Sun Bathing in the Salt Pond

Re-making the Image of Tropical Tourism in Antigua and Barbuda

by
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Authors Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

A tropical paradise – lush green palm trees and white sandy beaches – is what comes to mind when a tourist envisions the perfect Caribbean destination. Yet, ironically this idealized nature is highly transformed by tourism itself. Tourism is one of the most destructive activities in coastal zones: mined white sand is deposited to replenish eroding beaches or create new ones; wetlands are dredged and filled for beach front resort development; and resort vegetation is heavily watered in countries that face water scarcity. This thesis exposes how these frictions are hidden from the idealized images of tropical tourism and questions the role these images play in intensifying three main contradictions of Global Tourism.

Antigua and Barbuda, a small twin-island nation in the North-East region of the Caribbean Sea, is one of the most extreme cases of a national economy relying on tourism in the world; 80% of their Gross Domestic Product is generated by Global Tourism and its related activities[1]. While tourism in Antigua and Barbuda has been extremely successful in economic terms, natural ecosystems have been sacrificed in its pursuit.

This thesis proposes new narratives which remake three dominant postcard images of global tourism in Antigua. *Sleeping on the Reef* attempts to alter the role of the quintessential beach front developments at Dickenson's Bay. From disruptive intruder to active participant, the development itself provides the structural framework for an artificial reef. This generates new habitats, expands micro-economies, and re-establishes protective ecosystems. *Hiking the Landfill* endeavours to combine two generated wastes of Cruise Ship Tourism - dredged fill and solid waste - to reconstruct The Flashes salt marsh landscape which was buried by these excesses. *Sunbathing in the Salt Pond* challenges the artificial and privatized landscape created by the Jolly Harbour development by re-positioning tourism as a node, rather than a container, within a much larger network of public and ecological programming. The deconstruction of the resort integrates it within its place; the Jolly Harbour Golf Course Fairway is eroded away, eliminating the need for fertilizers and excess water consumption; and an expanded coastline allows for greater public access.

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To the Waterloo Architecture and Dalhousie Architecture communities, I would not be here today if it were not for the encouragement of my fellow classmates, the support of the schools administrative teams, nor the mentorship of the teaching faculty. Thank you.

Last but not least, to the island of Antigua & Barbuda, I have thoroughly enjoyed being immersed in your culture for the last 12 months and am thankful to have had this opportunity to share what I have learned.

Preface

I would like to preface this thesis by stating that I am speaking from the perspective of a Canadian tourist. This thesis embodies my own personal experiences traveling the Caribbean and inhabiting tourist enclaves. Over the years, I have recognized how tourists – myself included – often objectify the destination, only seeking and seeing what they want: idealized images of nature and luxury experiences to consume. This mentality has drastically shaped the coastal landscapes of which they desire, and the subsequent economies the locals depend on. This has created a placeless typology of beach resort that has sprawled the coastlines of the Caribbean. I took this thesis as an opportunity to educate myself as a tourist about the deception that occurs in tourist towns and to investigate the role architecture and design could have in challenging this artificial reality. May this thesis stand as a rejection of the current model, in an attempt to re-imagine the greater agency of tourism within the industry.

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Introduction

Issue

"The meaning and materiality of this landscape, though, are socially constructed and occur far more frequently in imagination than in nature. The resort beach landscapes of the island tropics are often artificial landscapes where developers have altered or reworked the natural shore into the vision of the classic tourist imagination[1]." – *Jeff Baldwin*

Global Tourism to the tropics has directly shaped the coastal landscapes it is built on. As one of the fastest growing industries in the world, tourism brings money, development, and people to an increasing number of destinations every year. Today, the dominate tourism model of Mass Tourism capitalizes on economies of scale, resulting in affordable and convenient pre-packaged travel experiences on an international scale. However, the rapid pace of expansion created by global tourism is proving to be an unsustainable model of development. The economic, environmental, social and cultural ramifications of global tourism have created intense frictions between the global tourism market and the local communities in which they inhabit. From pollution, resource monopoly and depletion, industry competition, to ecosystem degradation, global tourism has played a major role in the landscape alterations of many small island nations in the Caribbean.

Focusing on three contradictions of Global Tourism, the introductory essay unmasks these frictions between tourism and destination. The first contradiction, imagination versus reality, investigates how the promotion of the ideal beach image by the tourism industry has directly altered the landscape and homogenized the diversity of the actual destinations. The next contradiction, local versus global, examines the consequences of Caribbean nations being economically tied and extremely dependent on foreign money and power. The last contradiction, consumption versus conservation, addresses how the duplication of these desired images greatly interferes with the human and natural systems of the site. By exposing the deception of the tourism industry, new authentic images of tropical tourism can emerge.

Site

Antigua and Barbuda, a small twin-island nation in the Northeast region of the Caribbean Sea, is no exception to this model of development. The operation of the current tourism industry in Antigua and Barbuda has been extremely successful in economic terms but has sacrificed a lot of its natural ecosystems in the pursuit of artificial landscape creation. With 80% of the country's Gross Domestic Product (GDP)

generated by Tourism, Antigua and Barbuda is one of the most extreme cases of a country dependent on foreign money and influence in the world[2]. Antigua, the larger and more populated of the two islands, represents the test site for this thesis's investigation. This research focuses on the West coast fronting the Caribbean Sea; where 90% of the tourism development exists[3]. This development includes numerous beach front resorts and an international cruise ship harbour. However, this coast was also home to a large density of salt ponds, mangrove basins, and fringe coral reefs. The use of dredging, infilling, and clearing for these large scale landscape creation projects has removed or degraded the quality and quantity of these vital coastal ecosystems. With the loss of this protective sponge space, the island is extremely vulnerable to the threats of climate change and severe weather events. This monopoly of the beach front has also restricted and highly privatized a once very public area, altering the social makeup of the coast. Tourism has directly shaped the coastal landscape of Antigua for the pursuit of its own interests.

Proposal

The proposal of this thesis is to design new narratives of tourism which re-make three dominant postcard images of global tourism in Antigua. Sleeping on the Reef attempts to alter the role of the quintessential beach front developments at Dickenson's Bay. From disruptive intruder to active participant, the resort development provides not only the structure for the living breakwater/ artificial reef system but takes on responsibility for its health and longevity as a measure of its future tourism stability. Hiking the Landfill endeavours to combine two generated wastes of Cruise Ship Tourism - dredged fill and solid waste - to reconstruct The Flashes salt marsh landscape which was buried by these excesses. Sunbathing in the Salt Pond challenges the artificial and privatized landscape created by the Gated Community Tourism at Jolly Harbour by re-positioning tourism as a node, rather than a container, within a much larger network of public and ecological programming. Using the postcard as a medium, this thesis attempts to unveil the other side of tourism and shift the tourist's perspective from idealized to authentic views.

Part 01

An Essay on Global Tourism

Global Tourism

The idealized image of Tropical Tourism

That water-have you ever seen anything like it? Far out, to the horizon, the colour of the water is navy-blue; nearer, the water is the colour of the North American sky. From there to the shore, the water is pale, silvery, clear… you can see its pinkish-white sand bottom. Oh what a beauty! You have never seen anything like this… You must not wonder what happened to the contents of your lavatory when you flushed it. You must not wonder where your bathwater went when you pulled the stopper... Oh it might all end up in the water you are thinking of taking a swim in; the contents of your lavatory might, just might graze gently against your ankle as you wade carefree in the water[1].
– Jamaica Kincaid

Introduction

The role tourism has played in shaping the natural coastlines of the tropics is undeniable. As defined by the World Tourism Organization, tourism encompasses, "the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure business and other purposes[2]." In the Caribbean, the tourism industry is motivated, operated, and driven by global actors and markets outside of the region. The term Global Tourism is not well defined in the literature but for the purpose of this thesis is used to reinforce the scale the industries operate on and power external forces have on the localized industries within the Caribbean. Global Tourism dominates the economic wealth of many small island nations in the Caribbean. This has created a severe dependency of many islands to the global market. Although, global tourism has its benefits by generating revenue, transitioning economies from primary sectors of agriculture and manufacturing to the service sector, and creating employment[3], the success or demise of a country's economy is majorly determined by external forces. Victor T. C. Middleton's 1998 text, "Sustainable Tourism – a marketing perspective" with Rebecca Hawkins has been a staple piece of literature outlining the scale and ails of global tourism. These concerns span from landscape degradation, pollution, erosion, exploitation, sedimentation, habitat stress; to resource depletion, competition, high imports, and heavy regulations[4]. The scale of global tourism makes it extremely difficult to create change in a capitalist motivated market; especially as heavy competition has driven down the cost.

This thesis focuses on three of the biggest contradictions associated with tourism and how their friction could be leveraged to improve the industries interaction with a destination. The first contradiction, "Imagination versus Reality" looks at how the role of imagery and marketing has influenced development in the Caribbean. Society's preconceived expectation of a destination, regardless of the actual place, has caused artificial replications to sprawl the coastlines; presenting

FIGURE 1
Facing Page
Sun, Sand, & Sea. The three S's of Tropical Tourism and the most desired qualities when choosing a destination.

an almost entirely imagined image. The second contradiction, “Local versus Global”, questions the longevity of small island nations surviving on tourism as their main economic activity. Foreign money, migration, and power have had a strong influence in shaping and creating a dependency of small island nations in the Caribbean on the indeterminacy of the global market. The last contradiction, “Conservation versus Consumption”, investigates the extended consequences of ecological alteration; most of which does not necessarily occur at the direct site of manipulation. The landscape creation projects to produce these images have placed an inequitable value on nature which has threatened the existence of man and animal.

This role reversal of the coast has left these islands exposed to local and global threats. This thesis aims to leverage the tourism industry to re-make the image of tropical tourism in the Caribbean to promote ecologically driven design, an expansion of the local economy, and closed loop tourism experiences.

Imagination vs. Reality

Global tourism and the explosion of knowledge sharing have created universal images of paradise which have defined tourism in the Caribbean and transformed its very existence. Destination Image (DI) is a theory that dissects the rationale behind the images of a place we form in our mind, regardless of our intimate knowledge of a place[5]. The literature on DI theory, although categorized differently from paper to paper, agrees that these images are derived from Stimulus factors comprising information sourcing, previous experience and distribution; and Personal factors including personal values, motivations, and demographic[6]. Everyone has a unique DI[7] that is developed over time and easily influenced[8], yet generally there is a universally established language of tropical tourism images; Sun, Sand, and Sea.

There is extensive literature on this theory as countries and tour companies have tried to decipher why tourists decide on a destination; and how they could alter their global image to increase tourism. Katharina Petra Zeugner-Roth and Vesna Žabkar state that, “all nations have images, whether deliberately cultivated or not[9],” in their article, “Bridging the gap between country and destination image: Assessing common facets and their predictive validity.” This piece of literature investigates the how countries are branded much like corporations, and how this image can be easily manipulated to create a desired appeal[10]. Through the use of visual materials ranging from postcards to travel brochures, tourism has and continues to be presented as a commodity (Figure 2-5). The contradiction here is that photographs are universally accepted as fact; illustrating to the viewer an authentic and genuine depiction of a destination[11].

Airline Promotion

FIGURE 2
Idealized tropical tourism travel poster with dolphins, a private beach and perfect weather for an airline and steamship package, approx. 1960's. These images were used to promote tourism to the Caribbean.

Steam Ship Promotion

FIGURE 3
Typical Steamship Poster promoting tropical tourism as healthy and exotic, undated but best guess at 1960's.

Photographs

Postcards

FIGURE 4
Photograph taken to replicate the traditional postcard views.

FIGURE 5
Typical postcard of Tropical Tourism showcasing the sun, sand, and sea.

FIGURE 6
The following images represent some of the most common destination promotion imagery. These framed views of artificial environments have shaped the desires and expectations of many tourists travelling to the Caribbean.

In reality these images are perfectly framed to, “direct expectations, influences perceptions, and thereby provides a preconceived landscape for the tourist to discover[12]“. William Cannon Hunter presents four common DI images (Figure 6), and how they are altered to reflect the desired images of perfection in his article, “A typology of photographic representations for tourism: Depictions of groomed spaces”. The first is a natural landscape showing tourists being led by a guide to discover rare flora and fauna in a controlled experience[13]. The second is a cultivated landscape where the natural environment has been altered for a specific experience; for example a golf course[14]. The third portrays tourism products, i.e. accommodation or facilities, without people[15]. The last category reflects a traditional or cultural experience that is being recreated for profit and is generally associated with the distant past; omitting the current day rituals and practices of society, many of which have been phased out due to western influence [16].

The implications of these constructed images are that they are frozen and framed; making promises of what is to be expected upon arrival to a destination[17]. This does not take in account the variability of wildlife behaviour, the massive land creation construction to form these spaces, nor the “back of house” activities and people working in the tourism industry. Yet these images have been set as a standard of expectation. One

of the major gaps between traditional and responsible global tropical tourism is the consumer's perceived want of the standard over the authentic.

The postcard is a global icon of tourism[18]. As the most widely available, economic and effective medium for destination promotion[19], the postcard plays a vital role in presenting the desired image of tropical tourism. The way the postcard is constructed and choreographed is just as important as the information it displays. By using brightness and primary colours helps the tourist to envisage an alternative to the Northern cold climates[20](Figure 7-8); to the use of familiar objects to provide a level of comfort and security[21] (Figure 9); the artefact is far from a pure representation of fact.

In most cases, postcard imagery is motivated by trends of the tourism industry which are largely responsive to external consumer demands, and not by the destination itself. This had led to another powerful role of the postcard; teaching the tourist how to see[22]. In the age of social media, capturing the perfect "selfie" image has not only altered our experience with the landscape but exacerbated our value of it. The pristine postcard images of pure white sand beaches void of the undesirable and "back of house" we so desire as tourists have intensified the divide between authentic and superficial. All of these factors aid in the creation of a specific image of tropical tourism that is not always reflective of the naturally occurring landscape that exists. The two opportunities that exist here, and are explored further in the design, is the ability of the postcard to expose the truth in the creation of tourism destinations; and for the industry itself to take a greater role in changing the standards it promotes to eventual change the desires of tourists themselves.

FIGURE 7
Antigua - 365 Beaches.

Traditional modern postcard showcasing the islands top asset without people.

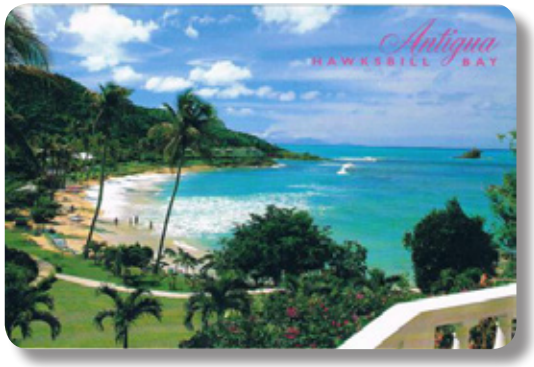


FIGURE 8
Hawksbill Bay, Antigua.

Vintage postcard showcasing a very similar image to the modern postcard.

The Caribbean Identity

The rich diversity of the Caribbean has been homogenized by the desire for the ideal Sun, Sand, and Sea combination. Welcoming over 29 million visitors in 2016[23], the Caribbean is a popular vacation destination for the North American and Western European markets due to its proximity, noted climate and beautiful coastal landscapes. However, this word association has fused the extremely diverse profiles of the islands and created a typical resort typology that is replicated all across the coasts of the Caribbean. Although many destinations possess the ideal beach setting, this image is a highly constructed landscape. To put into a brief perspective, a study of the occurrence of white sand beach, number of days with sunshine, and ideal water conditions was curated to dissect a relationship between the idealized image and reality (Figure 13).

To begin with, the Caribbean islands are categorized into three distinct groups based on their geographic, geologic, and geomorphologic features. The first is the Greater Antilles, found to the North, contain the largest islands in the Caribbean and are the most established tourist destinations as they have the greatest proximity to the major tourism markets[24]. Due to their size they have many niches with optimal conditions. These islands are rectangular in shape with their longest sides to the North and South; of which the North-East results in the best climate[25]. These islands are also centrally located within the protection of the Caribbean Sea. Therefore, authenticity in this region is quite high but imagery still omits the cultural and social diversity. The second group called the Lesser Antilles is composed of much smaller and younger islands arching the eastern coast of the Caribbean. This category has two subcategories which delineate between Leeward and Windward. Both sub-categories have the greatest exposure to the roughness of the Atlantic Ocean creating a polarized coastline. The Leeward Islands are lower in elevation, have more sunshine, and are much older in geological time resulting in uninterrupted stretches of white sand beaches[26]. Comparatively, the Windward Islands are much younger in geologic time and most resemble a conical volcanic shape, producing black and brown sand beaches[27]. Also, due to the relationship to the wind these islands experience more rain and therefore have greener vegetation[28]. As the least representative of the ideal image, these islands have low tourism arrivals, less established tourism industries, and are the least accessible. The last category is the Outlying Islands, which are found outside of the Caribbean Arc and whose geographies are each unique to their location.

These physical characteristics have indisputably shaped the tourism industries of each individual island and lead to the inequitable dependency on the coast for their economic success. From this investigation it

is indisputable that one of the greatest weaknesses of tourism is that the industry is built on and promotes an image that exists more in imagination than reality.

Destination Image in Antigua

Antigua (Figure 9, 10), is one of the few islands that have calm Caribbean Sea water, natural white sand beaches, and advantageous sunshine, naturally. However, the monopolization of the tourism industry in the coastal zone is quite alarming. The main land of Antigua belongs to the Lesser Antilles – Leeward classification but is a unique exception as it is an outlier of the main volcanic arc and does not possess the typical characteristics. This resulted in a geomorphic composition of isolated hills and stretches of plain, unlike the conical symmetry of the other volcanic islands in this category which has played a major role in the development of the tourism industry. The twin-island nation is found on the Caribbean Plate; formed from the Atlantic Plate moving down under the Caribbean plate causing volcanic plumes to rise from the magma of the inner earth[29]. Antigua has three major geological zones: Volcanic Rock, Sandstone, and Limestone[30]. In relation to tourism, 90% of the resorts can be found on the Volcanic and Sandstone Formations which fronts the Caribbean Sea; this formation has produced nice long stretches of uninterrupted white sand beach (Figure 11). As well, the strongest tensions in weather patterns occur off the Eastern Atlantic Coast, leading to a calmer

FIGURE 9
Context map of Antigua and Barbuda outlying the main Volcanic Arc which resulted in its unique geology, and strategic position in the Northeast corner.

FIGURE 10
Context map of Antigua, the larger and more populated of the twin island nation, illustrating the polarity between the East and West coast.

FIGURE 11 & 12
Zoomed in images show the contrast of long stretches of beach fronting the calm Caribbean Sea; with the cove like beaches abutting the rough Atlantic Sea.

Characterization of the Caribbean Islands

FIGURE 13
This chart compares the political, environmental, and economic influences and impacts of a select key islands in the Caribbean. The data illustrates that although there is a unified image of tourism in the Caribbean, the context is extremely diverse and each island is unique; from its political agenda, to its environmental composition. The single expected image has drastically altered the landscape tourism inhabits.

Region		Country
GREATER ANTILLES		Cuba
		Dominican Republic
		Jamaica
		Puerto Rico (US)
LESSER ANTILLES	Leeward	Anguilla (UK)
		Antigua and Barbuda
		Barbados
		Saint Kitts and Nevis
		Saint Martin/Sint Maarten (FR/NL)
		Virgin Islands (US/UK)
	Windward	Aruba (NL)
		Curaçao (NL)
		Dominica
		Grenada
		Guadeloupe (FR)
		Martinique (FR)
		Montserrat (UK)
		Saint Lucia
		Saint Vincent and the Grenadines
		Trinidad and Tobago

Environment	Tourism (Based on Proximity and Tourist Numbers)	Economic (GDP - Argi.., Industry, Services)
Mining and Processing causing sedimentation	High - Close Proximity - (Excluding USA)	4% 23% 72% - Petroleum (Tourism N.L.)
Mining and Processing causing sedimentation	High - Close Proximity	5% 33% 62% - Tourism
Deforestation and Mining causing erosion	High - Close Proximity	6% 21% 72% - Tourism
		0% 50% 49% - Pharmaceuticals (Tourism 5th)
	Medium - Former European Union	2% 21% 77% - Tourism
Sedimentation caused by Tourism	Medium - Former British Colony	2% 17% 80% - Tourism
	High - Close Proximity	3% 12% 85% - Tourism
Sand Mining and Beach Erosion	Medium - Limited Development	1% 27% 72% - Tourism
	High - Close Proximity	1% 15% 84% - Tourism
Sedimentation caused by underdevelopment	High - Close Proximity	6% 21% 72% - Tourism
	High - Constituent Country of Netherlands	0.5% 33% 66% - Tourism
	Medium - Limited Tourism Development	0.5% 16% 84% - Tourism
	Low - Limited Access/ Tourism Development	15% 16% 70%- Soap (Tourism 3rd)
	Low - Limited Access/ Tourism Development	10% 14% 77% - Food and Beverages (Tourism 4th)
	Low - Limited Access/ Tourism Development	N/A
	Low - Limited Access/ Tourism Development	N/A
	Low - Limited Access/ Tourism Development	2% 22% 77% - Tourism
Sand Mining and Beach Erosion	Medium - Limited Access/ Far Proximity	3% 14% 83% - Tourism
Sand Mining and Beach Erosion	Medium - Limited Access/ Far Proximity	8% 17% 75% - Tourism
	Medium - Limited Access/ Far Proximity	0.5% 14% 86% - Petroleum (Tourism N.L.)

Western Caribbean coast. This, along with the geological composition has added to the strong presence of resort developments on the Eastern coast of the island. Unlike the Limestone formation, where only 10% of hotels are located[31], beaches are far to come by naturally, taking the shape of small protected coves (Figure 12). New resorts on the Atlantic coast have to create their own beach by terracing down and importing sand[32]. This polarity in experience has allowed tourism to monopolize the highest quality coastline on the island. The physical makeup of the island has played a huge role in establishing a successful tourism industry which ironically has in turn altered the very thing of desire.

The gap between an authentic and standardized experience could be Antigua and Barbuda's greatest opportunity. In an extremely competitive environment, specializing the tourism experience is an opportunity for the nation to diversify its tourism portfolio and create niche markets within the industry. The trends in the market coming from the explosion of social media are showing a change in the modern tourist which desires a unique experience that is not main stream. As well, Airbnb has showed us that the tourist has already begun to evolve from the all-inclusive vacation packages to a more authentic experience. The future of Antigua and Barbuda's tourism industry depends on its ability to adapt to these two alterations in experience.

Local vs. Global

"The travel and tourism industry has taken little active part in framing the environmental policies so vital to its own interests[33]". -The Economic Intelligence Unit

The Mass Tourism model is the most common model of Global Tourism in the Caribbean and the world; generally focused around a regions geomorphic, climatic, or cultural features. Economies of scale make travel affordable when executed with a large number of people all coming from and going to the same destination. Canadian companies like Sunwing and Signature Vacations capitalize on this by providing all-inclusive vacation packages – containing air travel, accommodation, food and beverages, and airport transfers – from select transit hubs across Canada to the most popular Caribbean destinations. This model has been so successful because of its convenience, security, and affordability. However, mass migration also correlates to increased waste, social influence, and over population. This becomes a problem as many of these small islands in the Caribbean are being pushed to their carrying capacity.

The literature on the positive and negative ripples of Mass Tourism in the Caribbean region has been widely published. S. R. Lakshmi and T.L. Shaji illustrate this very statement in their journal article, "Transformations of Coastal Settlements Due to Tourism," where they

discuss the “Littoralisation Phenomenon[34]” (Figure 14-15). This is the ribbon development at the coast which creates a tangible and intangible barrier between the ecology, local communities, and the economy. Accredited to a lack of land-use planning and building regulations, coastal development has experienced unconstrained sprawl, causing severe ecological losses, altering land values, restricting coastal access, and erasing the existing local culture or re-creating a superficial façade to be marketed as authentic[35]. The freedom of tourism enclaves has caused friction in the inequitable relationship between local communities and global tourists. Keller Easterling argues, in “Enduring Innocence: Global Architecture and Its Political Masquerades”, the power large tourism developments like this have over the country they reside in, acting like a Vatican-like-state-within-a-state[36]. Creating an entity like this without complete control over its agency can be extremely dangerous not only for upholding economic equity but also environmental accountability and social peace.

Many Alternative Tourism models have been developed as a reaction against the mass tourism model by specializing the industry into niche markets; i.e. eco-tourism, agro-tourism, and adventure tourism. Each caters to a very specific tourist and provides a more personalized, specified and cultured experience.

FIGURE 14 & 15
A comparison of the Littoralisation Phenomenon in Punta Cana from 1985 (Top) to 2015 (Bottom). This ribbon of development creates a tangible monopoly and physical barrier against a fragile and threatened ecosystem.

FIGURE 16
The Rock House Hotel is carved into the rugged coastline, leveraging its site to create a unique experience. This is in strong contrast to the typical beach front resort.

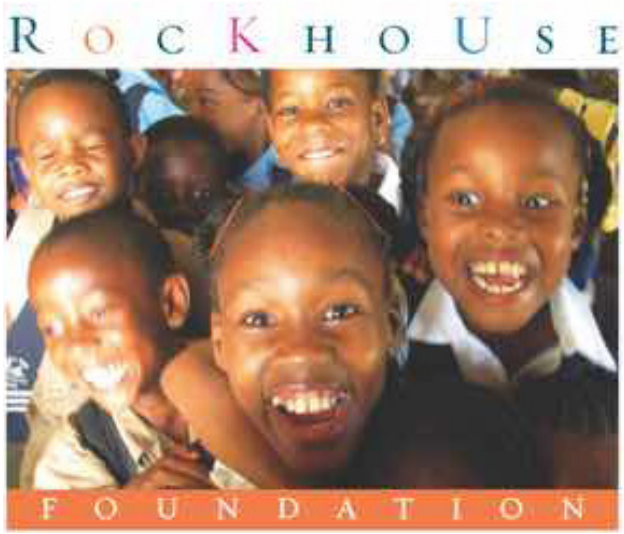


FIGURE 17
The Rock House Hotel created the Rock House Foundation as a medium for giving back to the community. The hotel has taken an active role in shaping the growth and development of the local community; from a new library to educational programs, and training.

Although, these alternatives strive to be more ethical and responsible, they do have their drawbacks by operating on a much lower scale and generally costing the consumer more. One of the more widely known alternatives is Eco-Tourism which has a specialized interest in ecology, education and social equity. Benefits of Eco-tourism include: bringing income to impoverished communities, improving global awareness, and contributing to the establishment and survival of protected areas and species[37]. Countries like Costa Rica and Grenada are world leaders in Latin America and the Caribbean and present strong manifestos encouraging equitable and ethical planning and operation of tourism destinations, through merging local tacit knowledge with expert global knowledge. The greatest hindrance of Eco-tourism is its scale[38]. Mass tourism's success is founded on its ability to reach a large number of people under a single governing body.

Currently, Eco-tourism exists on a smaller community based scale which has not been able create major ripples within the global tourism landscape. A precedent of this model of tourism is the Rock House Hotel in Negril, Jamaica. Perched atop the dramatic cliff face of Jamaica's West coast, Rock House truly integrates itself within its natural landscape (Figure 16). In addition to site sensitivity and the use of local materials, Rock House is a vocal advocate for environmental stewardship and giving back to the

community[39] (Figure 17). However, the hotel is a high-end exclusive small scale resort which can only obtain a specific type of tourist. One of the issues of Eco-tourism is that it caters to the eco-luxe tourist or the off-grid tourist; two qualities not in the majority of Mass Tourism travelers. The future of ecological tourism lies in the adaptability of the Eco-tourism model to fit within the Mass Tourism framework.

Another model of interest similar to Eco-tourism is the Slow Tourism model which is a tangent to the Slow Food Movement. Slow Tourism promotes development over physical growth by adopting Herman Daly's concept of 'soft growth' of quality over quantity[40]. This model addresses the inequitable economic gain, segregation and evaporation of social practices, and controls environmental disruption[41]. The opportunity of this model lies in its manifesto of changing the word "Tourist" to "Guest"[42]. Although a slight modification, the cultural significance of each word drastically changes the role of the visitor. As mentioned above, this is the future of tourism as barriers between structured tourism enclaves begin to breakdown with small local initiatives through Airbnb providing a more authentic experience.

Unlike the current mass tourism model which bulldozes beach front property or the eco-tourism model which is neither off the grid or exclusive; there is an opportunity for this thesis to investigate the application of an alternative form which synthesizes between active interventions corresponding with natural systems. The gap in the literature of alternative tourism lies in the difference between lightly engaging with, or really disturbing of, the land, versus immersing and invading nature and truly operating in synthesis with it. The common large engineering infrastructure projects which govern strong control and restrict the movement of the landscape are extremely destructive and expensive. However, an integrated model of construction, ecology, and community would provide a framework for creating a sponge between the tensions of the local and global populations.

The Role of Tourism in the Caribbean

Tourism greatly changed the future outlook of the Caribbean. As noted above, the physical characteristics of each island has played a vital role in the success or stunting of its tourism industry. However, there are numerous intangible characteristics that have also played a strong role. One of the biggest factors in the development of an islands tourism industry is based on its proximity to tourist markets; the closer an island is located, the more frequent and cheaper an airline carrier can get fly there[43]. Therefore, it is no surprise that the islands which are least desirable climatically with the least hours of sunshine and least accessible have the least established tourism industry and therefore have

more diverse economies. As well, the tourism on these islands is usually more specialized and Eco-friendly. Not only does proximity correlate to flight times, but also to trade. As islands must import almost all commodities, their ability to sustain a tourism industry – one highly dependent on water, energy, and food/ beverages - relies heavily on trade, and islands closer to the major exporters have greater benefits.

Political allegiance has also influenced the tourism landscape in the Caribbean as many islands have strong ties to their colonial roots; and many are still legally bound to them. Some islands do not solely rely upon their own economy for economic success as many islands are not independent countries. Aruba, Puerto Rico, and Martinique which are nationally tied to the Netherlands, the United States and France, respectively, have vastly different economies and governmental protocols[44]. With this comes the breakdown of political structure; from the communist regimes of Cuba to the two-party system passed down from former colonial times. It is much easier for tourists to travel within their own jurisdiction, therefore islands with strong European relations benefit from high tourism arrivals from their respective home countries.

One advantage to the smaller islands is that they are in close proximity to one another and have been able to benefit from cruise ship tourism. However, this has major ecological consequences as the execution of the MARPOL Convention in 1973 forbade dumping solid waste at sea, resulting in the cruise ship industry to exchange their solid waste at ports of call for continual docking[45]. Many small islands are overwhelmed by this agreement but depend on it. Although tourists search for a placeless Sun, Sand, and Sea destination, the choreography behind which destination is selected is much more complex and generally out of the tourists control.

