discreet geologic sites made unique in a competitive globalizing island tourism industry by embedding art into the local ecology itself, or treating ecology as art – static, preservable, delicate. Thirty years after Manrique's first installation project,⁶⁴ UNESCO designated Lanzarote a World Heritage Site in part for this socio-ecological synthesis, in some ways precluding overdevelopment and in other ways encouraging Lanzarote's branding as a certain type of desirable tourist destination. Either mode of tourism development requires the island to expand its infrastructure and carrying capacity, with different expectation of limited or unlimited growth. This chapter will set out a timeline of Lanzarote's development into art island to clarify the "art island" concept, an analysis of how Manrique's rhetoric manifested years later in the UNESCO designation, and briefly describe the contemporary impacts of the "art island" branding on the *Museo Atlántico*, a massive underwater museum that embodies Anthropocene environmentalism. Each implicates the way we conceive of marine and environmental

⁶³ Anibal Vega, interview.

⁶⁴ "UNESCO - MAB Biosphere Reserves Directory."

heritage in the management or conservation of marine resources. These developments have specific implications for island livelihoods, and how our understanding marine space, our deployment of environmentalism, can deter or enable overdevelopment. The development of Lanzarote illustrates how ideas of art, ecology, and value can cross oceans and alter environments.

Carrying Capacity: Fascism, Tourism, and Making Islands Livable

Lanzarote was once considered too arid, strange, and volatile to host tourists, instead developed as an agricultural provider to mainland Spain. In the process of cultivating these vineyards and small farms, local Lanzarote residents established a specific land ethic for this, their volcanic island. Garcia-Rodriguez et al. provide a long history of aridity in the eastern Canary Islands, Lanzarote and Fuerteventura, both found on the southern edge of the temperate zone, in the subtropical anticyclone belt.⁶⁵ With less than 150 mm of rainfall a year, Lanzarote's inhabitants devised original agricultural systems to combat the aridity, although low yields have historically limited socio-economic development and population growth. Tourism materials from Manrique's *Jameos del Agua* note that "The struggle for survival in such a peculiar environment has given rise to ingenuity and an economy of productive resources that can be perceived in the area's onion, melon, prickly pear, tomato and fig crops, but particularly in its vineyards."⁶⁶ These farming systems have left behind an important regional heritage, with an environmental and scenic value – decidedly socio-

⁶⁵ José-León García-Rodríguez, Francisco J. García-Rodríguez, and Carlos Castilla-Gutiérrez, "Aridity, Desalination Plants and Tourism in the Eastern Canary Islands."

⁶⁶ Maderuelo, *Jameos Del Agua*, 1:52.

ecologically oriented rather than untouched or pristine – that has played an integral role in Lanzarote’s development. These agricultural systems sufficed until the introduction of seawater desalination plants and the arrival of tourism in the last third of the twentieth century (first on Lanzarote in 1964), which improved living standards for the local population but also led to a socio-economic transition to tourism.



Figure 7: Traditional agricultural practices worked with Lanzarote's volcanic landscape. "When you are born in a county like this water shows its true value." (Photos courtesy of Memoria Digital de Lanzarote).



Figure 8: Traditional, often gendered, agricultural practices defined the local landscape (Photo by Javier Reyes Acuna with permission of Memorias de Lanzarote).

Expanded tourism development was only made possible through technical and political engineering. Until 1963, the aridity of the island posed a problem for developers: there was barely enough water on the island for Lanzarote's inhabitants, let alone any number of visiting tourists.⁶⁷ The island had met its carrying capacity by the late 1950s, resulting in an exodus of island natives to other Spanish-speaking countries due to limited water resources.⁶⁸ Limited water had cultivated a particularly intimate land ethic for this rural agrarian and artisanal fishing society. One local recalled growing up on the island, following her grandfather's footsteps in the fields, careful not to disturb the rows of volcanic soil and upset the delicate arrangement that let the vineyard grow. "You learned to respect the landscape, living here," noted the long-time island resident, now a biologist.⁶⁹ But two brothers, locals, changed this ethic by installing the island's first desalination plant in 1962.⁷⁰ In so doing, they altered the carrying capacity of the island and enabled further development, leading to roads, hotels, and increasing mass tourism interest from the United Kingdom.⁷¹ Tourism was particularly attractive as an alternative to a failing mineral extraction industry; in 1968, synthesized products made up much of Lanzarote's mineral and produce exports irrelevant in the global markets and tourism was the most sustainable industry alternative.⁷² After decades of boutique tourism for British merchant visitors,

⁶⁷ Maderuelo, 1:143; José-León García-Rodríguez, Francisco J. García-Rodríguez, and Carlos Castilla-Gutiérrez, "Aridity, Desalination Plants and Tourism in the Eastern Canary Islands."

⁶⁸ Anibal Vega, interview; Idoya Cabrera, interview.

⁶⁹ Idoya Cabrera, interview.

⁷⁰ Swyngedouw, "Into the Sea"; Schallenberg-Rodríguez, Veza, and Blanco-Marigorta, "Energy Efficiency and Desalination in the Canary Islands."

⁷¹ José-León García-Rodríguez, Francisco J. García-Rodríguez, and Carlos Castilla-Gutiérrez, "Aridity, Desalination Plants and Tourism in the Eastern Canary Islands."

⁷² Moss, "Pleasure Islands: The Canaries Offer Different Visions of the Sublime," 50.

ecological pressures and subsequent adaptations opened the doors to mass tourism in the Canary Islands.



Figure 9: Mass tourism development on Lanzarote (Photo used with permission of Memoria de Lanzarote).

Before Manrique’s installations, mass tourism seemed the only way for Lanzarote to modernize. Tourist development in the Canary Islands has progressively changed the way of life and the economic strategies of the littoral populations of the islands. It modified the traditional activities that farming and fishing families traditionally combined in their households.⁷³ Early tourism of the 19th century was linked to export agriculture associated with British capital and merchant shipping, as merchants would visit for the “perceived ‘health giving’ potential and the exoticism of

⁷³ Pascual, “Littoral Fishermen, Aquaculture, and Tourism in the Canary Islands: Attitudes and Economic Strategies,” 79.

the landscape.”⁷⁴ Mass tourism was then popularized in the 1960s, engineered by the Spanish dictatorial state.⁷⁵ Despite the known deleterious effects large developments had on adjacent islands ecologies, in the final decade of Gen. Francisco Franco's dictatorship the regime deployed tourism to improve Spain's economy and end its international isolation.⁷⁶ This expansion has taken place first and foremost in the littoral zone, excluding those fishery-dependent populations and the activities that take place in these coastal areas.⁷⁷ Broader constituencies of northern European tourists took advantage of booming resort development which, Bianchi and Talavera point out, invited “foreign residents and entrepreneurs and the speculative development of urban tourist infrastructure, in some cases driven by Spanish and international consortia of investors.”⁷⁸ Often underwritten by public funds managed by public authorities, Canarian governments invested in an “infrastructure of pleasure”, which both “reflects the new spatial and symbolic arrangements of capital through which new sources of value are created in the tourist economy” and which consists of “urban spaces with consumption at the center.”⁷⁹ (The *Museo Atlántico* is one of these very spaces, though submerged: publicly funded and selectively available to the public.) These hotels were under construction on rural Lanzarote when Manrique returned permanently in 1964.

⁷⁴ Selwyn and Boissevain, “Introduction,” 13.

⁷⁵ Selwyn and Boissevain, 13.

⁷⁶ Lawrence, “From Bullfights to Bikinis.”

⁷⁷ Pascual, “Littoral Fishermen, Aquaculture, and Tourism in the Canary Islands: Attitudes and Economic Strategies,” 65.

⁷⁸ Selwyn and Boissevain, “Introduction,” 13; Bianchi and Talavera, “Between the Sea and the Land: Exploring the Social Organisation of Tourism Development in a Gran Canaria Fishing Village.”

⁷⁹ Bianchi and Talavera, “Between the Sea and the Land: Exploring the Social Organisation of Tourism Development in a Gran Canaria Fishing Village,” 96.



Figure 10: Manrique in his Cactus Garden (Photo from Memoria de Lanzarote).

César Manrique, Preserving Nature by Design

Through his art installations, local artist César Manrique hoped to preserve the historic, environmentally intimate socio-ecology and heritage of Lanzarote. By building tourism experiences into the environment *as art*, Manrique created a concrete set of landmarks that demonstrated the value of Lanzarote’s Naturecultures.⁸⁰ César Manrique redesigned Lanzarote’s environment into spaces that would attract tourists and create economic value for the island’s undeveloped interior. Capitalizing on the rawness and ruggedness of the volcanic environment, Manrique highlighted its alien and untamable landscape through built social spaces in the International Style. Manrique’s “interventions” took the form of monumental structures, wind toys and, most notably, embedded social spaces. These spaces (seen in Figures 11 and 12) are

⁸⁰ “Natureculture” refers to a synthesis of nature and culture in ecological relationships, deconstructing dualism and highlighting the mutual construction of niche and impact. Fuentes, “NATURALCULTURAL ENCOUNTERS IN BALI”; Haraway, *The Companion Species Manifesto: Dogs, People, and Significant Otherness.*; Haraway, *Staying with the Trouble.*

built into and highlight natural geologic features of the island and are meant to facilitate human sociality in an explicitly socioecological context. Take, for example, los Jameos del Agua (In English, the “Lava tunnels of water”), Manrique’s first and grandest project. He created pools and platforms for dancing, music, and restaurants around a pristine underground cave where an endemic protected species of white crab has its only habitat (Figure 12). Part of Manrique’s project to “envisa[ge] possible Utopias,” these “educational” sites emphasized, for Manrique, “a globalizing symbiosis of Art-Nature Nature-Art.”⁸¹ In throwing tourists deep in this alien environment, Manrique encouraged new ways of understanding, appreciating, and framing the world. In these buildings Manrique dissolved the distinction between interior and exterior, site and structure. He envisioned a tourism specific to place rather than erasing place.



Figure 11: Los Jameos de Agua, one of Manrique's first project, turns a lava tunnel's caves into social spaces. A cafe, music hall, and pool are nestled in the inflationary caves around a pool filled with a rare, endemic white crab (photo by author).

⁸¹ Manrique and Gómez Aguilera, *César Manrique*, 69.



Figure 12: The Fundación César Manrique, tasked with maintaining Manrique's legacy, turned his first home on the island into a museum. Another lava tunnel has been converted into a series of small lounges and bar spaces (photo by author). For more images of Manrique's installations, please see Appendix A.

Manrique's vision of tourism leveraged islander identity and the specificities of Lanzarote's ecology to create a style of tourism defined in opposition to the mass tourism of other Canary Islands, at certain costs to traditional livelihoods. In this way, he was simultaneously a political actor in tourism development, a tourism developer acting politically, and a designer with a specific philosophy and aesthetic.⁸² Manrique is often quoted for his brave anti-development rhetoric, standing in the face of local authorities and protecting the environment with his radical land ethic:

“Those of us born of you [Lanzarote], those of us who know about your magic, your wisdom, the secrets of your volcanic structure, your revolutionary aesthetics; those of us who have fought to rescue you from your enforced historical isolation and the poverty which you have always suffered, begin to tremble with fear as we see how you are destroyed and submitted to massification. We realize just how futile your accusations and cries for help are to the ears of speculators in their hysterical avarice and the authorities' lack of

⁸² Tendra, “Nature and Misterium towards Culture.”

decision that sometimes tolerates and even stimulates the irreversible destruction of an island which could be one of the most beautiful and privileged on the planet."⁸³

Manrique even criticized mainland economic policies for erasing a sense of place and ignoring the needs of coastal ecologies. He advocated for human adaptation to their ecological context rather than an erasure of unique environments:

*"It seems utterly incredible that, despite the catastrophic alteration of almost the entire Spanish coastline, blurring the traits of each piece with a complete lack of adaptation and the gratuitous introduction of a cold international standardization, we have failed to learn the lesson whereby we must stop and save what is left."*⁸⁴

Manrique decried overdevelopment, creating and staffing his Foundation with environmentalists and activists. Manrique specifically highlighted island inhabitance, with visibly limited resources floating almost adrift at sea, as synecdoche for Earth. Citing the island's carrying capacity, its "limited dimension and restricted space", he advocated for "balanced development" where "intelligent planning should put an immediate stop to the irrationality of its chaotic growth."⁸⁵ With restricted resources and poor incentives for sustainable development, Manrique hoped to use Lanzarote as an example for the world to follow. Today, the César Manrique Foundation (FCM) is a staunch advocate for restricted development, aiding environmentalists and bureaucrats on the island as a non-governmental influencer.

At the same time, Manrique's projects were explicitly development, and tourism development at that. While the Jameos was a conservation project protecting the endemic white crab, it was part of an infrastructural overhaul by local government to

⁸³ Manrique and Gómez Aguilera, 118–19; For more on "Land Ethics", please refer to Aldo Leopold and the surrounding Environmental History literature (Cronon, etc.).

⁸⁴ Manrique and Gómez Aguilera, 108.

⁸⁵ Manrique and Gómez Aguilera, 119.

take the island out of its “backwardness” – including projects like the desalination plant.⁸⁶ Mayor Ramírez Cerdá, Manrique’s childhood friend and war-buddy, continued to support Manrique’s projects and whatever infrastructure (roads, toilets, electricity) was necessary for the construction or visitation of those projects. “If anything deteriorates the island [of Lanzarote], no matter what its source is, I shall never have anything to do with it,” Manrique declared.⁸⁷ Yet, the success of his own projects was contingent on the infrastructural development of Lanzarote on a massive scale.⁸⁸

While explicitly denouncing “paradise” as the touristic ideal, Manrique’s imagined cure to mass tourism in many ways resonates with critiques of island tourism as a process that culturally and spatially reshapes islands. Ian Strachan and Angelique V. Nixon. Nixon expands on Strachan’s materialist critique of “paradise,” in which “the strength of paradise as metaphor and mythological construct lies in its ability to transform itself”, to note the ways in which (Caribbean) identity both is shaped by and resists the expectations of “paradise.”⁸⁹ Krista Thompson demonstrates that the visual culture of paradise – from palm trees to coral reefs, certain environmental features signal “the Caribbean Picturesque” – have not just social but environmental consequences for the islands in *Eye for the Tropics*. Dr. Amelia Moore asserts that Islands themselves are “are not inert geological objects. Islands are both created and creative [and this phenomenon] becomes apparent if you follow the redevelopment of

⁸⁶ Maderuelo, *Jameos Del Agua*, 1:143.

⁸⁷ Manrique and Gómez Aguilera, *César Manrique*, 108.

⁸⁸ In line with critiques of “ecotourism” ventures made by Carrier and McLeod, the creation of infrastructure around ecotourism sites is at much open for critique as the operations of the ecotourism venture itself. Carrier and Macleod, “BURSTING THE BUBBLE.”

⁸⁹ Strachan, *Paradise and Plantation*, 36 Cited by Nixon. ; Nixon, *Resisting Paradise: Tourism, Diaspora, and Sexuality in Caribbean Culture*, 4.

particular islands across space and time.”⁹⁰ Lanzarote is in many ways another transformed island paradise. César Manrique infused Lanzarote’s environment with brandable value through his immersive/eco-art installations, creating spaces infused with island pride and literal value for the tourism economy. He imagined a utopic tourism industry that could capitalize on the local environment with little actual cost to that environment. In so doing, Manrique both positively and negatively impacted the island’s ecology and landscape through tourism-incentivized management and mismanagement and re-created Lanzarote as an “art island.”

UNESCO’S Man and Biosphere Program

The effect of the “art island” approach to tourism branding on local environmentalism was twofold: first, the César Manrique Foundation and civil government leveraged the natureculture-oriented art and installations to draft rigorous zoning regulations that ostensibly limited overdevelopment; second, these organizations preserved Lanzarote’s socio-ecology by establishing the entire island as a UNESCO Man and Biosphere site.⁹¹ While both were positive policy steps –

⁹⁰ Moore, *Destination Anthropocene: Global Change Science, Tourism, and the Rebranding of Island Space in The Bahamas*, 4.

⁹¹ The single critical history of the Man and Biosphere program establishes the uniqueness of the program, its importance to UNESCO’s project, and room for growth. Peter Bridgewater, in his recent paper “The Man and Biosphere programme of UNESCO: rambunctious child of the sixties, but was the promise fulfilled?”, situates the MAB program within the environmental movement of the period, part of an upwelling of international environmental organizational projects that emerged out of the post-Cold War globalist regime and a new social consciousness. UNESCO’s senior figures were planning a significant meeting on the environment (The Biosphere Conference) which, held in Paris in 1968, gave rise to a pragmatist, reasonable use and extraction framework that sought to satisfy both socio-ecological preservation and the resource demands of post-war modernity. Bridgewater describes the conferences of note, the missed opportunities to promote MAB program success within the shifting cultures of UNESCO, and the small successes that gave helped the MAB program “tread water” to 2016.⁹¹ But the MAB program exists in a larger context still, reacting to changing definitions of “heritage”, UNESCO’s various attempts to address maritime culture in its programming (which

progressive, innovative, and defensive of environmental health – neither ultimately prevented illegal overdevelopment, promoted the traditional “harmony” with nature romanticized by Manrique, or made sure that traditional livelihoods could thrive in a tourism economy. While the unique establishment of the *entire* island as a Man and Biosphere (MAB) site tells us much about the consumability of the island unit, it did not ultimately, effectively, promote comprehensive environmentalism on Lanzarote.

First, Manrique and his tourism-funded foundation championed aggressive development regulation to protect Lanzarote’s surreal environment from overdevelopment. Redefined respect for the island’s aesthetic was so central to Lanzarote’s new self-image that well-regulated development became proxy for understanding the state of democracy on the island and in Madrid for local residents. Further examination of this phenomenon is included in Chapter 3.

Second, Manrique’s work and networks ultimately codified Lanzarote’s traditional socio-ecological relations through UNESCO’s nascent Man and Biosphere program. Manrique’s personal crusade for ecological and social preservation paved the way to Lanzarote’s designation as the first island UNESCO World Biosphere Reserve in 1993. In the process of redeveloping the island, Lanzarote was designated as a United Nations Educational, Scientific and Cultural Organization (UNESCO) Biosphere Reserve in 1993, which more than preserving some genre of “pristine” natural site requires that specific areas demonstrate a “strong historic link between man and nature.”⁹² Manrique’s commitment to building that relationship into

remained informal until 2001), and increasingly siloed approaches to human-nature interaction across disciplines.

⁹² Morales, *Taro: El Eco de Manrique*.

Lanzarote's volcanic ash were heralded as defining factors in this designation.⁹³ In public dialogue with the economic pressures of package tourism, Manrique framed the island as a discrete, socio-ecological, delicate system whose aesthetic and ecological value *enhanced* rather than impeded the island's tourism value; it was an exemplar of the "ecodevelopment" principle touted by the IUCN's new *World Conservation Strategy* while simultaneously meeting Franco's development imperative.

But why, specifically, Lanzarote? Lanzarote was the first MAB site to be designated in its geographic entirety – the whole island is a MAB site. It was the entirety of Lanzarote's historic socio-cultural relations, the sustainable land ethic of islanders, and indeed Manrique's focus on vernacular architecture and environmental design that won the designation. Lanzarote's maritime heritage, its "perceptions, discourses, practices, customs, traditions...maritime culture, maritime-ness, distinguishing maritime features, and the relationship between the land and the sea, endowed with cultural, emotional, or use values" expanded and challenged the framework for MAB site selection.⁹⁴ It recognized Lanzarote and the Canary Islands as a whole as an aquapelagic system driven by Lanzarote's limited island resources.

As a member of Spain's committee on site selection, Manrique had much to gain from designating the island as a Reserve. Some speculate the designation was meant to help regulate the illegal development slipping through the cracks of local government permitting more forcefully, with international aid and on an international stage.

Paradoxically, the MAB designation is also a boon to tourism. It's heralded on

⁹³ Anibal Vega, interview; CACT Tourism Materials.

⁹⁴ Tejero and Camós, *Revisiting the Coast*, 6. Further review of the significance of Maritime Heritage is explored in Chapter 3.

informational materials as you enter and exit the island's only airport and draws tourists to dive in the challenging waters off La Graciosa island.⁹⁵ The Man and Biosphere brand of environmentalism lends credibility, through its history, to Lanzarote's brand.



Figure 13: The poster and logo of the "World Conference on Sustainable Tourism", held in Lanzarote (at Manrique's Jameos del Agua) between April 24 and 28, 1995, two years after Lanzarote was declared a UNESCO Biosphere Reserve, at which UNESCO's "Charter of Sustainable Tourism" was signed. (Photo used with permission of Cabildo Insular de Lanzarote.)

⁹⁵ The island of La Graciosa and the Marine Reserve off its shores is a popular, and tiring, day trip for tourists. Home to 500 residents, tourists visiting La Graciosa tend to be more intrepid and repeat visitors to Lanzarote. For divers, it's an adventuresome and sea-sickening trip to pristinely clear waters. Upsettingly, the only instance of fish feeding I saw in Lanzarote's dive industry was by the divemasters who lead trips in the Reserve. They were relatively poor guides, mismanaging guests and putting several divers at risk to extend the length of the dive.



Figure 14: Information stand at the World Conference, featuring logos designed by Manrique (photos courtesy of Cabildo Insular de Lanzarote).

The Man and Biosphere program was part of an upwelling of international environmental organizational projects that emerged out of the post-Cold War globalist regime and a new social consciousness. With the publication of *Silent Spring* by Rachel Carson in 1962, popular culture and media (though overwhelmingly white, middle-class, and American, with a particular expectation of tropical environments and its own virtual environmental imaginary ⁹⁶) were attuned to unsustainable environmental practices. UNESCO's Biosphere Conference, held in Paris in 1968, gave rise to a pragmatist, reasonable use and extraction framework that sought to satisfy both socio-ecological preservation and the resource demands of post-war modernity. Since then, the program has struggled with visibility and messaging, in part

⁹⁶ Paige West and James G. Carrier, "Ecotourism and Authenticity: Getting Away from It All?" *Current Anthropology* 45, no. 4 (2004): 483–98, <https://doi.org/10.1086/422082>.

due to and increasingly siloed approaches to human-nature interaction across disciplines.⁹⁷

Conclusion: Consumable Islands

Island ecologies across the globe have been shaped as part of an artistic crusade to create consumable island tourism brands. Islands have always been particularly "consumable,"⁹⁸ and mass tourism from the global north has shaped island ecologies through colonization and economic pressure to make them more so.⁹⁹

Manrique deployed his art as a local agent, though informed by his experience of New York's modernity and Modernism, to preserve the local ecology from homogenizing development pressures. Manrique's sites sought to create value for landscapes that were not emblematic of "paradise", not altered to obscure the local ecology, but designed to emphasize difference. The art island is a designed, fraught landscape, to be sure, but one that hoped to center an "authentic" sense of place at the center of its brand.

Yet, in so doing, this tourism model has economically undercut the livelihoods of the local farmers and fishers central to its Man-and-Biosphere brand. Canarian fishermen and women are increasingly forced, through economic pressure, to forfeit the foreshore and rent their coastal homes to tourists.¹⁰⁰ Centering traditional, sustainable, socio-ecological relations – naturecultures – at the heart of Lanzarote's

⁹⁷ Bridgewater, "The Man and Biosphere Programme of UNESCO," 4.

⁹⁸ Moore, "Climate Changing Small Islands."

⁹⁹ Sheller, *Consuming the Caribbean*; Thompson, *An Eye for the Tropics*.

¹⁰⁰ Pascual, "Littoral Fishermen, Aquaculture, and Tourism in the Canary Islands: Attitudes and Economic Strategies."

economy has effectively preserved these coastal activities as artefacts without enabling them to grow, be dynamic, thrive in a new and inescapable economy – to be resilient. Preserving artefacts of a naturecultural relationship rather than the actual dynamic fact of the relationship itself illustrates a misconception of what resilient livelihoods must look like. While Lanzarote expands capacity to demonstrate this “art island” to visitors with projects like the *Museo Atlántico*, throwing tax dollars at the maintenance of its image as a globally conscious yet hyperlocal community, Manrique’s intended protection of that community grows stagnant and stale.

At sea without its captain, Lanzarote has consumed its unique heritage to compete in a homogenizing mass tourism market – exactly what Manrique hoped to avoid. Has the *Museo Atlántico* helped or hindered Manrique’s vision? The next chapter explores why tourists are attracted to the *Museo Atlántico*, how diver professionals interact with the sculptures on a daily basis, its economic impact, and what the life of this object has been on the island that is all ochre.

CHAPTER 2: Interpreting and Experiencing Artifice at the *Museo Atlántico*



Figure 15: Divers prepare to descend to the Museo Atlantico. The state-sponsored patrol boat crew watch their descent. Photo by author.

It is a warm and windy summer day, and the sun shines lazily through a sky filled with Saharan dust. Occasionally it glints off of the deep teal waters to the south of Playa Blanca, Lanzarote's most recently developed beachfront tourist destination. At its most dense, plastic floaties and raunchy bottle openers almost pour out of storefronts on Playa Blanca's volcanic rock-hewn boardwalk. Shop owners from Morocco and China delegate offers to the British and French tourists ambling from pub to shore in packs. The tourists are called "los gambas" by locals: prawns, bare shoulders crisped a fiery pink by sun exposure and curled around restaurant tables for their breakfast beer. Through the crowds of prawns, neoprene-clad divers march with tanks propped on their shoulders down to the shore. They sling their buoyancy control devices (BCDs) on like vests, inelegantly lean on rocks or waddle into the shallows to slide on fins, and swim out to their motorboats. Buoyed by the air in their BCDs and weighed down by tanks and lead, the divers roll on to their backs and protectively cradle their cameras as they kick like otters hoarding a sea urchin snack on their stomachs. Once

dragged aboard by some obliging crewmember, divers grip the boat as the motor gives a guttural start and sends them skating across the water to the *Museo Atlántico*.

Without the large red buoys and patrol ship moored alongside them, the *Museo* would remain unknowably hidden underneath the calm waters near Playa Papagayo. Instead, the underwater sculptures are neatly penned within a network of buoys and ropes, under surveillance from 9 am to 4 pm when the guards return home and the museum is declared closed to human visitors. Until then, the boats arrive at assigned times. Ideally, boats newly devoid of divers pull away from the patrol ship as the next full boat arrives, moors up, and with little ceremony dumps the divers and their guide into the blue. Water bubbles around your head as you tumble and right yourself in the water, lurching forward and down, letting air up and out as you sink towards a small, algae-covered sign that barely reads “*Museo Atlántico*.” For a seafloor devoid of borders, it is odd to realize that you have entered a new kind of marine territory, a leisure space that is anything besides water.

Lanzarote has long been one of the Canary Islands identified with diving, especially instead of white beaches and raucous partying. Due to the lack of freshwater rivers to spill sediment into the sea, it has crystal clear waters, angel sharks, and diversity of dive sites accommodate all levels of diver and preference. Without a particular reputation for its tropical ecology, Lanzarote’s environment often “pleasantly surprises people” with large schools of fish and top-rate visibility; where visitors to popular dive destinations have expectations, Lanzarote’s dive tourists have few preconceived notions about the marine ecology and dive amenities on Lanzarote

and have “surprisingly” good dive experiences.¹⁰¹ One can dive Lanzarote any day of the year, whereas “In the Caribbean you have storm seasons, or in Thailand you have rain seasons.”¹⁰² Many divers appreciate that Lanzarote has “very clear waters because there is no rivers” and stable year-round currents and temperatures, which one CACT official mentioned as a key factor in the installation of the *Museo* in the south of the island. Dive tourists’ experiences of the marine world inform their sense of what it means to be on Lanzarote and what they value, and their material and aesthetic preferences can drive coastal development.

Fluid phenomenologies like those experienced around the *Museo Atlántico* project create new categories of being for the tourists and dive professionals in relationship to their environment and material conditions. Following scholars Elizabeth Deloughrey, Felicity Pickens, and Rebekah Park, I argue that while artist Jason deCaires Taylor hoped to leverage dive experiences into the rallying cry for a more responsible global environmental consciousness, those who live with, on, and under the new marine environment imagined by Taylor might not necessarily hear the call. Instead, the *Museo* shows how the material conditions of capitalism, and tourism development as a capitalist leisure space often impede dive tourists’ ability to engage environmental themes. While many divers do glean environmental themes and eerie affects from the *Museo*, its material conditions and costs may prevent many divers ever experiencing the *Museo* in the first place.

¹⁰¹ “And the expectation for other locations is higher. I spoke with someone, they went to Australia, sit like, two days travelling and then you expect something, get there and hm, it’s not - here, you don’t expect a lot and then you can be pleasantly surprised. You know Flamingo Wall - people are surprised it’s here.” Dive instructor and shop owner, Playa Blanca.

¹⁰² Dive instructor and shop owner, Playa Blanca.

The Museo Atlántico, as Intended

The *Museo Atlántico* is, explicitly, three things. First and foremost, it is art. A monumental project with almost 300 individual sculptural pieces and funded by Lanzarote's Center of Art, Culture, and Tourism (CACT), the *Museo* is considered by the artist to participate in César Manrique's tradition of immersive art installations as the ninth "visitor center." Indeed, the artist's website situates his work in the land art tradition as a "new field of artistic expression, where art has become a form of activism."¹⁰³ Much as César Manrique sought to preserve open space and traditional relationships with Lanzarote's landscape through his visitor centers and Biosphere Reserve campaign, so too does Taylor believe that his product can "introduce the viewer to new ideas and thoughts" about "a global and environmental awareness."¹⁰⁴ He does so by "taking the viewer to the depths of the ocean", "experience samples of worlds beyond their own in a safe and non-destructive manner", using "new fields of materials, locations and scale, as the artworks it exhibited were built in and from the natural environment," recalling for the visitor the cultural context of galleries and museums as educational spaces:¹⁰⁵

"We call it a museum for a very important reason. Museums are places of preservation, conservation and education. They're places

¹⁰³ "Overview," Introduction.

¹⁰⁴ "Overview," Environment, Art, and Activism.

¹⁰⁵ For a concise history of museums as educational spaces see Macdonald, *A Companion to Museum Studies*; Other canonical texts include Hooper-Greenhill, *The Educational Role of the Museum*; and Cameron, "A Viewpoint"; Rader and Cain, *Life on Display* provides a crucial history of the shifting role of the museum in science education, highlighting how sponsorship and economic pressured curators toward particular representations of life.

where we keep objects of great value to us, where we value them simply for being themselves.”¹⁰⁶

For Taylor, as an artist and an environmentalist, the cultural weight of art can draw a different type of attention to marine conservation issues, creating objects of study on a dive that transcend the “brevity of most people’s exposure to our ocean environments.”¹⁰⁷

Within Museum Studies, a burgeoning field in Cultural Studies, scholars might consider the *Museo* a “post-museum,” an “emancipated” experience which liberates the content and viewer from proscriptive curatorial and learning styles through experiential learning that expands public participation in science.¹⁰⁸ Education scholar Richard Watermeyer calls the “post-museum” part of a postmodernist “Interactive Turn” that is either part of a “Disneyfication” or “distraction machine” Museum environment, or a specific pedagogy that recognizes the variable social positions of people who enter post-museum space and inevitably leave with different interpretations of that experience.¹⁰⁹ Anita Maurstad argues that the materiality of museums opens up these different interactions with museum objects, as much as experts try to contextualize those objects (through narration, text, dioramas) in ways they think can only result in specific interpretations by the audience.¹¹⁰ The *Museo*

¹⁰⁶ Taylor, *An Underwater Art Museum, Teeming with Life*. In addition, Taylor’s team note that “behind the scenes museums involve research into different cultures and preservation of objects from ages past or foreign lands. In this way, the underwater museums are no different...” Is this abductive parallel supposed to imply the power of the *Museo Atlántico* to create opportunities for marine ecology research, or that the project is memorializing and othering the marine spaces colonized by Taylor’s projects?

¹⁰⁷ “Overview,” An Underwater Art Museum.

¹⁰⁸ Hooper-Greenhill, *Museums and the Interpretation of Visual Culture*, X.

¹⁰⁹ Watermeyer, “A Conceptualisation of the Post-Museum as Pedagogical Space,” 2.

¹¹⁰ Maurstad, “Cod, Curtains, Planes and Experts”; Hubard, “Complete Engagement.”

refers to these standards for terrestrial museums and capitalizes on the cultural cache of the museum in “the West” to draw tourists attention to environmental issues.

But close attention the infrastructures and experiences surrounding the implementation of the *Museo* reveals that this post-museum comes at certain costs, both literal and ephemeral. There is a museum entrance fee, an “entrance”, and an “exit,” and specific symbolic content the artist has declared relevant to the experience of the dive site. The *Museo*, and the dive professionals who guide you through it, are tasked with facilitating the tourist’s interaction with the marine world in a way that evokes particular messages and meaning. This is the content dive professionals are required to study and recite to clients before leading dives at the *Museo*, much as docents facilitate engagement with works of art of enhance your appreciation of a piece. Taylor thus restructures experiences of marine space through physical and symbolic interventions. The other “cost” of these installations that has to be justified is the insertion of these art objects into delicate marine ecologies; for Taylor, these sculptures justify themselves as ecologically productive catalysts, creating opportunities for fish, algae, and in some cases, coral, as artificial reefs.

The second explicit claim made of the *Museo Atlántico* is that the project serves the environment by reducing damage to other dive sites while acting as ecologically productive artificial reef habitat for marine flora and fauna. Made of pH neutral concrete used for Reef Balls and organized in formations “tailored to suit endemic marine life,” the *Museo* claims to be “designed on a conservational level.”¹¹¹

¹¹¹ “*Museo Atlántico*.” This page is a general overview of the project from the artist’s webpage.

The “wide reaching benefits” of Taylor’s works include “working with and enhancing the marine environments they are placed in”, as well as the ability to “boost diversity” by providing substrate for algae and coral as well as habitat for fish, crustaceans, and invertebrates.¹¹² Local officers from CACT promoted that they consulted with marine biologists from the local university, an environmental impact assessment contractor, Dracaena, and local geologists before installing the *Museo*, and that they operated within the constraints established by those assessments.¹¹³ There are no publicly available studies that attest to the efficacy of Taylor’s sculptures as ecologically productive, though private research commissioned by the tourism board and conducted by Dracaena demonstrated a doubling in “biodiversity”, three times the “ecological abundance”, and four times the density of algal growth on the *Museo Atlántico* between pre-operational and operational assessments.¹¹⁴ CACT representatives I spoke with also noted a 5 kg increase in biomass growth, but all this information was provided without a description of the methods used by the consultants who produced the report. Three years after the project “broke ground” in 2015, CACT is promoting an eelgrass restoration project conducted with the University of Las Palmas de Canarias that will move the *Museo* into its next phase as “a natural laboratory for the investigation of life on our coasts.”¹¹⁵ Before this restoration project, CACT suggested *Museo* might function autonomously as an artificial reef.

¹¹² “Overview,” Environment, Art, and Activism.

¹¹³ Parsi, “Deep Dive.”

¹¹⁴ As described by the CACT staff responsible for operational management of the *Museo Atlántico*, and transcribed verbatim.

¹¹⁵ “Lorenzo Afirma Que Ahora Centrarán ‘Todos Los Esfuerzos’ En Destinar El *Museo* Submarino Al ‘Estudio’ de Los Mares.”

There is substantial debate in marine ecology literature as to the capacity of artificial reefs to meet the ecological objectives of their designers. There is not, for example, rigorous evidence that artificial reefs enhance production or diversity of colonizing species like seagrass¹¹⁶, coral reef fish¹¹⁷, or whether they merely aggregate fish that breed in other locations.¹¹⁸ Similarly, while Taylor’s website promotes how his sculpture sites “draw tourists away from the delicate ecosystems and fragile corals of existing reefs,” there are no coral reefs on Lanzarote, nor substantial evidence of this phenomenon in tourism studies or scientific literature.¹¹⁹ While not specifically addressing the *Museo Atlántico*, studies are currently attempting to demonstrate the use of artificial reefs as alternative dive sites to reduce dive pressure on natural reefs.¹²⁰ At the very least, Taylor hopes that his projects can be used to study marine colonization and ecological growth patterns.

Finally, the *Museo* is a political object, using state funding to meet a specific socioeconomic objective. Funded by local taxes, managed by police and CACT, and officially inaugurated by the President of Lanzarote Pedro San Gines, the *Museo Atlántico* is technically a public good intended to facilitate Lanzarote’s development

¹¹⁶ Layman, Allgeier, and Montaña, “Mechanistic Evidence of Enhanced Production on Artificial Reefs.”

¹¹⁷ Ehrenfeucht, “Artificial Coral Reefs as a Method of Coral Reef Fish Conservation.”

¹¹⁸ Schrope and Lindberg, “Understanding the Ecology of Artificial Reefs”; Yeager et al., “Does Landscape Context Mediate the Nature of Density Dependence for a Coral Reef Fish?”; Overholtzer-McLeod, “Variance in Reef Spatial Structure Masks Density Dependence in Coral-Reef Fish Populations on Natural versus Artificial Reefs”; Wilson et al., “Artificial Reefs, the Attraction-Production Issue, and Density Dependence in Marine Ornamental Fishes.”

¹¹⁹ “Overview,” Environment, Art, and Activism; Leeworthy, Maher, and Stone, “Can Artificial Reefs Alter User Pressure on Adjacent Natural Reefs?” track this same phenomenon, demonstrating in one case study that the presence of an artificial reef decreased logged recreational use of surrounding natural reefs while local dive charters thrived.