The Emergence of Tourism in Antigua and Barbuda

Antigua and Barbuda has always been economically tied to foreign power and money since first settled by the British in 1632 (Figure 18). This inequitable relationship has resulted in a long history of a single-activity economy, dramatic population division/ foreign ownership, and large scale landscape alteration. In the beginning, Antigua was an instrumental piece in the British Empire for two economic reasons. As the closest British port from Europe, Antigua's stood as the "Gateway to the Caribbean[46]." The isle controlled trade routes and was in essence the capital of the Northeast Caribbean; housing major government officials. As well, Antigua and Barbuda produced more sugar cane than the entire Caribbean British Colony combined[47]. Every workable piece of land in Antigua was used to produce sugar cane and every able body was out working in the fields. Contrarily though, with large scale production came large scale turmoil; every drought or alien species

invasion destroyed the year's crop not only for a single farm, but usually the entire island.

The abolishment of slavery in 1834, lack of demand, and degradation of land over time effectively led to the demise of the sugar cane industry and left the country in need of a new source of livelihood. Prior to World War I, Antigua saw its first economic shift as there became an increasing demand for construction and industrial labour over manual field labour. It was not until World War II that Antigua truly evolved out of its "Plantocracy" of sugar cane production, with the development of a United States naval and air base; bringing upon a shift from hard labour to maintenance.

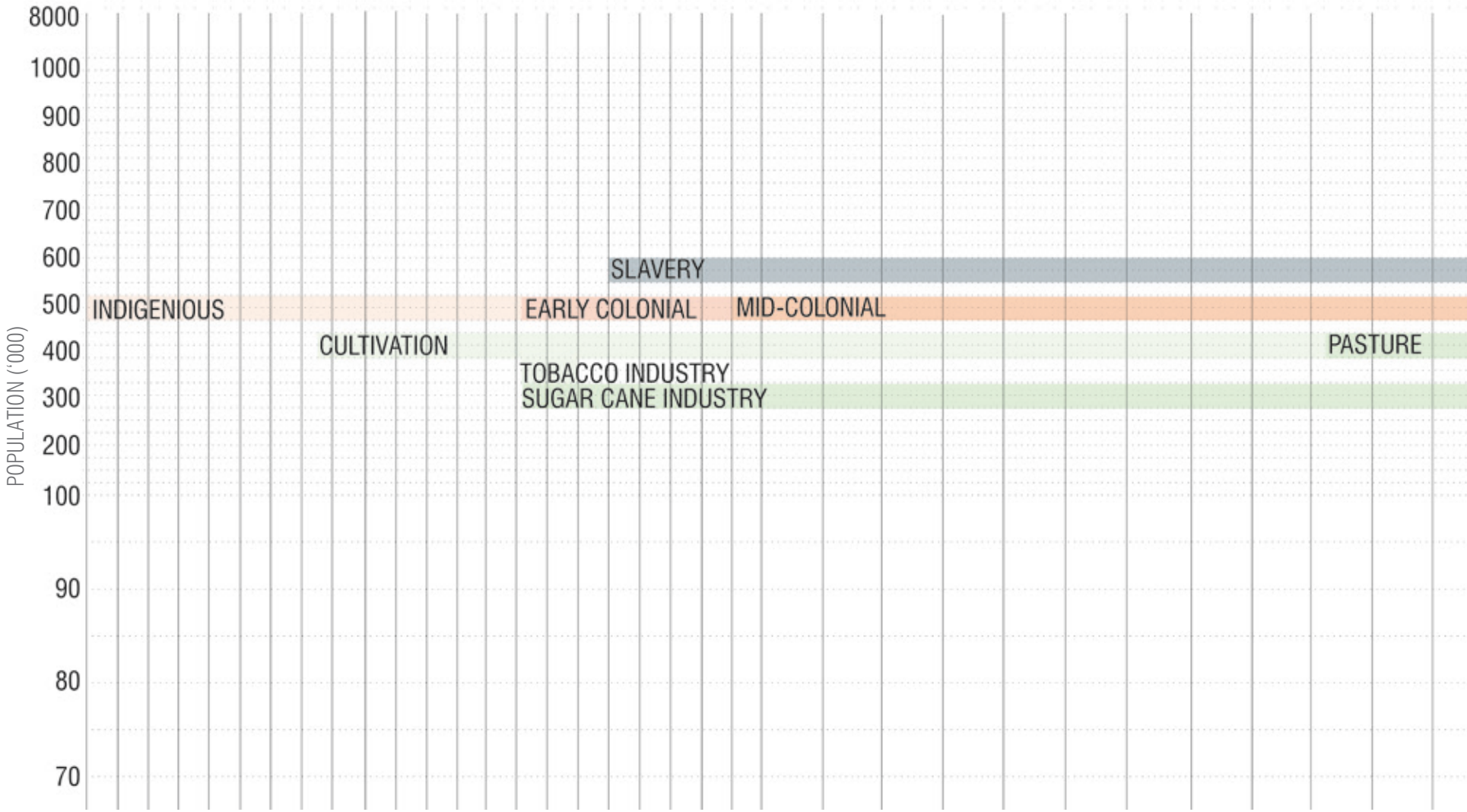
The Second World War drastically propelled the emergence of global tourism as the middle class rose and traveling was being more accessible and affordable. Antigua was ready to respond as it had already established itself as a strategic port and was operating one of only three international airports in the Caribbean at the time[48]. After the war, in the mid 1950's, as travel was becoming more popular with steamships and commercial airlines, the United States gave ownership to the government of Antigua, and they were one of only three other international airports at the time in the Caribbean. This led the way for the expansion and eventual domination of the tourism industry over the economy of Antigua and Barbuda and has set up the current state of development on the island. Tourism arrivals then doubled nearly every decade from 1960 till 2000. The explosion of the industry left little time for active tourism planning as the coast quickly became occupied and resources were withdrawn at alarming rates.

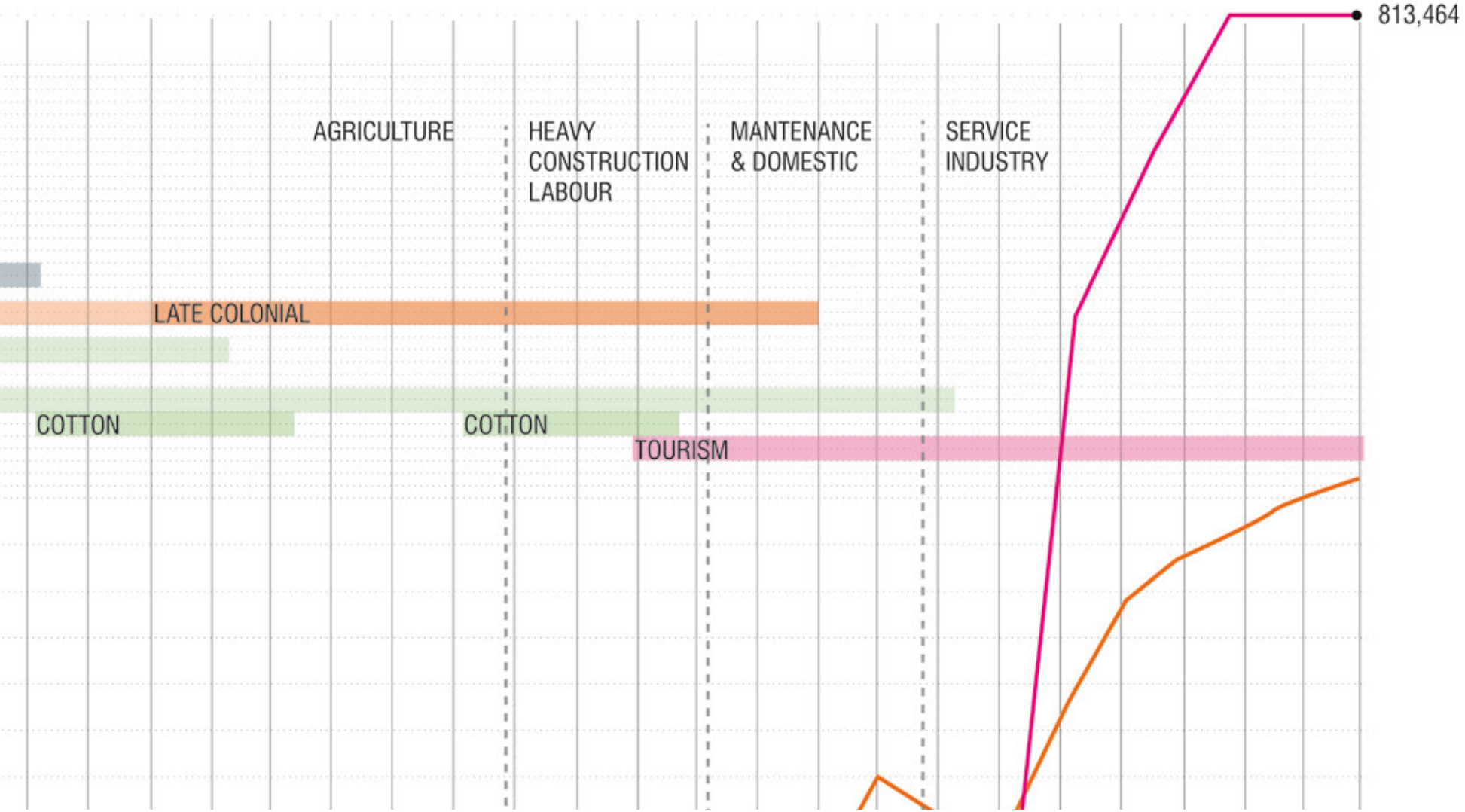
Today, Antigua & Barbuda owes more than 80% of its GDP to tourism and its related activities[49], making it one of the most extreme cases of coastal dependency in the Caribbean. Like the Sugar Cane economy, Antigua and Barbuda continue to rely solely upon one economic activity for their economic prosperity. New threats now exist in extreme weather events, disease outbreaks, and market crashes. This has left Antigua and Barbuda vulnerable to external forces out of their control. These are not only threats of physical damage, but drastically impact the countries brand which has been just as effective in reducing tourism numbers.

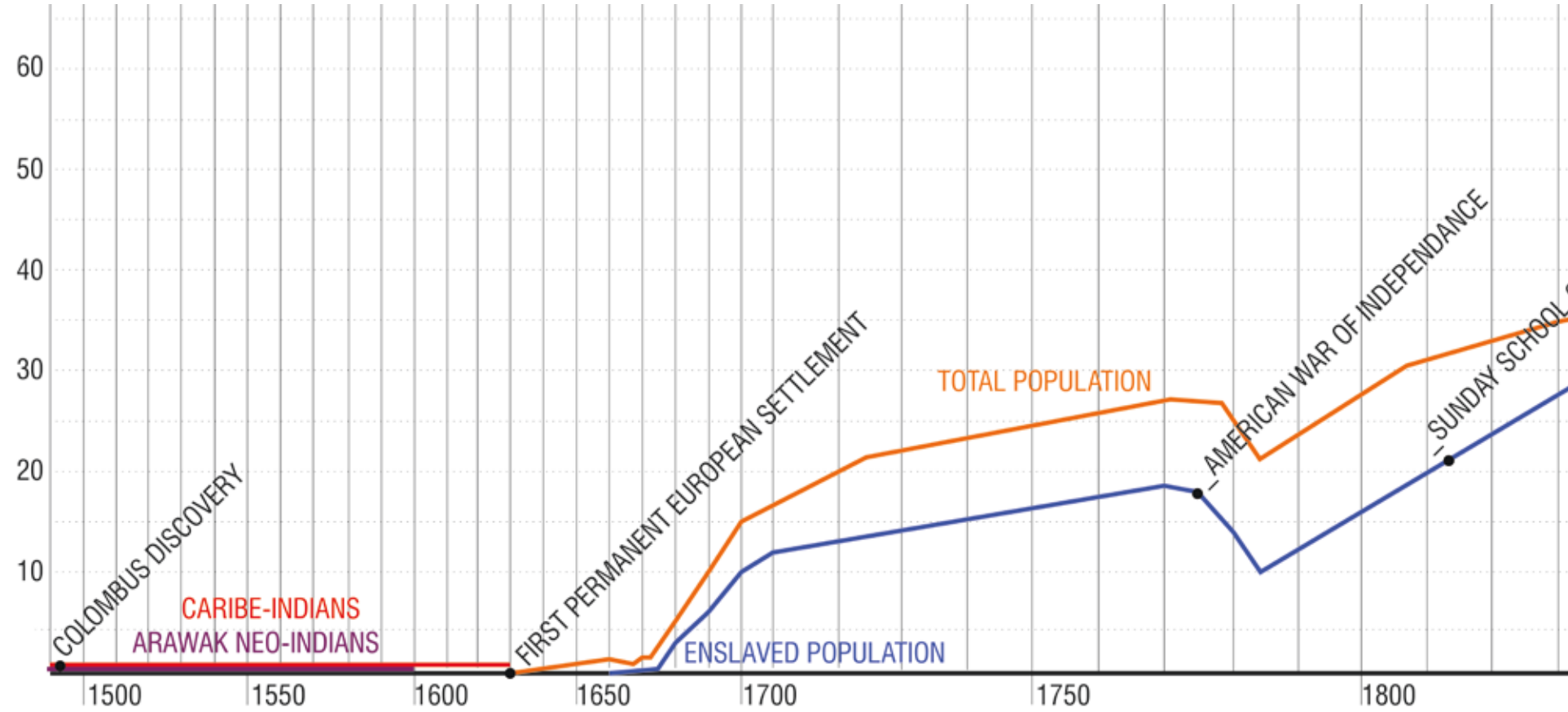
As Antigua and Barbuda's tourism industry is heavily reliant on the North American and European markets, the annual growth of tourist arrivals directly corresponds to the state of these foreign economies. The 2008 recession was the first major hit to tourism in Antigua and Barbuda and the wider Caribbean region since the growth plateaued at the turn of the century. The second hit occurred in 2011 when the United Kingdom, one of Antigua and Barbuda's largest markets, experienced economic instability making airfare prices skyrocket[50]. The pre-2011 tourism numbers have not

Timeline of Migration and Economic Shifts

Antigua and Barbuda




813,464
AGRICULTURE
HEAVY CONSTRUCTION LABOUR
MANTENANCE & DOMESTIC
SERVICE INDUSTRY
LATE COLONIAL
COTTON
COTTON
TOURISM


60
50
40
30
20
10
COLOMBUS DISCOVERY
CARIBE-INDIANS
ARAWAK NEO-INDIANS
FIRST PERMANENT EUROPEAN SETTLEMENT
TOTAL POPULATION
AMERICAN WAR OF INDEPENDANCE
SUNDAY SCHOOL
ENSLAVED POPULATION
1500
1550
1600
1650
1700
1750
1800
YEAR

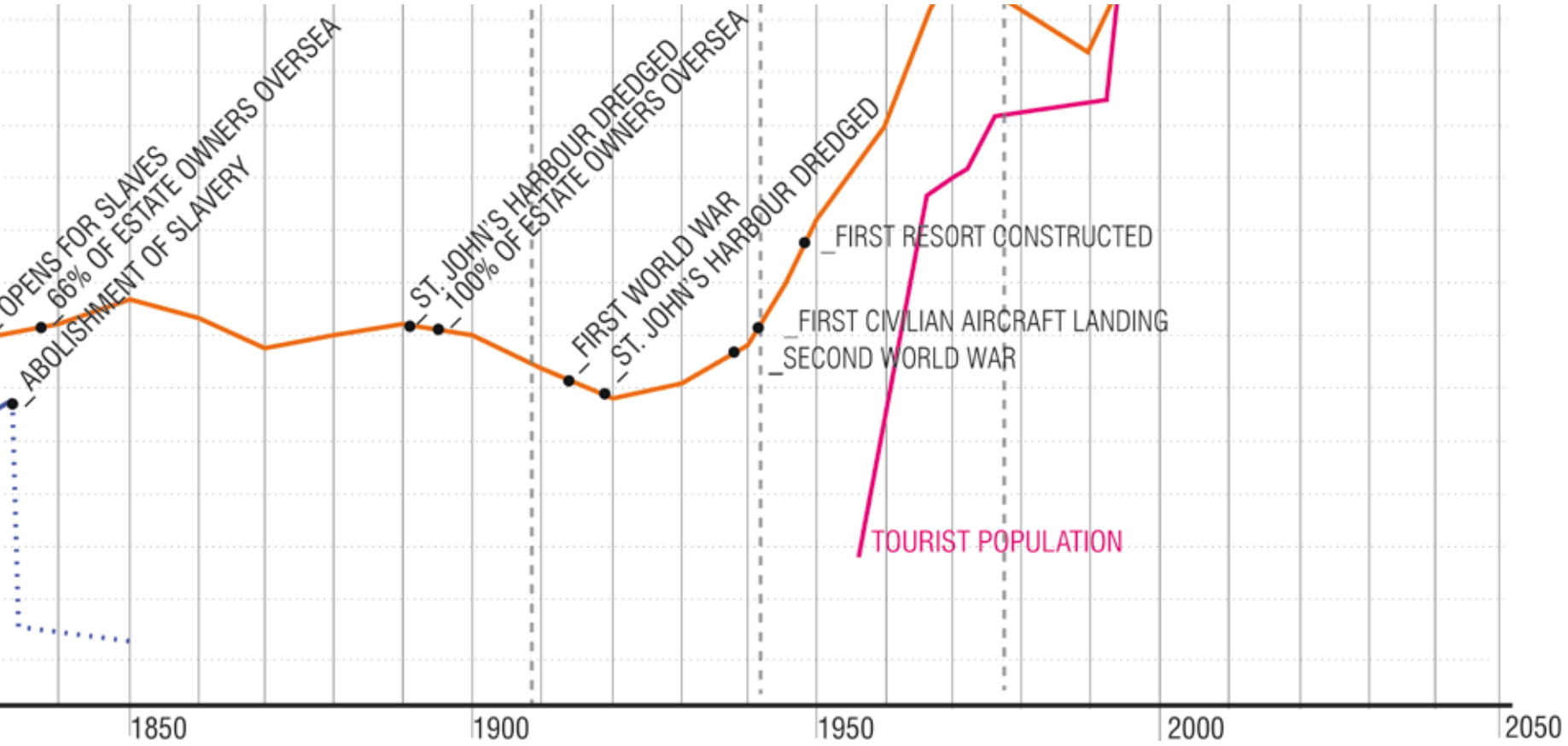


FIGURE 18

This timeline illustrates the history of Antigua and Barbuda's transition from a dominate sugar cane producer for the British Empire to a leader in tropical tourism. Prior to WWI, Antigua saw its first economic shift and an increasing demand for the construction and industry labour, over manual field labour. Although, sugar cane production was still dominating the economy and work force it was the first time a large shift in perspective occurred. The U.S. military base built on the island during WWII, was one of the major turning points for introducing to tourism. A demand for construction and maintenance took inhabitants out of the fields and provided a new set of skills. After the war, in the mid 1950's, as travel was becoming more popular with steamships and commercial airlines, the US bases were given ownership to the government of Antigua, one of only three international airports in the time in the Caribbean, leading the way for the expansion and eventual domination of tourism.

yet been achieved. However, Tourists still account for 95% of Antigua and Barbuda's population[51] making the influence of foreign culture indisputable (Figure, 22). Yet, this extreme migration in itself has severe fluctuation throughout the year with the high tourism season spanning from November to April, strongly correlating to the winter season experienced by the tourists home country. With this comes a major concern of unemployment during the low and shoulder seasons. With 53% of the population indirectly employed by the tourism industry[52], any change to tourism arrivals is detrimental (Figure 21).

Antigua and Barbuda's tourism industry is also reliant on foreign power and money through international ownership of resorts and tourism related services. Foreign ownership extends back to colonial times when 2/3 of all landowners lived in the United Kingdom[53]. This absenteeism of ownership at the time was characteristic of Antigua and Barbuda and only emphasized the degree of foreign control. Today approximately 88% of Tourism Accommodation is foreign owned[54], resulting in a percentage of profits from tourism leaving the country. An example of the power these large international corporations hold over their residing countries occurred in July of 2017. Sandals Resorts International announced that the Sandals Grande Antiguan, one of the largest hotels and employers on the island, announced it would be closed temporarily from September to November of 2017 during low-season. At a time of the year when employment in the country is at its lowest, an additional 700 jobs would be dissolved with little notice[55]. This just highlights one example of how quickly the economy would crumble if the industry lapses.

Guiana Island, off the north-west coast of Antigua, has been dubbed the future home of Antigua's 366 beach[56]. As a spin off to the popular tourist phrase, "365 powdery white sand beaches… one for every day of the year [57]," this undeveloped island has been slated for a tourism enclave which has been quite controversial in its treatment of the coastline which involves the dredging out of mangrove trees and infilling with pristine white sand (Figure 19, 20). This tourism enclave is just one part of a much larger development master plan called *Antigua and Barbuda Special Economic Zone Project* (ABSEZ). Some of the major points of contention were outlined in two articles in the Antiguan Observer, the first on May 21st 2017, and the second, a guest commentary article, on May 22nd 2017, which included: no legal obligation to hire Antiguans, expedited visa/work permit process for foreign workers, exclusive fishing rights, tax free status, pay no duty, and leniencies on development within the protected North East Marine Management Area (NEMMA)[58]. This relinquishing control of a portion of the island to foreign investors is extremely risky, and only heightens to

FIGURE 19 & 20

The Antigua and Barbuda Special Economic Zone Project Site Plan (Right) is proposing to develop the currently uninhabited Guiana Island with a collection of tourism and commerce establishments. This proposal encroaches into the protected North East Marine Management Area and removes a great deal of the islands protective mangrove barrier. The power of the tourism industry to change the boundary of a protected area is very dangerous to the longevity of the island's coastal resources. Socially, this reinforces that tourism operates above the law which has aided in local frictions.

Tourism Arrivals versus Employment

Antigua and Barbuda - 2014

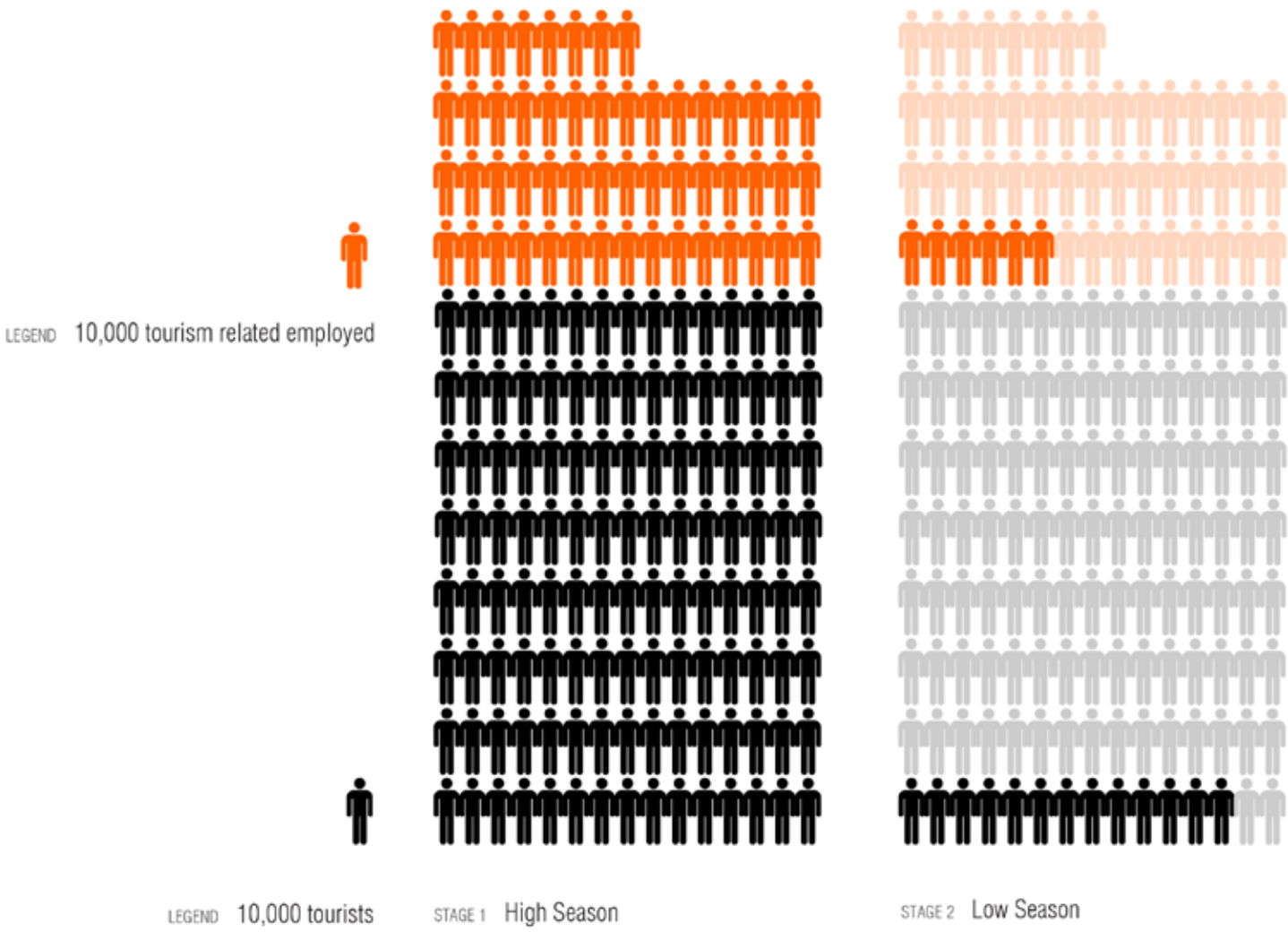


FIGURE 21
This figure illustrates the number of tourist arrivals compared to employees for Antigua and Barbuda in 2014. There is a drastic drop in employment during the low season as tourism arrivals decrease by approximately 80% due largely to warm weather in their home country. Specializing the tourism industry would better distribute arrivals over the entire calendar year and reduce the pressures of mass tourism.

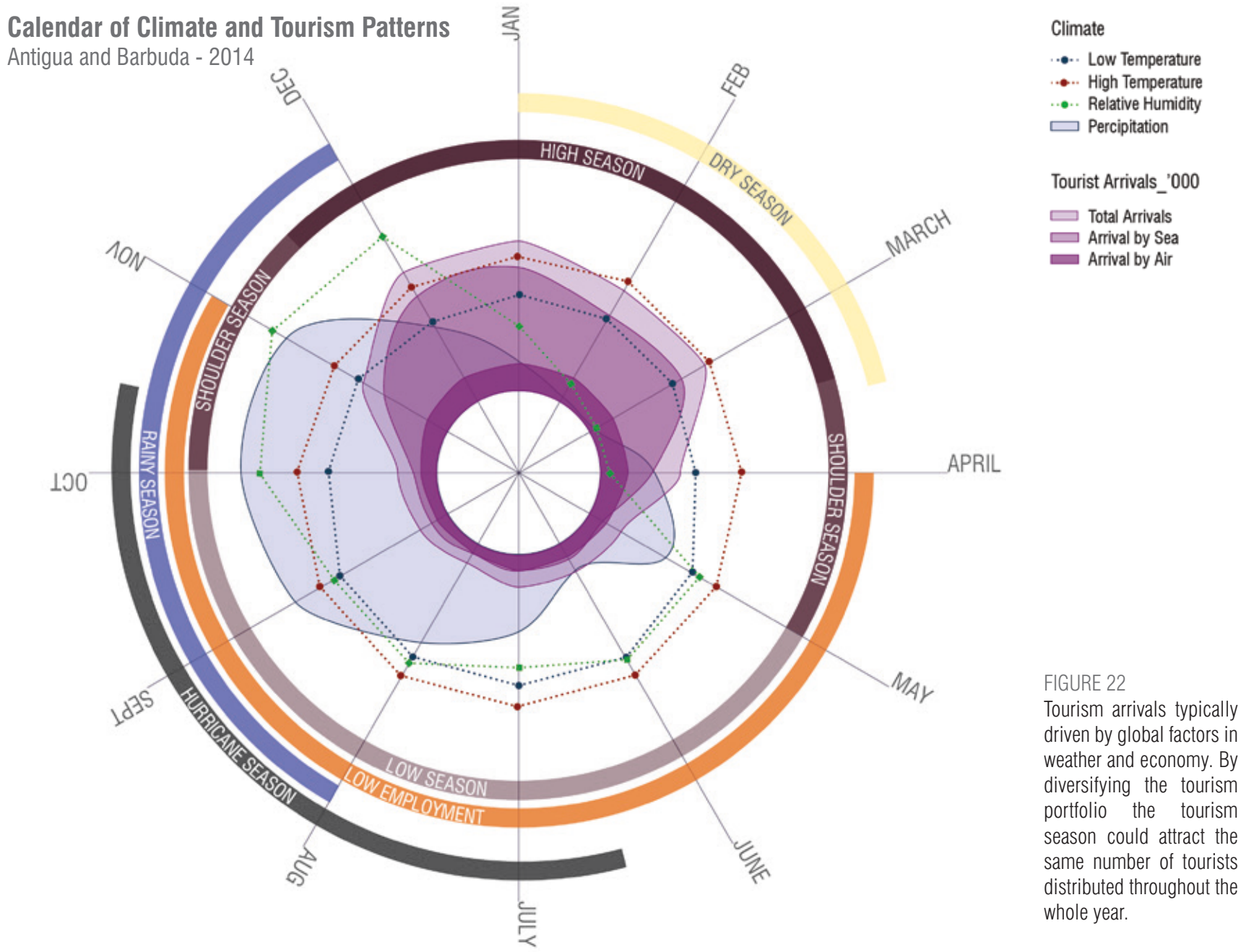


FIGURE 22
Tourism arrivals typically driven by global factors in weather and economy. By diversifying the tourism portfolio the tourism season could attract the same number of tourists distributed throughout the whole year.

tensions between the local communities and the global tourists. If this style of development continues in Antigua and Barbuda every inch of coastline will be developed and vulnerable; something that is not advantageous to an economy reliant on the quality and longevity of the coast.

If this type of development is the future of Antigua, the entire island will in no time be an artificial landscape depleted of its natural assets. Re-making the images of tropical tourism to reflect an integrated and specialized industry that empowers and expands local economies will decrease the pressures tourism places on the country. If working within the existing tourism framework and catering to the contemporary tourist, the local communities have the greatest amount of economic agency. As mentioned above, companies like Airbnb have drastically changed the tourism landscape in recent years as the contemporary tourist is demanding a more authentic accommodation. In Antigua and Barbuda, the opportunity exists where local communities can deconstruct the typical resort accommodation by providing accommodation on a smaller scale. Although this still leaves the local economy reliant on global influence, local ownership allows 100% of the profit to stay within the local economy. Industries like tourism are extremely trendy, and becoming a trend-setter is an extremely advantageous role to have in the uncertainty of the tourism market.