¹²⁰ Leeworthy, Maher, and Stone, “Can Artificial Reefs Alter User Pressure on Adjacent Natural Reefs?”; Polak and Shashar, “Can a Small Artificial Reef Reduce Diving Pressure from a Natural Coral Reef?”; Shani, Polak, and Shashar, “Artificial Reefs and Mass Marine Ecotourism.”

as a tourism destination in a changing global dive tourism market. It is meant to increase tourism visitation to the island and stabilize Lanzarote's dive tourism industry (more divers will attract more dive professionals, which will justify state measures to support the dive industry, one CACT official hypothesized) while remaining loyal to the "art island" environmentalism fomented by César Manrique. One CACT official described the *Museo* as an extension of Manrique's legacy in sustainable development, that "Manrique was very modern for his period, innovative to create a sustainable way to develop tourism. On the other Canary Islands, development is very different."¹²¹ He continued, "While the seven centers developed by César Manrique ground tourism in Lanzarote, we need more artists to develop the idea of Lanzarote's nature being art in a sustainable way." In this context, Lanzarote's "nature" is its brand, and the *Museo* is an extension of that approach.¹²² For the CACT official, "Manrique doesn't exist anymore so we have to find new artists, new people, able to keep on this sense. That is the soul: to keep on putting art and nature together." Lanzarote's legacy of environmental design and protection of marine and terrestrial resources through the Biosphere Reserve makes Lanzarote "a special place for the *Museo Atlántico* ,"¹²³ where the politics of environmentalism on the island align with the political

¹²¹ This tourism official described "sustainability" as necessarily connected to development, such that "It is impossible to make something sustainable if you just pay attention to the environment. It has to be sustainable in the social and economic point of view as well." This is distinct from other development patterns for him, "the same system that existed everywhere, during the 1960s in Spain", because "the way it was developed was by building, like, huge towers in front of the beach without paying attention to the seafront and things like that. So that is the easiest because that's the way it has been done through the years, so I don't want to say that it's difficult to develop sustainably but it is [difficult] because that's not the way we've done it through the years."

¹²² All of Lanzarote's tourism is expected to gear itself toward independent tourism, highlighting Lanzarote's "culture, gastronomy and sport." The Minister for Tourism declared that they "do not need more tourists, but better ones; in tune with [Lanzarote's] uniqueness as a destination and to leave more spending on the island...[we need promotion] based on excellence, that is, quality versus quantity." Lanzarote Guidebook, "LESS IS MORE Lanzarote Targets Quality Over Quantity."

¹²³ NC, Dive Professional, PVDC, interview.

symbology of the *Museo* sculptures themselves in a way that attracts new, paying dive tourists.

As one of the closest tropical climates to continental Europe still within the active continental networks European Union, the Canary Islands have healthy dive tourism economies and compete within the archipelago for all breeds of diver.¹²⁴ Historically, Lanzarote was known for its color, visibility, and large population of the rare angel shark (*squatina squatina*), without a coral reef community to speak of. Other Canary Islands like El Hierro could advertise the occasional Manta Ray or dolphin pod, with warmer waters coming out of the gulf stream. As such, the CACT official noted, the *Museo* “is specially designed for promoting the diving in the island” for a specific diving clientele. CACT insists that the project is designed to enhance ocean awareness and draw curious, experienced divers and novice divers alike. The intrigue of the *Museo* project may even force non-divers to gain dive skills and become ocean explorers, the CACT official noted, saying “you have to learn to dive, so that we can be aware of what’s going on below the sea level and seeing what happens there. There is no excuse, we are surrounded by sea but sometimes we live with our backs to the sea.” One stated goal of the *Museo* was to emphasize the

¹²⁴ In Todd, Graefe, and Mann, “Differences in SCUBA Diver Motivations Based on Level of Development”, they note that there are six major themes that attract people to diving: adventure, learn, escape, social interaction, stature, and personal challenge. Divers with higher levels of development are motivated to pursue the activity for different reasons, usually stature and escape; Other research on diver preference reveals that preference does vary according to years active as a diver, according to Lucrezi, Saayman, and van der Merwe, “Managing Diving Impacts on Reef Ecosystems”; Lucrezi et al., “Scuba Diving Tourism Systems and Sustainability”; Morgan, Massey, and Huth, “Diving Demand for Large Ship Artificial Reefs”; Ramos et al., “The Usefulness of the Analytic Hierarchy Process for Understanding Reef Diving Choices”; and Kirkbride-Smith, Wheeler, and Johnson, “The Relationship between Diver Experience Levels and Perceptions of Attractiveness of Artificial Reefs - Examination of a Potential Management Tool.”

necessity of aquapelagic thinking and ocean conservation to island environmentalism, but the goals for sustainable development are less clear.

As much as the *Museo* can meet its explicit goals, it also, implicitly, creates new lifestyles, hopes, and conflicts for the people of Lanzarote. It alters the local dive economy by attracting greater visitation, reorganizing the regions of Lanzarote that are considered “diveable.” Playa Chica, the dive education hotspot for the island on the Eastern coast of Lanzarote, is an almost frantically bustling boat dock and beachfront. Most dive shops keep storefronts on the local commercial strip, but since the construction of the *Museo* most dive shops have opened a short boat ride away from the *Museo* in Playa Blanca. The *Museo* also restructures the standard dive experience with the insertion of an immobile object of focus for education. Taylor and his management crew are clear that they consider his art to provide a public service. This chapter seeks to elaborate on the *Museo*’s impacts on Lanzarote’s diving communities by better understanding their physical relationships – their fluid phenomenologies – to the *Museo* as dive tourists and dive professionals. For tourists, the *Museo* is a novel but not exclusively rapturous dive experience; the costs of the *Museo* and the obtuse political symbology of the sculptures dilute the power of the installations environmentalist message. A dive experience centered around sculptures is a fundamental phenomenological shift for experienced divers, many of whom find the *Museo* a waste of money. For dive professionals the *Museo* provides a boom in the island’s dive industry and a resume-building certification, but they often fail to make the *Museo* legible for tourists. Using a mixed methods combination of ethnography, participant observation, semi-structured interviews, and rapid response surveys, this

chapter describes the experiences, interpretations, and consequences of the *Museo Atlántico* intervention.

Fluid Phenomenologies

Taylor and the effective curators of the *Museo* define the value of the *Museo* through its spatial interactions with divers, marine organisms, and oceanographic phenomena. To more accurately and deeply understand the role the *Museo Atlántico* has in transforming Lanzarote into a (potentially) resilient dive location, then, requires a fluid phenomenology of the interactions between sculpture, sand, sea, and subject (human and non-human). Haldrup and Larsen note the impacts of this type of phenomenology on tourism studies methodologies writ large, that “in tourism people interact routinely with a wide range of objects and material environments; they bring their gendered, racialized and aged bodies into play when performing leisure and tourism.”¹²⁵ In the context of the “Oceanic Turn,” what Elizabeth Deloughrey categorizes as the rise of a new oceanic imaginary in the social sciences, coastal and marine tourism requires a particularly complicated attention to materials that are mobile, transient, and just out of reach to our predominantly terrestrial species.¹²⁶ The ways in which humans access and sense these material realities at the *Museo Atlántico* is contingent upon the personal life histories,¹²⁷ technologies, and relationships divers have with the physical act of diving.

Feminist scholars in tourism and island studies set the terms for understanding the material environment of dive tourists and tourism. Many of these scholars describe

¹²⁵ Haldrup and Larsen, “Material Cultures of Tourism,” 286.

¹²⁶ Deloughrey, “Submarine Futures of the Anthropocene.”

¹²⁷ See Greider and Garkovich, “Landscapes.”

redefinition of the body by technology and restricted access to air, intimacies with non-human marine organisms, and comfort with risk cultivated through diving. Pickens and Ferguson (2014) laud divers as “monstrous” amphibians swimming in the wake of Donna Haraway’s cthulu, disturbing what it means to be human by exposing “the historical and largely forgotten primacy of land-based coordinates in theorizing human life.”¹²⁸ This is one of Taylor’s considerations for underwater sculpture, which he thinks should “create an interface or bridge between an unknown marine world and our familiar earthly world, in a way that...offers a wider perspective through which to see our life in a greater context.”¹²⁹ He also mentions how “Against the vastness of the ocean, humanity seems fragile. And submerged in the water, all sense of temporality is lost.”¹³⁰ Taylor is aware of the ontological implications of his work from his own perspective and has objectives based on his own experience for those who have access to this expensive recreational activity but may not recognize the diversity of ways human and non-human aquanauts interact with marine space.

Immersion in the ocean inverts terrestrial anthropocentrism through technological mediation and new requirements for managing one’s own body. That is, when a human dives they become something of a cyborg. Even a reflex as immediate as breathing is transformed “through a circuitry that includes humans, science, technology, and nature in a ‘body-incorporated.’”¹³¹ Their scuba diver is made “more-than-human” through her confrontation the im/possibility of submerged human life. Through the act of immersion, Pickens and Ferguson propose, the scuba diver can be

¹²⁸ Picken and Ferguson, “Diving with Donna Haraway and the Promise of a Blue Planet,” 329.

¹²⁹ Cué, “Interview With Jason DeCaires Taylor.”

¹³⁰ Cué.

¹³¹ Picken and Ferguson, “Diving with Donna Haraway and the Promise of a Blue Planet,” 329.

nothing other than “open, relational, human and non-human.”¹³² Environmental Historian Helen Rozwadowski’s survey of the development of dive technology emphasizes how scuba technology modified the human body and expanded scientific research, the marine imaginary, and landscape photography below the ocean’s surface.¹³³ More than just a tool for research, or solely for recreation, she demonstrates how dive gear created a precise interaction between work and play that defined a new relationship to knowing marine space.¹³⁴ For Tourism Studies scholar Stephanie Merchant, a diver’s physical relationship with her dive gear is just one part of the “sensorium,” the different “ratios of sense” by which we come to understand and dwell in space, that in the underwater world have to be re-organized from travelling or land-based sensoria.¹³⁵ Similarly, Rebekah Park has described the “submerged dermal contact” of dive phenomenology, which for the kelp-harvesting Haenyo of South Korea creates a new category of feminist and feminine sociality, labor, and episteme.¹³⁶ The *Museo Atlántico* presents a case study of fluid phenomenology similarly engaged with labor, touristic performance, and technological mediation as tourists find new ways to make contact with the environment, with Taylor notably playing on these phenomena to elicit a specific reaction from dive tourists.

¹³² Picken and Ferguson, 333; Blackman and Featherstone, “Re-Visioning Body & Society.”

¹³³ Rozwadowski and Van Keuren, *The Machine in Neptune’s Garden*; Rozwadowski, “Playing By—and On and Under—the Sea: The Importance of Play for Knowing the Ocean.”

¹³⁴ Rozwadowski, “Playing By—and On and Under—the Sea: The Importance of Play for Knowing the Ocean” Merchant demonstrates this phenomenon in her article on dive sensoria, and how b] A diver’s subjective personal history, their normalized, preconceived goals, their conscious and subconscious relations to equipment and underwater space all combine in their performative exploration and understanding of the seascape (page 217).

¹³⁵ Merchant, “Negotiating Underwater Space.”

¹³⁶ Park, “A Life Aquatic: Jeju Oceanic Epistemes.”

But the *Museo* is only intended for a certain type of body. If feminist phenomenologies argue every subjectivity is necessarily unique, creating subcategories of experience, labor, and culture, it becomes impossible for any tourist to derive the implicit messages Taylor has etched into his silent sculptures. A diver's uniquely constituted worldview might interpret a sculpture differently, or be distracted by a part of the dive experience more salient to them. For Taylor, however, the *Museo* is a space for a certified dive tourist with enough disposable income to afford an additional surcharge on their dive, able to interpret Taylor's sculptures from his culturally specific set of symbolic cues. Lanzarote residents, many of whom do not or cannot afford to dive, are the *Museo*'s most accessible public and least frequent visitors; the *Museo* has no plan to certify residents in SCUBA and turns Lanzarote's public into potential consumers before it recognizes them as the primary backers of the installation. Even as the *Museo* opens up to uncertified divers supervised by instructors, Taylor forgets how overwhelming a skill like diving is to learn; this emphasizes the aspects of the *Museo* that are driven by profit, not public education. The *Museo Atlántico* public object that claims to contribute to a public good, but access to the project is exclusive and mediated by socioeconomic, material, and phenomenological difference.

The *Museo Atlántico*, as experienced

Tourists

Divers on Lanzarote justified their visits to, or explicit avoidance of, the *Museo Atlántico* by describing what they value in a dive experience, highlighting ecological features, economic barriers, and personal aesthetic preferences. Of the 80 divers

interviewed, 25 were dive professionals and 55 were dive tourists. Of those interviewed, 62% of divers identified as male, and 38% of divers identified as female. The average age was 39 years old, from 18 to 66 years old. The majority of interviewees (85.5%) came from across Europe, with the rest coming from the United States, South America, Australia, and Hong Kong. While these divers are a small proportion of the record-breaking 176,644 diving visitors to Lanzarote in 2017, let alone the 3 million total visitors to the island, they provide crucial insights into motivations to, and experiences of, visiting the *Museo Atlántico*.¹³⁷ Emerging from divers' general satisfaction with the project were concerns about artificiality, ecotourism, climate depression, and the reorientation of the dive experience.

The *Museo*'s artificiality was a critical point of contention for divers, attracting some and repelling others, impacting divers' willingness to pay and the experience of the dive itself. Taylor's installation politicized divers' site preferences, creating new categories of consumer that also aligned with categories of gender and experience. First and foremost, many novice divers were eager to consume the novel *Museo Atlántico* because the whole experience of diving remained, itself, novel. These divers didn't perceive the site as unnatural as much as "yet another thing to experience in the world of diving." They enthusiastically noted the fish life that aggregated around the statues, and the eerie or serene qualities of the site. Many who review the *Museo* positively called it "very aesthetic." At the very least, it is apparent that the appearance of the installation was striking. More often than not, divers would pull out their

¹³⁷ Lanzarote Guidebook, "RECORD BREAKER Tourist Arrivals Top 3 Million in 2017" The UK accounted for 46% of all tourist arrivals (1,452,141), dwarfing the next largest market Germany with 15% (474,587), both of which nations have large dive communities. Package deals made up 62% of bookings, but the independent sector boomed with a 1.2 million arrivals – a 65% increase from 2010.

GoPros to show me their selfies taken underwater. These often did not include artwork in them, just the diver surrounded by a blue halo glittering with sardines. Photography of dive sites can cause different levels of damage depending on diver skill level.¹³⁸ Divers often noted that the *Museo* is “something you should experience once in a lifetime”; whether that is because the dive is special, novel, connotes a certain approach to diving or some other quality that might make a diver restrict the number of times they dive on an artificial reef site.

For others, the submersion of the sculptures was crucial to their experience and interpretation of the *Museo*. One diver endorsed the transformations the seascape had on the object, where “because [the *Museo*] is man-made, and it’s standing underwater, if you had the same statues on land it wouldn’t have the same effect, for me.” One diver found it “strange to see the manmade turning into life. I’m not an arty sort of guy but what the art is trying to do is quite cool, especially for someone who loves nature. I’ve dived artificial reefs across the pacific that come to life, but they are usually battleships. The *Museo* adds more of a personal touch.” The symbolism of the intervention speaks for itself. Many found the “topics” of the sculptures “meaningful,” “magic,” “full of atmosphere and poignancy,” and a “very humbling experience.” A few divers returned multiple times to fully capture the experience. One younger diver “dove it twice because it’s so spooky. I almost ran out of air last time I was so immersed.” The submarine context, artwork, and recreational experience all synchronize to affectively communicate the surreal and timeless issue of climate

¹³⁸ Picken, “‘So Much for Snapshots’”; Picken, “From Tourist Looking-Glass to Analytical Carousels.”

change and human narcissism. As Taylor intended, the situation of his sculptures added a new layer of significance discernable by the diver.

However, more experienced and older divers disavowed the *Museo*. This population is made up of divers who regularly dive, have a certification level above Advanced Open Water, or have dived over a long period of time. Those cohorts described “not needing to go again” and the site as “not for [them.]” They dive to explicitly remove themselves from encountering society, intervention, and artifice. One long-time instructor observed:

“A lot of people, almost everybody likes the museum. But what they always say is ‘I’m actually there to see fish’ – They prefer to see life. Some people...refuse, they’re just against these types of things. I don’t know why that is. People have the feeling that the sea is neutral and nobody has the right to put anything in. And on land, we’re used to it. To build a house you build it, but in the sea, some people say, ‘it doesn’t belong there.’”

In this case, the *Museo* intervention dissuades some divers from ever even engaging its content. They perceive the *Museo* to interrupt their understanding of fluid phenomenology and connection with the marine environment. One regular visitor to Lanzarote extended a certain preservationism to the entirety of the island, noting that “The other CI are all high rises and yelling. Here on Lanzarote there are only colors - green, blue and brown.” He continued, “There’s nothing like it but I’d prefer to dive it alone. With people there, cameras and big groups, it’s not so peaceful.” Some divers, exclusively male, described themselves as “not an art person” when qualifying their experience of the *Museo*; some enjoyed the dive despite a familiarity with art or museum spaces, and others remained uninterested. Regardless, the treatment of art as

an object deserving attention at the expense of other aspects of the dive irked divers with more experience.

The insertion of the *Museo* as an art object to focus on, with a value assigned to experiencing and interacting with that art, disrupted the typical phenomena of the dive experience. Dive Instructors, constrained by their assigned time slot and set dive path, herd divers from one sculpture to the next, tapping on tanks to draw stray divers back to the route. Typically, the dive experience is more exploratory, with divers taking time to explore nooks and crannies, expanding their awareness in four directions: in addition to their awareness of distance forward, depth above and below, and horizontal exposure to currents and moving fauna, divers must also attend to sound, which moves 4.3 times faster through water. Denser than air, water transmits vibration energy so much more quickly than air that sounds made behind the diver can appear to come from in front of the diver. However, the *Museo*'s structure encourages the diver to focus on sight and symbolic interpretation over the meandering multisensory exploration that is the crux of diving a "natural" site.

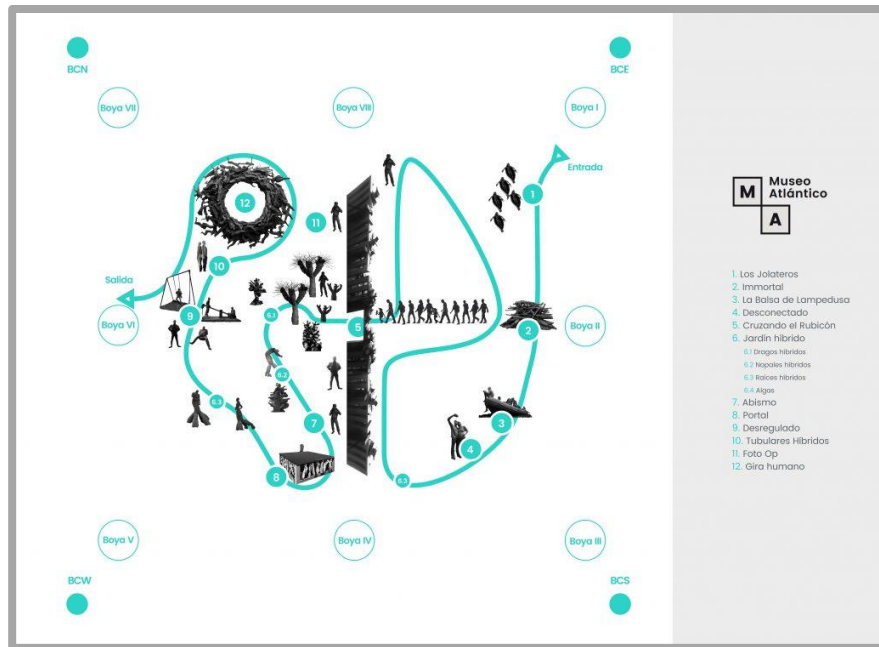


Figure 16: The official guided path through the Museo, including markers of where the buoys are. Provided by CACT.

Unique to the *Museo Atlántico* is the pressure dive professionals feel to make sure that each diver sees all of the sculptures curated for the site, meeting the diver's expectations for their *Museo Atlántico* experience. While a divemaster ideally never leaves the group underwater to bring a panicked diver to the surface, they may do so if working with a group of experienced divers, leaving them to explore a different area, or allowing them to explore in pairs for the entirety of the dive. The *Museo*, however, demands that divemasters chauffeur their clients through a specific path to make certain degree of narrative sense, as well as to protect the sculptures. In addition, dive shops are only allowed to be on site their scheduled time slots, packed one after another in about thirty-minute intervals. If the dive is completed in an abnormal order, dive groups from different shops will collide. This occasionally results in divers switching groups only to surface with a totally different dive shop or straying far enough from the designated path to get lost. Being bound to the narrative experience

and content of the *Museo Atlántico* dive radically alters the epistemological parameters underpinning fluid phenomenologies. For the *Museo* to “make sense” dive instructors must brief divers on the meaning of the sculpture’s symbology and guide their divers along an exact, crated path for the *Museo Atlántico*’s concepts to make sense.

The Museo encourages divers to expect a specific set of images in order to evoke a specific set of ideas and concerns about global environmental change for divers. Unlike César Manrique’s installations, which highlight Lanzarote’s existing environment by enhancing human access, the *Museo Atlántico* alters the marine environment by installing human objects through a relatively exclusive type of recreation. One CACT authority was confident the *Museo*’s purpose, that it is:

“specially designed for promoting the diving in the island. Okay so many people say that, ‘Well it is a pity you have to learn to dive to see the museum because I cannot dive.’ The question is, you have to learn to dive, so that we can be aware of what’s going on below the sea level and seeing what happens there. There is no excuse, we are surrounded by sea but sometimes we live with our backs to the sea.”

The Museo Atlántico, and all of the life that aggregates around it, is summoned to perform Anthropocene environmentalism to educate Lanzarote’s tourists. One CACT official believes this experience can demonstrate for visitors the dependence of coastal tourism on marine resources, where because “many of the resources we have come from the sea...we’ve got beaches, we’ve got sea water...the development on land depends on the sea, this is as Jason says, like a portal.” For older divers, however, the unaltered dive experience was already a portal transformative enough on its own and encouraging of exploration and autonomous inquiry.

This mandate and pre-defined narrative is sometimes annoying for more experienced divers who value the agency and interaction cultivated by unaltered dive experiences. One diver remarked, “When I dive I prefer to be surprised, see things I don’t expect. At the *Museo*, there is something you *have* to look at. In two years with even more life there will be more to look at, maybe that will make it better.” This diver remained more interested in bioaccumulation than the sculptures themselves. Multiple divers expressed frustration or anxiety when they realized they only had one shot to see all of the sculptures. Multiple divers avoided these concerns and booked multiple dives at the *Museo* so they could experience the same sculptures in different conditions, or more commonly to switch the type of underwater camera they were using to document the site. The diver who ran out of air because she was so immersed in the dive, by contrast, took on risk to “complete” the dive – a foreign concept to a practice where the length of the dive is usually determined by the body’s dependence on air. While scuba technology extends the time a diver can be underwater, bodily dependence on air and the absorption of nitrogen into body tissue still limit the human capacity to “be immersed.” One dive guide even preferred to share air with her dive client, a risky practice that usually marks the end of a dive and return to a reliable air source, than finish the dive early because there was a set itinerary of sculptures to see to complete the curated dive path.

For others, the erasure of statue detail by algae and sand presented a loss in value to the dive. The entry fee for dive tourists is 12 Euro, funding security boat maintenance, security guard salary, the maintenance and debt on the *Museo*, and recouping the costs of the *Museo*. In addition, a single digit percentage of entry fees

goes towards conservation and research efforts regarding the *Museo* and Lanzarote's marine ecology. For some, they consider the interaction between installation and ecology worth the price of admission. For others, they are paying to see the sculptures themselves. Much like the dive tourists disappointed with the overgrowth of the statues, dive professionals who have lived with the *Museo* were simply disappointed in the material process of change around the sculptures. One notes:

"I love the [Museo Atlántico], what the guy did. What I don't like about it...I saw it from the beginning, I saw the statues - you can't believe the details he put in it. You can see the skin, stitching. But that's all gone, and that's what we want. You can't clean it, it's an artificial reef. But that's a shame in one way. The time he spent on it, the detail, you can't see."

The ecological development Taylor identifies as the central component of the artwork frustrated tourists, dive professionals included, who wanted to see something human installed underwater. The novel dive experience of visiting the *Museo*, or perhaps Jason deCaires Taylor's brand value, as more valuable to divers than the sculptures' material relationships with Lanzarote's shallow water ecology.

A debate within a family of divers highlighted this contrast in dive preference. The mother was a "little disappointed. Naked sculptures and naked light would have made the sculptures less mediocre because the detail vanishes, and the algae is scarf-like [referring to the way the algae obscures features]." After realizing this, the mother described paying more attention to the marine life. Her daughter reprimanded her, saying she should have "focused on the sculptures because they were the whole point of the dive! I appreciated the drowned refugees - if you don't realize that's what they are it loses some political...power." To get the explicit symbolic content of the sculptures and their connection to Lanzarote, the mother said, "you'd really have to

analyze the sculptures”; she found this process of analysis to interrupt the dive. For the daughter, this was the explicit purpose of visiting the *Museo* in the first place.

An additional disruption to diver satisfaction for some divers was the experience of growth conditions and symbolic messaging as “eerie” or scary. One frequent visitor to the island said “I don’t see any happiness. It is a little bit dark. But I don’t want to say I don’t like it, I think it’s great. The people in the playground that is a little bit of fun. But other things are a little bit...dire.” Another diver gave the *Museo* one star on Google Review, saying that it was a bad dive because it “gave him a dismal impression.”¹³⁹ Another called the *Museo* “quite disturbing and creepy today, [as] there was very little sunlight.” The critical messages embedded in the *Museo* reduced the recreational value of their experience for some divers.

A majority of the divers who were not interested in diving the *Museo* cited its expense, as the entry fee places an uncommon additional economic burden on the diver. The cost of admittance, 12 Euro, is added to the average cost of a single dive, not including gear rental, about 42 Euro on average. One experienced diver criticized those who say the *Museo* is too expensive and not worth the benefits of visiting the sculptures, accusing them of not recognizing the embedded costs of dive tourism. He implies that divers should be ready to pay for infrastructural amenities local government actors construct to improve dive experiences since dive tourists are signaling that they want the dive industry to be accessible to them by being there. An additional charge for a unique dive site (an important conservation habitat with limited

¹³⁹ In the original French: “Bof, Ça me donne une impression lugubre.”

dive capacity, a state park site, or even a base tourism tariff) is not actually an uncommon phenomenon in dive pricing. World-renowned sites with high demand like Sipadan, a volcanic mount off of Borneo, or even diving in Lanzarote's own Marine Biosphere Reserve off of La Graciosa, often include additional charges to cover monitoring and patrol staff, conservation and scientific research expenses, and other regulatory costs. These charges effectively privatize a common pool resource to reduce traffic or over-exploitation.

The *Museo Atlántico*, marketed as a specific dive experience for almost any level of diver, has altered the quality and type of diver that visits Lanzarote. One instructor summarized groups of divers he identifies on Lanzarote: those that never want to visit the same site twice, those that can visit the same site ten thousand times with a different reason each time, and those who dived once then never again.¹⁴⁰ This becomes a challenge at the *Museo* when divers try to use their license for the first time in years, having forgotten how to dive and creating risk for the dive center. Similarly, there are those who focus on photography to the extent that they crash into the sand, sculptures, or marine fauna, sacrificing the environment for the visual consumption of the environment. Professionals are aware of the risk. One instructor created categories of diver that might experience the destination in different ways based on the physical capacity of divers of different levels, saying “If you are of a certain level you can visit it a little differently because you can make a good video there or a good picture there - you know how to deal with your buoyancy. Others not so much.”¹⁴¹ Finally, there are

¹⁴⁰ Instructor, DCL.

¹⁴¹ Dive Instructor, Manta Diving Lanzarote.

those that have never dived before but see the *Museo* on television and demand an experience. For those divers, an instructor can bring them down to a limited depth and hold on to them as they explore the *Museo*.

The *Museo Atlántico* as a specific underwater attraction alters dive industry dynamics. Divers who haven't dived in years, or who might otherwise not have visited Lanzarote, come to the island with specific expectations for their experience of the marine environment through the *Museo Atlántico*. One instructor laughed, "the funny thing is, almost no one would arrive here without a diving license and [demand to] see Flamingo Wall," a popular dive site in Playa Blanca.¹⁴² The *Museo* attraction, however, creates the assumption that any tourist will be able to easily experience and consume the *Museo* any time they visit; the installation was designed and promoted to be consumed in a particular way, with expectations established through the *Museo*'s promotion on social media and European television. These promotions imply easy access to the site to many visitors; a tourism official was surprised that "There's still a lot of people who think that because it's a museum that they can go there, because a museum you just pay an entrance fee and you're in."¹⁴³ To an astonishing degree for some dive professionals, tourists will come to the dive school and demand training to see the *Museo*. These interruptions, beneficial to the economy as they may be, alter the experiences of the people teaching dive classes, leading tours, and interacting with the *Museo* almost every day: Dive Professionals.

¹⁴² Interview, Dive Instructor, DCL.

¹⁴³ Interview, CACT representative.

Dive Professionals

Scuba diving is often promoted as a way of getting to know nature, submerging divers in a surreal world and connecting that physical experience to environmental stewardship. For the dive professionals responsible for the training and safety of novice divers, their work is a balance of risk assessment, stewardship, and making the marine environment legible to landlubbers. A self-described “tribe,” divemasters and instructors are globally nomadic polyglots, moving between paradisiacal dive industry hotspots in response to their perceptions of shifts in global dive politics and the global dive industry. Sometimes changing local culture or local labor markets along the way,¹⁴⁴ dive professionals manage expectations and imaginaries of the local environment – or else find ways to make the marine environment meet expectations. Their relationship with the environment is simultaneously experienced as stewardship, extraction, and care. At the *Museo Atlántico*, dive instructors struggle to meet the expectations both of divers and the objective of the installation, challenged to follow a specific agenda and curated route in an ecology more typically defined by fluid, random encounters.

Asked to act as museum docents and explorers at the same time, these adventure leaders create a new category of ecological labor of co-existent exploitation and conservation. Working with, on, and around nature as part of extractive industries is a way of knowing nature intimately. As Richard White described in seminal article, “Are You an Environmentalist or Do You Work for A Living,” the tendency

¹⁴⁴ Wongthong and Harvey, “Integrated Coastal Management and Sustainable Tourism”; Davis, “Local and Semi-Local Economic Impacts of Dive Tourism in Bunaken National Park”; Milne, “Tourism and Development in South Pacific Microstates.”

for environmentalists to associate work with environmental degradation can connote classist and privileged modes of environmental interaction: “Environmentalists so often seem self-righteous, privileged, and arrogant because they so readily consent to identifying nature with play and making it by definition a place where leisured humans come only to visit and not to work, stay, or live.”¹⁴⁵ But work and play both, Elaine Scarry notes, involve an extension of our sentient bodies out into the external world.¹⁴⁶ Dive instructors unite these physical modes of understanding landscapes and ecologies in a specifically marine context which, our feminist phenomenologists argue, is itself an entirely different phenomenological category. As such, Helen Rozwadowski juxtaposes the concepts of ‘work’ and ‘play’ as critical categories for knowing nature and the marine environment. The critical category of ‘work’ becomes a way to match bodily effort against the materials of one’s habitat, gaining intuitive understanding of a specific ecology and often in the name of conservation-as-recreation.¹⁴⁷ For the marine environment specifically, work and play are ‘inextricably connected’ and sometimes ‘indistinguishable’ due to the technological mediation required to explore below the surface.¹⁴⁸

Dive professionals describe themselves as “nomads,” a “tribe,” “ocean warriors” or “stewards” more than laborers. Predominantly coming from the global north, instructors (certified to train and certify beginner to divemaster students) and divemasters (certified to lead dives and provide support to instructors) are drawn to the

¹⁴⁵ White, “‘Are You and Environmentalist or Do You Work for a Living?’: Work and Nature,” 173.

¹⁴⁶ Scarry, *Resisting Representation*, 52.

¹⁴⁷ Rozwadowski, “Playing By—and On and Under—the Sea: The Importance of Play for Knowing the Ocean,” 150; See Meyers, “An Aesthetics of Resilience.”

¹⁴⁸ Rozwadowski, “Playing By—and On and Under—the Sea: The Importance of Play for Knowing the Ocean,” 163.

lifestyle, community, and daily experience of the dive industry. Those who exclusively work as dive instructors are estimated to make about \$20,000/year in the United States, with wages increasing the closer a dive operation is to a coast.¹⁴⁹ For many, dive instruction subsidizes global travel, while for others, global travel is necessitated by the seasonality of the dive industry. Lanzarote's year-round dive industry makes it near unique as an accessible dive tourism location; compared to dive hotspots like Koh Tao in Thailand, with a long monsoon season, or the Caribbean, notorious for its hurricanes, Lanzarote instructors reported that "maybe we cancel 10, 15 days, a year because of wind."¹⁵⁰ The *Museo Atlántico* is strategically placed in a south-facing bay, protected from the currents channeled down past La Graciosa in the northeast to maximize the number of days the dive site is "open." Lanzarote's proximity to Europe is an additional attraction for dive professionals. Almost every dive professional interviewed who had children in Europe mentioned that they moved to Lanzarote to be closer to family to support their child or planned to have a child now that they were closer to home. Many parent-dive instructors also noted that Lanzarote felt safer than non-European dive locales.

Dive professionals have experienced a spike in the number of dive tourists, dive shops on the island, and dive professionals hoping to benefit from the *Museo* tourism attraction. For those who live in and on Lanzarote's seas, dive professionals agree that the *Museo* has utterly altered the land- and marinescape of dive tourism on

¹⁴⁹ "Salary and Career Info for Diving Instructors" While the U.S. Bureau of Labor Statistics doesn't provide statistics for scuba instructors, it does count them among all self-enrichment teachers. Professionals in that category made a median of \$36,680 per year as of 2015. I cannot find reputable statistics for the Canary Island industry or European dive industry more generally.

¹⁵⁰ BP, DCL, Interview.

Lanzarote. Longtime dive owners note the increase in business as much as the migration of dive shops from Playa Chica, the historic dive industry hub on the eastern side of the island, to Playa Blanca in the south. Accessible only by boat, the *Museo Atlántico* is a challenging location for Playa Chica dive centers to access because it requires a fuel-inefficient boat ride or uncomfortable van trip to and from the nearby marina while wet. For those located in Playa Blanca, the *Museo* is barely a 10-minute ride away and a new source of economic growth. One shop owner notes, “for me it brought a lot of business. As a business that’s been here 16 years, I still like [Lanzarote]. But with the Museum it gives an extra, it’s a nice thing after 16 years that it changes it, it’s new again. For me [the *Museo* is] all positive and that’s because of the business.” One resident lauded the project, “From now on Lanzarote will always be on the map as a dive destination. It’s the only place in Europe [with an underwater museum] and not long to fly to, so in the long term a lot of divers are going to see it! It’d only have to be 5% (increase in visitation) for the island, and for the few dive centers it does a lot.” In this way, the *Museo* has created a new economic future for some in Lanzarote – and for the nomadic dive labor market.

Many dive professionals moved to Lanzarote speculating that dive tourism has increased on the island due to shifting global politics, particularly unrest in the Middle East. The Canary Islands and Egypt are considered “local” dive sites for Europeans, many of whom keep second or retirement homes in this Saharan archipelago. One instructor noted that:

“Lanzarote was not a famous dive destination to be honest. If you look at the hours flying, maybe four hours from Northern Europe, you can also go in four hours...to Egypt, which is really...much more colorful, more fish.

(But now) we are busy because Egypt (was) a big diving country, and now people are nervous about going to Egypt...That brought a lot of people as well, the problems in the world - together with the Museo."

And one young diver, new to the island settled on Lanzarote because "Now, all the Canary Islands are top world destinations, in 5, 10, years will be even more so.

Because of the fighting in the Middle East - tourism won't go to Egypt for dives. It will come here instead." His perception of this changing global condition, much like climate change, motivated his decision to move to the island.

Climate change itself was notably *not* a concern for most dive professionals. Despite Jason deCaires Taylor's condemnation of bankers and ignorant citizens who don't recognize climate change or recognize that they are complicit in climate change in the *Museo Atlántico*, over half of the dive professionals interviewed were not concerned about the impacts of climate change on their life or profession. Most did not mention climate change on their own until asked about the subject by the interviewer. Some laughed that sea level rise would "make more interesting sites to dive on the island." Other hypothesized that changing ocean temperatures might bring more megafauna or even coral to Lanzarote. One divemaster who had worked in environmental education said that "climate change is the last thing Lanzarote should worry about," prioritizing freshwater access and expanding recycling on the island instead.¹⁵¹ Passionate as many dive professionals claim to be, many of the divemasters and instructors interviewed did not recognize the impacts of global climate change on the marine environment or their livelihoods. To this extent, many dive professionals

¹⁵¹ Interview, divemaster, NSD.

were not regularly inspired by the *Museo*, as an educational art project, to political action.