Consumption vs. Conservation

Antigua and Barbuda's beautiful coastal landscapes do not occur naturally everywhere and require large scale construction projects for their creation. This has formed a unique relationship between the longevity of the nation's coastal assets (sandy beaches and healthy coral reefs), the tourism industry, and economic prosperity. These images of tropical tourism have not only created a standard of expectation for a tourist, but have also created an economic value for nature. Some of the most iconic examples of extreme landscape creation can be seen just off the coast of Dubai, in the Persian Gulf, where developers are essentially raising islands. The Palms Jumeirah development is formed by the dumping of sand into the gulf to form 120km of new coastline[59] (Figure 23). This development literally starts eroding the minute it being developed as water starts to erode it away. Projects like these drastically change the local ecology of a site; with and against the current.

Dredge, Clear and Fill construction is one of the more widely practiced construction methods in the Caribbean to create harbours, beach nourishment, and resort construction (Figure 24). Although this method expands the tourism landscape, it's drastically declines the environmental landscape. In the literature it is widely accepted that the disturbances of dredging are extremely site specific; highly dependent on the existing state

of the surrounding ecosystems. The most common consequences specifically in the tropics are investigated in the journal article, “Environmental impacts of dredging and other sediment disturbances on corals: A review”, by Paul Erftemeijer et al. The major consequences from extraction come from high turbidity and sedimentation resulting in habitat degradation[60]. A loss in habitat brings a reduction of marine life; which in turn degrades the quality of tourism activities like snorkeling and scuba diving which are major stakeholders in the industry. Making the tourism industry aide in the responsibility of the landscapes sustainability could provide a whole new paradigm of tourism.

Resort Development

Playa Mujeres is an up and coming area in Mexico, to the North of Cancun, where multiple large scale resort projects are being developed along the Caribbean coast. The international hotel chain Riu Hotels and Resorts has two developments side by side at the end of the strip; one newly constructed – Riu Dunamar, and another under construction – Riu Palace. As the first resorts to pop in this area, the surrounding natural environment and local development stands in high contrast to the clear cutting of the development (Figure 25, 26, 28). Sites are first cleared of natural vegetation and raised to a higher grading, approximately 1-1.5 meters was observed (Figure 30). Non-native vegetation is imported and underline by an irrigation

FIGURE 23
The Palms Jumeirah development is very unconventional as it begins eroding the second the fill hits the water; calling to question the long term effects on the surrounding environmental systems of beach erosion and deposition.

FIGURE 24
Dredging is a common technique used in landscape creation that is quite disruptive on the surrounding landscape. Sea floor disruption lifts loose sediment, lowering visibility and starving coral reefs, the loss of coral contributes to beach erosion, and the reaction continues.

system (Figure 27, 29). Water dependent features are used as a focal point in the lobby (Figure 33). Access routes into the general area are restricted to resort vehicles only (Figure 32). In ten years this area will read very differently. The argument for development is quite solid; a relatively unproductive area will soon be a dominate economic contributor. The economic prosperity is undisputable, but the power the tourism industry could have in remedying the displaced local community and severed ecology could drastically change the friction between the global and local actors.

Antiguan Ecology

At 21km across, Antigua is a small but dense island. Nearly all tourism development occurs within 800m of the coast[61], and 100% of the population lives within 10km of the coast[62]. The two major ecosystems affected by tourism development in Antigua are mangrove forests/ salt ponds and coral reefs. These two ecological actors play vital roles in supporting local flora and fauna and protecting the coast.

FIGURE 25
The development at Playa Mujeres has created stark boundaries between what is natural and what is man-made. With a number of beach front properties currently under construction, the future of this peninsula will be defined by the current mass model of static resort development.

Start Top Left Clockwise

FIGURE 26
Beach front properties are cleared flat.

FIGURE 27
Healthy green landscaping is a high priority of the tourism industry, even in droughts.

FIGURE 28
The scale of resort construction disrupts a large network of systems. There are opportunities in these undisturbed sites to propose a responsive building typology.

FIGURE 29
The shoreline, although altered slightly, maintains the natural dune vegetation.

Start Top Left Clockwise

FIGURE 30
The resort development is raised from the natural topography.

FIGURE 31
The Peninsula at Playa Mujeres has minimal disruption to the natural environment with limited human occupation.

FIGURE 32
New infrastructure is restricted to tourism related use only.

FIGURE 33
Water Features are used as decoration.

FIGURE 34 & 35
The edge condition of the Mangrove Forest provides a sponge swatch along the coast which suppresses wave action and the root system stabilizes the coast.

The Mangrove structure provokes a possible architectural intervention of an integrated responsive and dynamic system which works with the Mangrove, contrasting the current practice of clearing all mangrove trees in favour of a beach.

Mangrove Forests are one of the most underrated ecosystems on the planet, largely due to their swamp like habitats (Figure 25). The swamp aesthetic is highly disagreeable for creating the desired destination image of tourism. However, the mangrove is one of the most productive ecosystems in the world and its removal from the coast is detrimental. The space in which the sea meets the land is known as the Intertidal region. This region is a mediator between fresh rain water, brought to the coast by gravity via streams, and the salt water of the sea, which over washes periodically at high tide breaching the beach[63]. In low lying areas it is common to find salt ponds, swamps and marshes formed in this zone as they act as containers for the above interaction. A notable inhabitant of this area, the Mangrove Tree, recognized by its exposed interwoven root system (Figure 26), and found only in the tropics, plays a vital role within this coastal ecosystem. The benefits of the Mangrove are well known and published extensively in the literature, yet they are not respected for their, mainly invisible, benefits. The major benefits of credit include: soil stabilization, water filtration, flood mitigation, carbon sequestering via biomass conversion (In short, converting chemicals into leaf litter), diverse habitat for aquatic and land species, and harvestable products[64] . Mangrove Forests are extremely powerful for reducing on shore wave action by slowing the speed of water, and have proven to protect landscapes during storm surges and hurricanes[65]. Many of these

characteristics occur because of the rigidity and strength of the mesh like mat structure of the mangrove forest and could be a very valuable precedent for designing in such a dynamic landscape. Even with these extremely beneficial attributes, Mangrove Forests are commonly seen socially as swamp land and therefore incredibly undesirable. Therefore it is no surprise that mangroves are affected greatest by dredge and fill construction. They are also negatively altered by increased erosion, water extraction, and pollution upstream, while overfishing, deforestation, and reduce the quality and quantity within the forest itself[66]. These factors have all aided in the under appreciated of the Mangrove Tree.

Antigua and Barbuda's west coast is characteristically defined by these ribbons of narrow stretches of beach backed by salt ponds filled of mangrove trees. There are four species of Mangrove Tree dwelling in Antigua and Barbuda, and are each uniquely characterized by their salt tolerances. The following is listed as least to most susceptible to salt: Red Mangroves are found seaward along calmer coasts, White and Black Mangroves are positioned directly behind Red mangroves in shallow waters, and Button Mangroves are situated on dry foreshores with salt spray[67]. Mangroves therefore cultivate in a spatial organization of dependency and follow two formation patterns, Fringe and Basin. Along the West coast of Antigua the basin formation is the most common as mangrove forests are very common within Salt Ponds[68]. The tropical resort typology cannot fit in between these narrow stretches of beaches backed by ponds and are eventually infilled[69]. Therefore, they are usually dredged and filled. All but four salt pond-beach combinations on Antigua host tourism accommodations[70]. Between 1980 and 2010, the islands saw a drastic 40% decline in the mangrove population, accredited mainly to tourism development and extreme weather events[71]. In the latter case, mangroves cannot reproduce during major disturbances either man-made or natural as they require extremely calm waters for long durations during reproduction[72]. Today, the areas once protected by the mangrove forests now experience increased erosion and flooding, and decline in species diversity and sightings. As an imperative agent in the coast landscape, the loss of the mangrove tree is damaging.

At present, the conversations regarding mangrove population sustainability have less to do with better understanding how tourism and mangroves could synthesis and more with how best to displace mangroves because of tourism. In the ABSEZ project, introduced above, a significant portion of the mangrove trees in the development zone will be affected. Therefore the developer has proposed that for every tree removed one will be planted in a designated Mangrove Preservation Area[73]. Although a gracious gesture, the role of the mangrove tree as we've learned

is extremely site specific due to its mediator role within the landscape and by isolating the mangroves to one area the buffer zone is completely eliminated in another. This has exposed a great deal of coastline, and a great deal of infrastructure. Also, the preservation area will be promoted as a tourist attraction, which questions the legitimacy and motive of the gesture. However, depending on the operation, maintenance and support this integration of tourism and ecology could provide fruitful insight into how the two could co-exist at a large scale with more permanence. This here lays the greatest opportunity and challenge of how to integrate the mangrove ecosystem with tourism programing.

Coral Reefs on the other hand are one of the most diverse ecosystems in the world; providing food and shelter for almost 25% of all ocean species[74]. Coral reefs only cover less than 1% of the earth's surface, illustrating just how dense and diverse this ecosystem is, supplying an intensive and extensive food web[75]. They are found in the tropics as they need warm water[76], and in the shallow tropical and subtropical waters due to the necessity of direct sunlight for photosynthesis[77]. There are certain types of deep water coral but as they are not pertinent to the test site they have been omitted. Reefs are vital not only for their habitat and harvest but also for the protection they provide the coast. By creating a rough sea bottom, wave breaks occur off-shore. This slows the speed of the wave crashing on the beach. The survival of tropical beaches depends on both the waves to not erode away the beach and for the reef to provide replenishment from the hard bodies of calcium carbonate-fixing corals[78]. Like most ecosystems around the world, coral reefs are extreme susceptible to the effects of global warming, over-fishing, urban runoff and tourism. In 2004 the World Research Institute published a report titled, "Reefs at Risk in the Caribbean", which concluded that 2/3 of all reefs in the Caribbean are affected by human activity, 1/3 by coastal development, and another 1/3 by sedimentation and pollution (Figure 27), with most reefs affected by a combination of 1 or more additional factors[79].

Fringing reefs, the only typology of reef found on the island of Antigua, are characterized due to their attachment to the shore shelf[80]. Therefore they are extremely accessible to tourists, daily sailing tours with snorkeling or scuba diving are popular tours run for both cruise ship and over-night tourists. However, tourism is one of the attributes associated with coral reef decline. The Antigua and Barbuda National Strategic Biodiversity Action Plan (2014-2020), describes the current state of the country's coral reefs as in, "very poor condition, stressed by high sedimentation, and activities like over-fishing, destruction by the anchoring of boats, improper placement of fish traps, garbage, breakage by recreational diving, and the release of partly treated sewage from coastal holiday developments directly into

the sea… exacerbated by climate change and climbing global temperatures which has caused bleaching events in Antigua and Barbuda as well as other places in the region[81]". It is ironic here how the very thing of attraction is so neglected by the attractor. In Antigua, coral reefs have been documented to cut 70-80% of wave energy[82]. This is vital to maintaining healthy beaches.

The current view of coral reefs by the tourism industry is quite static; something to be consumed. However, shifting the view of the reef as an active and vital participant in the coastal landscape provides an interesting opportunity to again place some ownership of the tourism industry on the landscapes health and preservation. This is one way Antigua and Barbuda could diversify its tourism programming and alter the existing tourism paradigm of the landscape only exists for our consumption.

Conclusion

The future of many Caribbean nations depends on a re-organization and re-focus of the tourism industry it is so dominantly supported by. Altering the role of the tourism industry between three of the most crystallized frictions provides an opportunity to change the tourism paradigm all together. The tourism imagery that has so severely transformed the coastline could be leveraged to re-make the current standard of development, a standard that has proven to be unsustainable. Providing greater agency to local micro-economies allows countries to diversify their economic portfolio and lessen the control of global influence. Lastly, imposing ownership of the local ecology on the tourism industry would shed light on the chain of reaction construction has on a destination. Without a disruption to the system, the future of tropical tourism is unknown.

"The future of design lies not in focusing on the things that will happen anyways but in giving shape to things that would not otherwise happen, and yet need urgently to happen[83]." - *Anita Berriebeitia*

FIGURE 36
Changes to the sand budget of the coast have direct implications. From beach erosion, sedimentation, flooding, to downstream suffocation, most of these consequences are not accounted for or taken responsibility for by the tourism industry.

Part 02

Design Intent + Strategy

Antigua and Barbuda

A Case of Landscape Creation in the Name of Tropical Tourism.

Design Intent

The intention of this thesis is to alter the existing tourism paradigm by proposing a new model of tourism which is all-inclusive; and not in terms of vacation packages. This new model attempts to close the gap between the global tourism industry and the local destinations in which they inhabit.

Socially, the greatest opposition to the industry changing is the preconceived perceptions of nature defined for decades by a socially accepted standard of imagery. By re-making the existing idealized images of tropical tourism, this thesis's first goal attempts to redefine not only the value, but also to expose the work that goes into the creation of these landscapes.

Economically, the gap exists between single activity economies dependent of foreign markets and profit leaving the island. The next goal of this thesis is to empower local Antiguan communities to diversify their tourism offerings; allowing for small scale businesses to keep tourism profits within their own communities. As well, to invest in micro-economies to expand the economic portfolio and turn the excesses of tourism into profit.

Environmentally, the gap exists between the tangible value of land over the intangible value of nature. The next goal challenges role nature could have in landscape creation. The role of the resort must change from imposing to integrated.

Three sites which had each been altered by tourism in a different way were selected to test out this intention. The strategy of this thesis is to show the regional affect tourism has had along the coast of Antigua, and how the three sites create a visible language of tourism development. Postcards are also used as an artefact to illustrate the new re-made images of tourism. This thesis does not present an answer or a solution. Rather it hopes to present a new way of looking at complex problems. The aim is to present a dialogue of what could be and what further questions that would evoke.

FIGURE 37
Facing page
Aerial Map of Antigua showing the distribution of clustered urban areas surrounded by exhausted sugar cane fields, mountainous peaks to the Southwest, and beach formation.

FIGURE 38
Key map of three selected sites for design proposal.

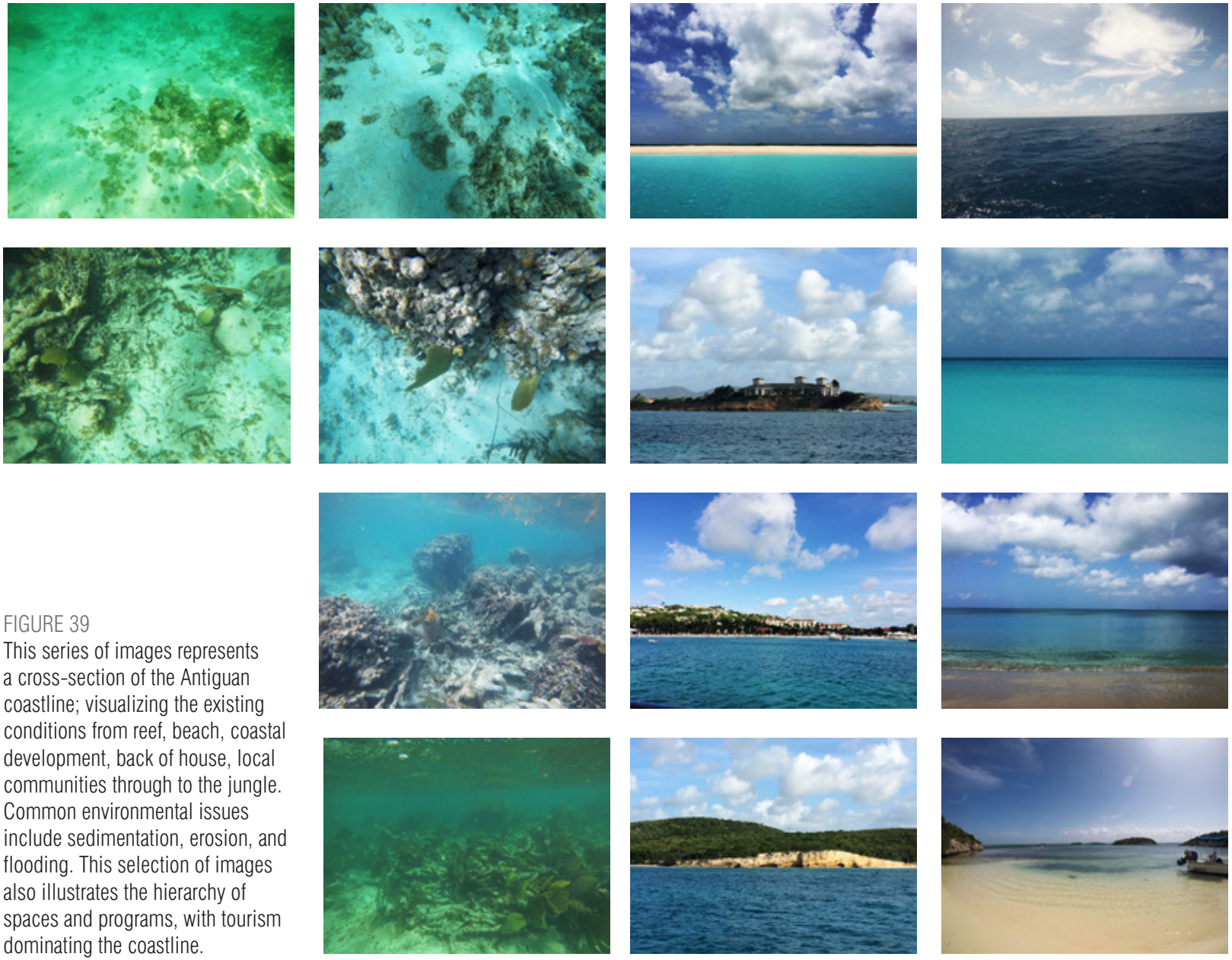


FIGURE 39
This series of images represents a cross-section of the Antiguan coastline; visualizing the existing conditions from reef, beach, coastal development, back of house, local communities through to the jungle. Common environmental issues include sedimentation, erosion, and flooding. This selection of images also illustrates the hierarchy of spaces and programs, with tourism dominating the coastline.





























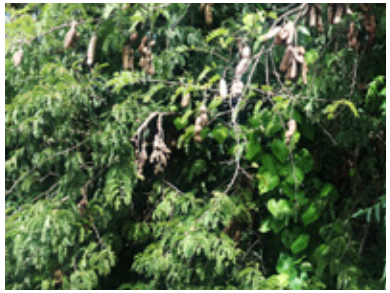










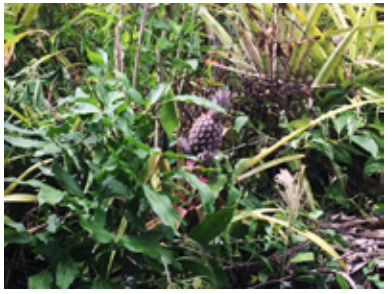




FIGURE 40
This map illustrates the condition of the West coast right at the beginning of the tourism industry's emergence. Tourism itself exists only at the coast or in the major urban center. Local townships are situated inland or elevated on the mountainside. The natural ecology is intact and relatively undisturbed.

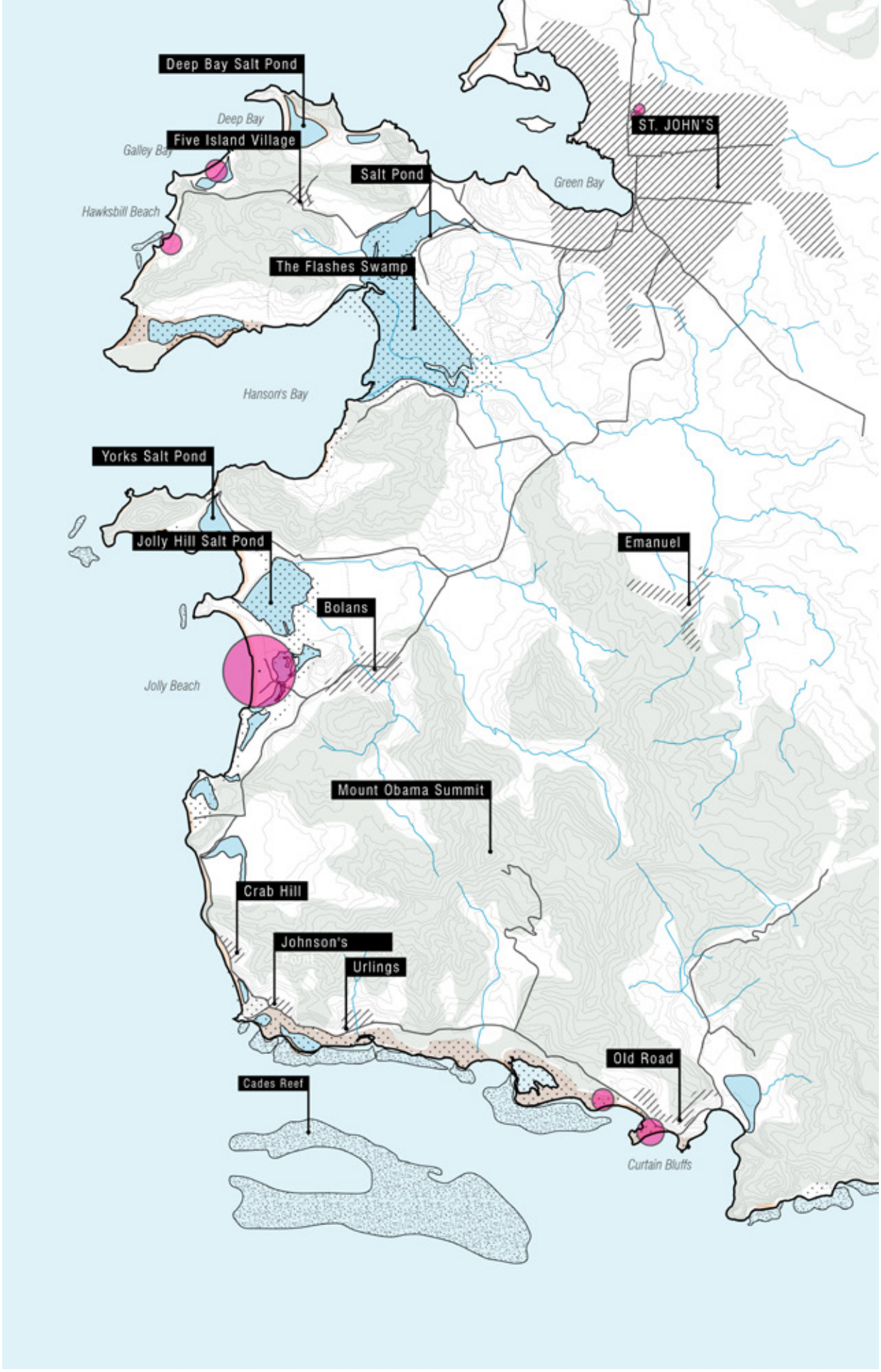

Deep Bay Salt Pond
Deep Bay
Five Island Village
Galley Bay
Salt Pond
ST. JOHN'S
Green Bay
Hawksbill Beach
The Flashes Swamp
Hanson's Bay
Yorks Salt Pond
Jolly Hill Salt Pond
Emanuel
Bolans
Jolly Beach
Mount Obama Summit
Crab Hill
Johnson's
Urlings
Old Road
Cades Reef
Curtain Bluffs

FIGURE 41
This map illustrates the thickness of the coastline in 1977 by the local ecology creating a protective buffer. This sponge space is vital to the longevity of the coast and protection from natural disasters inland.

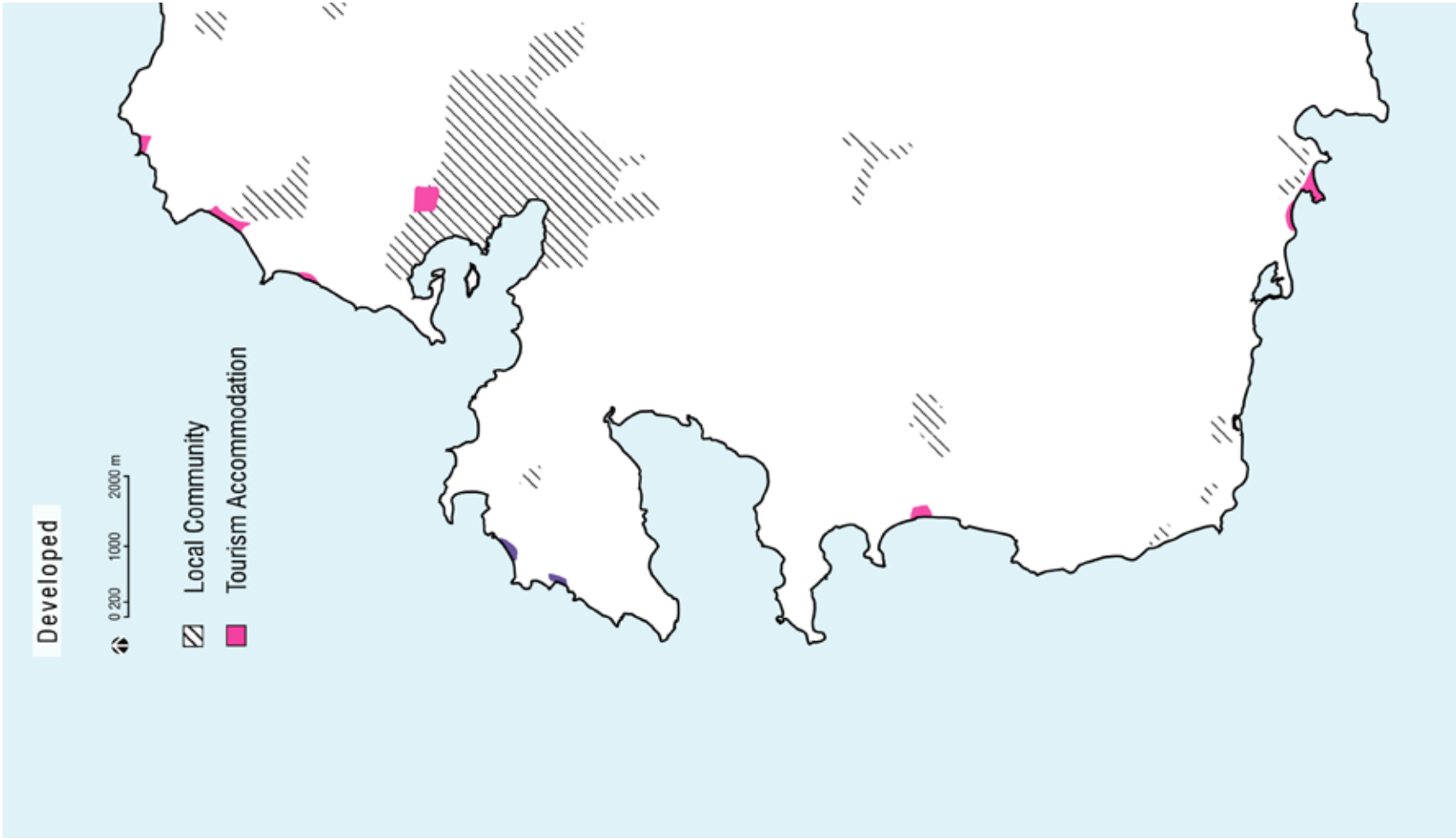


FIGURE 42
This map illustrates the distribution of local communities and tourism enclaves. In 1977, tourism was being developed in small pockets along the coast; interfering very little in the natural social and ecological systems.

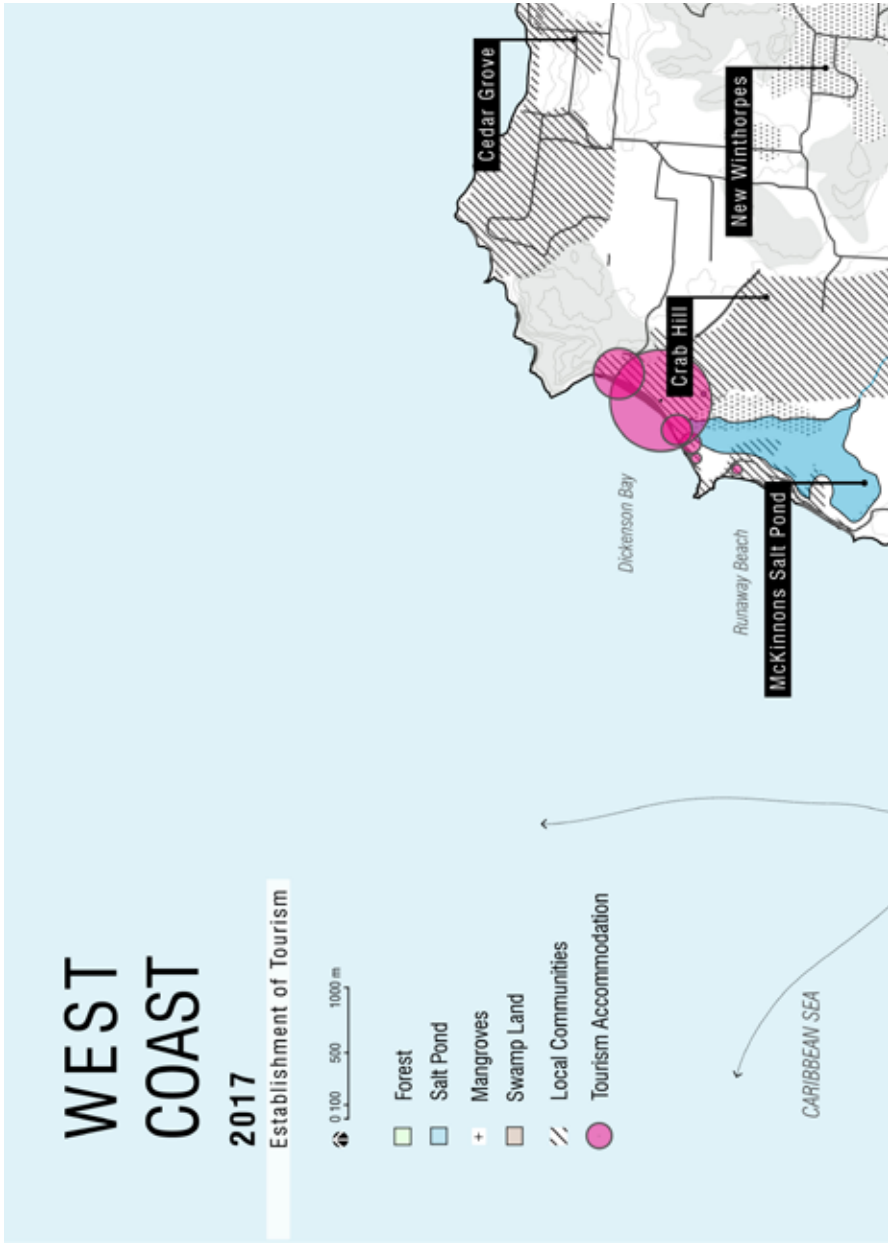
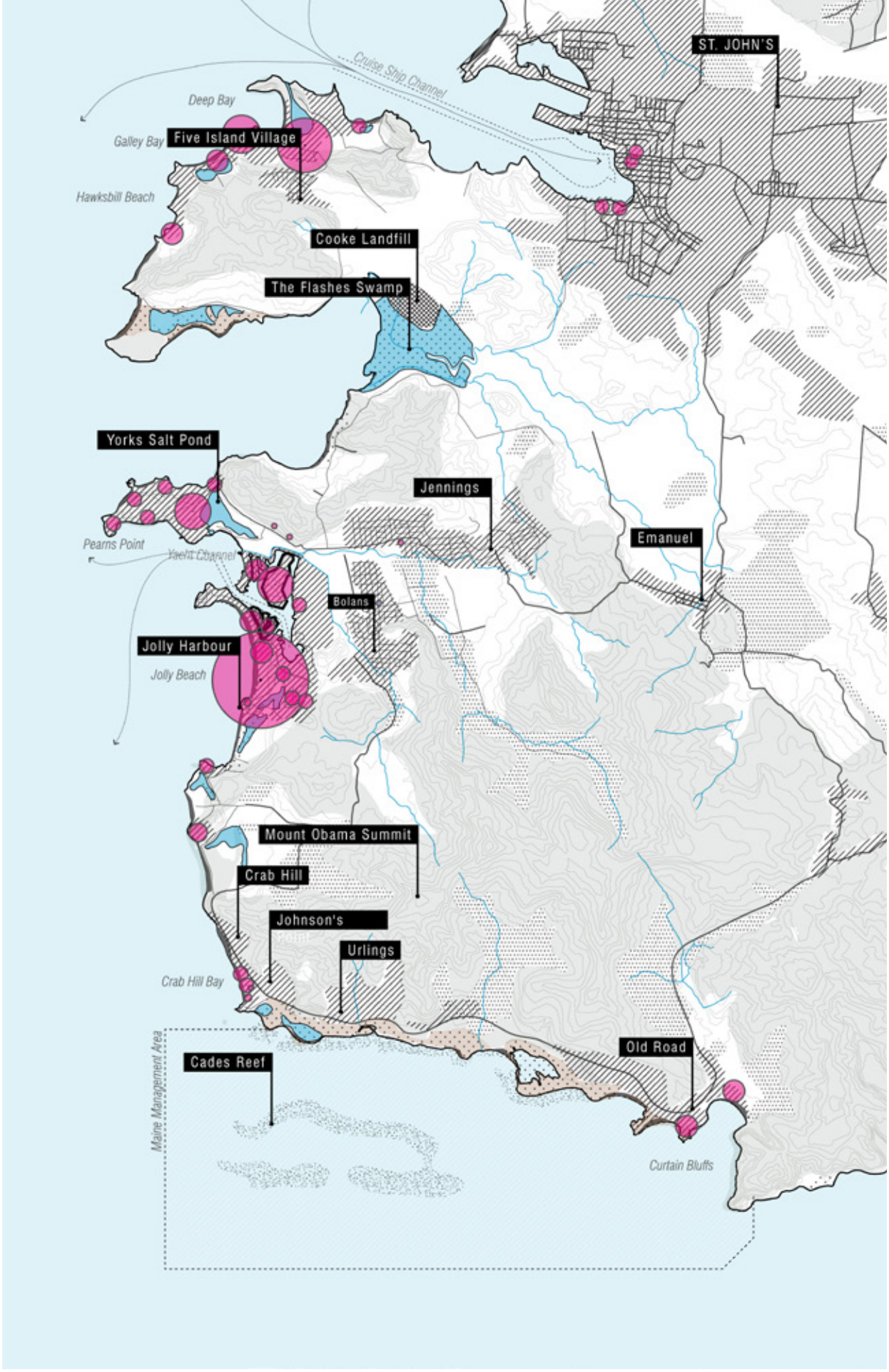


FIGURE 43
From 1977 to 2017 there is a dramatic increase in tourism development and decrease in ecology. The construction of the cruise ship channel and harbour created an enormous amount of dredged fill which was deposited in the “Flashes” salt marsh. The monopoly of tourism on the coast is very evident and has created tension through restricted local access and resource exploitation.


ST. JOHN'S
Cruise Ship Channel
Deep Bay
Galley Bay
Five Island Village
Hawksbill Beach
Cooke Landfill
The Flashes Swamp
Yorks Salt Pond
Jennings
Emanuel
Pearns Point
Yacht Channel
Bolans
Jolly Harbour
Jolly Beach
Mount Obama Summit
Crab Hill
Johnson's
Urlings
Crab Hill Bay
Maine Management Area
Cades Reef
Old Road
Curtain Bluffs

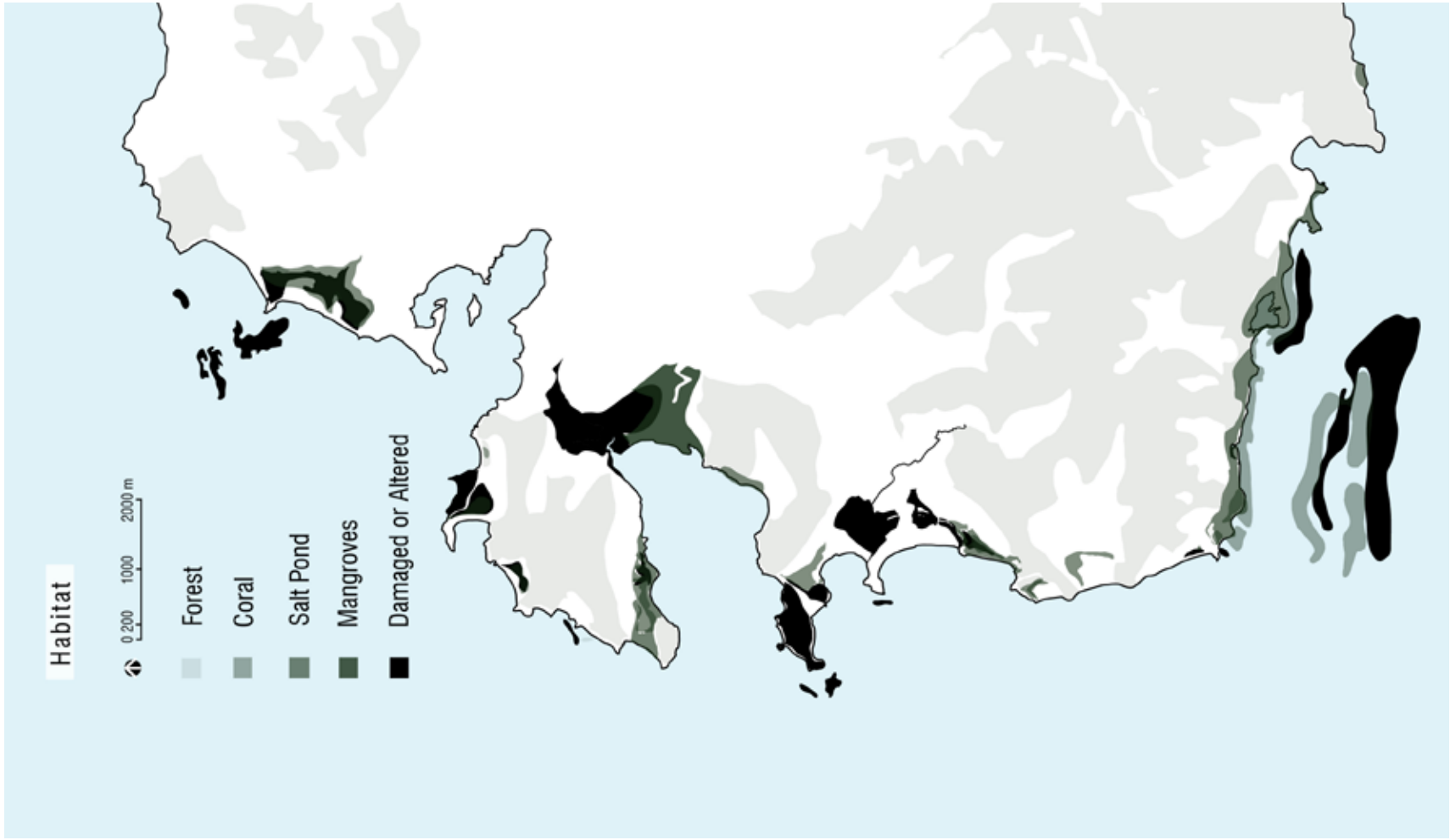


FIGURE 44
This diagram illustrates the state of ecology in 2017. The black illustrates severely degraded or destroyed wildlife; this has created breaks along the coastal ribbon. With the loss of coral reefs beaches are more susceptible to erosion. The elimination of the mangrove buffer de-stabilizes the coastline and increases flooding. These two ecosystems are vital to maintaining one of the greatest attributes of tourism - the beach.

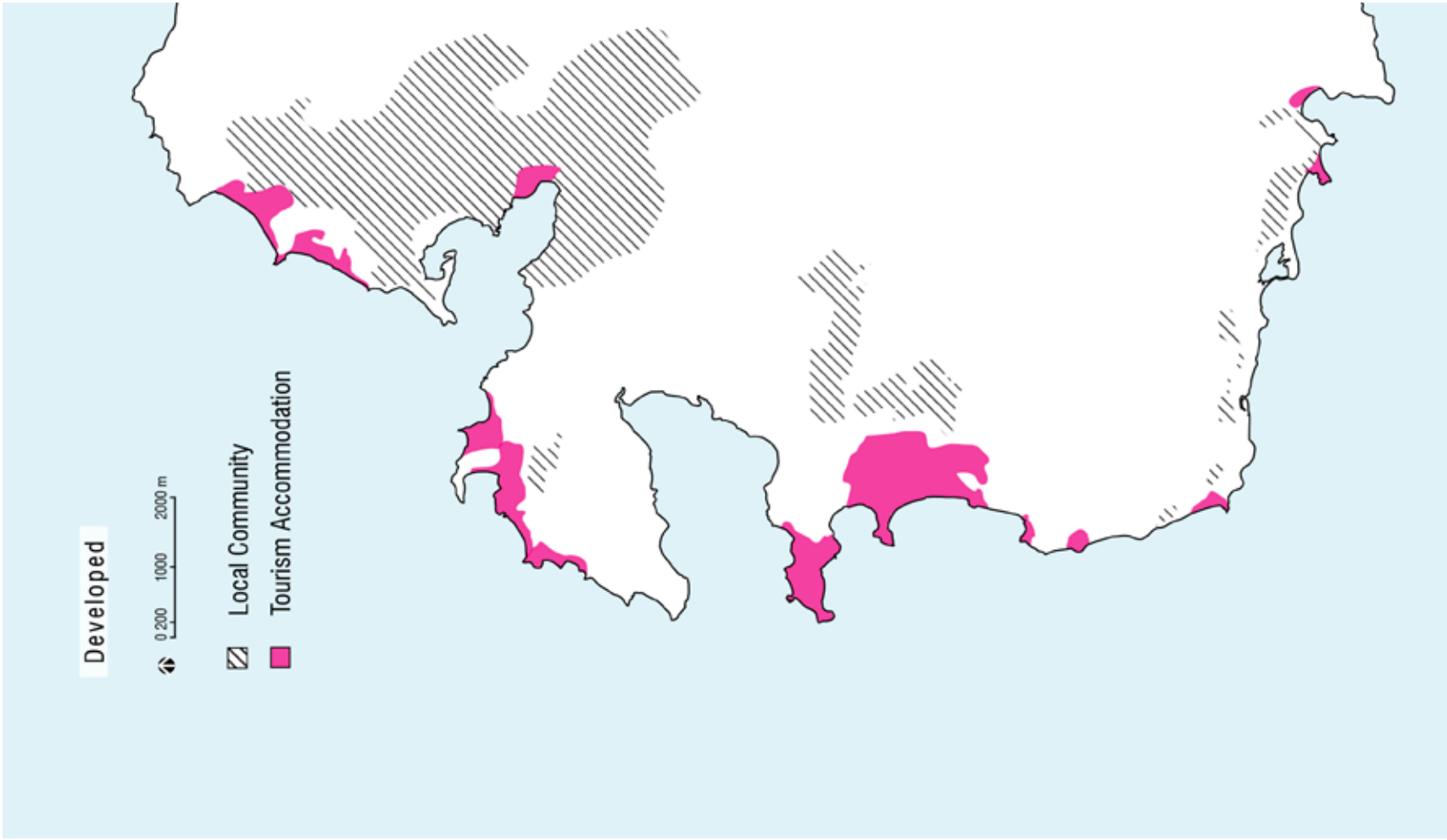


FIGURE 45

This diagram illustrates the growth of urban centers compared to the development of tourism. The sprawling of tourism is evident; creating a ribbon of tourism along the coastline in place of the ribbon of ecology. This monopoly makes public access to public beaches (in theory) very difficult. The spots along the coast where tourism is not currently present is most vulnerable to becoming developed in the future.

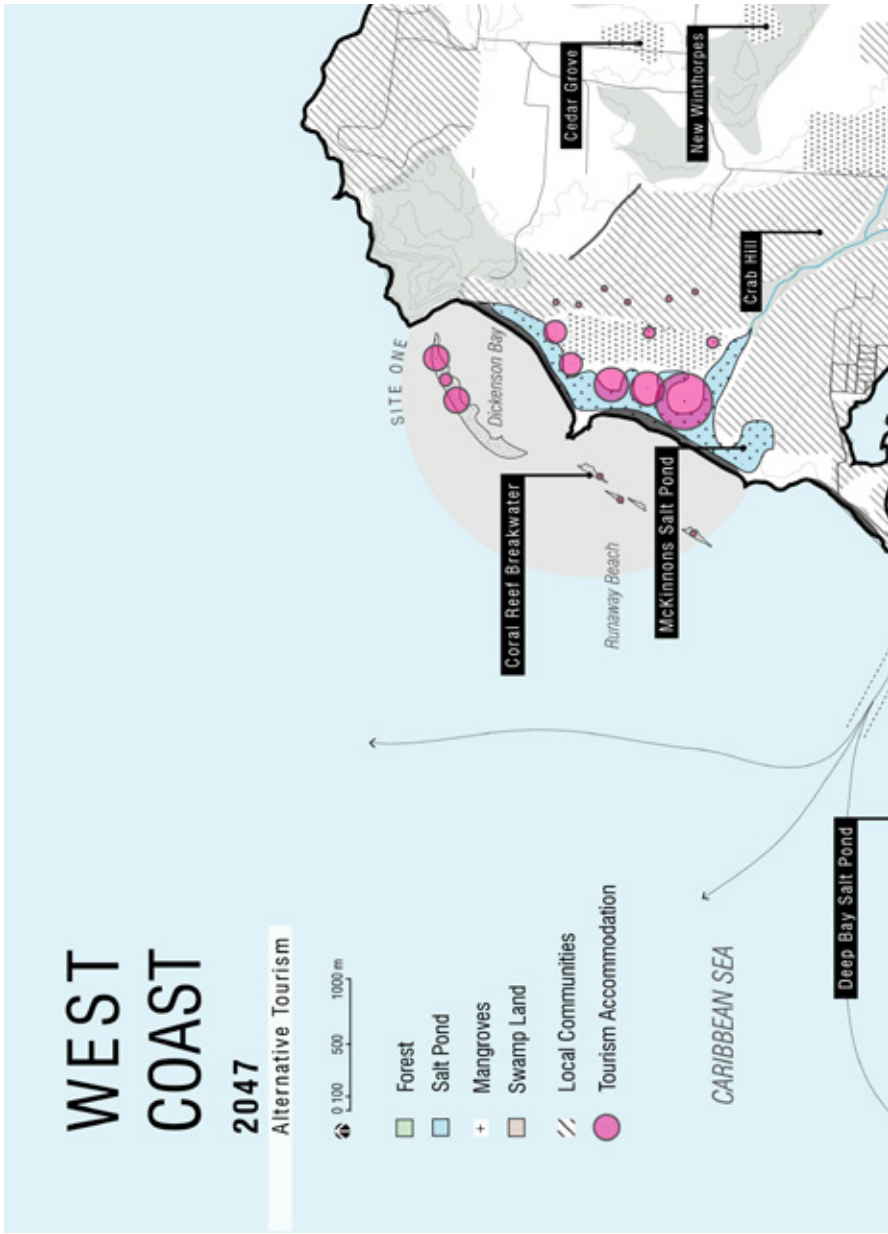
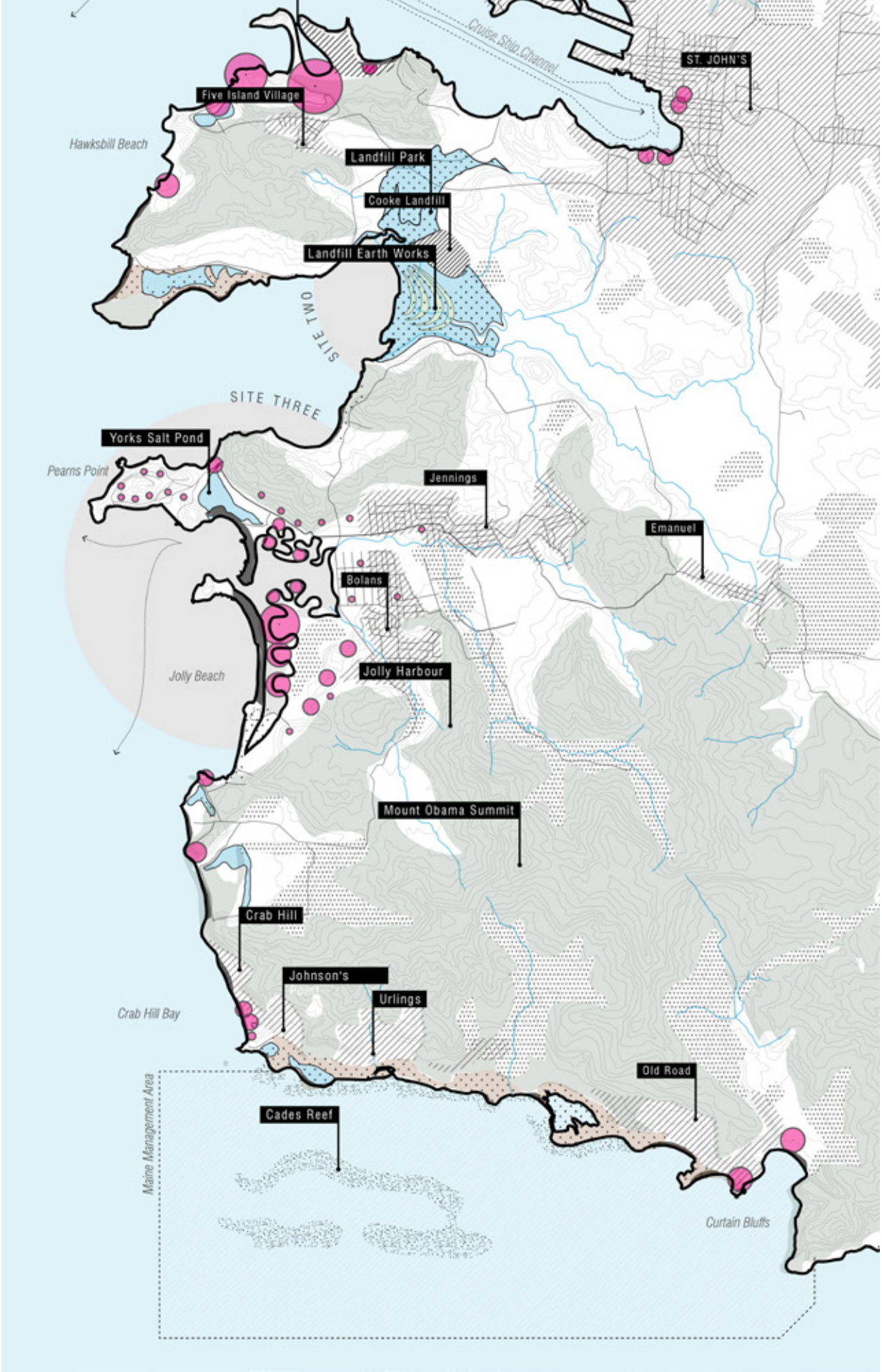


FIGURE 46
This map represents the proposed design for the West Coast in 2047. The major design strategies include removing tourism development of the coastline, integrating all three actors of ecology, local, and global programming, and revitalize the areas most affected by tourism.


Cruise Ship Channel
ST. JOHN'S
Five Island Village
Hawksbill Beach
Landfill Park
Cooke Landfill
Landfill Earth Works
SITE TWO
SITE THREE
Yorks Salt Pond
Pearns Point
Jennings
Emanuel
Bolans
Jolly Beach
Jolly Harbour
Mount Obama Summit
Crab Hill
Johnson's
Urlings
Crab Hill Bay
Old Road
Cades Reef
Maine Management Area
Curtain Bluffs

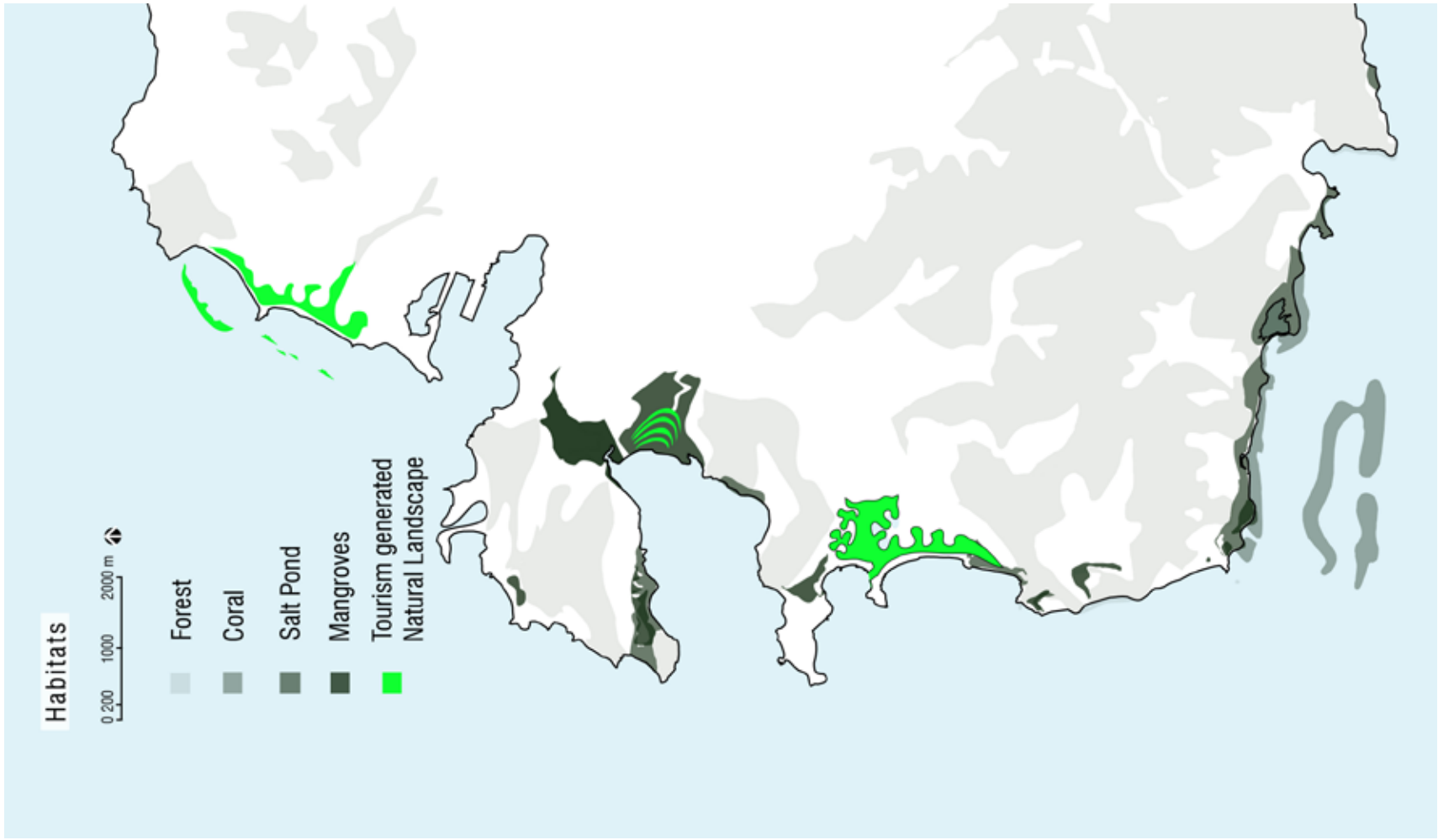


FIGURE 47
This diagram illustrates the revitalization and integration of the coastal ecosystem. By synthesizing the previous beach front development into the buffer zone, a new ribbon of inhabited sponge space emerges. In the design, ecology is not just reintroduced but reimagined as a landscape creation technique. Using artificial reefs to prevent beach erosion provides a new type of tourism experience. Using waste material to create an earth work prevents to loss of more ecology and generates a new economic activity.

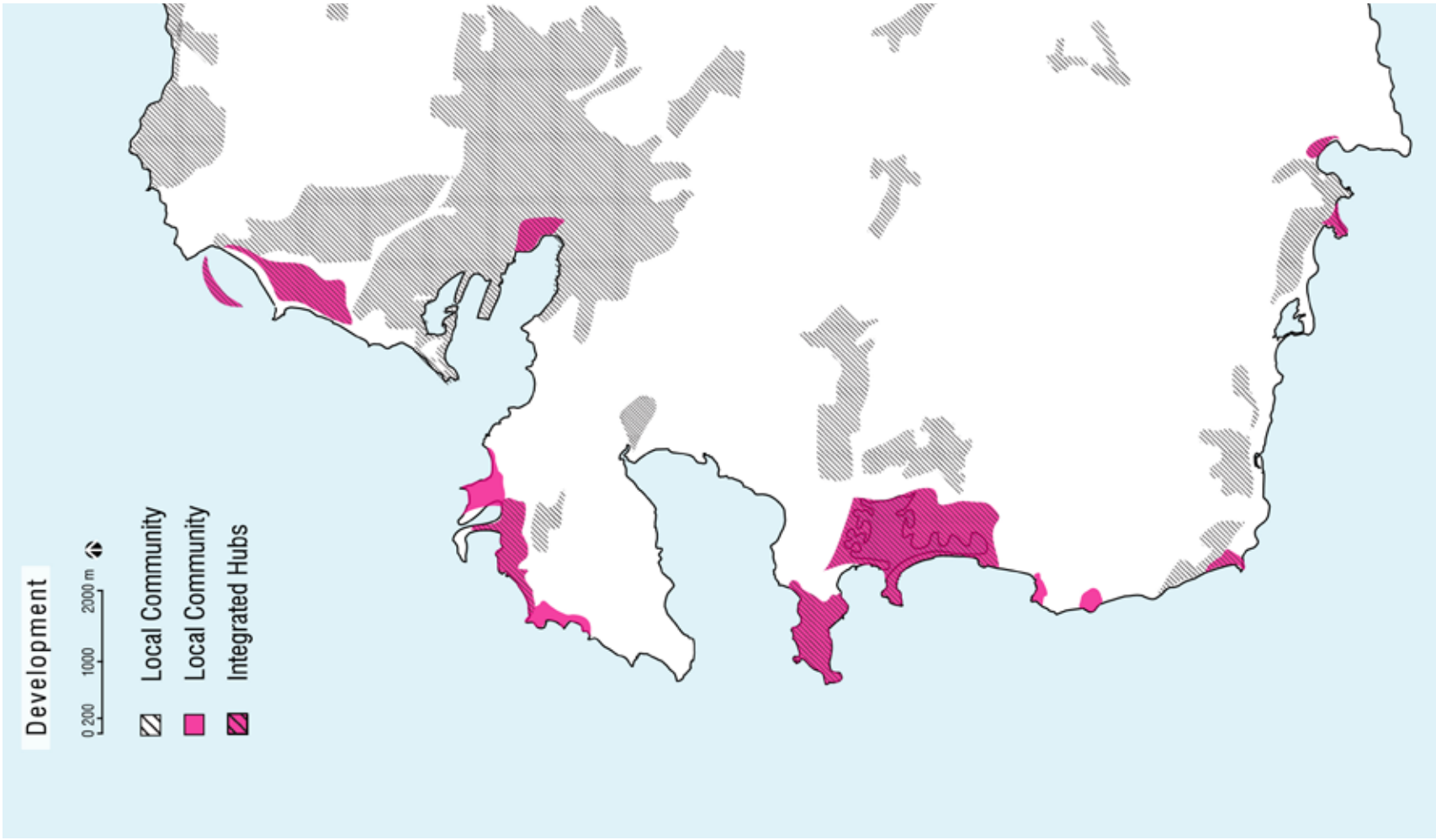


FIGURE 48
This diagram presents a series of integrated hub communities where ecological, local, and tourism programming are combined to remove the barrier and monopoly of beach front property. These hubs provide a unique opportunity for Antigua and Barbuda to create niches within their tourism offerings and expand their local tourism portfolio.

Design Matrix

Intention & Strategy for three sites.

	Population (approx.)	Landscape Creation Methods	Affects[1,2,3]	Goals
Site One Dickenson Bay 	Tourist: 625 Local: 22,000 St. John's Capital	Dredge for Harbour: 1. McKinnons Salt Pond (Abandoned due to Bedrock)	i. Destruction of Mangrove Habitat ii. Loss of fish species count iii. Siltation of water iv. Sedimentation causing death of coral, sea grass and algae v. High water turbidity vi. Buccaneer Cove restricted beach access vii. Corbison Point no public access, prehistoric and historic site	1. Address the water quality of McKinnon's Salt Pond a. Re-introduce Mangroves as filtration system. b. Extend ecology reclamation up stream. 2. Re-Introduce ecology as protection. a. Coral Reefs for Beach Replenishment. 3. Create micro-economy between local agriculture and tourism.
Site Two The Flashes 	Tourist: 575 Local: 500 Five Islands Village	Dredge: 1. At Green Bay for Cruise Ship Port -to North. Spoils deposited in The Flashes salt marsh. 2. Creation of Landfill.	i. Destruction of Salt Marsh and Mangrove Habitat ii. Pollution run-off into Hansons Bay	1. Optimizing wasted habitat. 2. Generate economic benefit from excess waste and material. 3. Re-claim Mangroves as filtration system along major waterway.
Site Three Jolly Harbour 	Tourist: 1350 Local: 3,200 Bolans Township & Jennings Village	Dredge and Fill for Harbour Creation: 1. Jolly Harbour, Marina & Golf Course	i. Destruction of Mangrove Habitat ii. Loss of bird species count iii. Siltation of water iv. Sedimentation causing death of coral and sea grass v. High water turbidity vi. Limited and restricted Beach Access vii. Beach Erosion from Yacht Channel at Mosquito Cove viii. Disapproval of local bathing/ topless (Cultural Insensitivities) ix. Fishing boats replaced by tour boats	1. Expand Coastline and Water Access. a. Bring coast to local communities. b. Make greater connection from local to global. 2. Re-Introduce ecology as protection. a. Coral Reefs for Beach Replenishment. b. Mangroves for Hurricane and Storm surge protection. 3. Re-Organize Tourism Accommodation. a. Distribute tourism facilities to foster small local initiatives.