For those who choose to make their play into their work, it is often a case of pursuing one's pleasure less than one's politics. One dive instructor trainee had just quit the lucrative commercial dive industry assisting with oil rig construction to instruct tourists. "I want my hobby to be my work," he noted. "SCUBA is a popular job because it's fun, because people love the diving lifestyle, travelling, meeting people. There is a lot to love about diving on Lanzarote, lots of marine life, lots of different types of site - even tech diving... Life is easy on Lanzarote. There's a family of divers...it's a great place to learn to teach."¹⁵² Dive professionals are in this sense tourists, seeking leisure as much as a livelihood. Alternately, these are the sorts of professional amenities any job-seeker might consider before committing to a new location. The *Museo Atlántico*, then, becomes another professional amenity. Many expect that it would keep dive shop revenue up and be an added professional benefit on resumes. One instructor lauded the dive community on Lanzarote and mentioned that "the *Museo* only makes it better."¹⁵³ Dive professionals certified to lead dives at the *Museo* do, however, extract extra benefits from the *Museo*'s development.

The *Museo Atlántico* divides the Lanzarote's dive community into those eligible or ineligible to guide dives at the *Museo*, attempting to enforce specific modes of environmental interaction at the *Museo* through the Ecodiver Guide (EDG) training. The EDG training is a day-long seminar during which CACT can explain the idea

¹⁵² NC, PV, interview.

¹⁵³ NC, PV, interview.

narrative and framework with which to prepare dive tourists. To lead a dive at the *Museo*, divemasters and instructors must complete a lecture unit explaining the curated path through the site, get a tour of Taylor’s still functioning studio, and finally dive the site as a group. The lecture is effectively a formal analysis of each statue tied to environmental themes. Take, for example, this sculpture entitled “Deregulated”:



Figure 17: Deregulated by Jason deCaires Taylor, photo courtesy of artist.

The CACT official teaching the EDG seminar might say:

“This sculpture comes at the end of the tour and is with a group of other statues. As you can see, they are business men riding various playground objects like see-saws and swings. If you look closer, you will notice that all the playground toys are oil jacks. These businessmen are playing with our oil and our energy as if they were toys, and it is called “Deregulated” because it is the lack of regulation that lets them get away with these games. This is one of the last sculptures, so be careful to make sure that your clients have enough air to complete the safety stop at 5 meters.”

While perhaps a somewhat blunt analysis of the symbolic content of the work, these descriptions are designed to give dive instructors a vocabulary with which to express the politics of the artwork regardless of their experience with immersive post-museum art installations. The briefings are meant to be recited as close to verbatim as possible to make sure that dive tourists experience the art “accurately.” Each description of each set of sculptures is nested within the practical dive planning that divemasters do to mitigate risk during the dive, like to watch out for certain types of wildlife, be aware of diver impacts on the surrounding environment, or manage diver stress. One instructor who retired to Lanzarote after a decade of conservation work abroad believed these EDG certifications weren’t high enough, saying “If you’re gonna have an Ecoguide title it should have more education. We have a misconception that divers know everything about the ocean, and I think there’s still a lot to be taught about how to respect the environment and deal with the different conditions.” While the EDG training satisfies CACT’s standards for understand the *Museo*’s political ecology, it has little to do with teaching dive professionals about the rest of Lanzarote’s marine ecology or providing actionable sustainability initiatives for dive professionals or dive tourists.

Rarely, however, did dive professional briefings or performance meet the specific standards of CACT’s EDG training. Across dive shops, across instructors,

briefings were highly variable. Referring to the *Museo* map (Figure 14), dive professionals explained each sculpture in their own way and time, often focusing on different aspects of the dive. Some would emphasize the fauna that had taken up residence in certain areas of the installation, while others expanded on the political commentary of the sculpture. Some instructors found the sculptures to be helpful tools with which to communicate with their clients, lauding the device, “The *Museo* someways is about our dirty world, about politics. I don’t care for politics. The design explains in a good way, with sculpture.” Much like Genese Sodikoff’s descriptions of “The Low-Wage Conservationist,” these dive profession blur the line “between “implementer” and “target” of development intervention in a Biosphere Reserve space.¹⁵⁴ Sodikoff describes how reliance on cheap local labor in conservation area perpetuates the behaviors and activities that endanger the ecosystem being conserved; she demonstrates how low-paid manual workers in a Biosphere Reserve in Madagascar create conservation and tourism value by discovering species while “unintentionally perpetuating the conditions of habitat endangerment.”¹⁵⁵ Dive professionals are not only passed the burden of articulating the environmentalist message of the *Museo*, but also ostensibly responding to the sculptures as environmental stewards on the island. Often, their logistic responsibilities get in the way of promoting environmentalist messages, or even acting sustainably at all.

Dive professionals are the site at which environmentalist messages and hard truths are fumbled, delayed, dropped, or transmitted; dive professionals minimize the

¹⁵⁴ Sodikoff, “The Low-Wage Conservationist,” 443.

¹⁵⁵ Sodikoff, 443.

critical and dire message of the *Museo* in their dive briefings, swept up in a pressure to profit by efficiently teaching and processing as many dive tourists as possible.¹⁵⁶ On a logistical level, some dive shops fail to adjust their own workflow to the strictly timed schedule of the *Museo*'s security boat and management office. Many arrived late for their slots, accommodating older, slower divers or newly certified ones in their own time and were admonished by CACT. While making these sorts of accommodations is a critical part of a dive education practice, they did not necessarily align with the efficiency goals of *Museo* management and instructors were pressured to move faster. Using more gas to meet their entry time and cutting the dive briefings where divemasters have the opportunity to explain sustainable practices short, create environmental problems while simultaneously engaging the *Museo*'s "environmentalist" experience.

Additionally, embedded in the design of the *Museo* are structural challenges to maintaining a safe dive and exploring environmental concepts with divers. While many "thought it would be made really accessible for try dives" many instructors say it is too deep. A "try dive" is a supervised open water dives for people who have never scuba dived before. After a quick session in the pool with an instructor where the client practices breathing, the instructor holds on to the diver in an open water site of no more than 12 meters. The *Museo* is 15 meters deep, and as such letting "try dives" in was a controversial decision made by *Museo* management. Dive operators can

¹⁵⁶ Biosphere Reserve dive leaders, unconnected to the *Museo* and ostensibly held to an even higher conservation standard by law, used unsustainable dive practices like anchoring and fish feeding during my dive off the coast of La Graciosa. Despite operating as one of the few active agents of marine conservation on the island, they were the first dive professionals I saw who employed poor diving practices. In that sense, the *Museo* is much more rigorously following good dive protocols, albeit requiring immense infrastructure to be able to do so.

upcharge for these programs because of the associated risk and one-on-one instructor contact; many dive shops had recently opened up “A Day at the Museum” try dive programs. A shop owner was disappointed, “It’s 15 [meters] and within the PADI standards you can’t even go to the bottom, so we don’t do that. We keep them to the maximum depth they are allowed to go but it’s...a lot of work, so we only take two with an instructor. People complained there was no immediate access to the site.” These sorts of structural changes to the dive tourism market caused by the Museo have created subsequent changes in the dive labor economy on Lanzarote, altering lifestyles, attitudes, and relations in coastal tourism development.

Professionals attributed the EDG program with creating a community and stabilizing the dive industry on Lanzarote, emphasizing the *Museo*’s contribution to the island’s ongoing tourism and infrastructure development. The EDG successfully created a sense of shared purpose amongst the dive staff. One dive instructor noted, “A lot of the EcoDiver Instructors are my friends, all the instructors on the whole island. We share a mindset. We connect because all dive instructors come from another place [to Lanzarote].”¹⁵⁷ For another, the professional benefits of rebranding *themselves* as “Ecodiver Guides” made them particularly pleased to connect with other dive professionals on this small island. He notes, “For my future it is good to have this [EcoDiver] certification on my CV, to have connections in the dive profession.” This was one of the positive externalities of the *Museo Atlántico*, creating a stronger set of standards not only for dive shop quality but also to promote a long-lasting professional dive community on the island and a global network of divers familiar with Taylor’s

¹⁵⁷ NC, PV, Interview.

work. This was a priority for one of the *Museo*'s coordinators from CACT, who was committed to:

“improv[ing] the conditions the dive guides got at the diving schools...we must stabilize and balance the turnover of dive guides. Even though it's quite difficult because they are quite used to, and quite like, the constantly moving, to work here for three months then move to Bali and stay another three months and then to Mexico. It's a way of life, we cannot change that. But we can improve the condition they've got while they're working on the island.”

Less turnover, however, requires more long-term housing for dive staff; this came into conflict with the growing independent tourism market Lanzarote sought to cultivate in 2017, as short-term apartment rentals for tourists reduced the housing stock for tourism professionals. Many ended up living three or four to a two-person house. CACT counted on the *Museo* to drive up profits for dive professionals and create incentives for affordable housing development.

The EDG training stabilizes the dive economy on Lanzarote, mitigating risk for CACT and standardizing their approach to dive centers and labor. The *Museo Atlántico*, despite being a public project, manages access to the *Museo* to incentivize specific types of dive industry development. One CACT official described how the dive shops that are accepted into the EDG program must meet minimum requirements for air compressor inspections, shop space, diving bottle safety, the registry of equipment and visitors, a contract with a hospital, insurance, etc. He noted that without an incentive to meet health and safety standards it “is difficult to deal with diving centers. It is like a classroom, I see them like a classroom of little kids sometimes. They constantly complain about things [when they are asked to make improvements.]” Instead, the *Museo*'s EDG program allows CACT to directly engage

with dive shop owners and employees, to set standards and homogenize the *Museo* diving experience, and to clarify Lanzarote's brand as a dive tourism location. The content expressed in the EDG training, and subsequently expressed to tourists, is subsumed by the *Museo*'s formal development function.

Conclusion

Phenomenological experiences and values divers derived from the *Museo* vary, as illustrated in the *Tourism* section of this chapter, but the development benefits for dive professionals are concretely altering the dive industry on Lanzarote to promote development. For tourists, the *Museo* is a novel but not exclusively rapturous dive experience; the costs of the *Museo* and the obtuse political symbology of the sculptures dilute the power of the installations environmentalist message. For dive professionals the *Museo* provides a boom in the island's dive industry and a resume-building certification, but they often fail to make the *Museo* legible for tourists. Rather, the messages Taylor's sculptures are meant to evoke are mixed, muddled, and interpreted differently by the divemasters and instructors they're delegated to. While EDG dive professionals are mandated to deeply understand the message of the *Museo Atlántico*, many dive professionals (EDG or other) remain shallowly aware of the rest of Lanzarote's ecology.

This chapter depicts the manifold ways in which the *Museo* is interpreted by dive tourists and dive professionals alike. As a destination, the *Museo* can mean many things to many people, but it is ultimately situated in a service economy context that has little regard for how well the *Museo*'s intended messages are interpreted. I have

situated my own interpretation of the *Museo* within a critical tourism studies context that highlights the development function of this artificial reef installation. Artificial reefs have been measured by their ecological function, and this chapter presents a preliminary study of subject positions produced by the *Museo* that can inform future research measuring artificial reefs by their educational function. However, without situating artificial reefs in their development context, we ignore the reasons why they might be there in the first place. The following chapter does just that, placing the *Museo* in Lanzarote's tumultuous history of coastal development to better understand how artificial reefs can be deployed to ends beyond ecological enhancement.

Chapter 3: Development and Democracy



Figure 18: A waterfront hotel development in Costa Teguise (Photo by author, 2017).

By establishing a restrictive master plan for development on Lanzarote, artist and architect César Manrique challenged the dominant paradigm in the Canary Islands for economic growth through mass tourism development. Restricting development of any kind, but especially mass tourism hotel plans, to the tightest corners of the island, Manrique disavowed the sun-sand-sex tourism that had become the bread and butter of tropical coastlines around the planet by the early 1970s.¹⁵⁸ Instead, he centered his own immersive design installations at the heart of Lanzarote’s tourism identity. Highlighting Lanzarote’s unique environment, vernacular architecture, and historic land ethic, Manrique insisted on development regimes that preserved large swaths of

¹⁵⁸ “Sun, Sand and Sea (and Sex) Tourism | The Encyclopedia of Tourism and Recreation in Marine Environments - Credo Reference”; Manrique and Gómez Aguilera, *César Manrique*, 108.

Lanzarote's rugged environs. He spearheaded a campaign to designate the entirety of Lanzarote as a Biosphere Reserve: its land, its surrounding waters, and the interactions between island inhabitants and those environs were all to be considered critical heritage. Lanzarote's tourism board (CACT) depicts this long history of controlled development as unique: uniquely conceived and intended, uniquely environmentalist for its time, unique in its specificity to place. At the time, locals considered these regulations a triumph for local governance despite whispers of unpermitted development across the island. To this day, the Biosphere Reserve (BR) and local land use regulations remain some of the few tools environmental activists from Lanzarote have to interrupt development, preserve their natural and cultural heritage, and exercise democratic freedoms.

Despite the layers of regulation put in place during Manrique's decades long project to redesign Lanzarote, activist groups, the tourism board, and developers continue to debate and negotiate what coastal development should look like and require. Since Manrique's death in 1992, the foundation protecting his legacy and maintaining his installations, the Fundación César Manrique (FCM), has criticized local, regional, and central governments for letting illicit development skate by unpenalized. And yet, while Lanzarote's silhouette remains unaltered by the high-rise hotels Manrique abhorred, the sprawling bones of new developments have still risen out of public lands. Constructed without time for public comment, new projects quickly become half-finished skeletons stalled by arbitration or bankruptcy. Court suits of developers charged with abuse of labor or misuse of lands are sent to Madrid for arbitration and often fizzle out unadjudicated. For the bureaucrats regulating public

land use, this is a commentary on the state of Spanish democracy as much as the pursuit of private profit at public cost.



Figure 19: An abandoned development close to Arrecife, Lanzarote's capital (Photo by author, 2017).

At the same time, CACT solicits new projects to, as they see it, extend Manrique's vision of naturecultural tourism into a new era of global environmental consciousness. The *Museo Atlántico* was solicited to develop new tourist attractions that follow Manrique's vision of place-based, ecologically grounded immersive art experiences. Publicly funded but exclusively accessible to those who can dive and afford the entry fee, the *Museo* is an aquapelagic development project for the Anthropocene – extending sociality below the sea surface to explicitly manifest human influence and dependency on the marine environment and climate. Manrique's

installations were designed with an environmental ethos that encouraged “man-nature” symbiosis while remaining financially productive for the local tourism economy. Installing human social spaces in lava pockets and building roads for car tours of the geologic volcano features that defined Lanzarote’s history, Manrique developed tourism products at a specific scale for the dominant tourism culture of the 1970s and 80s.

Taylor’s *Museo Atlántico* indeed extends this development model into the 21st Century, part of the Anthropocene epoch, where humans influence geological systems at a molecular level and artificial products proliferate through every ecosystem.¹⁵⁹ Rather than guiding tourists around or through naturally-formed volcano structures, Taylor creates an intervention in the marine environment that alters the entire ecological system itself. Literal human forms are embedded in the environment and tell stories of human ignorance and impact. Proposed as a new, resilient form of coastal tourism and dive tourism, the *Museo Atlántico* is an artificial reef system leveraging the entelechy of marine flora and fauna to develop an underwater tourist attraction. However, the *Museo Atlántico* is as much a tourism development as it is an artificial reef, with real impacts on public coastal access.

Playa Blanca’s Marina Rubicon, the current location of the *Museo Atlántico* and its offices, was a hotspot for unpermitted construction that ultimately pushed out a local fishing community from its historical home. The *Museo*, which uses the new Marina for studio and office space, is not only dependent on the legal erasure of local communities for (illegal) touristic development, but itself predicated on depicting an

¹⁵⁹ Crutzen, “Geology of Mankind”; Fahrenkamp-Uppenbrink, “Microplastics Everywhere.”

ecologically vibrant marine ecosystem as “empty.”¹⁶⁰ Given the removal of local residents, human and non-human, from the coastal margin, the *Museo* was able to be built up from *aqua nullius*, which extends colonial doctrines of terra nullius or no man’s land into the marine environment. *Aqua nullius* has identified as a tactic used to disentangle indigenous communities from water rights and access by Australian legal scholars, and described as the projection of touristic fantasy devoid of ecological reality onto the ocean by critical theorist Elizabeth Deloughrey.¹⁶¹ The *Museo Atlántico*’s installation, while sanctioned by governmental and para-governmental agencies, circumvented the democratic processes and agency of community organizers many island residents identify as central to Lanzarote’s communal governance and sense of self – if not brand.

The *Museo Atlántico* as a fraught symbol of local political agency in a new period of globalized touristic development. While my previous publication has outlined the role of agency, human and nonhuman, in artificial reef installation and success,¹⁶² understanding the artificial reef *as* a form of development itself is underexplored. I argue that these new practices demand a new regulatory approach to artificial interventions in marine space. For centuries, human use and development of

¹⁶⁰ For comparison, see Somner and Carrier, “Tourism and Its Others: Tourists, Traders and Fishers in Jamaica.” Their study of the removal of local fishermen from Jamaican beaches to ease development and erase traces of local communities and labor from the paradisiacal beach displays similar power dynamics and legible authority.

¹⁶¹ Sheehan and Small, “Aqua Nullius”; Deloughrey, “Submarine Futures of the Anthropocene” Deloughrey highlights the colonial and postcolonial human history of the Transatlantic Crossing, which Derek Walcott has described as “choked” with the visible remnants of living history -- distinctly *not* empty. Non-human species, Walcott presents, can create more-than-human history through their multispecies entanglements.

¹⁶² Meyers, “An Aesthetics of Resilience.”

the shoreline has hardened coasts with significant ecological consequence.¹⁶³ Yet, artificial reefs have remained free of critique as development, as hard intervention in the marine environment with ecological consequence, because of the way artificial reef projects use marine organisms do the work of development and performing ecological health.¹⁶⁴ But why are artificial reef-based development projects treated differently than terrestrial development projects? What about the vibrant matter of ocean life and space shapes concern about artificial interventions, or enables their installation? In this chapter I explore how life at the *Museo Atlántico* creates discrepancies between industry expectations of development projects and what actually happens under the surface. The *Museo* ultimately neither serves divers nor marine life in the way it was intended, making the *Museo* into a space of ambiguity rather than a space where engineering and design can elicit specific forms of socio-ecological interaction. On and under Lanzarote, we see not only the consequences of submerged development for marine ecologies but for the power of multispecies agency to interrupt destination development in Spain.

Developing an Ocean Full of Nothing

After decades of planning and geopolitical negotiation, Lanzarote had not only branded itself as a site for environmentally-minded tourism but had established concrete processes for disputing and protesting development. While the United

¹⁶³ See Gillis, *The Human Shore*; Kelman, “Boundary Issues”; Kahrl, “The Sunbelt’s Sandy Foundation”; Chiarappa, “Dockside Landings and Threshold Spaces: Reckoning Architecture’s Place in Marine Environmental History.”

¹⁶⁴ Future work by Dr. Amelia Moore and Jessica Vandenberg will contribute additionally to our understanding of how organisms are used in coral restoration development projects.

Nations Educational, Scientific, and Cultural Organization (UNESCO) designated the entirety of the island a Man and Biosphere Reserve as part of this restricted planning program, a nascent European Union (EU) identified Lanzarote as underdeveloped. Sandwiched between two international development organizations and with little local power to physically halt development, residents of Lanzarote witnessed a boom in illegal development. Far from an eco-centric utopia, Lanzarote slowly succumbed to development pressures altering the coasts of the other Canary Islands. Playa Blanca is one example of development that disempowered locals in order to develop 3S tourism and a lucrative luxury port, the Marina Rubicon. Convenient legal erasure of undocumented fishing and eelgrass communities in the area enabled the creation of these “forward-looking” coastal developments in Playa Blanca. Similarly, the *Museo Atlántico* is described as the future of resilient dive tourism on Lanzarote by the tourism board, predicated on defining the island's marine space as “empty.”

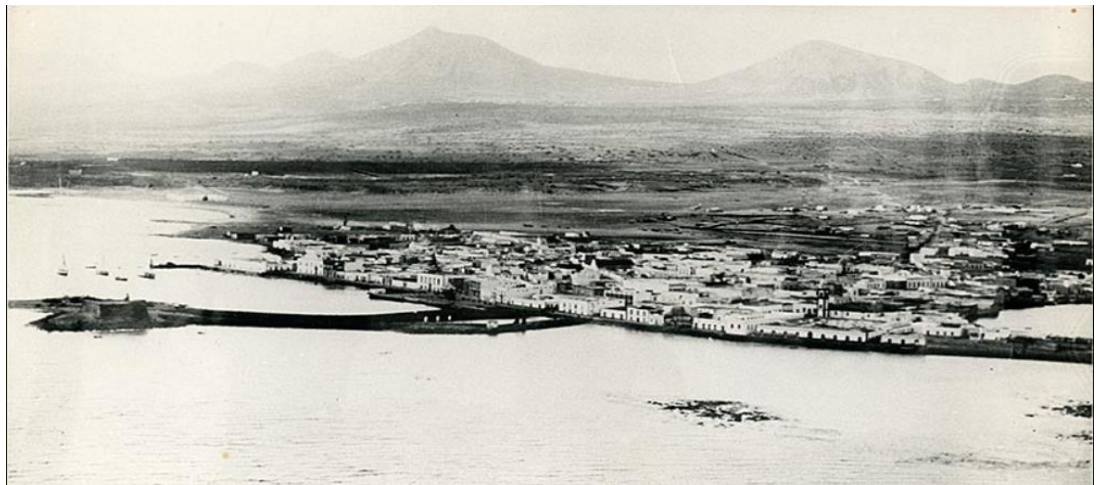


Figure 20: Aerial View of the city of Arrecife, 1951-1960, Francisco Armas, ref:5667, Memoria de Lanzarote



Figure 21: Aerial view of the coast of Arrecife, where we see the parks `Ramírez Cerdá` and `Islas Canarias`, the `Parador` and the `Arrecife Gran Hotel` before its reconstruction. 1971. Cabildo Insular de Lanzarote. reg:1971

Despite innovative and rigorous land use planning on Lanzarote, 3S tourism development and construction continued across the island. As early as 1973, Lanzarote's regional government had taken advantage of Spanish land laws established in 1956 that enabled Spanish provinces to create their own subsidiary rules and internal urban planning regulation. After the Canaries' establishment as an autonomous jurisdiction in 1982 and the election of Spanish Socialist Workers Party candidates in 1983, regional planners went beyond expectations and created the first *Plan Insular de Ordenación del Territorio* (PIOT, or, the "Island Plan for the Organization of the Territory") in Spain.

Leveraging his work on tourism installations and infrastructure, César Manrique was a primary collaborator on this ambitious development scheme to maintain the island's environmental and social integrity when the planning process began in 1987. PIOT was approved just before Manrique's death, and the number of tourist and residential accommodations was reduced from 250,000 beds to 112,336

beds from 1991 through the year 2000, among other decisive regulations regarding urban space.¹⁶⁵ PIOT's aggressive restrictions to urban growth was a crucial condition for the approval of Lanzarote as a Biosphere Reserve site, promising the preservation of local environmentalism and the environment. Today, many of the regulators overseeing the Biosphere Reserve note how, when tourism development began to accelerate, Lanzarote's unique land use regulations clearly created a different scale of tourism compared to the other Canary Islands. But as early as 1991, Lanzarote's regional government sacrificed the integrity of its development restrictions for tourist accommodation and attractions made by private developers.

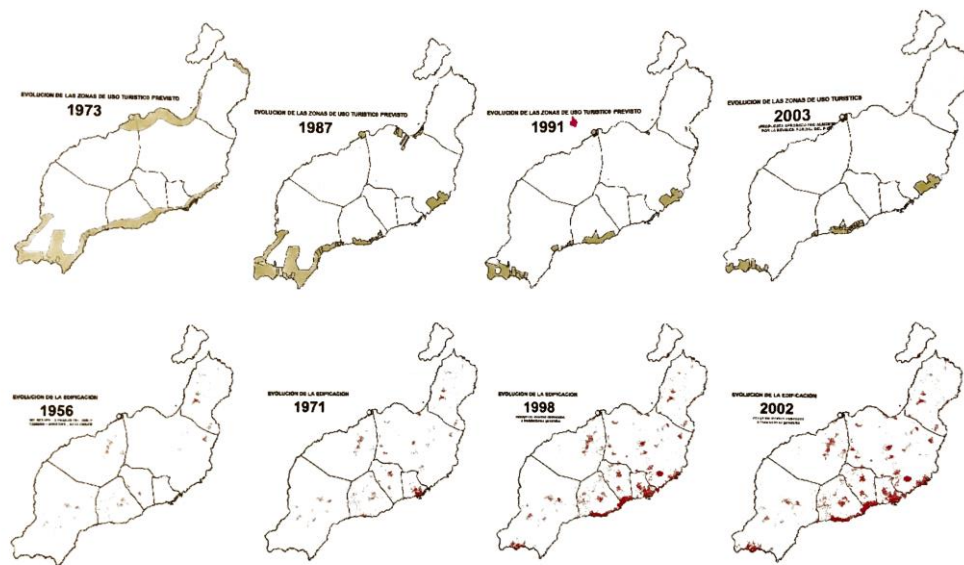


Figure 22: Protest against a hotel in Puerto del Carmen next to local beach "Los Pocillos." Orgnaized by environmentalist collective El Guincho. 1988, Gerardo Fernandez, reg: 11660

¹⁶⁵ Aguilera Klink, *Lanzarote*, 170.



Figure 23: The sign reads "For a new rezoning of Los Pocillos," meant to protect public space from development. Gerardo Fernandez, 1988, reg: 11666



Anverso: Ortofoto de la isla de Lanzarote (Grafcán, 2002)
 Evolución del suelo con destino turístico: Elaborado por E. Gil Páez, 2004 con ESRI® ArcMap™ 8.3;
 1973 a partir de NN SS de Isla de Lanzarote, 1972 y PGOU de Yaiza. 1973, 1987, 1991 y 2003 a partir de document. del Plan Insular y su Revisión.
 Evolución de edificaciones en núcleos a partir del análisis de A. Pérez Perdomo, 2004, operado por E. Gil Páez., 1998 y 2002, cartografía de Grafcán.
 Life Lanzarote 2001-2004: Exploración de Nuevas Líneas de Actuación, Financiación y Fiscalidad para la Reserva de Biosfera

Figure 24: The top chart maps the increasingly restrictive zoning of "Tourism Use" areas from 1973-2003. The bottom charts the growth of hardtop surfaces and buildings on Lanzarote since 1956. Materials provided by the Biosfera Reserva de Lanzarote.

Despite all these regulated restrictions, neoliberal financial properties and development investment undercut more stringent regional restrictions on development. Tax breaks in the *Regimen Económico y Fiscal del Archipiélago* (the local tax system) and investment by local firms, created financial opportunities for developers with little regard for PIOT restrictions. By 1998 the Canary Islands had the third largest GDP growth (4.58%) of any of the regions governed by Spain, and accounted for 42 percent of Spain's total tourism visitations. Almost a billion dollars' worth of infrastructure investment (roads, housing, ports, water and sanitation facilities) was proposed between 1999 and 2006. On Lanzarote alone, cement consumption rose from 99,100 tons in 1995 to 151,083 tons in 1998.¹⁶⁶ In an exhibition presented by the FCM in 2001, they list the expansions in car use, population size, and infrastructure investment since the 1980s, criticizing a "hurricane of investment" for the impending sense of "bulimia and collapse" in the islands tourism industry.¹⁶⁷ In interviews, one FCM representative described that in the early days of the European Union (EU), the Union subsidized unnecessary and only partially publicly supported development as a way to promote the value of the Euro while also providing local developers with a way to sink their "black money" pesos.¹⁶⁸ While the Consejería de Policía Territorial, Sostenibilidad y Seguridad (Canary Islands Ministry of Territorial Policy, Sustainability, and Security) published a white paper on criticizing development plans in 2001, citing "alarming levels" of consumption of natural resources for tourism

¹⁶⁶ Aguilera Klink, 176.

¹⁶⁷ Aguilera Klink, 180.

¹⁶⁸ Idoia Cabrera, FCM. Despite rigorous inquiry with online archives, I have not been able to find documentation of EU investment in the Canary Islands.

activities, the apparent “lack of sustainability in this economic model”, and the “most radical transformation of the territory ever seen on the Canary Islands”, developers and enforcers paid little heed.¹⁶⁹ One Biosphere Reserve officer described a developer who “flaunted development laws because of his immense capital and the assumed benefits for the island.” He described a pattern of development where, while:

“Everyone should be equal under the law, developers skate by. Some developers can be called out for illegal development, be brought to court, still continue building while cases wait for arbitration in Spain, finish and open a hotel development with no state agency on Lanzarote able to stop them. It makes a mockery of democracy in Spain.”

Development of Playa Blanca and the Marina Rubicon, an elite yacht harbor, not only ignored development regulations and priorities but was built on top of existing fishing communities dependent on the local eelgrass ecology. By the new millennium, private investment, the “Guazita Bypass” highway built to directly connect the airport in capital city Arrecife to rapidly developing Playa Blanca, and the proposal of a 650-meter extension to the fisherman’s jetty that would eventually become the Marina Rubicon, drew public attention to unpermitted development across the island.¹⁷⁰ The Marina Rubicon’s construction began in August 2000 despite public comment from the FCM to the Director General of Public Works. They critiqued the creation of a “maritime highway” between Lanzarote and Fuerteventura for “sporting and commercial uses” at the expense of “the community, communication or fisheries use” for “the type of tourism that is of doubtful profitability for the whole of

¹⁶⁹ Aguilera Klink, *Lanzarote*, 172.

¹⁷⁰ Aguilera Klink, 200.

Lanzarote.”¹⁷¹ They were particularly concerned with a type of “tourist behavior defined by a short stay and high consumption...exerting a pressure on the port and road infrastructures...[it] does not distribute wealth, concentrating spending on reception and dispersion centers, in this case the commercial area of the port.”¹⁷² FCM would eventually participate in lawsuits one FCM representative described as “exposing the serious corruption of municipal authorities and real estate speculators,” suing the Marina for illegal development and construction without a permit. For many residents I interviewed, it was no surprise that the *Museo* studios were based out of Marina Rubicon; the CEO of CACT, José Juan Lorenzo, is the nephew of one of the port’s owners and the cousin of the manager.¹⁷³ Corruption and the erasure of local communities seemed cemented at the Marina.



Figure 25: Protests at El Berrugo in the early 90s, Lancelot Magazine, reg: 11311

¹⁷¹ Marrero, “Alegaciones al Anteproyecto de Amplicacion del Puerto de Playa Blanca, Yaiza, Lanzarote,” 3–4 Translation by R. Meyers.

¹⁷² Marrero, 4.

¹⁷³ “Lorenzo Afirma Que Ahora Centrarán ‘Todos Los Esfuerzos’ En Destinar El *Museo* Submarino Al ‘Estudio’ de Los Mares.”



Figure 26: One El Berrugo home being defended by protesters, early 1990s, Lancelot Magazine, reg: 11313

Marina and hotel developers had bought up the areas around the old fishing district and beach called “El Berrugo,” a set of family homes in the vernacular architectural style. The Medina family was the last of a small community of fisher folk residing on the eastern stretch of a series of beaches that became Playa Blanca. Up until the 1970s, the local economy relied on fishing, livestock, and shell fishing with a small amount of rain fed agriculture for its livelihood.¹⁷⁴ Las Salinas de Berrugo were historic salt pans in a south-facing bay protected from northern currents, close to La Bocaina strait, where salt, lime stone, and stone barilla were harvested and sold for supplemental income by a small group of families.¹⁷⁵ The eelgrass beds fringing the coast nearby, about 30 feet deep in high tide and a quarter mile from the shore, provided juvenile fish habitat, sea turtle subsistence, carbon sequestration and nitrogen

¹⁷⁴ Fuentes, “Berrugo, o La Resistencia al Hormigón.”

¹⁷⁵ García, “La Batalla Contra El Puerto En Berrugo Hizo Que Saliera Toda La Corrupción”; Cabildo De Lanzarote, “La Sal.”

fixing services, and a delicate ecology of crustaceans and benthic organisms. These nutrient-rich patches in the shallow water flats of Lanzarote concentrate schooling fish communities and support the stock longevity by providing habitat for juveniles, thus drawing fishing communities like the Medina family to the coast. Harvesting salt for at-sea salting and preservation of caught fish, access to mackerel and sardines in the shallow eelgrass flats, and protection from major currents made this community an integrated socioecological ecosystem, often isolated from public life on Lanzarote; public officials, like the mayor of the Yaiza consulate who “oversaw” El Berrugo, often referred to the families as “a cave of socialists.”¹⁷⁶ While inhabited by the Medina family for over one hundred years, the fisher folk were forcibly evicted before the construction of the Marina Rubicon. The Medina family could not prove in court that they owned the property – they had acquired the property by a trade exchange and lived there for so long they had no documentation – despite protest and immense community support.¹⁷⁷ The last home remains abandoned on site today, where banners left on the property protest their expropriation: “Si luchamos Podemos perder; Si no lo hacemos estamos perdidos.” If we fight we can lose; If we do not, we are lost. The Marina’s development proceeded, razing the site and building a series of commercial units along the waterfront, as well as a breakwater and bridge network. There are biweekly markets, restaurants, and a pool, but the Marina is often quiet.

¹⁷⁶ García, “La Batalla Contra El Puerto En Berrugo Hizo Que Saliera Toda La Corrupción.” Original text: “Nunca hablaron con nosotros, decía que éramos una cueva de socialistas.”

¹⁷⁷ Rivero, “Desalojo en el Berrugo”; Fuentes, “Berrugo, o La Resistencia al Hormigón.”



Figure 27: The same building today in the middle of the Marina Rubicon mall complex (photo by author, 2017).

The *Museo Atlántico* similarly developed without public comment, “improving” the environment by making it legibly economically productive in a tourism development model from an “empty” seafloor. Because of the environmental uncertainties of the installation project management was particularly complex. For those involved in the implementation of the *Museo*, its location was key. They needed a site where they “could secure as many days for diving as possible,” one CACT representative explained. Protected by the island from the northeastern winds and currents that cut between Lanzarote and La Graciosa, the bay where the *Museo* rests is within walking distance of the rapidly developing Playa Blanca. When asked if Playa Blanca’s growing tourist community was an incentive to choose this bay, the representative rebuffed, “No, because if that were the main reason, we would have chosen Puerto del Carmen. That’s where many of the dive shops were actually, the

majority of the hotels were there.” Puerto del Carmen, however, is often overrun with divers and vans, each parked on a sidewalk to get as close to the entry point as possible, with few facilities to support dive operations. While waiting on a public infrastructure project that would provide the hundreds of divers who come to dive each day with showers, expanded bathroom facilities, shade and fresh water, Puerto del Carmen will remain a frantic and haphazard dive center. Puerto del Carmen’s waterfront is heavily developed with little room for new infrastructure, whereas Playa Blanca has, or had, swaths of beaches and waterfront access points with little development. This has allowed the *Museo* to install safety infrastructure, the *Museo Atlántico* office and studio, and multiple mooring sites for the dive shops scattered alone Playa Blanca for kilometers.

But it was the character of the seafloor that proved the real source of contention for the tourism board and environmental activists. The CACT official noted that “it was very important to choose a place with no life, and no, ah, ecological sites. So, it was difficult to find a place with these characteristics. But finally we found this bay, which is a bay within a bay, because Los Coloradas (a dive site) is already within this other inlet.” A Canarian environmental consulting group, Dracaena Consulting and Environmental Projects, determined this “unrestricted site” would benefit from an artificial reef that “increased the number, richness, and biomass of life.”¹⁷⁸ A feature in a management magazine notes how the team combed potential sites to make sure there was not a protected species of seagrass growing there.¹⁷⁹ Measuring biomass before and after the *Museo*’s installation, Dracaena Consultant Javier del Campo-

¹⁷⁸ Parsi, “Deep Dive,” 56.

¹⁷⁹ Parsi, 59.

Jiménez demonstrated “not only that the museum had no negative impact but also that, as an artificial reef, it had a positive impact on the biological communities by promoting marine life.”¹⁸⁰

At the same time, Taylor had begun work on the sculptures before regulatory approval was given by the local government, citing spoken approval from mainland Spain’s Ministry of Environment but drawing public criticism none-the-less. Despite holding a public meeting at the inception of the project, involving island residents as models for sculptures, and allocating 2% of annual revenue from the project to ecological research, local political groups protested the manner in which the project was conceived, permitted, and approved outside of the legally acceptable timeframe for coastal development.

Familiar with illegal development and sensitive to environmental regulation, local political groups on Lanzarote disputed CACT’s claim that the seafloor was “empty.” Stewards of César Manrique’s legacy perceive the *Museo Atlántico* to hypocritically undercut Manrique’s anti-development agenda, predicated on seeing the environment (terrestrial or marine) as “full” despite seeming “barren.” FCM Advocates describe the installation of the *Museo Atlántico* as “illegal” because there was no “real” period for public comment nor a publicly available environmental impact statement from the hired consulting group, let alone a discussion as to whether or not the *Museo* project, as a whole, was appropriate.¹⁸¹

¹⁸⁰ Parsi, 60 Parsi, 60 The management article emphasizes that the EIS “leaned heavily on steps laid out in the Ministry of Environment’s Methodological Guide for the Installation of Artificial Reefs, as well as feedback from environmental scientists at the Universidad de Las Palmas de Gran Canaria in Spain.”