FIGURE 49

This chart details out the intention and methodology of the following design work. The purpose of the matrix is to create a narrative of each site from its pre-tourism condition, type of tourism activity, consequence of tourism, design goals (In terms of ecological, social, and economic agenda), local benefit, sequencing and lastly the new image of tourism being proposed.

Local Benefit	Phases	Post Cards
i. New use of underutilized resource ii. Greater Public Access iii. Connection of Urban Core to coast iv. Provide opportunity to diversify economy.	1. Water structure established in Dickenson's Bay. Structure charged to attract Calcium which is the base for the artificial reef. 2. Coral is transplanted via experts and through volunteer tourism. 3. The success of the reef in beach protection creates a surplus of material down current which is re-deposited up current where erosion occurs.	i. Visualizing the relationship between coral and beach. ii. Relinquishing the correlation of tourism and beach and re-making the image of salt pond from swamp to natural pool.
i. Protected Nature Reserve. ii. Provide a new economic activity. Iii. Revitalizes fresh water source.	1. Existing dredged material and solid waste is shaped into Earth Work pattern. 2. Various layers of material are laid out to protect the buried solid waste from releasing harmful gases into the air. 3. New tourism activities emerge within the National Nature Reserve that are ecologically focused.	i. Creating legibility in Cruise Ship tourism's footprint. ii. Promoting the economic value in ecologic recovery.
i. Greater Access ii. Protection iii. Allow for Accessible authentic cultural exchange (Opposed to typical artificial representations of culture.) iv. Production of resources (Fishing and Harvesting)	1. The stream is re-routed through the golf course to natural break up the landscape to maximize the coastline, while maintaining the golf course activity. 2. The existing infrastructure is deconstructed over time as it degrades, pushing back the development off the beach. 3. Barriers are eliminated as ecological, tourism, and community programming co-exists within the salt pond container.	i. Integrating the local and tourism programming to break down the scale of traditional resort enclaves. ii. Disrupt the socially accepted standards of tourism, like the traditional Golf Course.

Part 03

Design Proposal

Sleeping on the Reef

Site One: McKinnons Pond

Proposal

Sleeping on the Reef attempts to alter the role of the quintessential beach front developments at Dickenson's Bay by imagining ecology as a development strategy.

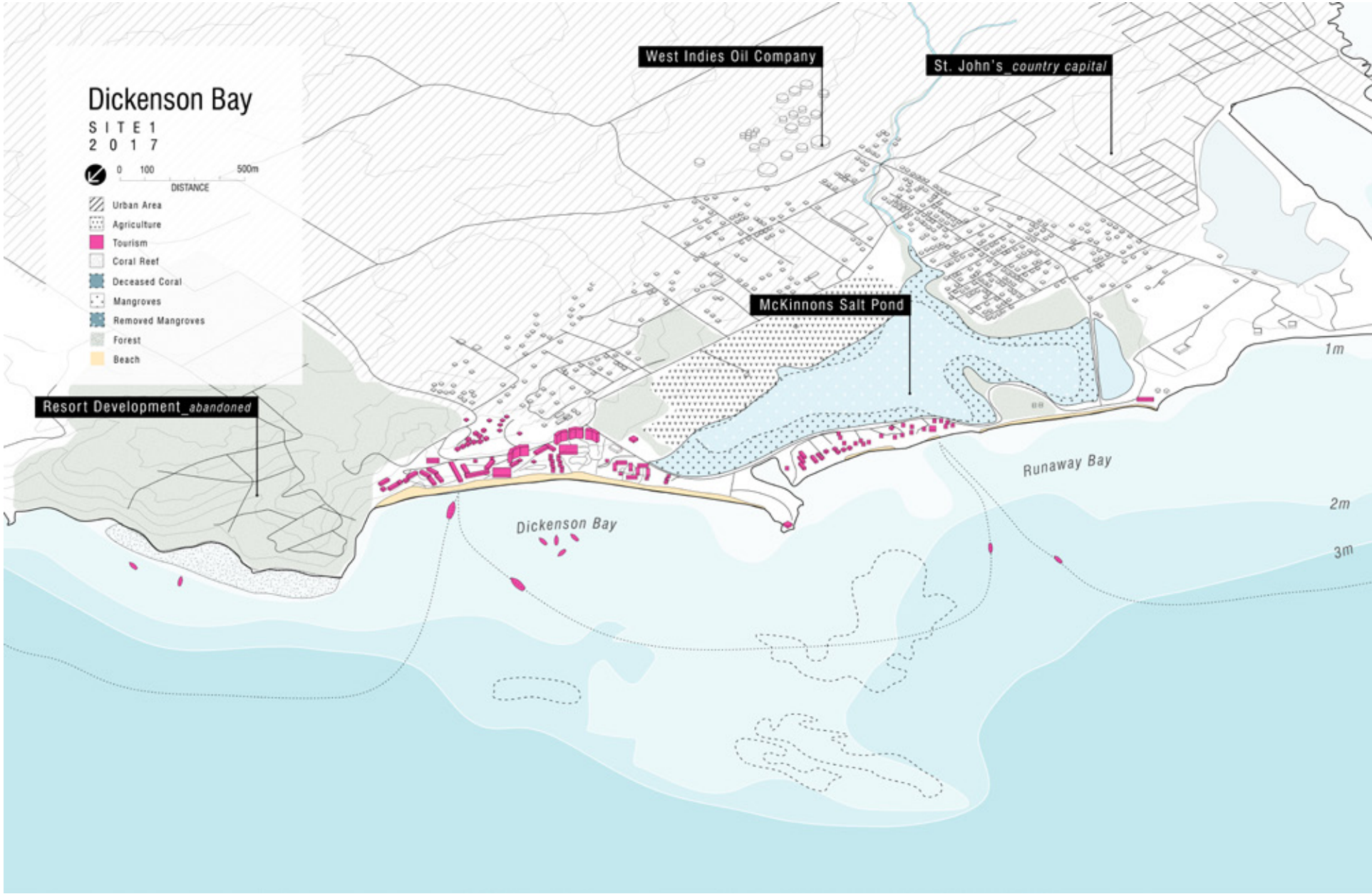
Context

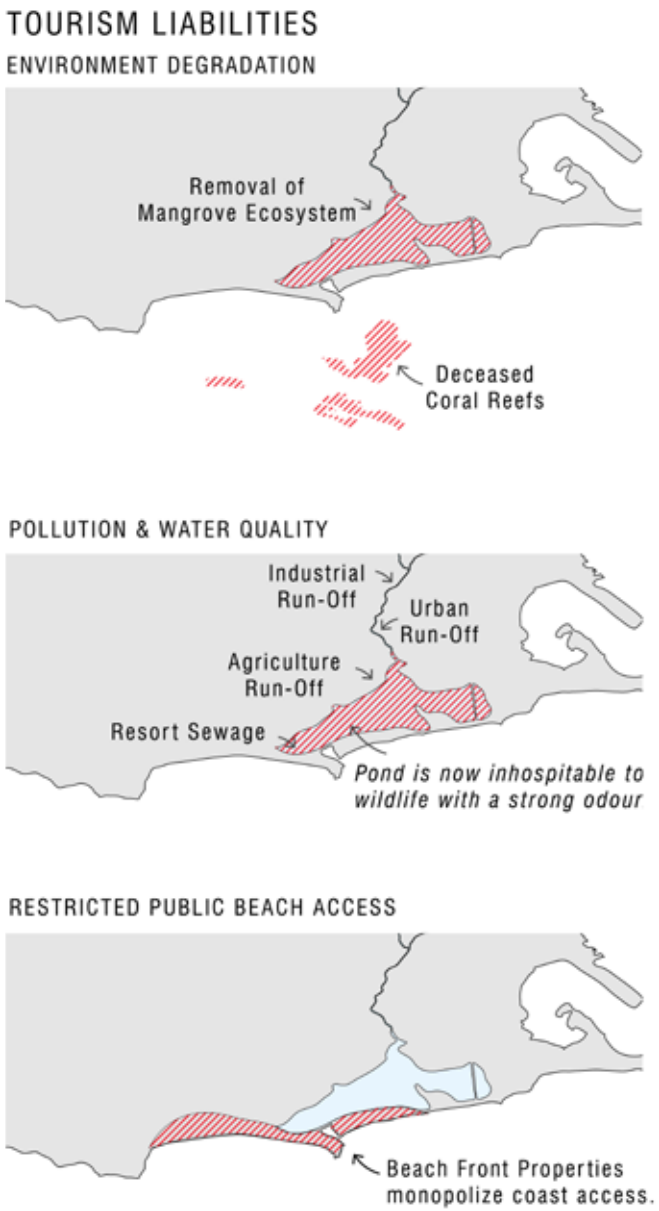
Dickenson Bay is not only an iconic beach front resort destination, home to a property of the international resort chain Sandals, but is also exemplary models of the beach-salt pond system. However, McKinnons Salt Pond stands derelict behind the beach front tourism properties after decades of improper discharge and abandoned construction. An 1842 room hotel complex and marina development encompassing over 350 acres was abandoned after construction hit bedrock in the late 1980's[1]. During construction the mangrove basin was cleared and the intertidal inlet was blocked. Now the pond has been steadily filling up with sediment and unfiltered water run-off, reducing the water quality and killing off most of the ponds inhabitants. Every year in the fall thousands of dead fish lined the perimeter due to a suffocation of oxygen in the water[2]. Klaus de Albuquerque, an authority on the subject of tourism degradation in Antigua and Barbuda and the Caribbean, published an article in 1991 titled, "Conflicting Claims on the Antiguan Coastal Resources: The case of the McKinnons and Jolly Hill Salt Pond". Albequerque notes the near-shore environmental impacts of spare and deceased coral and sea grass, low reef fish numbers, high water turbidity, and high siltation[3]. This is accounted for from the construction techniques at the marina, and the untreated waste water that was exposed to the coral. He also notes the onshore environmental impacts of loss of mangrove, and restricted public access. These construction projects have created an introverted perspective of the tourism industry, void of the work put into them, and the effects caused outside on them.

FIGURE 50
Facing page
This photograph represents the typical beach front property.

FIGURE 51
Top
This photograph illustrates the contrast between the Caribbean Sea, and McKinnons Pond; showing the thin strip of beach front properties in between. The pond is high in sediment and poor in quality.

FIGURE 52
Bottom
This photograph shows the edge condition between the urban environment to the top and agriculture to the left. Both are high contributors to the poor quality.


Dickenson Bay
SITE 1
2017
0 100 500m
DISTANCE
Urban Area
Agriculture
Tourism
Coral Reef
Deceased Coral
Mangroves
Removed Mangroves
Forest
Beach
West Indies Oil Company
St. John's_country capital
McKinnons Salt Pond
Resort Development_abandoned
Runaway Bay
Dickenson Bay
1m
2m
3m



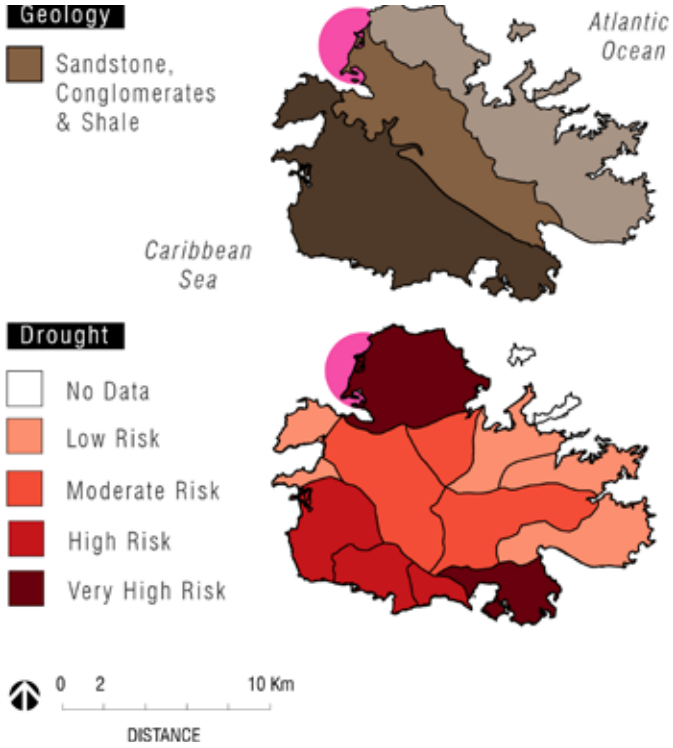
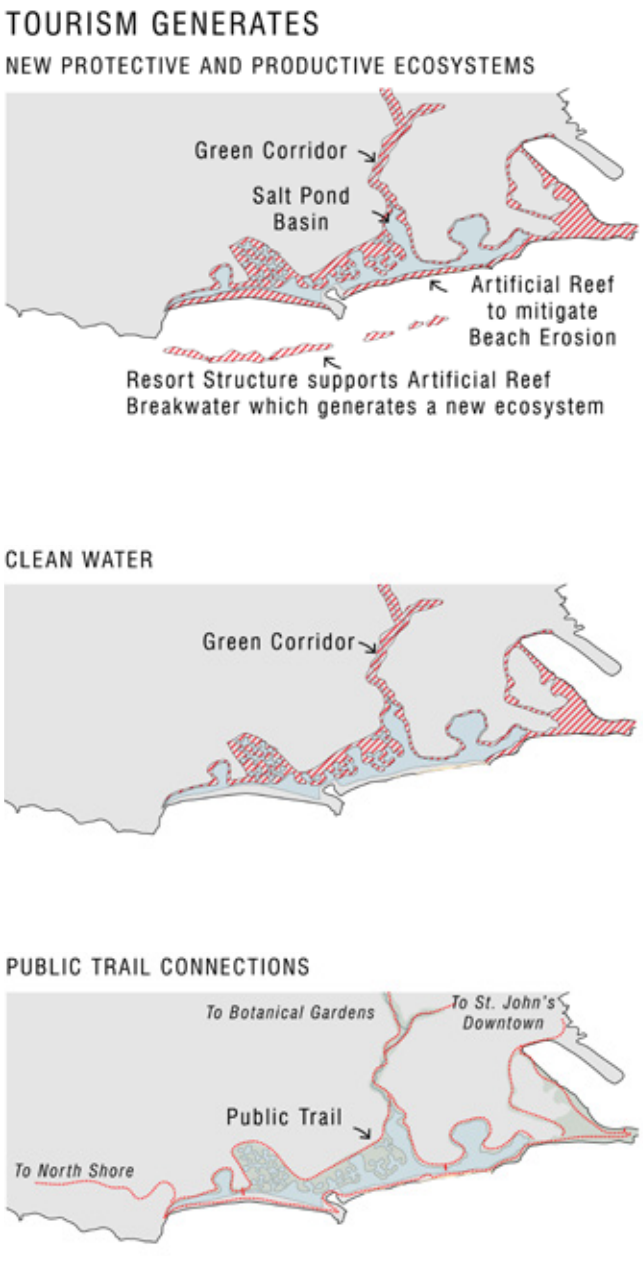


FIGURE 53

This axonometric illustrates the existing condition of Site One in 2017 and the relationship of the pond to the urban core, bordering agriculture and tourism developments. The diagrams to the left illustrate the three major issues caused by tourism and other factors this thesis wishes to address. Ecologically the site has lost a lot of its natural wildlife along the coast. Economically, there is a huge untapped resource in the derelict pond. Socially, the sprawl of tourism has created friction with regards to who owns the beach. The diagram maps above illustrate the regional condition of the above three issues. The site's geology is the reason for its beautiful natural beach. However, without its natural barrier is very susceptible to erosion. The site is in a high drought area which could benefit from a repositioning of the salt pond.


Dickenson Bay
SITE 1
2047
0
100
500m
DISTANCE
Urban Area
Agriculture
Tourism
Coral Reef
Deceased Coral
Mangroves
Removed Mangroves
Forest
Beach
Public Trail
Public Natural Salt Pond
Resort_large
Urban Core
Resort_medium
Resort_large
Resort_small
Beach Creation
Public Natural Salt Pond
Protected Lagoon
Resort_small
Previous Shoreline
Breakwater
Dickenson Bay
Reflected wave
Breakwater
Runaway Bay
1m
2m
3m
Wave Direction



New Image of Tourism

In reaction to the iconic beach image, this design imagines a resort that positively engages with and contributes to the natural systems at play in the coastal landscape. By relinquishing the beach, it can now operate as a mediator between land and sea. The resort development provides not only the structure for the living breakwater/ artificial reef system but takes on responsibility for its health and longevity as a measure of its future tourism stability. This system also creates a sand trap for the eroding beaches, feeding back into the sand budget which is currently being swept off the ocean shelf. On land the salt pond could be more than a neglected swamp by re-branding itself as a natural salt pool, creating new images of purification and rejuvenation. Again, the tourism program takes on direct responsibility of the quality and maintenance of the salt pond-mangrove relationship for the in return quality of the tourism experience provided. These two new images release the strain put on the coast by the idyllic pictures of white sand, palm tree, uninhabited beaches we too often see.

FIGURE 54
The new axonometric drawing illustrates the design proposal 30 years from today in 2047 and the diagrams highlight how the previous liabilities have transformed. Ecologically, wildlife is not just reintroduced but reinvented in an active role or production and protection. Socially, removing development off the beach and investing in a public boardwalk opens up the coast for true public access. Economically, what once was a neglected pond is now a profit generating hub.

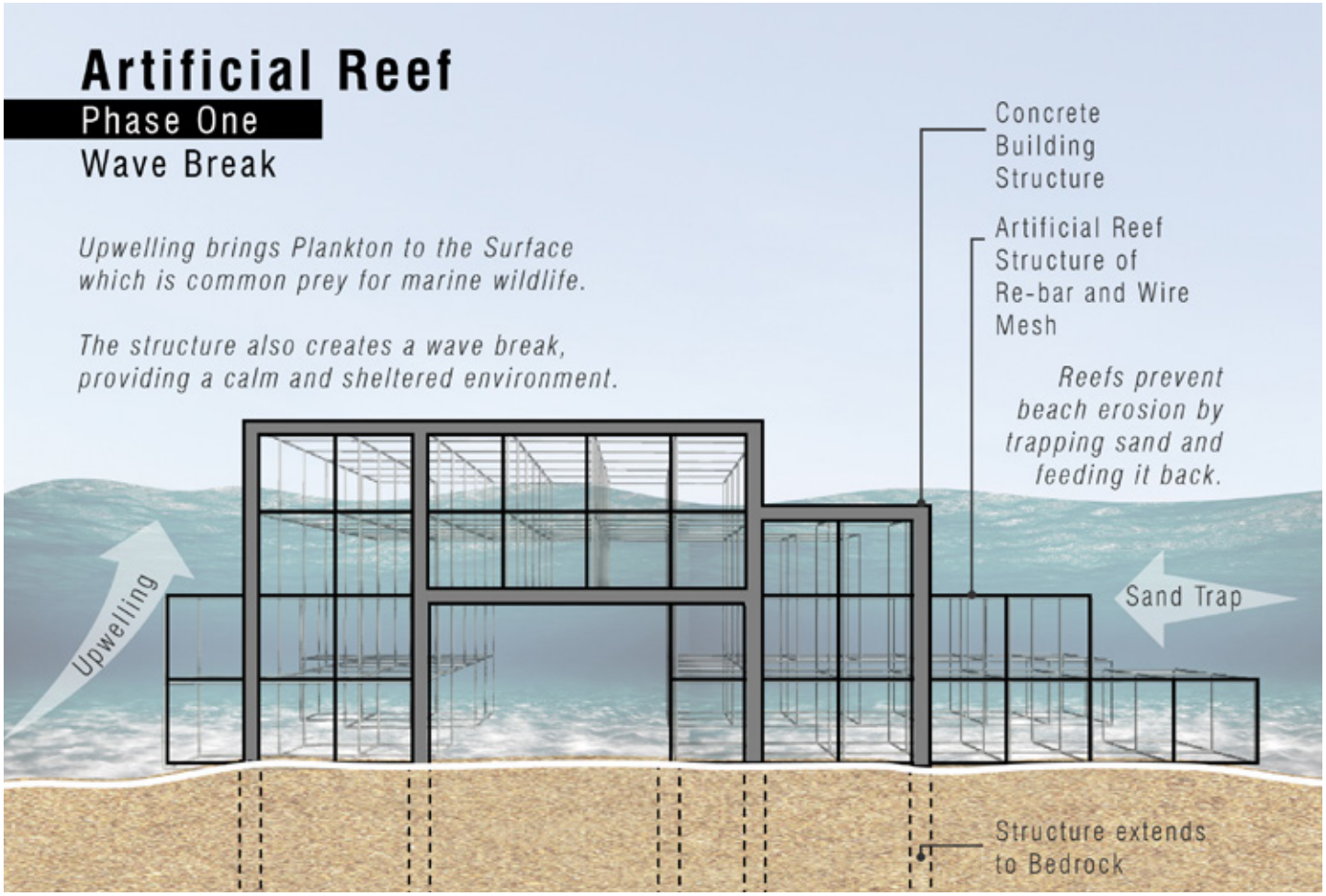
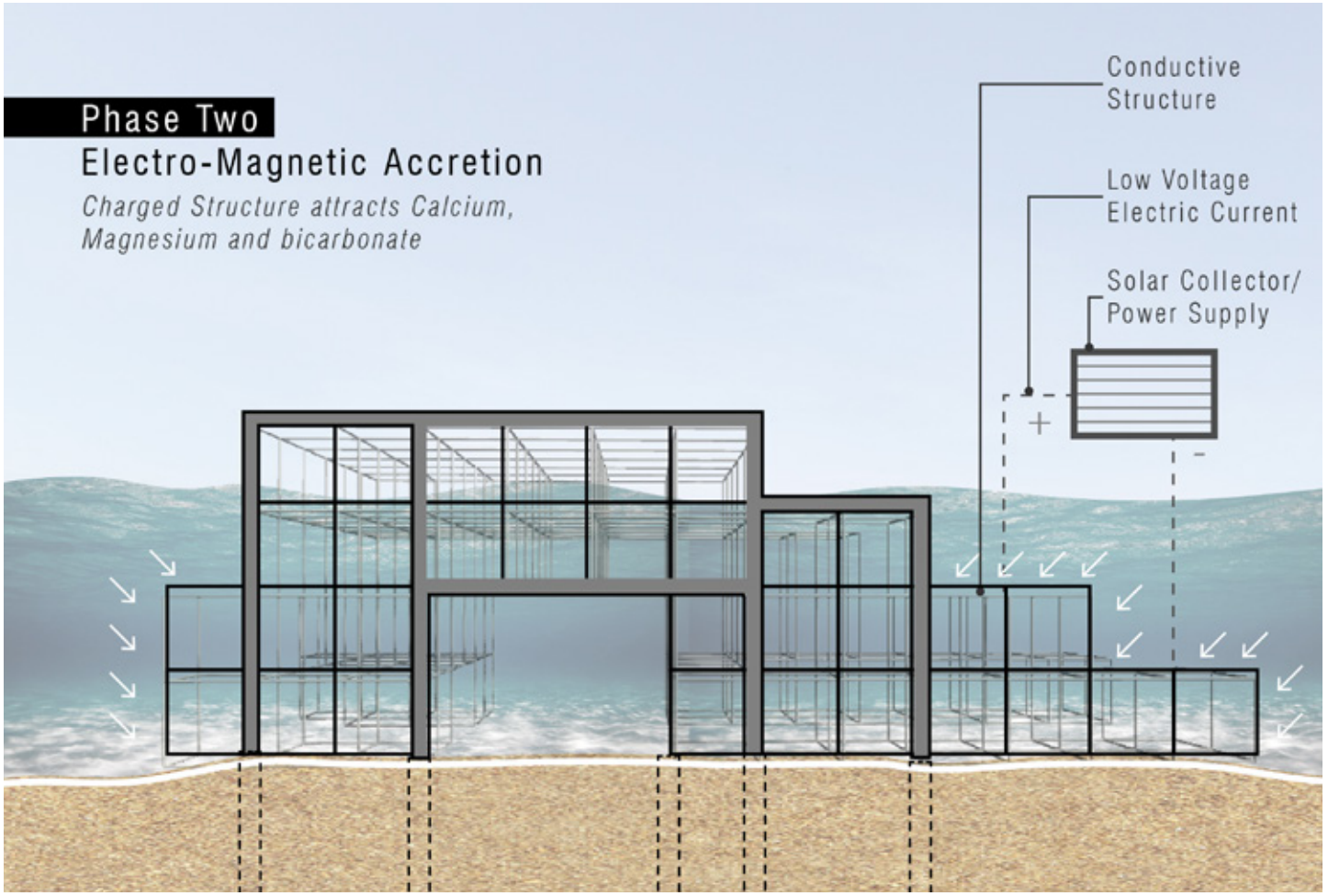
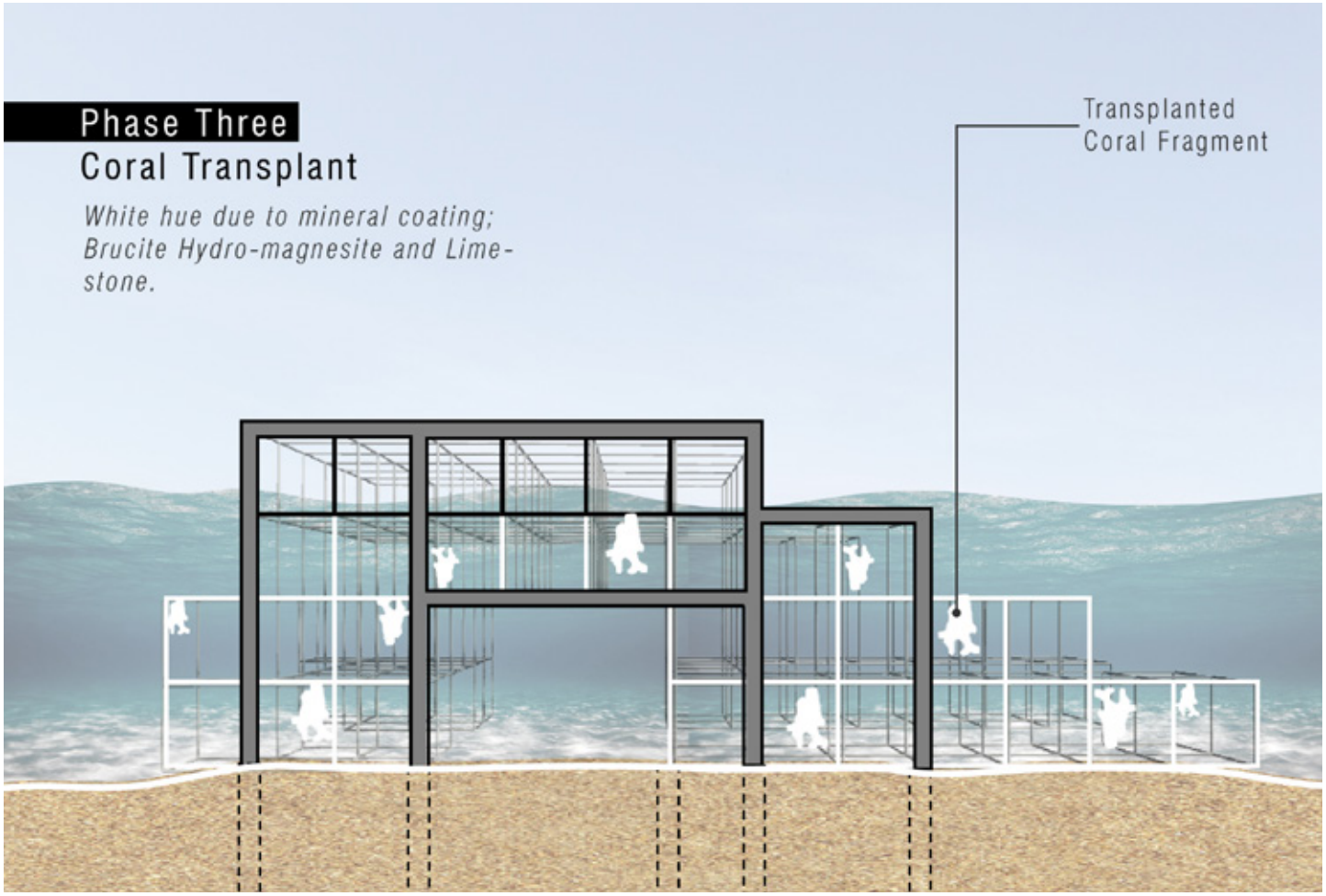


FIGURE 55

This series of drawings details out the phasing of a structure which supports an artificial reef and local and tourism programming. The artificial reef is used here to reverse the current beach erosion, provide a coral nursery, and a new volunteer tourism initiative. First, the reef structure is attached to the main structure and electrically charged to attract calcium which becomes the base for transplanting the coral fragments. The purpose of this artificial reef is to educate, re-mediate, and support local economic activity.