¹⁸¹ Two locals expressed that the discussion was more oriented towards addressing implementation issues than whether the *Museo* would move forward – it was assumed it would.

Much like El Berrugo, activists contend that there was an undocumented community – this time ecological – that was erased in the process of installing the *Museo Atlántico*. They describe the areas outside Marine Rubicon as “sebadal”, an ecological term found exclusively in Canarian Spanish referring to a seabed covered with *sebas* marine macroalgae. Fields of *sebedales* are rooted in the seabed anywhere from 10 to 30 meters of depth and in calm waters around the Canary Islands.¹⁸² *Seba*, or *Cymodocea nodosa*, stabilizes seafloor substrate with its root system, supports nitrogen-fixing and oxygen-producing algae, and provides habitat for juvenile fish.¹⁸³ In response, artist Jason deCaires Taylor describes the impact assessment process as “very comprehensive” as they “spent a year with a team of marine biologists, studying the site to make sure the use of the museum wouldn’t affect the natural habitat around it in a negative way.”¹⁸⁴ A CACT representative noted that a major step in the permitting process was to make sure there was no *sebas* in the site selected for the *Museo*. So adamant was he that there was no marine life at the site, that he described the future of the *Museo* as a *sebas* restoration site “to see if this weed could grow again, because apparently in the past it was an area where the plant was presented, but with the touristic development and some biologic reasons it stopped.” An FCM advocate disagrees, noting “It’s a lie: they’re not protecting the area, they’ve destroyed an area without any public dialogue.” As an isolated eco-art installation, the *Museo*

¹⁸² “¿Qué Significa La Palabra Sebadal? El Diccionario de La Real Academia de La Lengua Española No Incluye Este Término, Por Lo Que Supongo Que Es Un Canarismo. | Academia Canaria de La Lengua” in addition, as of 2000 the dwarf eelgrass (*Zoostera noltii*) population around Arrecife, Lanzarote’s capital, was 25 percent of its population size in 1995, while still a primary producer for 38.2 percent of benthonic species in the Canary Islands.

¹⁸³ Hartog, C. d. & J. Kuo. 2006. Taxonomy and biogeography of seagrasses. 1-23. In *Seagrasses*. Springer, Dordrecht.

¹⁸⁴ “Imagination, Conservation and Education.”

Atlántico might not consider itself a threat to the marine environment. The designers of the project took explicit steps – from an EIS to utilizing pH neutral concrete – to make sure this intervention only had “positive” environmental outcomes for local marine ecology. In the context of the Berrugo, however, the *Museo Atlántico* is another instance of illegal (or at least publicly contested) development on an island that prides itself on open, protected, environmental space.

Critiquing the *Museo Atlántico* as Development

Development is a foundational belief underpinning modernity, the means by which all modern advances in science and technology, democracy and social organization, and rationalized ethics emerge as a unified humanitarian project meant to uplift global populations through shared effort. Not necessarily emphasizing economic growth as progress, modernist development is a technocratic solution to a network of social and environmental challenges that addresses the conditions under which economic growth might occur.¹⁸⁵ But poststructuralists, including Berman,¹⁸⁶ find that Enlightenment-affiliated development presumes to define all metrics for what progress is, limiting alternative ways of being and ideal futures. Even alternative or post-development (which center participatory process and local communities) are in many ways reactionary and prescriptive.¹⁸⁷ Development projects are “capital-intensive, high-technology, large-scale development projects that convert farmlands, fishing grounds,

¹⁸⁵ Peet and Hartwick, *Theories of Development, Third Edition*, 2.

¹⁸⁶ Berman, *All That Is Solid Melts into Air: The Experience of Modernity*.

¹⁸⁷ Oliver-Smith, *Defying Displacement*, 1, 5–10; Pieterse, “My Paradigm or Yours?” interestingly proposes “reflexive” development, in which a critique of science is viewed as part of development politics.

forests, and homes into dam-created reservoirs, irrigation schemes, mining operations, plantations, colonization projects, highways, industrial complexes, tourist resorts, and other large-scale forms of use favoring national or global interests over those of people at the local level.”¹⁸⁸ In the way that the *Museo*’s installation process disempowered locals, it bears no resemblance to Manrique’s tourism infrastructure that, more than preserving traditional livelihoods, created political and social infrastructure that supported community efforts to preserve local space. Full of contradiction, the *Museo* is instead an illegal development that disempowered contemporary community activists and their efforts to self-determine their use of natural resources.

For many residents of Lanzarote, the *Museo Atlántico* is not progress. To the people and supporters of El Berrugo, the *Museo Atlántico* was a publicly funded project installed with little public input, undermining citizen agency in protecting local environmental space. The *Museo*’s offices and studios are inside the Marina Rubicon complex, overlooking the bay where the sculptures rest, paying rent and supporting the restaurants near the studio. Public funds supporting CACT are now being used to pay the studio’s rent to the Marina, built without public consent. Many environmental activists on the island describe the *Museo* as inappropriately validating the illegal development of the Marina Rubicon in El Berrugo and the ways in which its developers ignored regulatory responsibilities and a formal period for public comment to support the what Development historian call the “uprooting of people and the destruction of homes and communities in the name of progress.”¹⁸⁹ It’s a “dark project, a dirty project,” one community advocate scoffed. One representative

¹⁸⁸ Oliver-Smith, *Defying Displacement*, 2.

¹⁸⁹ Oliver-Smith, 3.

emphasized that the repeated development of tourism infrastructure without due public process “undermined democracy in Spain.” He described a pattern, where development would continue on Lanzarote while the court process proceeded in Madrid, reinforcing the local sentiment that the Canaries have so civic standing with the mainland, and that even now the Canaries are mere colonies that provide tax revenue through their year-round tourism economies. As one advocate decried during the Berrugo protests, “This has become a moment when the immensity of the sea is reduced to a business and our landscape is divided into urbanizable plots.”¹⁹⁰ The *Museo* has effectively privatized 50 square meters of open ocean off Lanzarote’s coast, attempting to restrict entry for profit by installing regulatable and surveillable infrastructure in public space in addition to charging 12 Euro for entry.



Figure 28: A boat full of divers arrives at the patrol ship to submit their entry passes. Different buoys mark the start and end of the Museo's curated route (Photo by author, 2017).

¹⁹⁰ Fuentes, “Berrugo, o La Resistencia al Hormigón.”



Figure 29: Divers load in to a skiff at the Marina Rubicon for the 5 minute boat ride to the Museo. Photo by Author.

The support infrastructure for the *Museo Atlántico* alters use of Lanzarote’s marine environment as much as the *Museo* itself, making common property private. As much as self-determination and sovereignty over one’s natural resources is an internationally acknowledged right, these rights are also claimed by states to develop resources in the “national interest” in the shallow waters of El Berrugo.¹⁹¹ A set of buoys marks the perimeter of the *Museo*, as well as the start and endpoints for the curated path through the museum. The *Museo* is safeguarded by a 25-foot patrol boat, which houses two security guards, emergency response equipment, a small stove and an espresso maker. Whether or not dive professionals are on good terms with the security staff can impact their relationship to the *Museo*, as running even five minutes late for one’s visitation slot can result in a citation by the *Museo* office, and chipper conversation may get you a free stovetop espresso and a grin. The guards are stationed

¹⁹¹ Oliver-Smith, *Defying Displacement*, 3–4.

at the Eastern corner of the *Museo* from 9 am to 4 pm, returning the boat to the Marina after that time. While one *could* swim from the shore to the *Museo*, one would need to cross a channel used by motor boats before reaching the *Museo* and completing the 15-meter dive. This has aggravated some of the guests, as one Google Review reads:

“The Museo Atlántico is a nice idea, but I find the implementation to be mediocre at best. The main reason is not even the sculptures, but the way in which the authorities use their ships to lock up the arsenal and you need a permit for every snippet of film.” (Tom, Google Review, April 2018)

At the core of this complaint – and many others noted during interviews with residents who don’t have access to dive equipment – is the expectation of access to public space, as a diver and as a photographer. CACT has extended its privatization of the coastline from the Marina Rubicon, where it rents space (like Taylor’s sculpture studio and the official *Museo Atlántico* office) and organizes tourism activities, to the ocean itself. It uses static structural interventions and markers, buoys, ropes and lines, to create a static, regulatable space in an ecosystem that is by definition fluid.

The *Museo Atlántico* ultimately exists in a fluid space that is volumetrically full, despite being regulated as a two-dimensional surface seascape the state defined as “empty” – empty of community, empty of marine life, and empty of value without human intervention. Oceanic space has a long history of being communally accessible, even when it leads to the exploitation of marine resources,¹⁹² and scholar Peter Steinberg has critiqued similar attempts to regulate marine space as territory for this very reason.¹⁹³ Furthermore, Steinberg contests the ability of humans to regulate a

¹⁹² See Bolster, *The Mortal Sea* Additionally, the United Nations Law of the Sea is predicated on the seabed being the “Common Heritage of Mankind.”

¹⁹³ Steinberg, “Of Other Seas.”

space as materially fluid and dynamic as the sea. Political Scientist Simon Dalby, by contrast, sees the Anthropocene as a period where governance has adapted to regulating volumetric space where once it dealt with two-dimensional border disputes: drones and airplanes militarize airspace, and climate change phenomena like the volumes of carbon dioxide in the air or shifting, sinking, and melting blocks of Arctic ice demand new paradigms for international governance. But local governance of the *Museo Atlántico* remains traditionally two-dimensional, patrolling the surface but inadequately prepared to control what happens between marine life and human visitors in the water column.

Marine flora and fauna have entirely different relationships to the *Museo* as an intervention in volumetric ocean space. While the *Museo* is “specifically designed for promoting diving in the island [sic],” as one CACT official reports, it has real, uncontrollable material consequences in a real, socioeconomic and ecological context. The material life of the *Museo* subverts expectations of what this artificial reef can provide dive tourists. While Taylor has often felt comfortable “letting go” of his installations such that the details of the artist’s hand is erased and marine life (coral, algal, or otherwise) overtakes the human form, attempts to regulate the *Museo Atlántico* as a safe and controlled dive site are at odds with actual unpredictability of underwater interactions. The *Museo*’s developers eagerly claim the “positive” ecological benefits of the project to justify its installation while simultaneously disavowing themselves of any culpability in what happens next. Employing a new materialist approach to understanding this underwater installation highlights the ways in which the *Museo* neither serves divers nor marine life in the way it was intended.



Figure 30: Schools of fish pool around one of the "Hybrid" series sculptures (Photo used with permission of the Jason deCaires Taylor Studio).

Vibrant Matter

The non-human aspects of the *Museo Atlántico* are very much alive, defying the boundaries and barriers established by CACT and repurposing the museum for their own use. As substrate, the statues interrupt the barren sea floor and create areas where algae, coral, seaweed, and can attach themselves. Taylor is utterly content to see the statues taken over by whatever might cultivate itself on the pH-neutral concrete. Indeed, he has intentionally added certain textures, he claims, to parts of the statues to encourage growth. This was particularly true of earlier statues built in the Caribbean, where drilled holes housed the cylindrical stems of coral, or lobster-scale enclosures provided protected habitat. At the *Museo Atlántico*, plumes of macroalgae adhere to the shoulders of concrete paparazzo and become toupees on the bald heads of

unmoving businessmen. The algae, swaying in the sea currents, animate the site and obscure the details painstakingly etched into the concrete.



Figure 31: Sea worms weave across a sculpture in the Rubicon series, and a filefish nibbles on some algae gracing her shoulders (Photos used with permission of the Jason deCaires Taylor Studio).

Museo sculptures designed for fish habitat have evolved beyond their intended or designed “positive” ecological function to interrupt the operation of the *Museo*. Over two months of weekly dives at the *Museo Atlántico*, I watched as various predatory species used not only the sculptures but the divers attending the *Museo* to herd prey into convenient formations for a kill. Given that dive tourists take a specific path to explore the *Museo*, there are repetitive and predictable shapes that habituate the animal stewards of the site to certain interactions. Most notably, the small school of barracuda (*Sphyrena viridensis*) that took up residence in the shallows of the museum, weaving amongst the fake kelp installed by Taylor to cater to snorkelers, use the bubbles emitted by divers as they exhale to hunt small fish. Barracuda wait for the

divers to ‘round a corner and create a “dead end” for sardine and small fish that school above the Rubicon sculpture. The Rubicon, an army of inattentive technology-addicts marching towards a “point of no return” symbolized by a large wall, channels the school into a corner. The bubbles of the divers, instructed by the dive staff to remain to the left of the Rubicon, dissuade the schooled fish from escaping to the left at any depth as their bubbles rise to the surface. The barracuda take this opportunity to “dive bomb” the schooled fish, now densely packed together between the divers and statues and easy prey. This behavior is akin to a tactic, leveraging material changes to ocean space – the surprising bubbles from divers that interrupt the usually stable water column —to increase the likely success of a hunt. In this way the *Museo* makes up a symbiotic assemblage, a knot of “diverse intra-active relatings in dynamic complex systems” rather than a biology made up of preexisting bounded units.”¹⁹⁴ But while scholars like Haraway avoid designating a “host” for these symbiotic interactions, it seems dishonest to de-center the *Museo*’s statues as the site and instigator for these interactions. These interactions exist because of the *Museo Atlántico* ’s attraction: an attraction for tourists as much as for aggregating species seeking habitat in a vast marine environment.

¹⁹⁴ Haraway, “Symbiogenesis, Symptoiesis, and Art Science Activisms for Staying with the Trouble,” *Monsters*, 27.



Figure 32: A triggerfish approaches the large camera of a Museo Atlántico diver, startling his dive buddy as it emerges from the "Gyre" sculpture. As the diver moves on, the triggerfish nips at his shiny air tank (Photos used with permission of Kjell Emonts).

When the *Museo* attraction is successful, the diversity of uses for the sculptures across species can lead to new categories of conflict. One example of multispecies interaction and conflict hosted at the *Museo* resides in The Gyre, where territorial triggerfish assail divers completing the curated dive path. The Gyre is one of Taylor's most ambitious sculptures, made up of over 200 individual pieces, naked bodies with limbs flung wide, laced together to form a ring. For Taylor the piece speaks to the bodies at stake in geopolitical affairs and the interconnectedness of human affairs. It also creates habitat for small benthic fish in the crevices formed by bodies fitting imperfectly together. Rather unintentionally, however, The Gyre mimics the shape of

a very, very large triggerfish nest, a ring of sand and rock dug into the sand with a depression in the center. Notoriously territorial, triggerfish (*Balistes spp.*) have been known to attack divers' hair, fins, and mask if divers swim near the nest. At the *Museo Atlántico*, the triggerfish have claimed The Gyre as their own, attacking divers with enough regularity that guides specifically warn divers away from that specific sculpture in their briefing. Divers have reportedly panicked when surprised by the fish, fleeing to the surface or overusing air. One longtime resident who has dived the island for decades mentioned with a glimmer of glee that several divemasters had mentioned "culling" triggerfish from the *Museo* during an illicit night dive due to the degree of duress the fish added to the dive experience. Triggerfish may be territorial, but so too are the dive professionals claiming "stewardship" status for the oceans. Entangled as the *Museo* site is, it remains a managed tourist attraction defined by (in many ways terrestrial) ideas of space, ownership, and staunch entitlement.

The designers and developers of the *Museo Atlántico* make no claim to predict what type of life will aggregate around the installation or to what end those species will make use of these sculptures. As eco-art, much of the actual ecological development of the sculptures is left to the currents and tides that shape the sea and patterns of organism movement. While Taylor might texture the cement to encourage settlement and growth of substrate-dependent sea life, he disclaims any control over what those species might actually be. However, as an organized "museum" of eco-art, Taylor and CACT set a particular dive route that creates particular expectations of what a diver will see. While many dive guides describe what a diver *might* see, they very rarely make guarantees as to what a diver *will* see in most dive contexts. In a vast

ocean filled with highly mobile species – certainly more mobile than divers lumbering through the shallows – dive professionals are usually trained to expect only the unexpected. Vibrant matter at the *Museo Atlántico* continually interrupts and subverts the messages Taylor hoped to convey through his serene and eerie installations. The relations forming between the statues and marine life may be perfectly benign, but the relationship between dive tourists or professionals and marine life are increasingly complicated, if not antagonistic.

Clandestine Development

The *Museo* may be a solution to boosting the dive tourism economy on Lanzarote, but does little for the sociopolitical resilience of this democratic territory of Spain. Built on and sunk near an illegal marina condemned in public discourse but supported by government agents, the *Museo Atlántico* is seen as illegitimate and exploitative. Local anti-development activists have struggled to regulate coastal development and maintain public participation in land management using Lanzarote's Biosphere Reserve status, protest, or lawsuits. Artificial reefs, considered conservation or restoration improvements before they are considered infrastructure or development, can be installed with even less regard for community consent in this Biosphere Reserve context where the island's environmentalist brand – derived from genuine environmental activism on Lanzarote 30 years ago – invites conservation-themed tourism infrastructure that give visitors access to the seafloor. The infrastructure demanded to support these very human expeditions to very unhuman spaces has altered shorelines to further exploit marine resources in the name of increased tourism

revenue to the state. Recognizing and regulating artificial reefs as development and allowing a public comment period may mitigate some of these issues.

Engaged with human objects that reach far beyond where human objects have commonly reached before, artificial reefs, the triggerfish, barracuda, algae, and sardines, reform into a complex new Anthropocene ecology “restored” or “enhanced” by intentional but uncontrolled human intervention. More than a Manrique-esque preservation and conservation effort, the *Museo* expands human access to a “barren” seafloor that might never have encountered the organisms that have colonized this Anthropocene intervention. There is little course for a more resilient dive tourism if tourism scholars and developers continue to neglect the social and multispecies entanglements of dive tourism sites, where the actual interspecies interactions at the Museo are often complicated, dangerous, and antagonistic.

Anthropocene tourism demands Anthropocene governance. Regulation for artificial reefs, where it exists, is usually part of the oil rig decommission process or individually permitted under Departments of Environmental Management. The exploitation of El Berrugo’s coasts emphasizes the need for clearer standards for the type of infrastructure allowed on the seafloor. What states and governing bodies consider valuable is tenuously connected to what communities consider sacred, and projects like the *Museo Atlántico* demonstrate the ability for globalization and development to reach deep below the ocean’s surface.