Phase Two
Electro-Magnetic Accretion
Charged Structure attracts Calcium,
Magnesium and bicarbonate
Conductive
Structure
Low Voltage
Electric Current
Solar Collector/
Power Supply
+
-


Phase Three
Coral Transplant
White hue due to mineral coating; Brucite Hydro-magnesite and Lime-stone.
Transplanted Coral Fragment

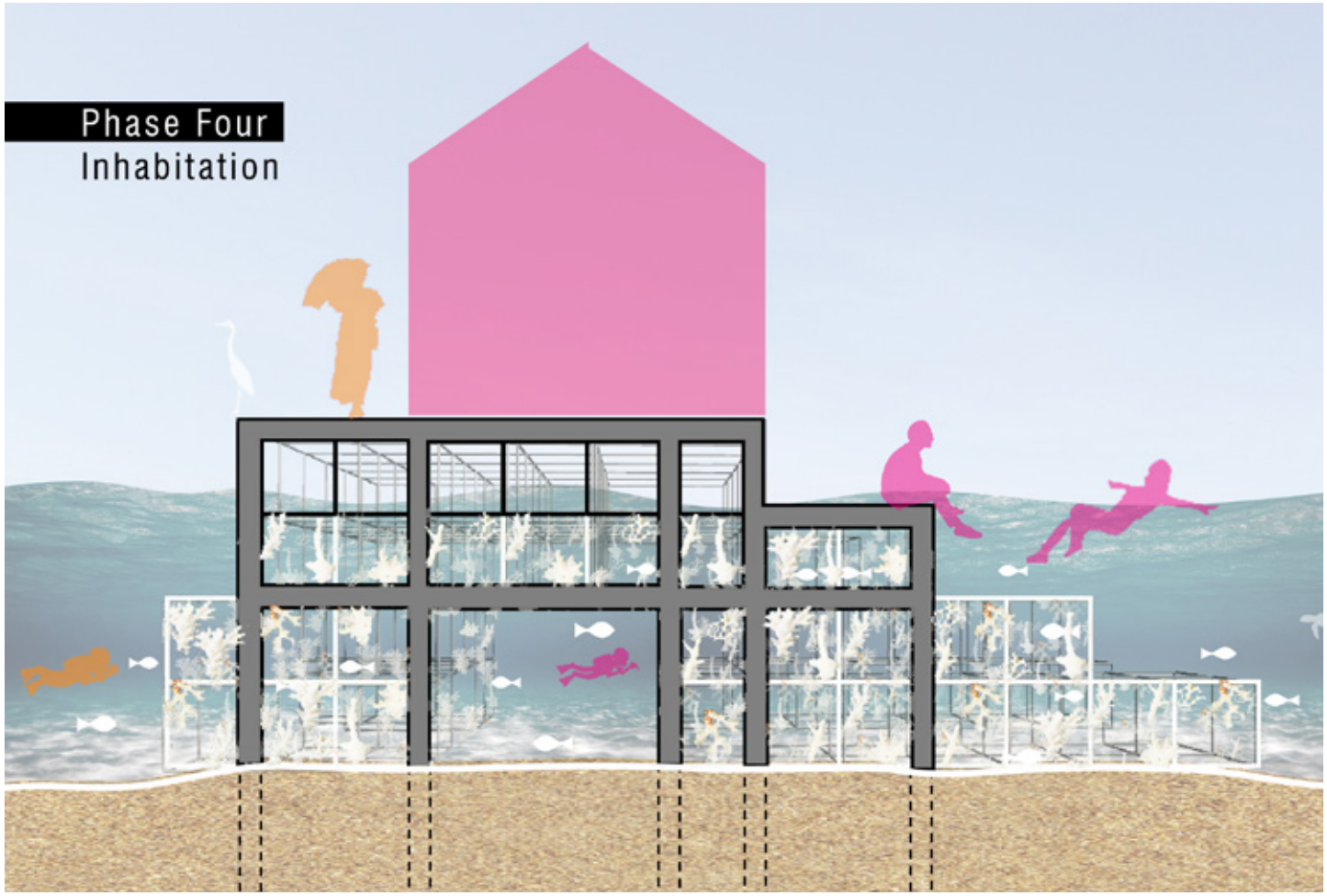
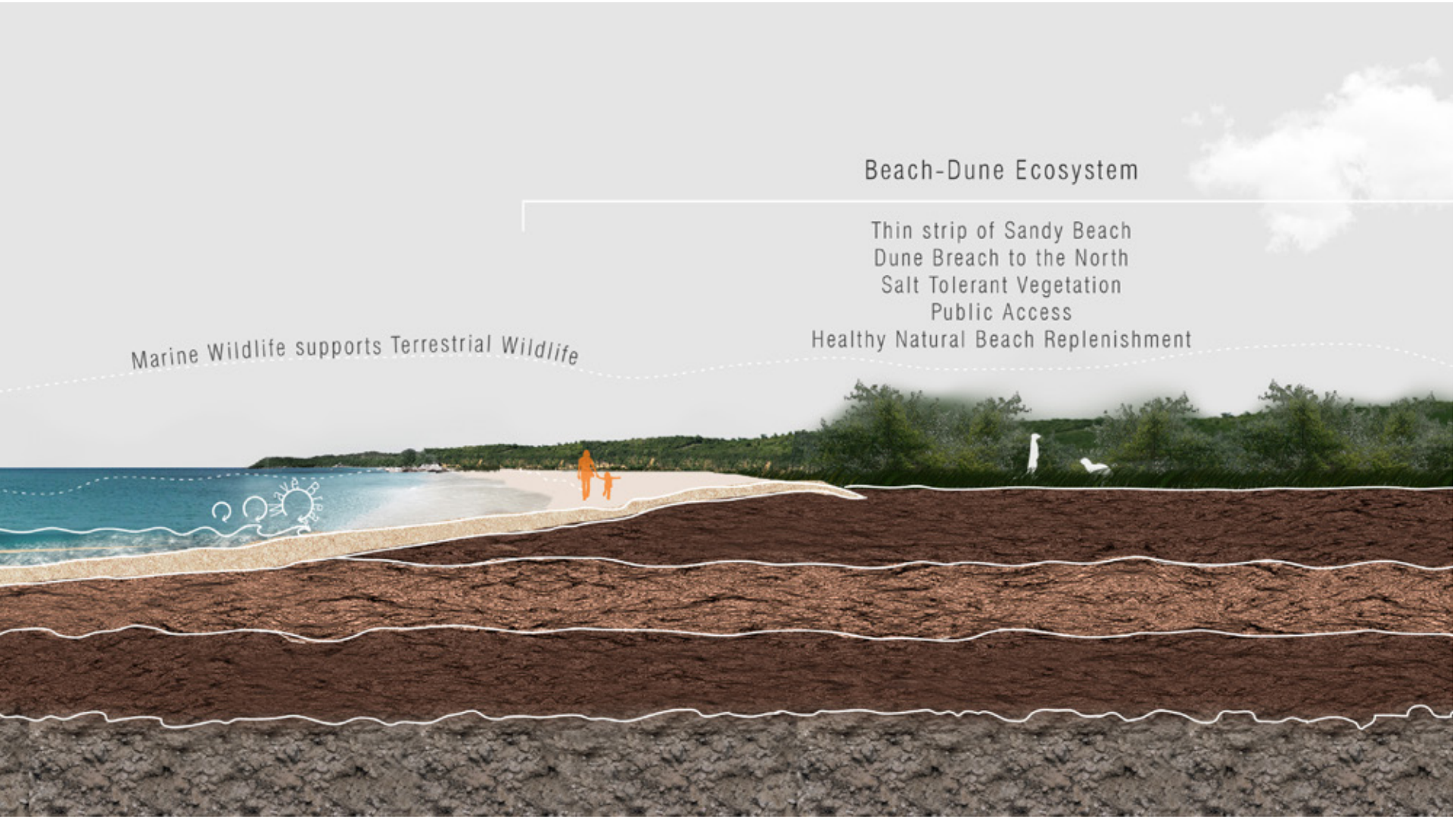
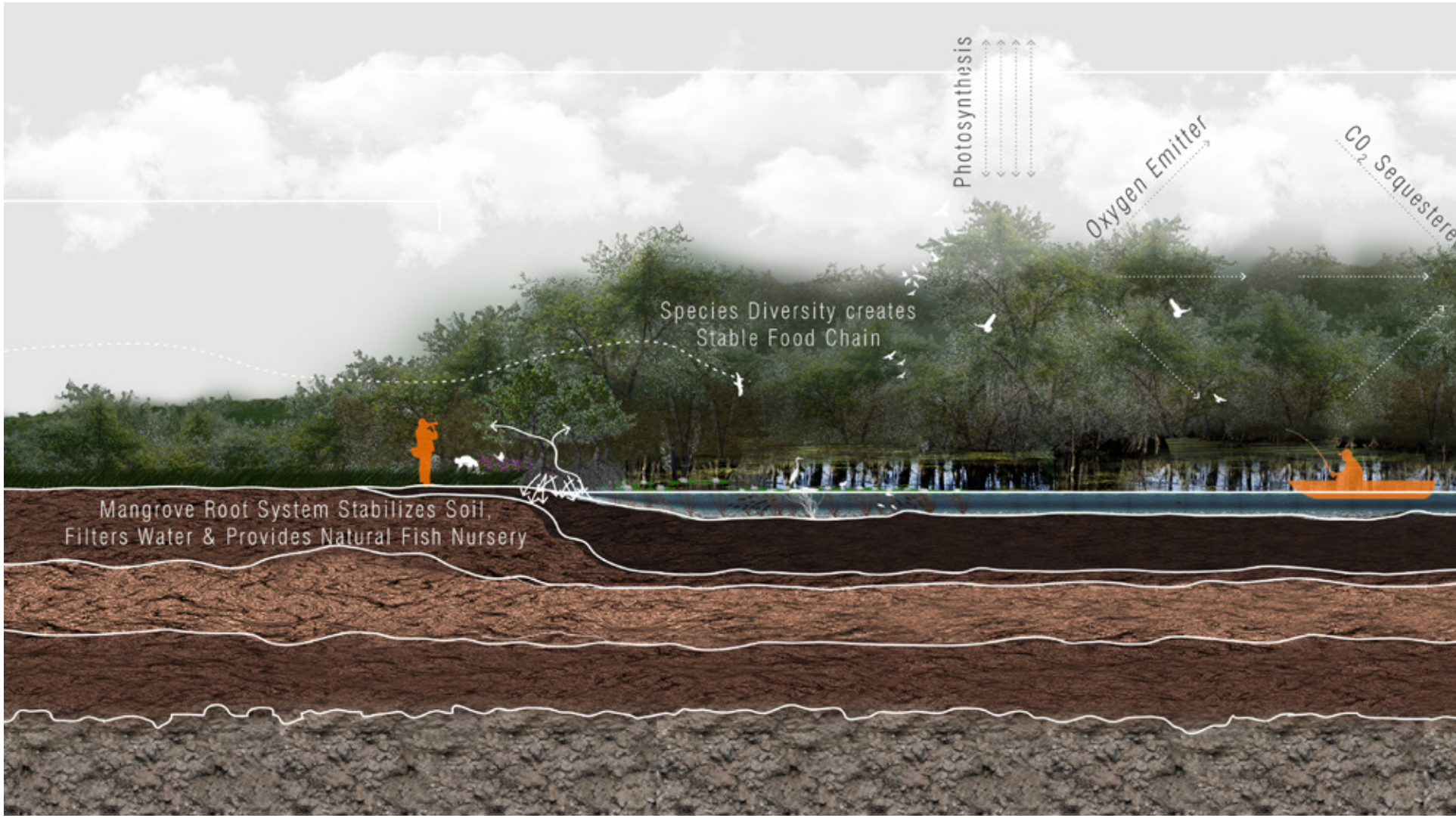

Phase Four
Inhabitation

FIGURE 56

This section illustrates a typical cut through the coastal landscape in 1977 at Site One. The purpose of this image is to make legible all the interactions that are invisible due to size or length of time, and understand the role tourism played in the landscape. In this scenario all three actors co-exist with minimal disruption to one another.


Beach-Dune Ecosystem
Thin strip of Sandy Beach
Dune Breach to the North
Salt Tolerant Vegetation
Public Access
Healthy Natural Beach Replenishment
Marine Wildlife supports Terrestrial Wildlife


Photosynthesis
Oxygen Emitter
CO_2 Sequestere
Species Diversity creates
Stable Food Chain
Mangrove Root System Stabilizes Soil,
Filters Water & Provides Natural Fish Nursery

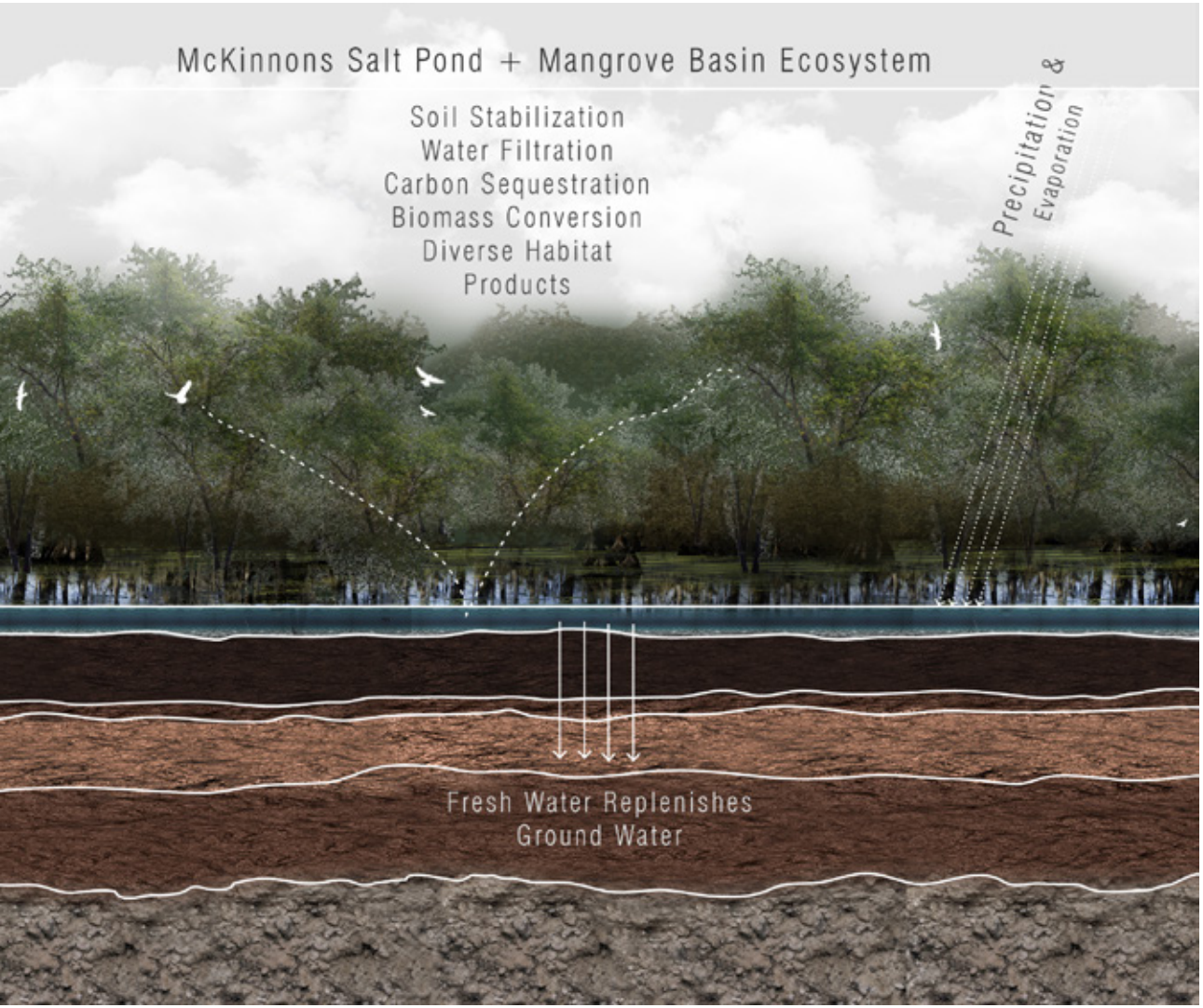
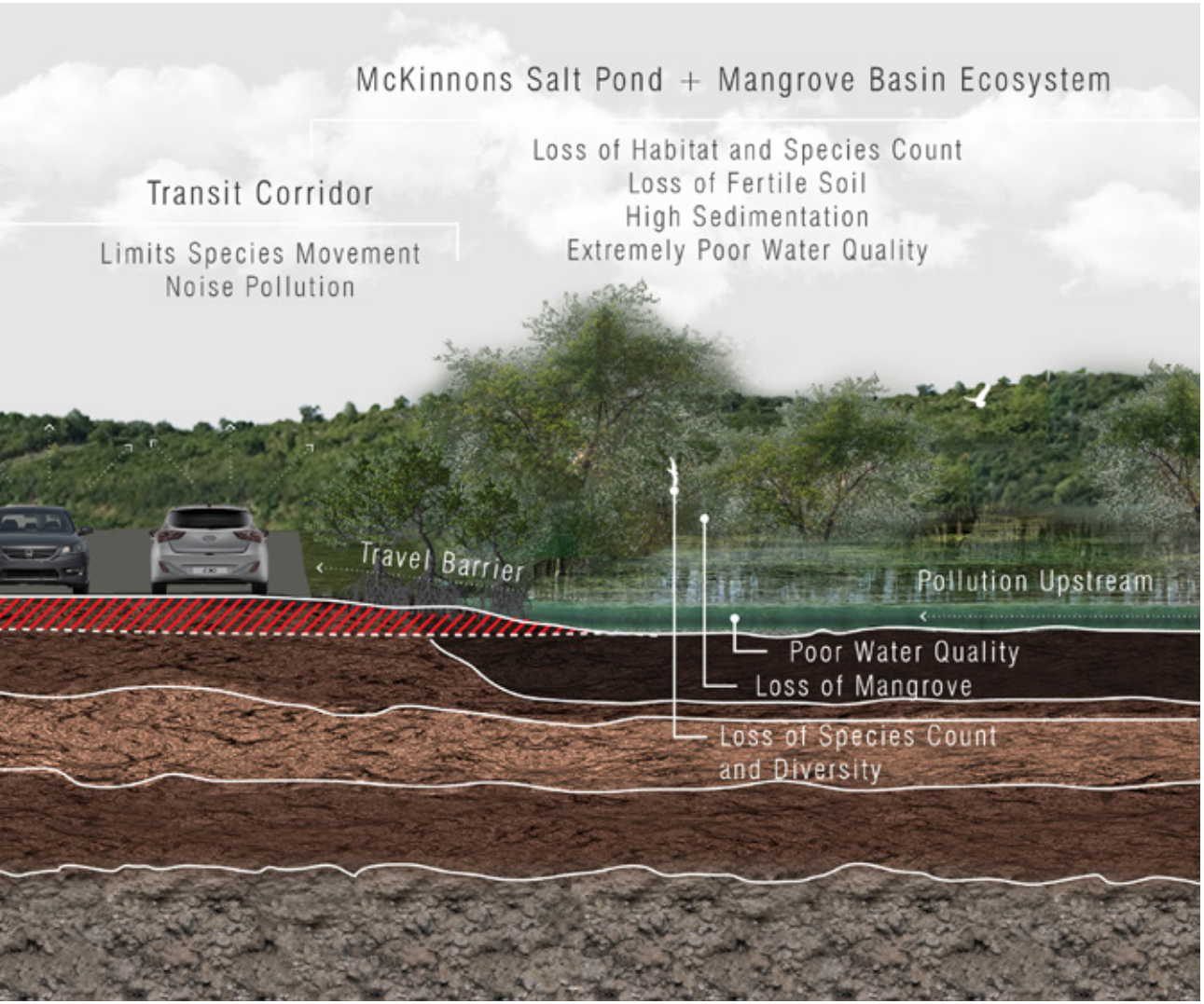

McKinnons Salt Pond + Mangrove Basin Ecosystem
Soil Stabilization
Water Filtration
Carbon Sequestration
Biomass Conversion
Diverse Habitat
Products
Precipitation &
Evaporation
Fresh Water Replenishes
Ground Water

FIGURE 57

This section illustrates a typical cut through the coastal landscape in 2017 at Site One. This image portrays a very different scenario where tourism has become the dominate actor invading the natural and social landscapes of the site. This drawing aims to bring awareness to the influence and scale in which tourism exists.


Eroded Coast Line
Imported Sand
Jetty - Beach Erosion Control
Wave Break
Resort Owned Beach Furniture


Resort Property
Restricted Beach Access
Gated Property
Removal of Existing Vegetation
Implanted Vegetation
Pollution
Engineered Fill


McKinnons Salt Pond + Mangrove Basin Ecosystem
Loss of Habitat and Species Count
Loss of Fertile Soil
High Sedimentation
Extremely Poor Water Quality
Transit Corridor
Limits Species Movement
Noise Pollution
Travel Barrier
Pollution Upstream
Poor Water Quality
Loss of Mangrove
Loss of Species Count
and Diversity

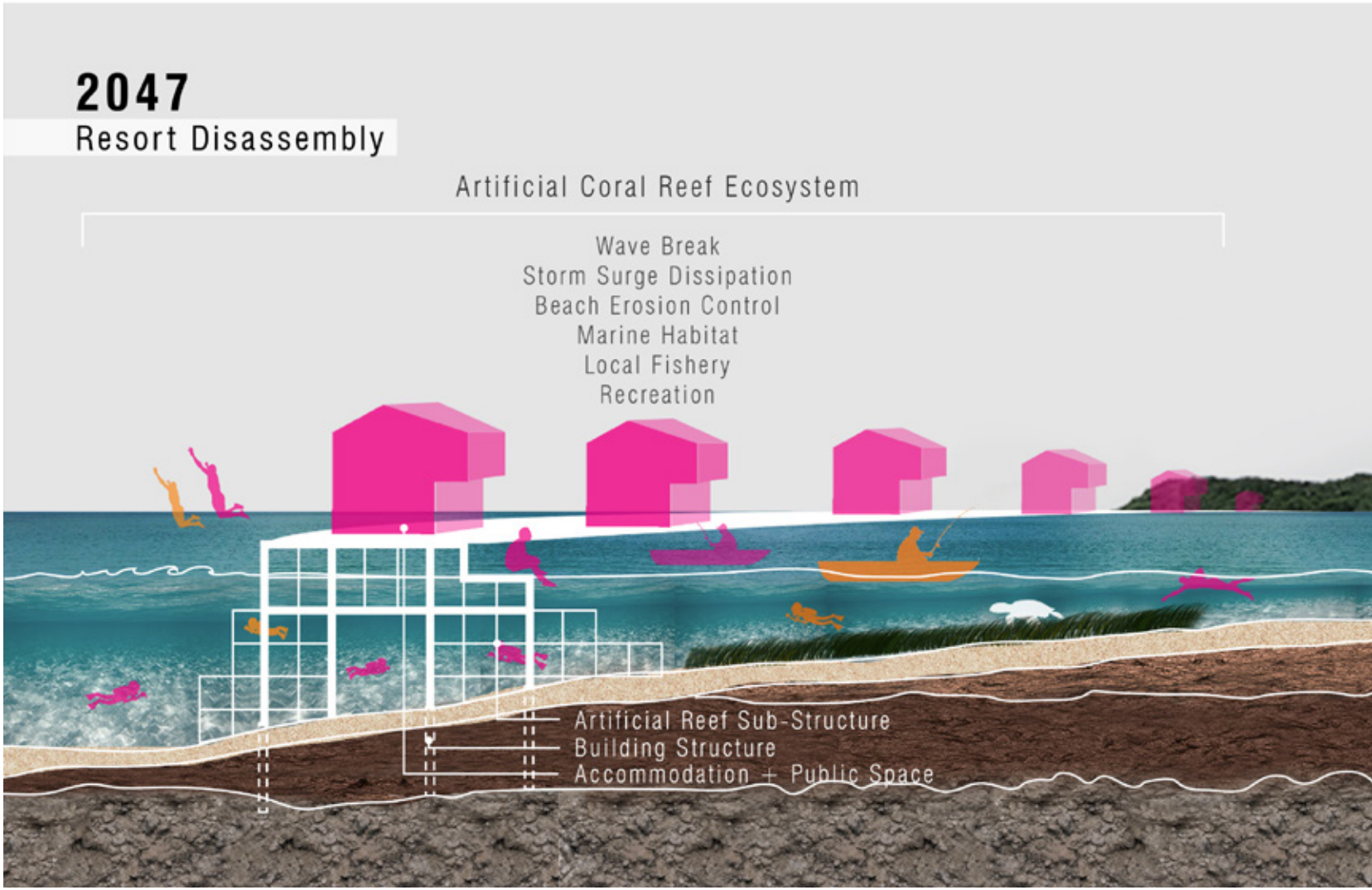
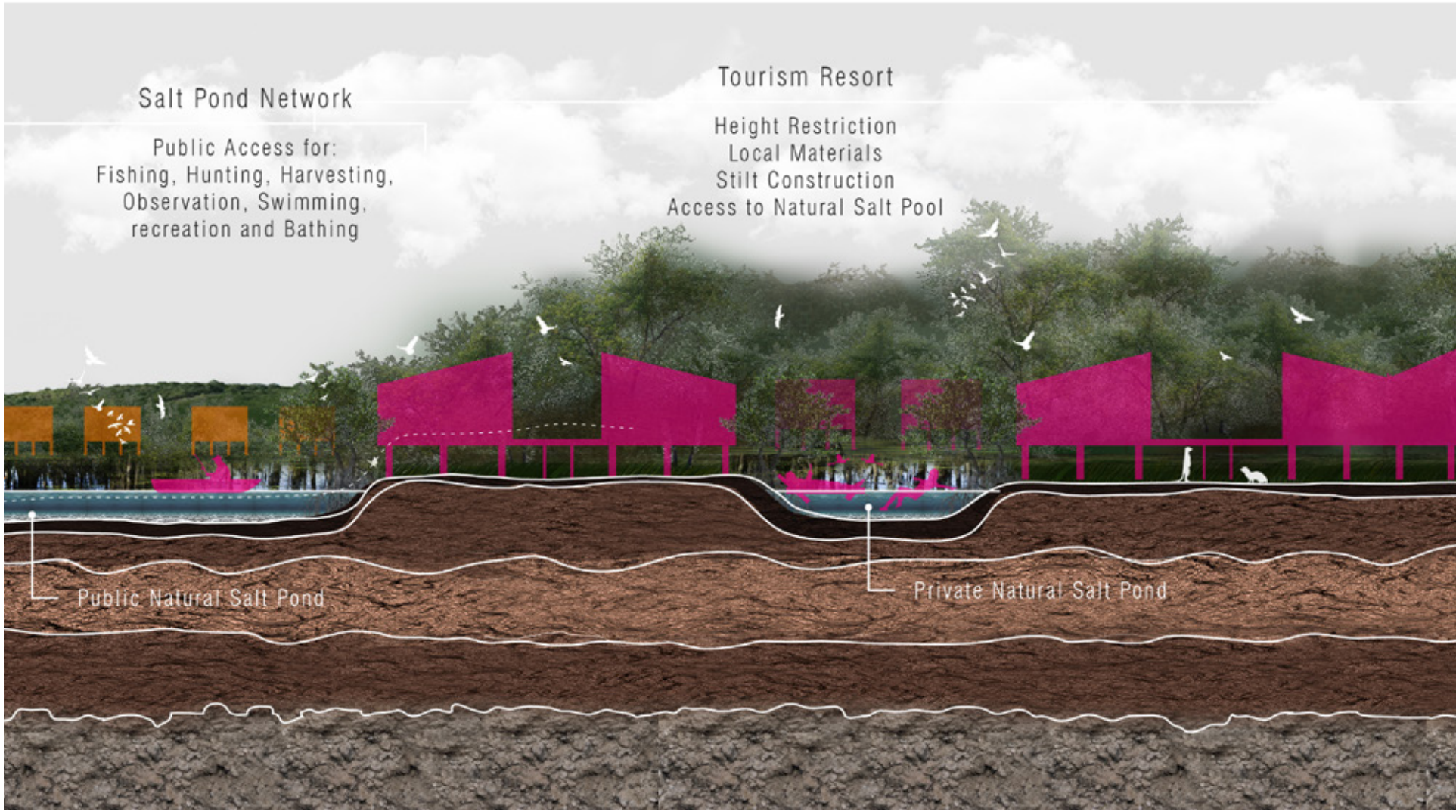
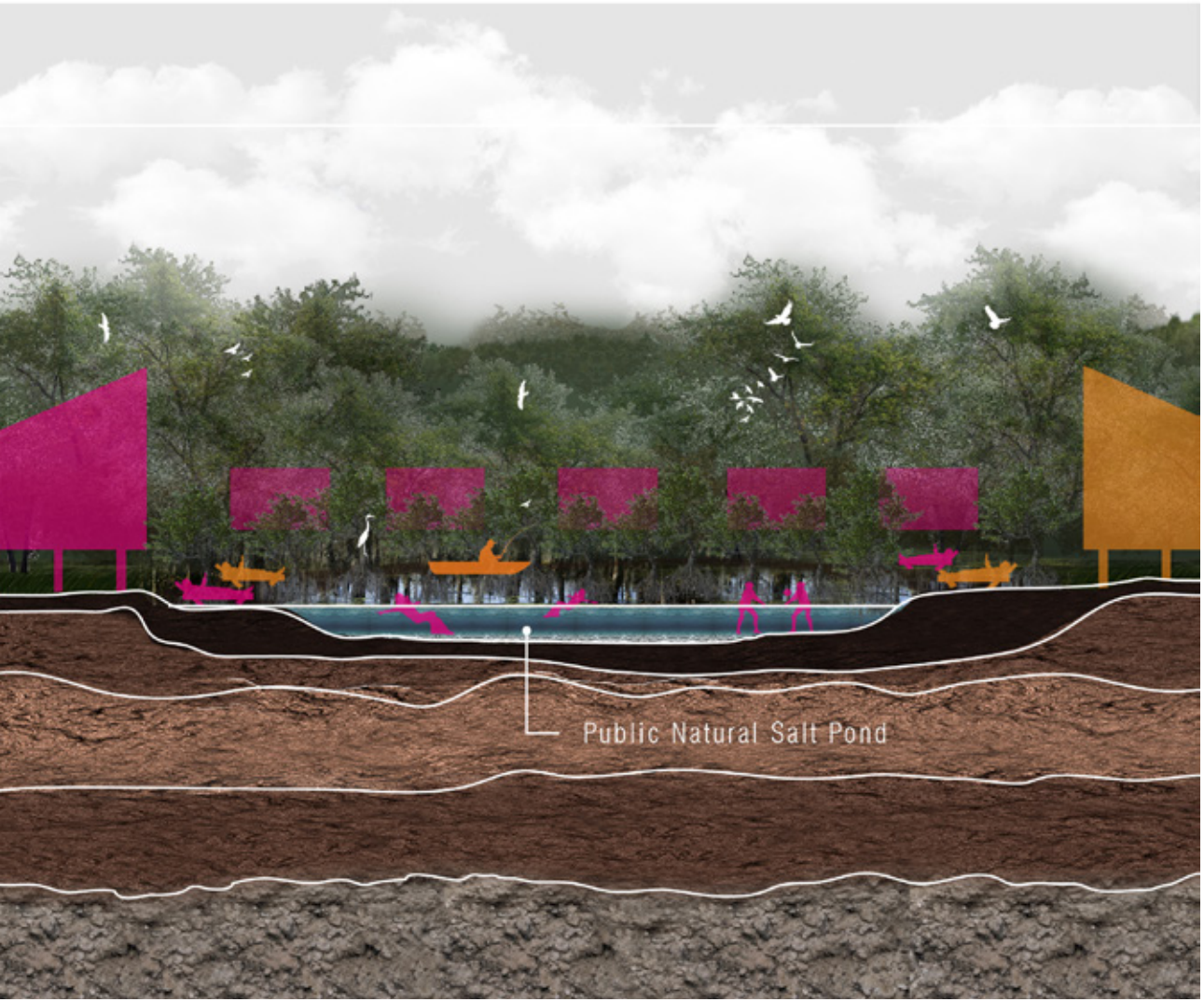


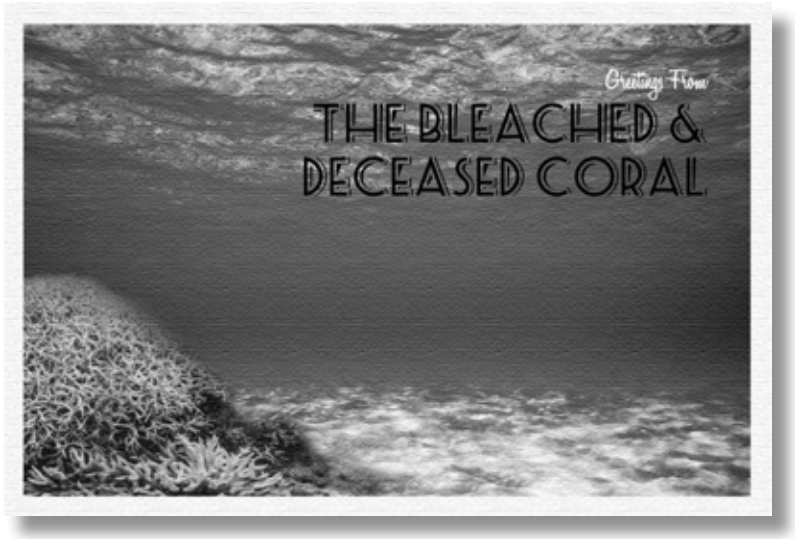
FIGURE 58

This section illustrates a typical cut through the coastal landscape in 2047 at Site One. The purpose of this image is to illustrate a possible scenario where all three actors work together to create change within the landscape. Opposing the first image in 1977 where each actor operated monogamously and the second where one actor dominated, this design proposes a correlated

approach where the failures of tourism become opportunities for the industry to create change. This occurs in the creation of an artificial reef that exists because of and to support a tourism and local educational program. This is also visible in the salt pond which once was so derelict it could not support fish now supports an entire portfolio of tourism and local activities.


Salt Pond Network
Public Access for:
Fishing, Hunting, Harvesting,
Observation, Swimming,
recreation and Bathing
Tourism Resort
Height Restriction
Local Materials
Stilt Construction
Access to Natural Salt Pool
Public Natural Salt Pond
Private Natural Salt Pond


Public Natural Salt Pond



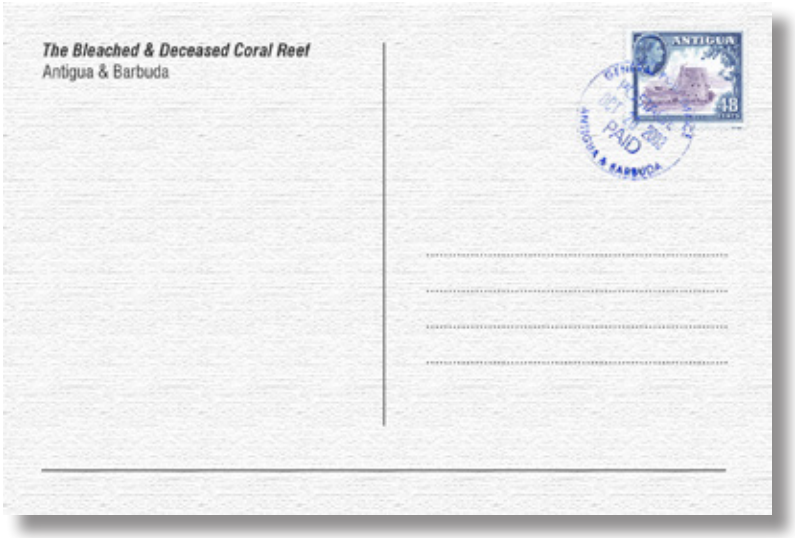


FIGURE 59
This postcard illustrates the poor quality of the coral reefs and the opportunity this void presents.

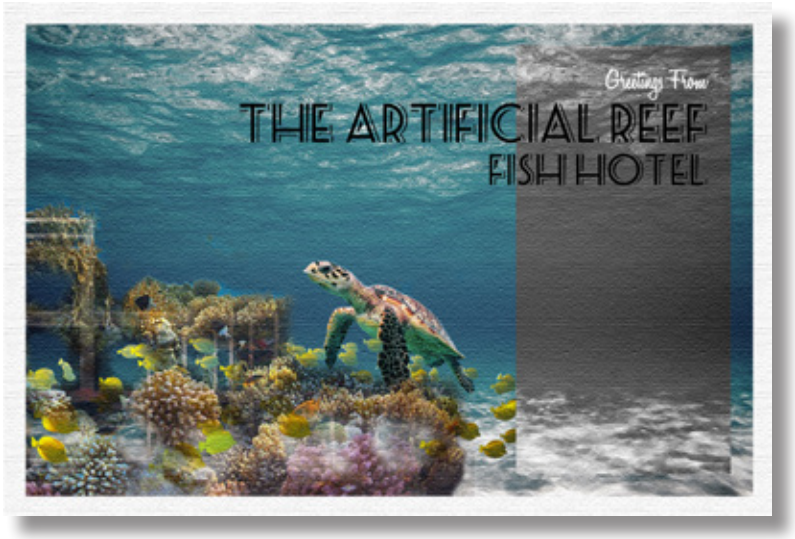


FIGURE 60
In contrast, this image portrays what could occupy this under used opportunity. Here an artificial reef is proposed to provide beach protection and marine habitats.

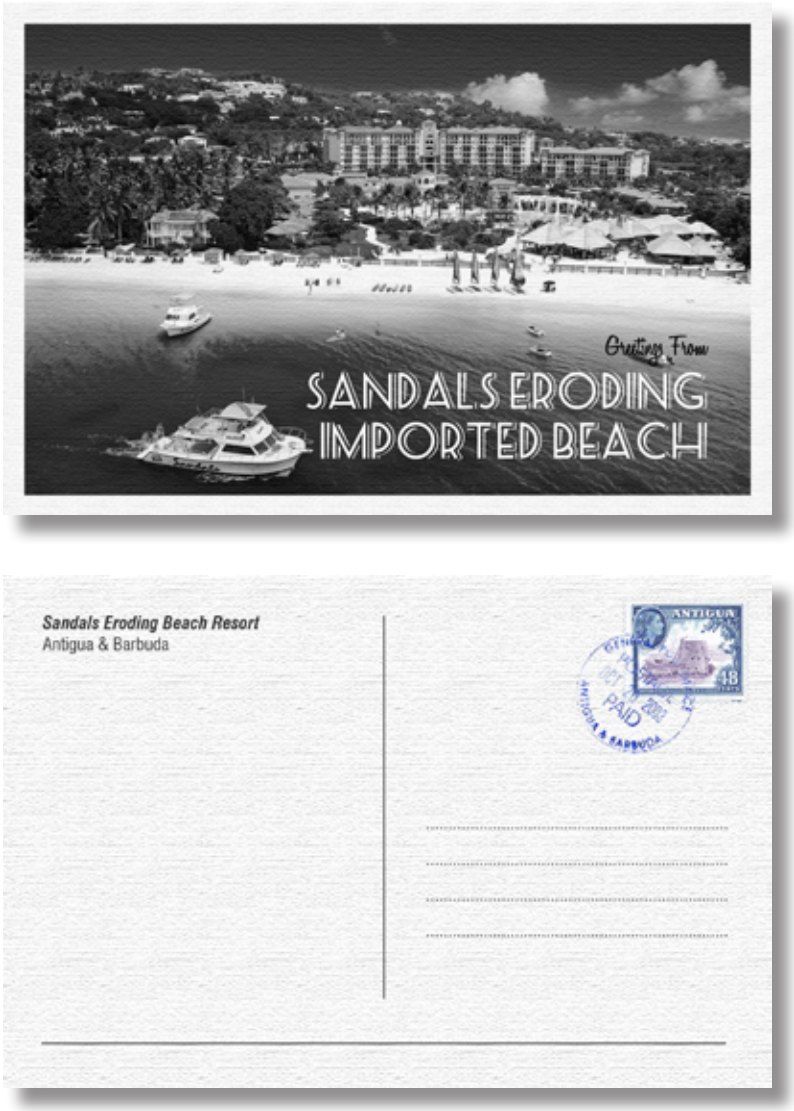


FIGURE 61
This postcard displays the typical monopolopy of the coast by the beach front resort.

FIGURE 62
In contrast, this image removes all development from the beach and relocates it inland and over water relinquishing the beach back to nature.

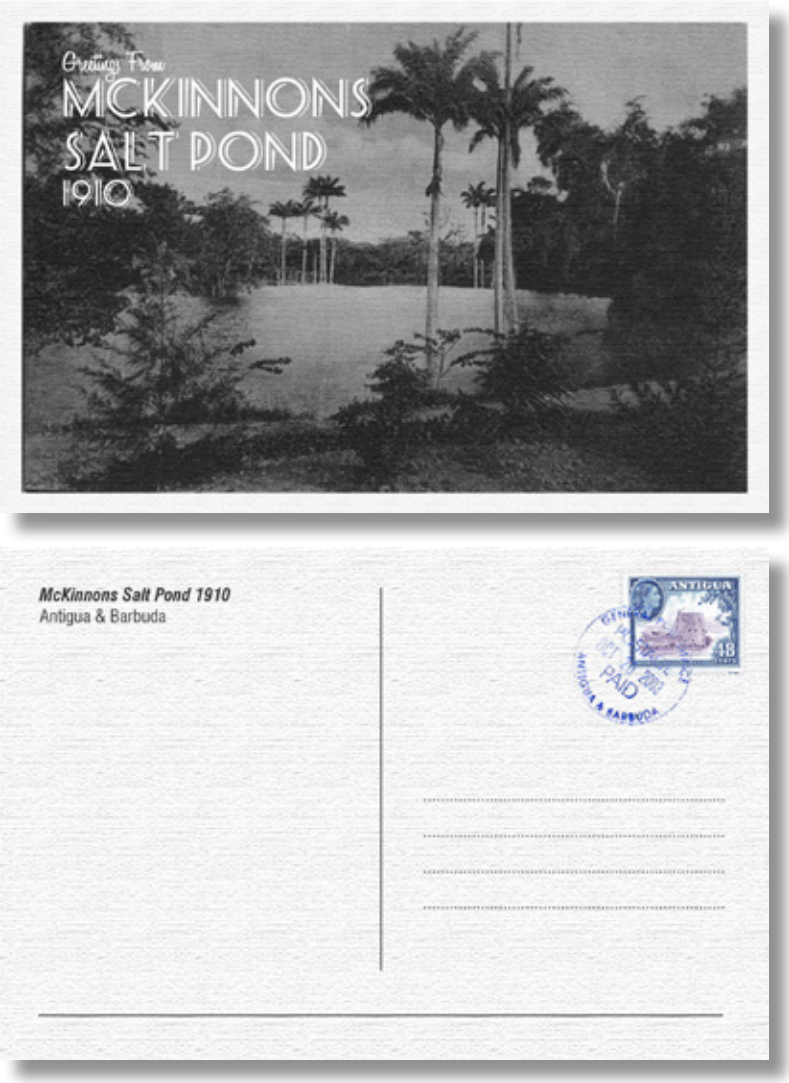


FIGURE 63
This vintage postcard shows the salt pond before tourism interfered.

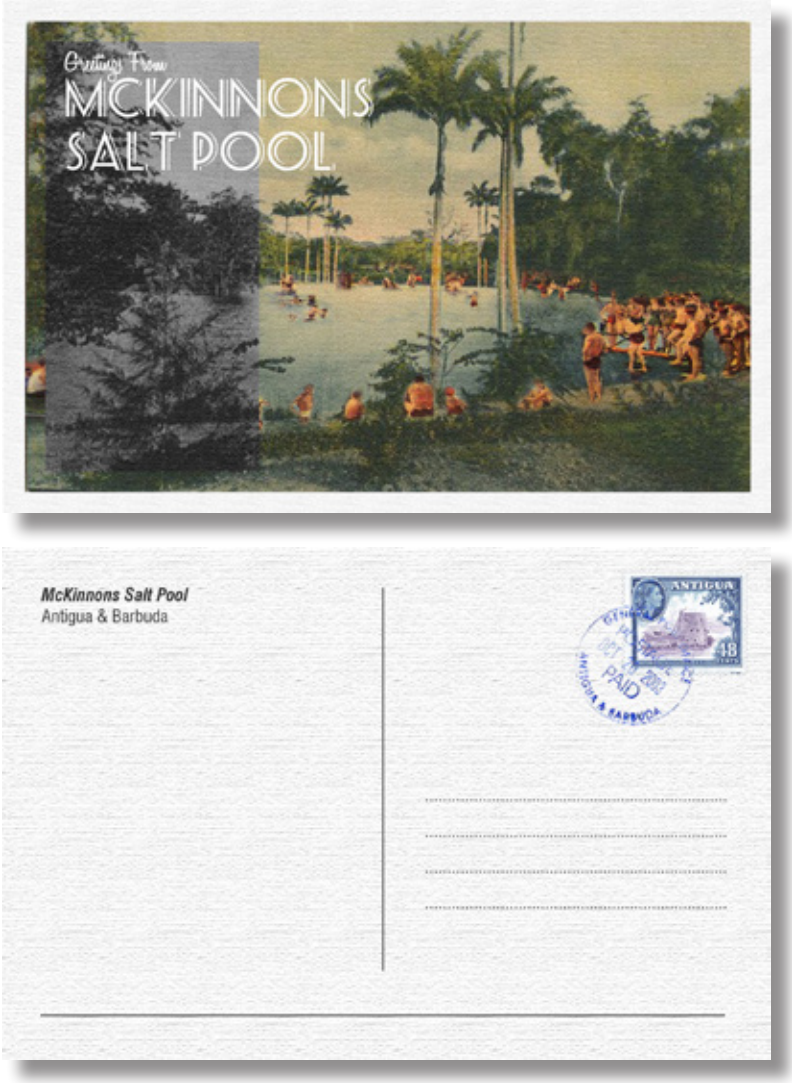


FIGURE 64
In contrast, this image envisions a low impact integration of tourism and ecology. This image is important to show that there can be a possible life for tourism outside of the beach.

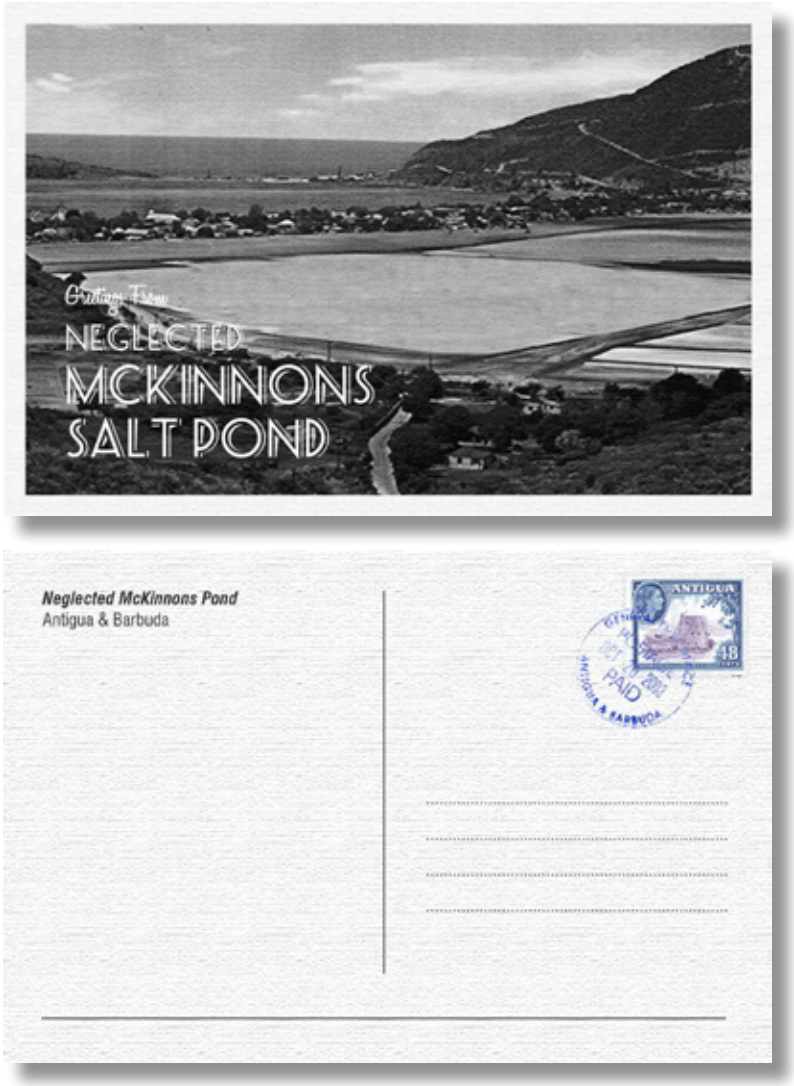


FIGURE 65
This postcard portrays the inward gaze of the coastal landscape and the neglected environment around it.

FIGURE 66
This design re-directs the gaze and brings life to the under-used and misunderstood landscape. Re-branding the pond as an ecological hub would re-establish it's position as vital resource.

Hiking the Landfill

Site Two: Deep Bay

Proposal

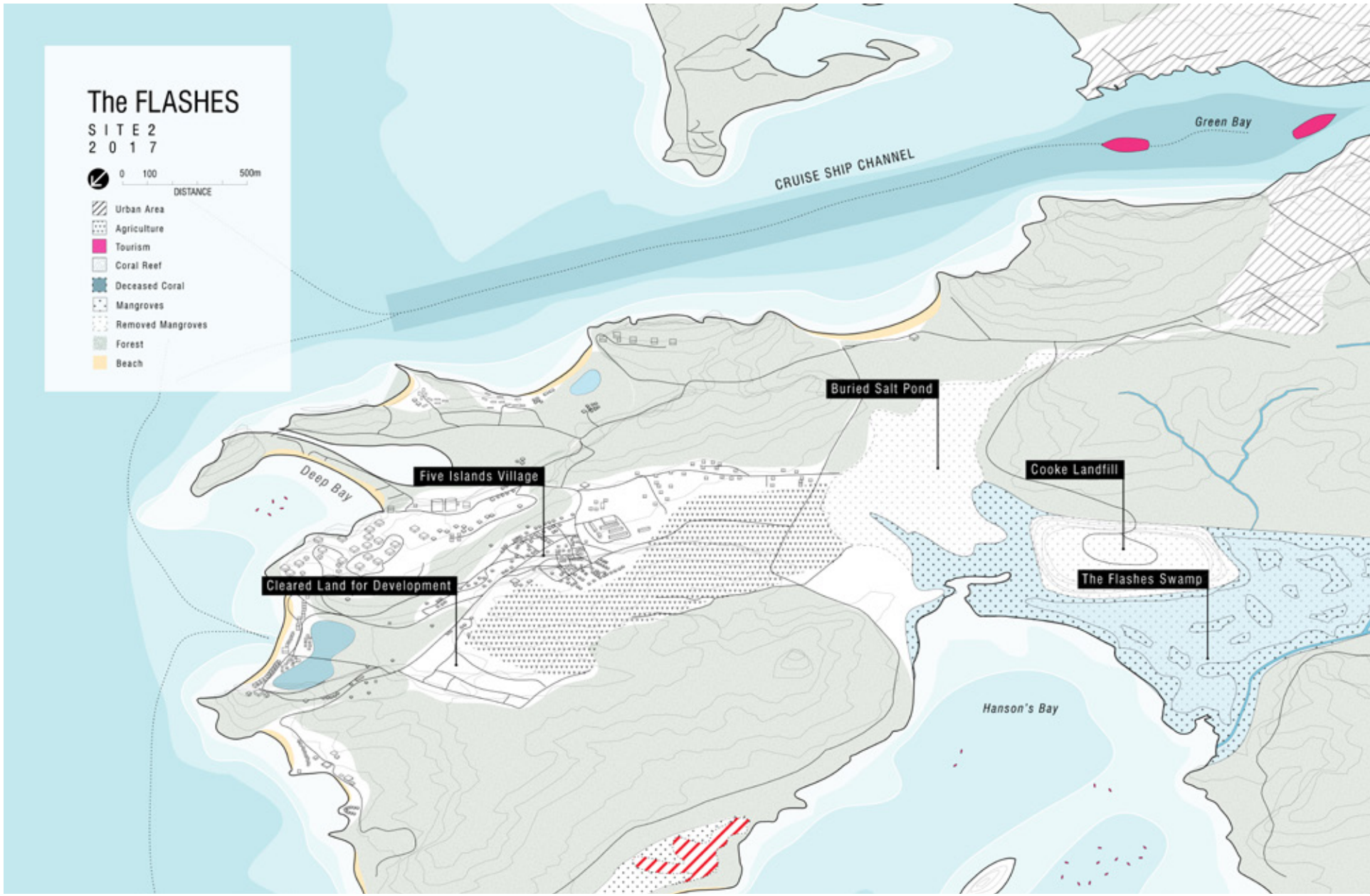
Hiking the Landfill endeavours to combine two generated wastes of Cruise Ship Tourism - dredged fill and solid waste - to reconstruct The Flashes salt marsh landscape which was buried by these excesses.

Context

The Flashes, a salt marsh ecosystem, has been directly manipulated by cruise ship tourism without even being inhabited by a single tourist. The Flashes have and continue to absorb the waste generated by cruise ship tourism. What was once the largest salt marsh on the island is now a depository of dredge fill and solid waste. Green Bay, located adjacent to the country's capital St. John, was dredged in the late 1980's in order to accommodate cruise ship access[4]. The spoils form the dredge project were deposited in a few areas but most significantly in the area around Hanson's Bay called the Flashes, the island's largest salt marsh, and 1.45km^2 of salt ponds and productive wetland[5]. In 1987 a report titled, "Environmental Impact of Depositing Dredge Spoils in an Area Northeast of Hanson's Bay, St. John's, Antigua" was published. This report outlines the current condition of the Flashes after the last dredge and evaluates its carrying capacity for another deposition. Of note, the landscape is extremely barren with patches of surviving vegetation within the spoils and a new assemblage of species attracted by the landfill[6]. From this activity has also brought upon another impact through the generation of use, waste. As mentioned above, the MARPOL Convention restricted disposal of waste at sea, therefore Antigua and Barbuda had to accommodate the solid waste coming from the four newly built slips. This unfortunately resulted in a landfill created in the North part of the Flashes. This has led to the loss and degradation of an extensive area of mangrove habitat and pollution of Hanson's Bay[7]. Hiding the messiness of tourism has created an unbalanced awareness of the tourist footprint.

FIGURE 67
This photograph illustrates the effects of depositing dredged material on the Flashes salt marsh. It is very evident where the spoils are and how limited vegetation is surviving within.

FIGURE 68
The Cruise Ship Harbour at Green Bay is an international port able to support 4 ships at a time. At a capacity of approx. 3,000 passengers each, this type of tourism makes a dramatic impact on tourist arrivals exceeding the local population.


The FLASHES
SITE 2
2017
0 100 500m
DISTANCE
Urban Area
Agriculture
Tourism
Coral Reef
Deceased Coral
Mangroves
Removed Mangroves
Forest
Beach
CRUISE SHIP CHANNEL
Green Bay
Buried Salt Pond
Deep Bay
Five Islands Village
Cooke Landfill
Cleared Land for Development
The Flashes Swamp
Hanson's Bay

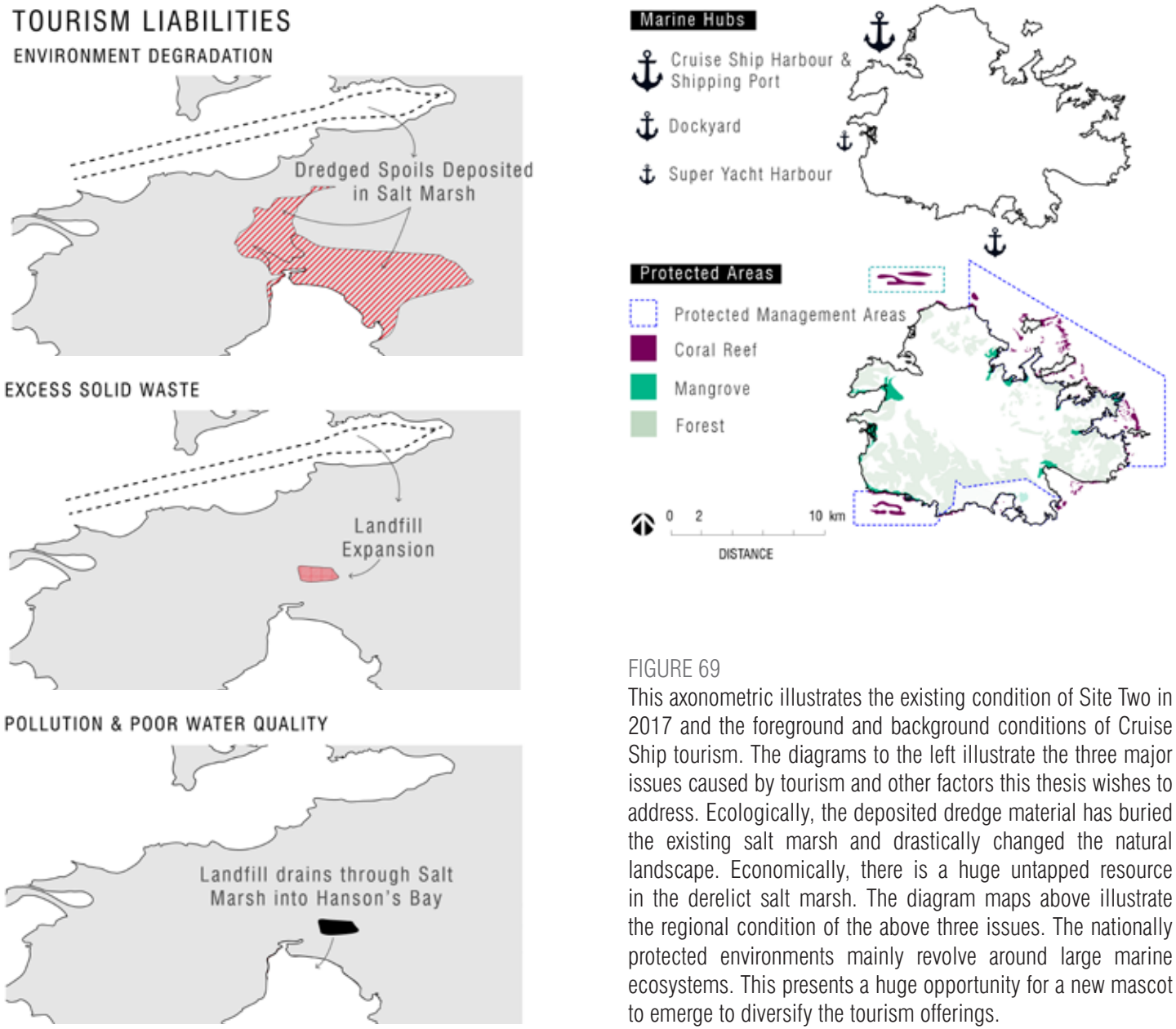
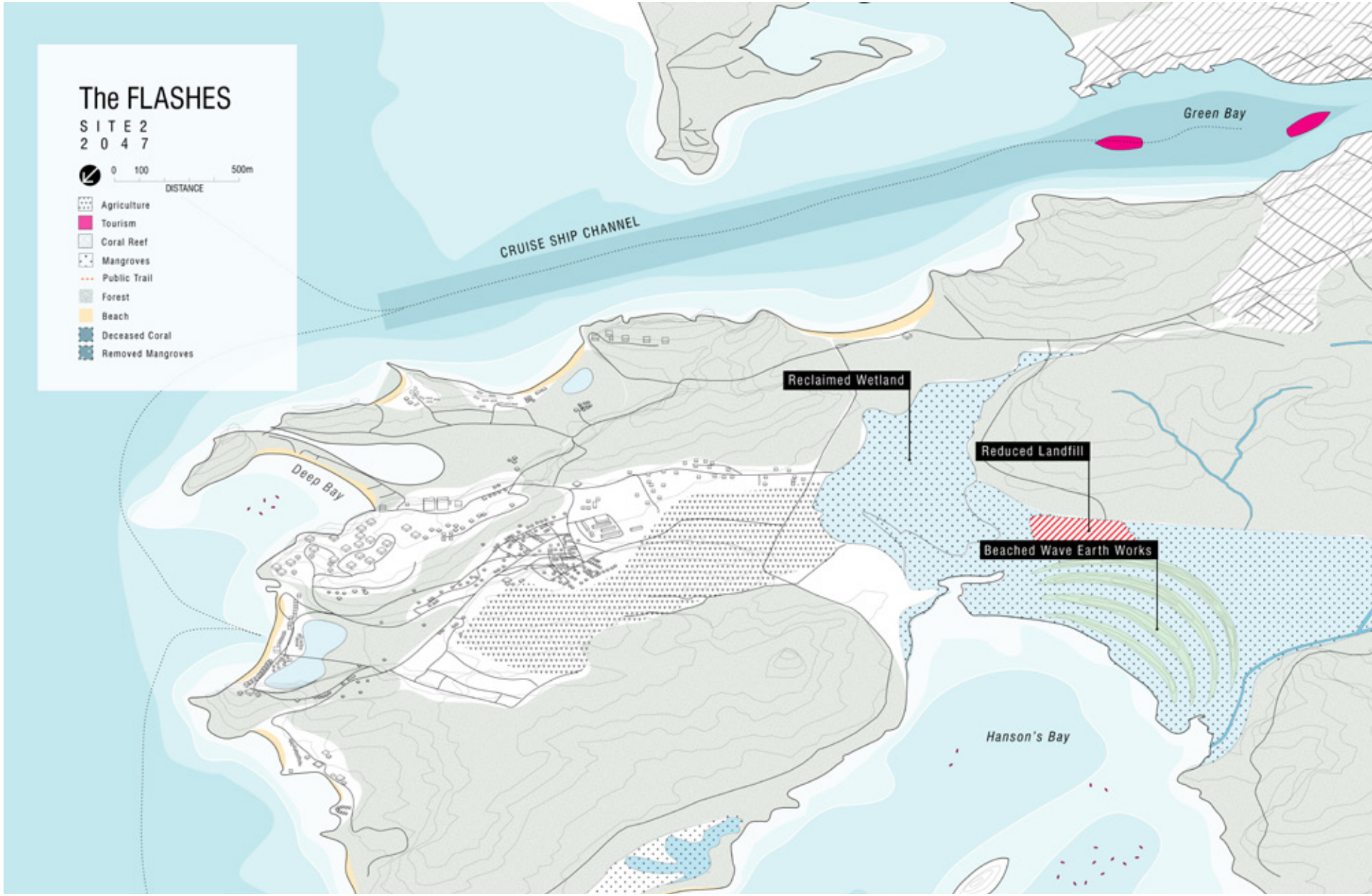
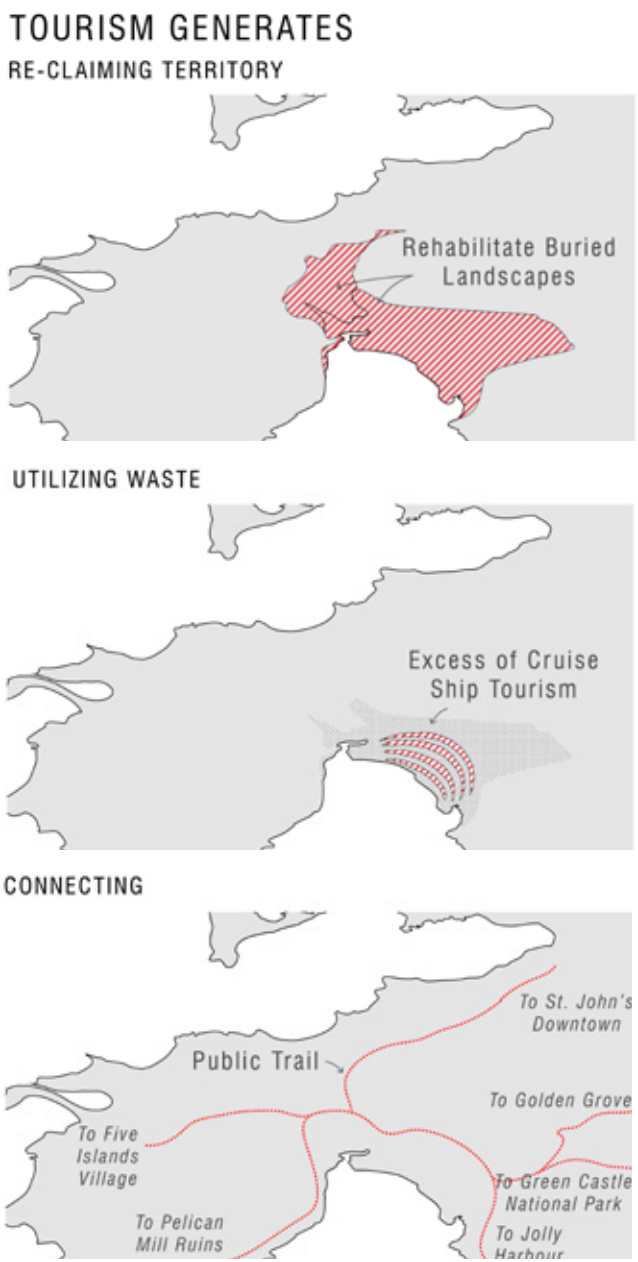


FIGURE 69

This axonometric illustrates the existing condition of Site Two in 2017 and the foreground and background conditions of Cruise Ship tourism. The diagrams to the left illustrate the three major issues caused by tourism and other factors this thesis wishes to address. Ecologically, the deposited dredge material has buried the existing salt marsh and drastically changed the natural landscape. Economically, there is a huge untapped resource in the derelict salt marsh. The diagram maps above illustrate the regional condition of the above three issues. The nationally protected environments mainly revolve around large marine ecosystems. This presents a huge opportunity for a new mascot to emerge to diversify the tourism offerings.