Conclusion

September 21st 2018, two days before the general Presidential elections in the Maldives, a team of men sent by the lame duck president Abdulla Tameen brought axes and ropes into the Coralarium, Taylor's most recent project, and tore down the sculptures in the installation. The president declared the sculptures haram, forbidden works that through their "un-Islamic depiction of human figures" was a "threat to Islamic unity and the peace and interests of the Islamic state," citing "significant public sentiment" against the sculptures.¹⁹⁵ The "world's first intertidal museum", the Coralarium, was a metal cube enclosing a series of mangrove men, with curious children and parents looking out at the horizon from atop the cube and part of the exclusive Fairmont Firru Fen resort.¹⁹⁶ An on-site marine biologist was hired to guide guests through a coral restoration experience, but now that amenity will have to wait. The sculptures are gone, and Taylor has moved on to a state-sponsored project in Australia. Once again, the social and political context of an artificial reef tourism project has disrupted the intended use and value of the project. More importantly, the project has disrupted the ecology and environment being ostensibly "restored." Once again, I am left questioning the priorities and process by which tourism developers value nature.

The *Museo Atlántico*'s implementation reveals the stew of actors, policies, and powers that deploy artificial reefs as a tourism product, arguing that developers use conservation rhetoric to justify artificial reef development with little accountability to

¹⁹⁵ News, "Unique Underwater Sculpture in the Maldives Destroyed after Deemed Un-Islamic."

¹⁹⁶ Trilivas, "Take A Swim In This Underwater Gallery."

the local public or environment. The *Museo Atlántico* in Lanzarote, Canarias is a large-scale sculpture installation that developers claim acts an artificial reef for ecological and economic benefit while education tourists about the marine environment. Lanzarote is an exacting example of an “art island,” a tourism phenomenon that leverages art, architecture, and a local conservation ethos to redesign the local environment in a way that makes the landscape’s value legible to visiting tourists. First in local architect César Manrique then, some argue, in *Museo* artist Jason deCaires Taylor, the tourism board has found champions of the local environment that make the value of Lanzarote’s desolate volcanic soils or empty seas legible and valuable to visitors. Dive tourist visitors to the *Museo Atlántico* are often too distracted by other parts of the dive experience to interpret the content of the sculptures, and marine organisms assert themselves in the *Museo* space in ways unanticipated by the artist. In its development the *Museo* project paradoxically obscured local protests over the development of coastal space, disempowering local voices where Manrique’s work once fomented an anti-development environmentalist movement on the island. To make *aqua nullius* productive, the *Museo*’s developers apply colonizing and exclusive practices to the waters of Lanzarote.

The *Museo Atlántico* is situated within histories of global conflict, not only from when Lanzarote was a stop-over for the Atlantic slave trade but as a Spanish colony catering to British tourists discouraged from touring in war-torn Egypt. When Dictator Francisco Franco deployed tourism as a tactic to solidify Spanish rule over its various colonies, including Lanzarote and the other Canary Islands, those tensions

over colonization sizzled under the surface of development.¹⁹⁷ These tensions are not only represented in the symbolic content of the *Museo*, but central to the placement and financing of the project: as part of the “infrastructure of pleasure” of Lanzarote, the *Museo* takes public funds and space and isolates them from public access in the name of the tourism economy. The construction of the Marina Rubicon, home to Taylor’s studios and dive shops that cater to the *Museo* divers, was constructed illegally on land previously owned and used by artisanal fishers. This development displaced fishing families from the shore, required further construction of tourist infrastructure, excluded fishermen from using those traditional beaches for fishing or even for preparing nets,¹⁹⁸ and migrated the artisanal fishing workforce to new activities. The agricultural labor and naturecultural relationships central to Lanzarote’s Man and Biosphere designation are erased in the name of coastal hotel development and erased from the narrative of the *Museo Atlántico*, Lanzarote’s new legacy.

At the heart of the conflict over the *Museo Atlántico* is the value and colonization of purportedly “empty” coastal and marine space. The El Berrugo fishing community? Legally, those coastal lands are empty and unoccupied. The seagrass beds? They didn’t exist according to the transects taken by consulting scientists, or at least they were replaceable. Despite the ocean being volumetrically full of seawater, fish, plastic, and plankton constantly moving and migrating through ocean space, the *Museo* is perceived to “make something useful” of Lanzarote’s “empty” submerged coast. Productivity in the fifty square meters of the *Museo* is now measurable as the

¹⁹⁷ Lawrence, “From Bullfights to Bikinis.”

¹⁹⁸ Ángel Santana Turégano, “Dependency and Development Patterns in Tourism.” See also Santana 1997.

number of visitors to the site, as revenue, as Instagram posts of specific statues, as a *site* with discernable “landmarks” legible to human visitors to the ocean blue. The installation of the *Museo* effectively privatizes a common pool resource to reduce traffic or over-exploitation while generating predictable profits, which developers use to justify the public tax dollars spent on the project without guaranteeing public access.

Perhaps Taylor’s *Museo Atlántico* is the most suitable inheritor of Manrique’s environmental legacy after all. The project, and its context, expresses the complex, involved, and convoluted network of people, policy, ecology and imaginaries that makes up much of contemporary ecotourism practice in the Anthropocene. The once-revolutionary environmentalism of Manrique’s tourism project has been consumed and reinterpreted by the global tourism economy, where the *Museo Atlántico* preserves less than it “enhances” through along the shoreline. The human hand in creating ecosystems, now explicit, is barely seen as an intervention at all. Lanzarote spreads itself thin, reaching for the economic development paradigms touted by the EU at the same time as it grasps at the symbiotic ideals of UNESCO’s Man and Biosphere program. The *Museo Atlántico*, an artificial reef development, serves both objectives. The paradoxical politics of Taylor’s work is precisely why the *Museo Atlántico* is a necessary study for a scholar of Marine Affairs.

As much as the coastline shapes, enables, and constrains political possibility, as Dr. Mendenhall described in her Marine Affairs Seminar Lecture (2018), so too do community ideas of political possibility shape the coastline. Attempting to understand the sociopolitical past, present, and future of the *Museo Atlántico* with the tools

provided by my experience in University of Rhode Island's Department of Marine Affairs has encouraged me to kill my darlings. Inspired by the methods and experience modelled in Marine Environmental History and Social Studies of Science, I had the tools to interrogate the policies and infrastructure whose aesthetics most align with my own, whose imagined utopias seem possible and close. Understanding Coastal Ecosystems Governance and working at the intersection of planning, governance, community engagement exposed me to histories of questionably well-intended infrastructure gone awry. Issues in the coastal margin are necessarily interdisciplinary, and Lanzarote's story is no different. Ineffective management policies, the power of capital, and coastal infrastructure projects at odds with community interests are themes that permeate the content of Marine Affairs coursework.

This thesis explored the preliminary impacts of and responses to the *Museo Atlántico* artificial reef development using qualitative methods like interviews, participant observation, photojournalism, and immersive ethnographic practice. The project was limited by time, access, and funding. While able to observe the early phases of installation and tourist engagement, it is to be seen whether the *Museo* will actually achieve its intended effects of boosting dive tourism, providing a new marine habitat that cultivates marine biodiversity, encouraging less turnover in the dive professional community, and producing a return-on-investment for the taxpayer: One Lanzarote journal recently noted that CACT spent 17,100 Euros on a marketing consultant to increase *Museo* visitation from tourists and Lanzarote residents alike, so it is clear that the project should continue to be observed and evaluated.¹⁹⁹ This project

¹⁹⁹ "Lorenzo Afirma Que Ahora Centrarán 'Todos Los Esfuerzos' En Destinar El *Museo* Submarino Al 'Estudio' de Los Mares."

could have benefitted from a more involved anonymous survey process like that used in the Block Island Wind Farm project, where we could have followed up with *Museo* divers after several months. One other major limitation is that my Spanish is basic at best (though I did have access to a translator on the island if necessary), so the communities I could talk to in their native language were limited to French and English. This restricted communication in certain circumstances, but for the most part tourism professionals were fluent in English. I also recognize that this is a very specific type of artificial reef development and am eager to see research on projects that are more utilitarian and less “aesthetic.” I expect that different tourist communities would be inclined to participate in such artificial reef projects.

Future projects could measure and track behavioral changes, and develop visualization techniques to help Biosphere Reserve managers quantify marine resources. Specifically, research out of University of Rhode Island has calibrated remote sensing tools to detect eelgrass in shallow and semi-shallow waters.²⁰⁰ An excellent Marine Affairs project would be to use historical satellite data and provide Lanzarote’s community with evidence of the previously existing *sebadal* bed where the *Museo Atlántico* is now. Funding was limited, and a future study would benefit from exclusively observing dive behavior at the *Museo Atlántico* – whether and how divers interact with the sculptures, marine species behavior at the site, and what happens at the *Museo* “after hours” once the patrol staff leave at 4 pm. With an additional research assistant and access to more tanks, it is entirely possible to do hourly rotations with adequate surface intervals at the *Museo* to quantify diver

²⁰⁰ Wang et al., “Terrestrial and Submerged Aquatic Vegetation Mapping in Fire Island National Seashore Using High Spatial Resolution Remote Sensing Data.”

behavior. Alternately, some tourism studies scholars have given consenting divers GoPro's for the duration of their dive and used video software to typify and quantify behaviors. How dive tourists understand tourism infrastructure could be discerned alternately through a mixed methods study with Q Sorting alongside structured interviews. Much of my data could also be quantified, and I encourage future Master's students interested in artificial reefs and underwater sculpture to process my data in SPSS or nVivo and explore other possible narratives of dive site preference on Lanzarote.

This story begins and ends with bodies of water. On a small desert island off the coast of Morocco, surrounded by the Macaronesian seas, human bodies adapted to and with their utterly arid environment to survive. Since settling the island in the mid-1300s, the people of Lanzarote have cultivated lifestyles and agricultural practices that maximized the amount of freshwater available on the island for human survival. These bodies of water adapted to the landscapes and marinescapes of the archipelago, cultivating new naturecultural relationships and symbiotic dependencies over hundreds of years of coexistence. Yet, over these centuries, human technologies increased the availability or extractability of these freshwater resources have re-defined the terms of symbiosis, expanding the carrying capacity of the island through technologies like reverse osmosis and desalination. These bodies of water are technologically adapted and extended beyond the freshwater resources provided by these cultivated ecologies. These bodies of water sank a silent army of humanoid sculptures to sit on the ocean floor. These bodies of water are held up by infrastructure and tourism income. These bodies of water are, in this way, vulnerable.

Appendix A: Lanzarote in Photos

These photos, taken by the author as part of her documentation and understanding of Lanzarote's tourism development, are selected from two summer of fieldwork.



Manrique's wind chimes and on-land sculptural installations mark major roads and intersections around the island.



At the Cesar Manrique Foundation, Manrique's former home has been converted into a museum for his artworks and collection amidst a lava field.





Social spaces in lava pits and a massive outdoor cactus garden highlight parts of Lanzarote's landscape through design.





A dive center at the Marina Rubicon advertises its proximity to the Museo Atlántico (above). On the other end of Playa Blanca, natural and artificial rocks create a safe lagoon for training divers.





Dive professionals complete their EDG training at a rented space in the Marina Rubicon (above). They then tour Jason deCaires Taylor's studio where a studio assistant demonstrates the plaster cast process (below).





The view from the studio (above). A fisherman cleans fish on the shores of La Santa while describing the island's shrinking fishing community (below).





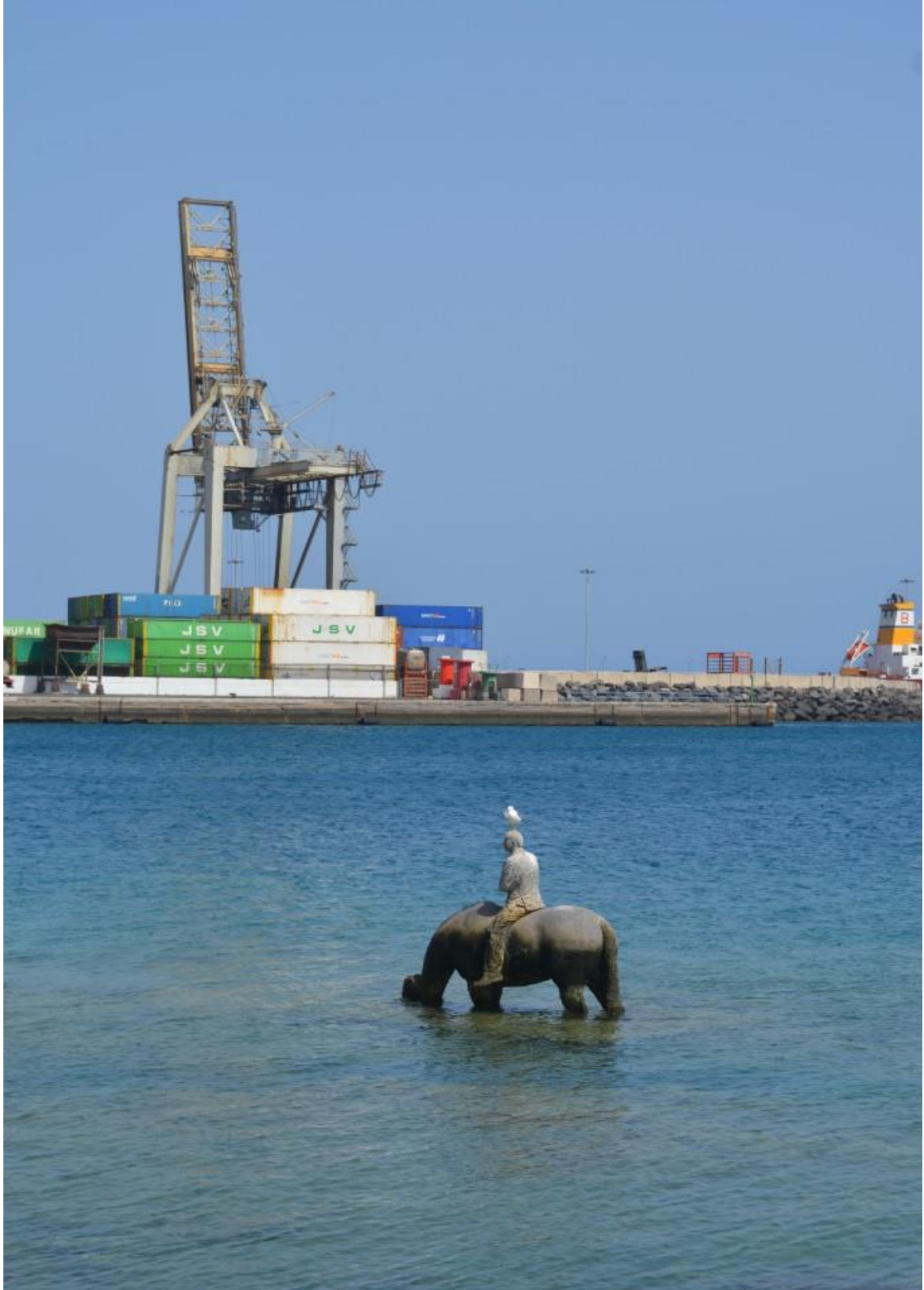
A typical beach scene on Playa Blanca (above). A landscape from Lazarote's untouched interior (below).





Tourists from one of the larger hotels rest and ‘screen up at the beach (above). An abandoned development frames national park land (below).





A replica of Taylor’s famous “Rising Tide” sculpture in front of the modern art museum and the island’s only cargo port.



Locals gather trash at Lighthouse Point during a coastal clean-up organized by the Biosphere Reserve. One dive professional attends (above). An impromptu bedroom on the northern abandoned coast (below).





The colors of Lanzarote: red, green, blue, ochre (above). Playa Chica beach before the morning dive lesson rush (below).





Roncadores getting cleaned on the shore at dusk in La Santa, a relatively untouched and sleepy fishing town (above). A dive instructor makes due without proper dive shop infrastructure and employs a shopping cart to teach his divers (below).





A wave break south of Famara Beach (above). Las Salinas de Janubio (below) is the only remaining, active salt farm on Lanzarote. Saltwater is scooped into tiered flats and left to evaporate away into salt for regional distribution.





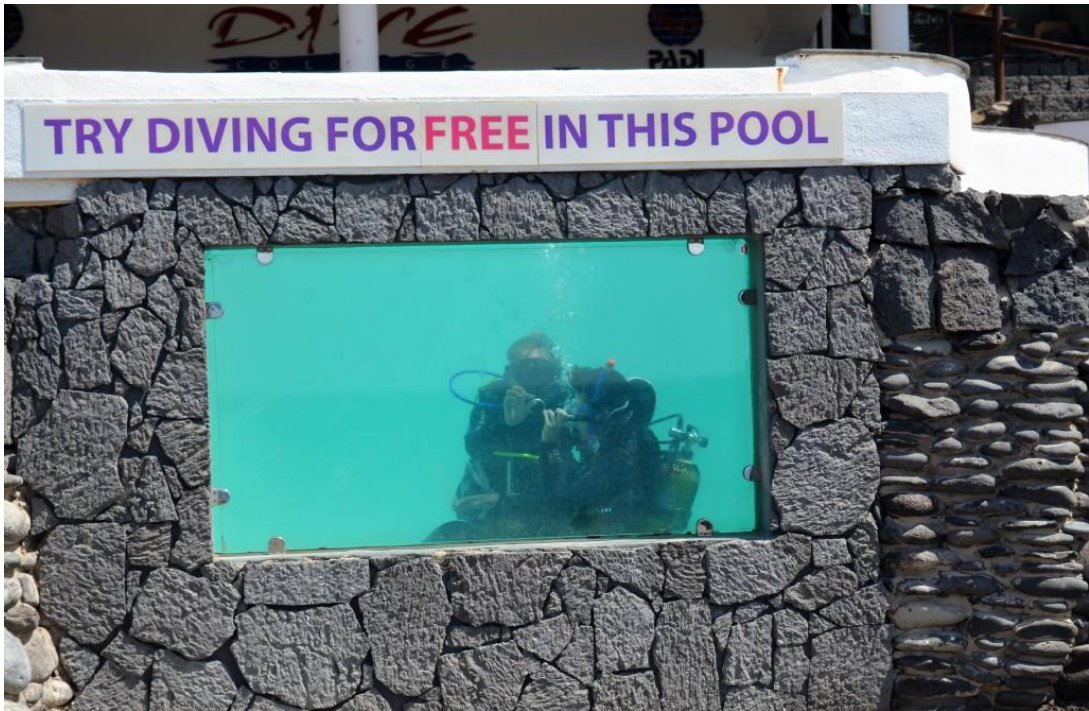
A group of local girls snack on free soda, sardines, and local bread during one of the many saint's celebration on the island in June. A large bonfire commemorates the night.



Coastal flooding is an undiscussed issue for the northeast corner of the island. A pier floods and the waves swipe a plastic chair from a restaurant porch.



Sunset in La Santa (above). A popular dive school's advertising can't be beat (below).





At the end of the Cueva de los Verdes, the underground educational trail stops in its tracks. Manrique's popular site educates visitors about the island's geological history.



A studio assistant for Taylor contemplates a sculpture for a young girl, which will eventually be cast in bronze and sent to a children's museum in Norway.



One of the “Rising Tide” statues with an oil-jack horse head (above). A mother and child in salt ponds tucked away from the crowds (below).



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