The FLASHES
SITE 2
2047
0
100
500m
DISTANCE
Agriculture
Tourism
Coral Reef
Mangroves
Public Trail
Forest
Beach
Deceased Coral
Removed Mangroves
CRUISE SHIP CHANNEL
Green Bay
Reclaimed Wetland
Reduced Landfill
Beached Wave Earth Works
Deep Bay
Hanson's Bay



New Image of Tourism

Opposing the hidden reality of cruise ship tourism waste, this design explores the opportunities for the local communities and the Flashes ecosystem to benefit from the waste. By using these surplus materials to re-invent the buried landscape, there becomes a feedback between responsible tourism, ecological re-habilitation, and new economic activity. The new images of tourism reflect a greater awareness for tourists of their impacts, and greater agency for new local economies whose profits are created by use and cycled back into the ecosystem and community.

FIGURE 70
The new axonometric drawing illustrates the design proposal 30 years from today in 2047 and the diagrams highlight how the previous liabilities have transformed. Ecologically, rehabilitation is driven by tourism to operate within a currently undeveloped area of the coast. Socially, the design brings awareness to the consequences of tourism and provides the framework for tourist driven change, something that rarely is motivated. Economically, what once was a neglected swamp land is now a profit generating hub which utilizes a previous hindrance as an opportunity.

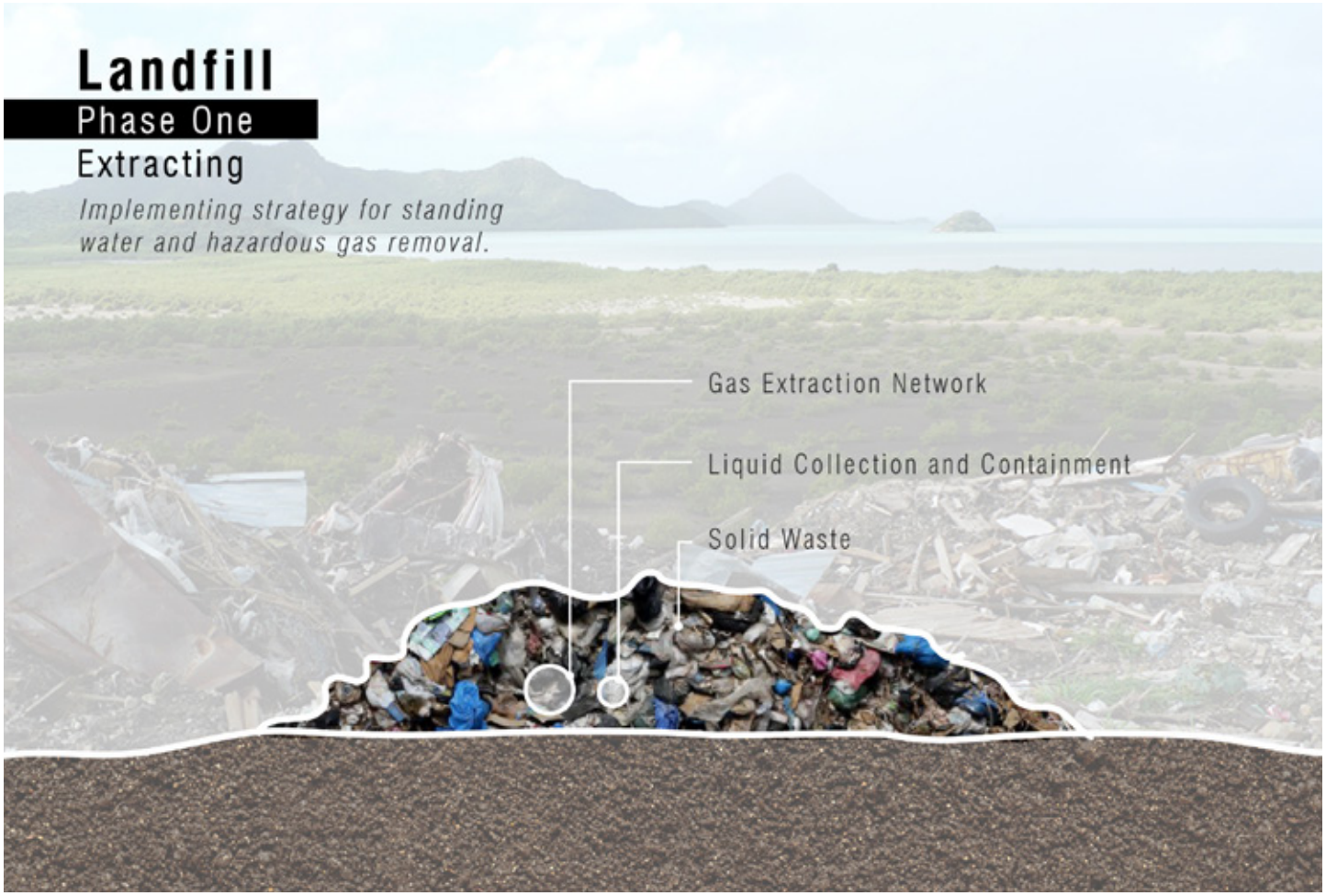
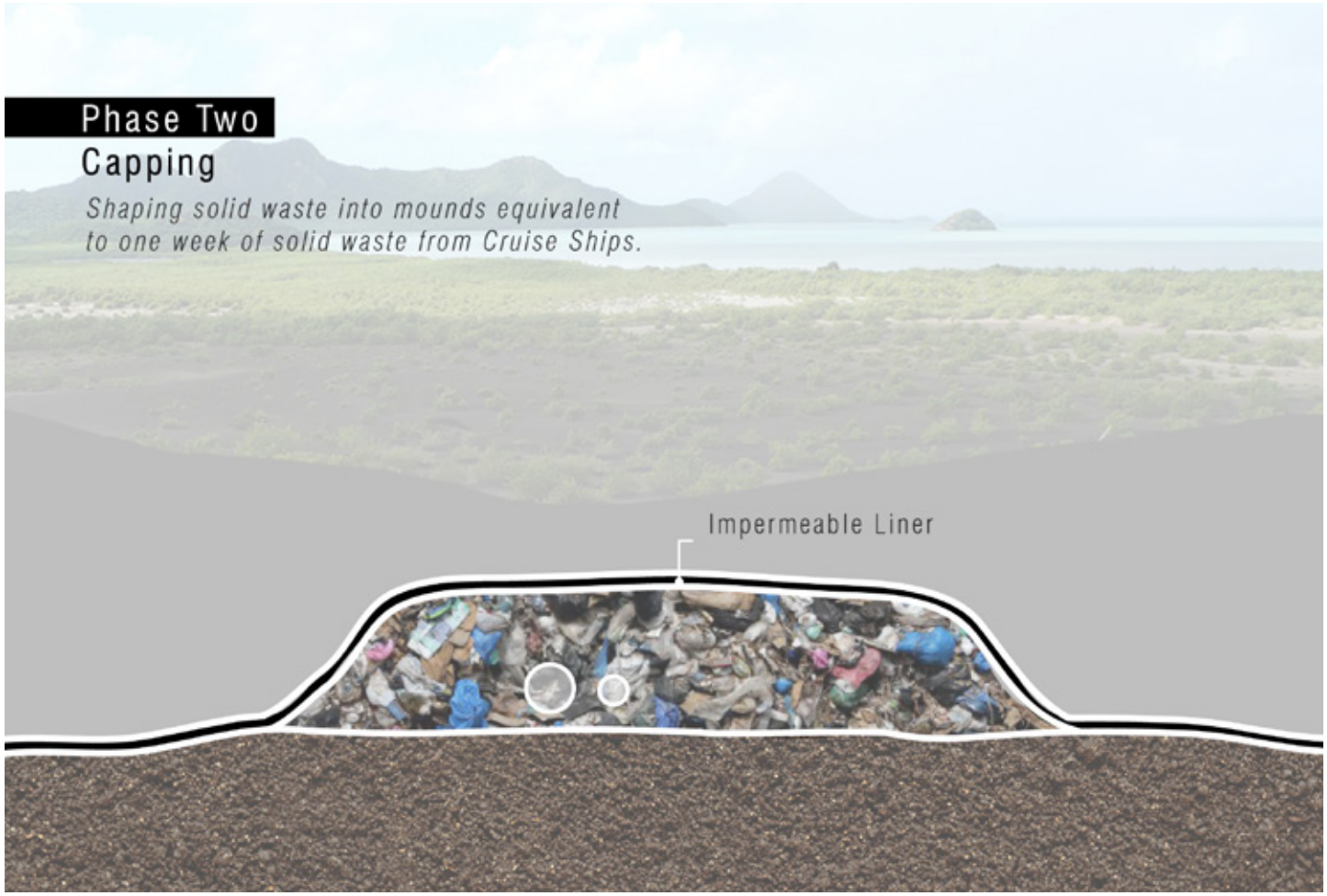
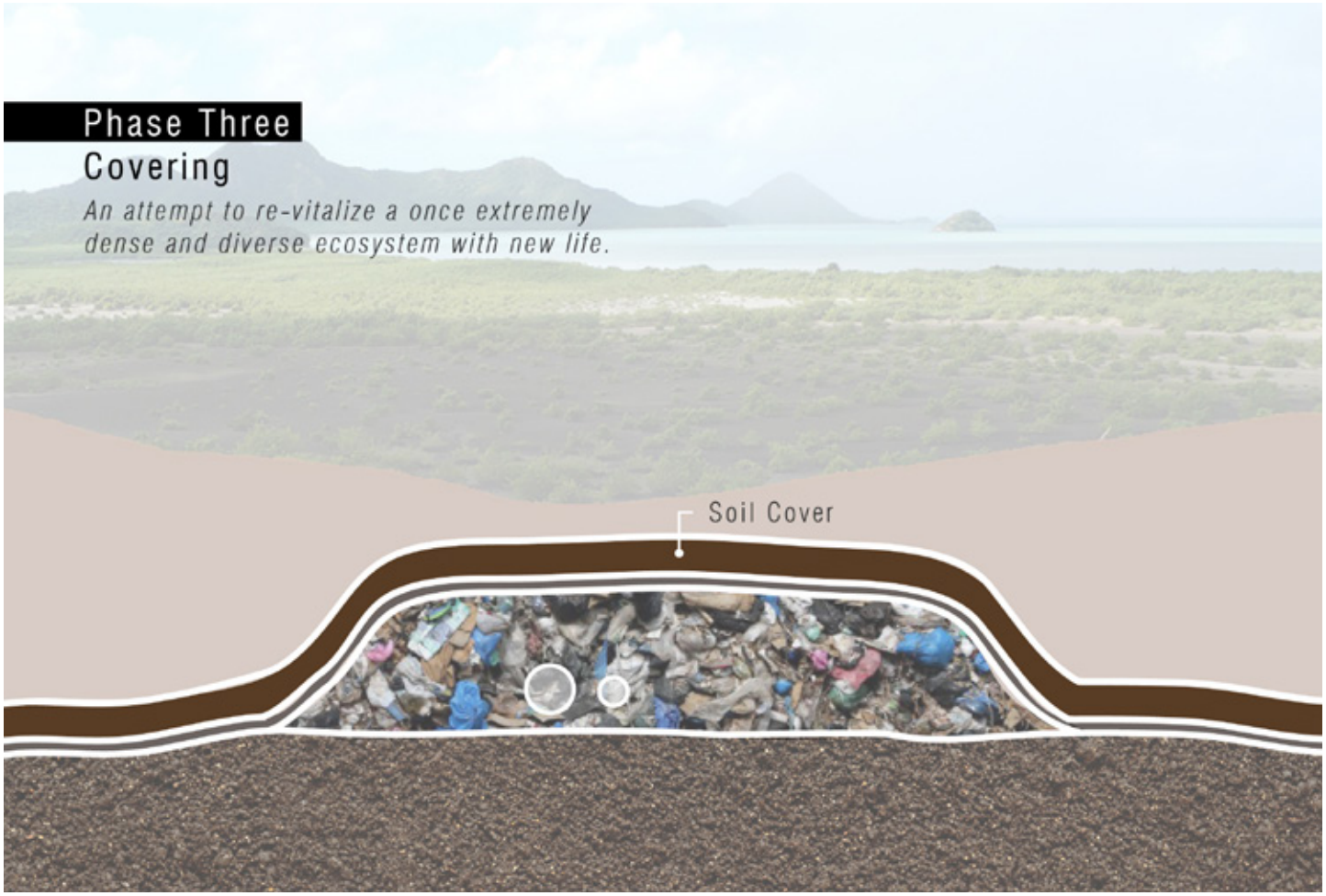
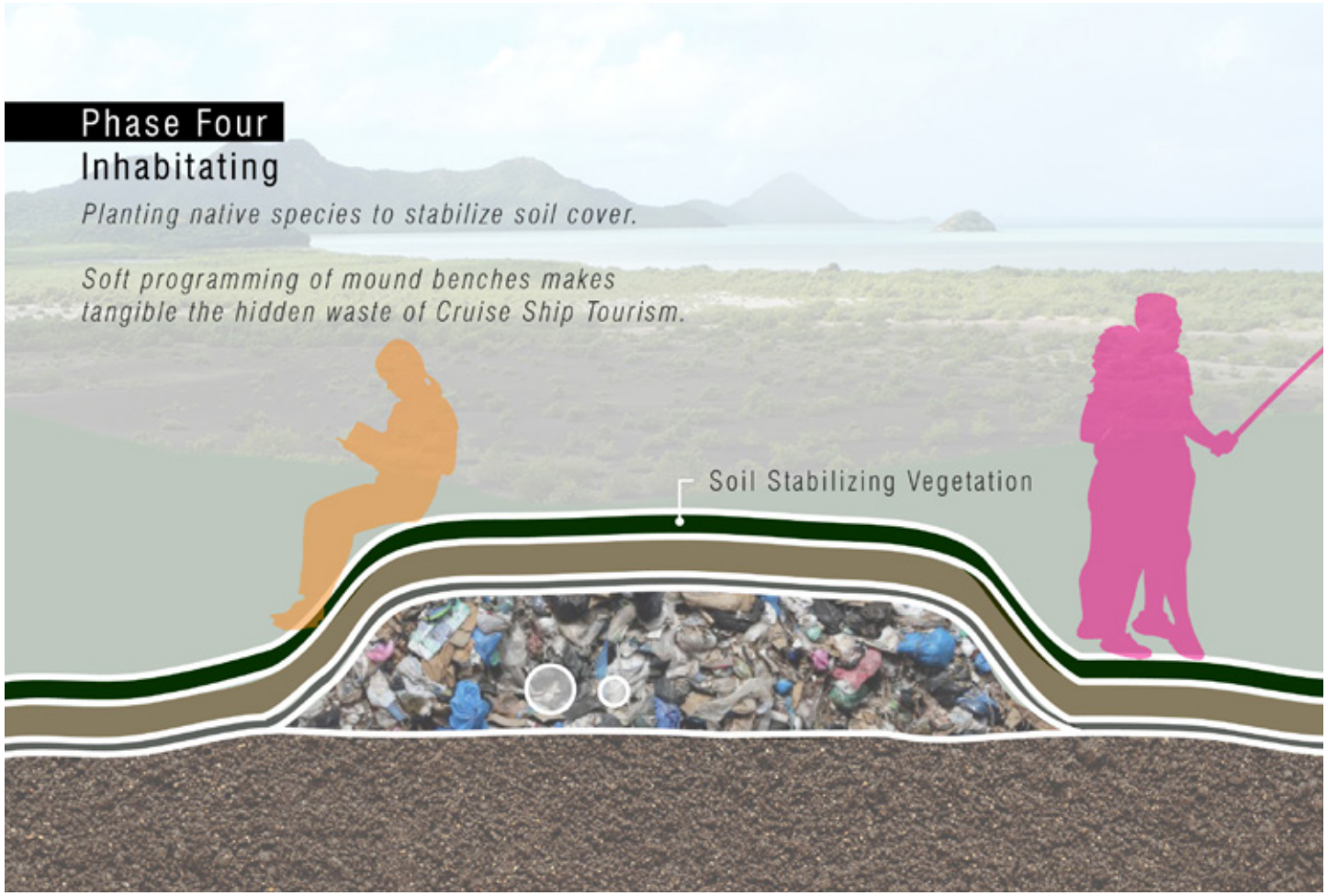


FIGURE 71

This series of drawings details out the phasing capping the solid waste base of the earth work. The scope of this includes 52 mounds, like the one seen above, to represent one week of waste, plus the four wave shaped hills. The earth work is used here to regenerate the solid waste and dredged fill that is created by cruise ship tourism. First, the waste is molded, lined, and in-filled to prevent the release of harmful gasses and to initially stabilize the work. The purpose of this earth work is to bring awareness of the tourist footprint, rehabilitate a wasted resource, and generate a new niche volunteer tourism portfolio.


Phase Two
Capping
Shaping solid waste into mounds equivalent
to one week of solid waste from Cruise Ships.
Impermeable Liner


Phase Three
Covering
An attempt to re-vitalize a once extremely dense and diverse ecosystem with new life.
Soil Cover


Phase Four
Inhabitating
Planting native species to stabilize soil cover.
Soft programming of mound benches makes
tangible the hidden waste of Cruise Ship Tourism.
Soil Stabilizing Vegetation

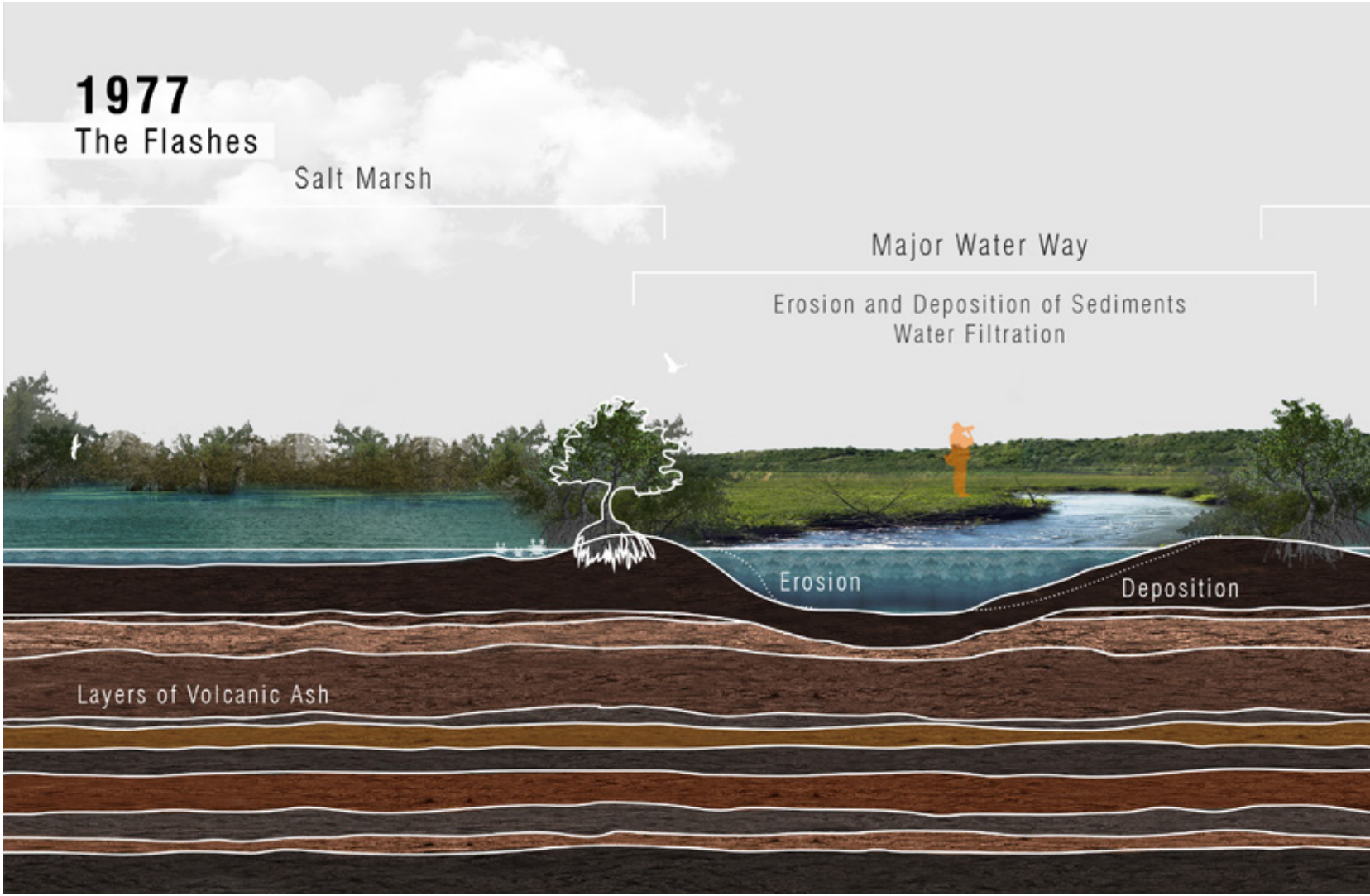
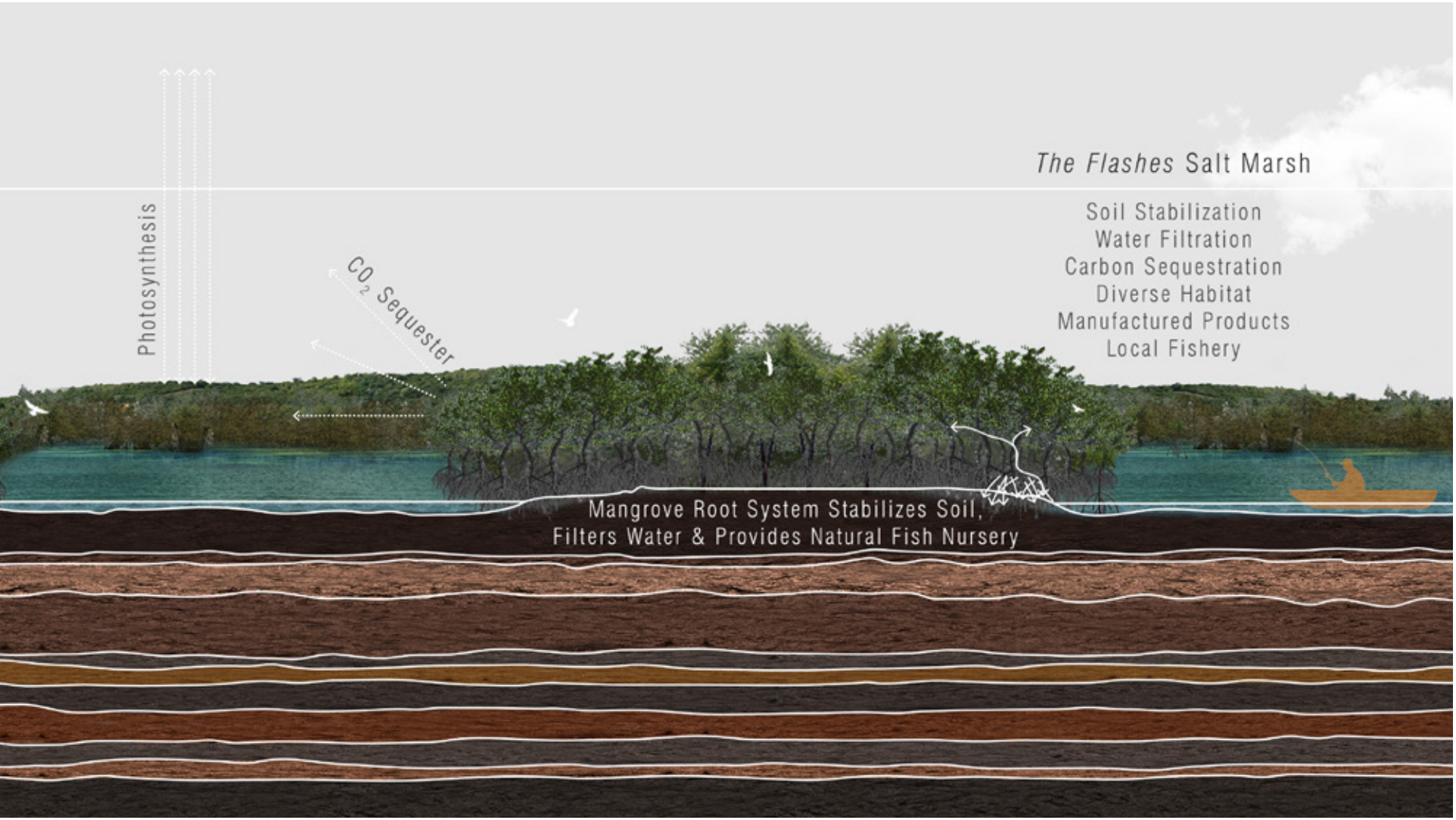
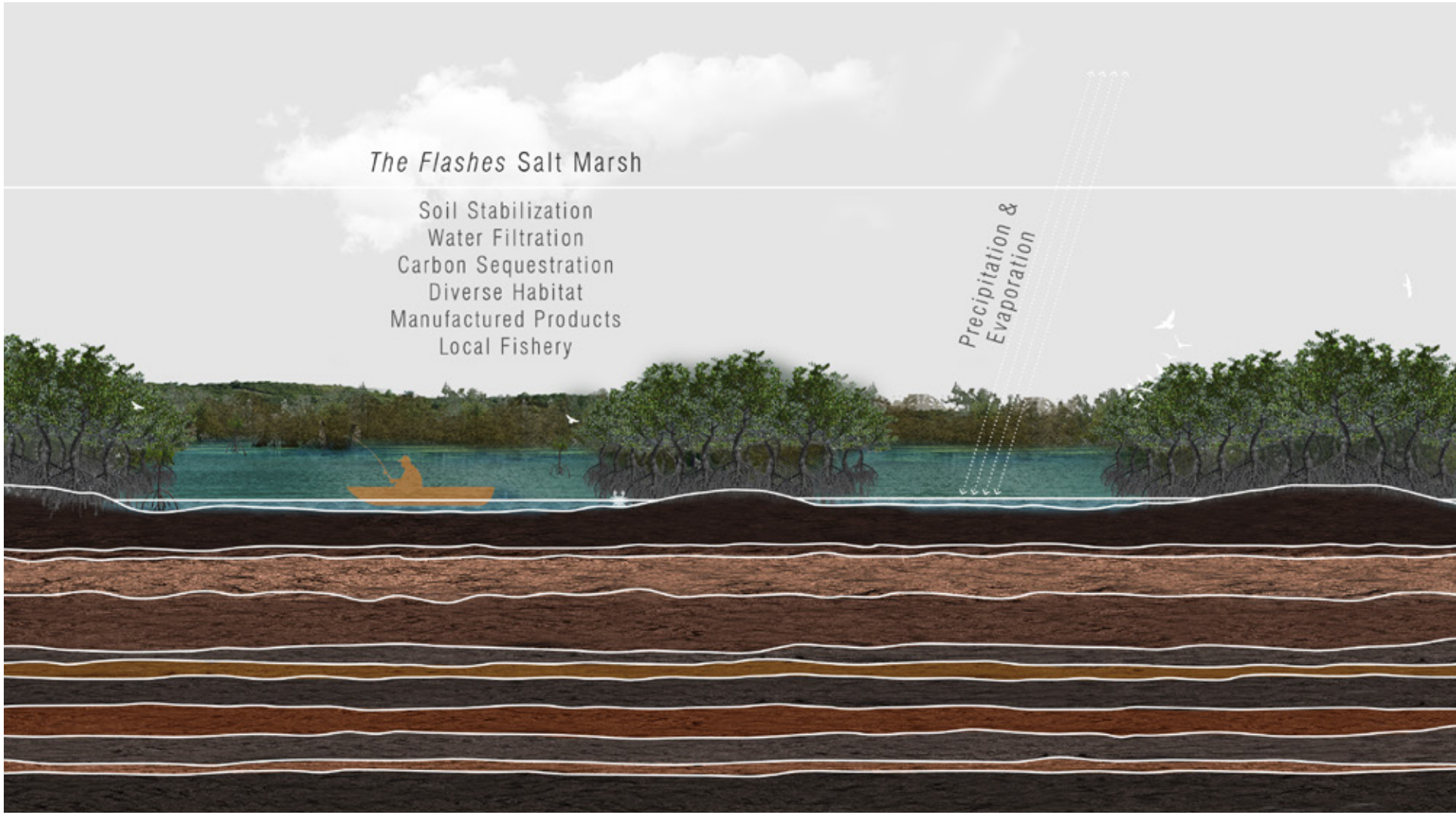
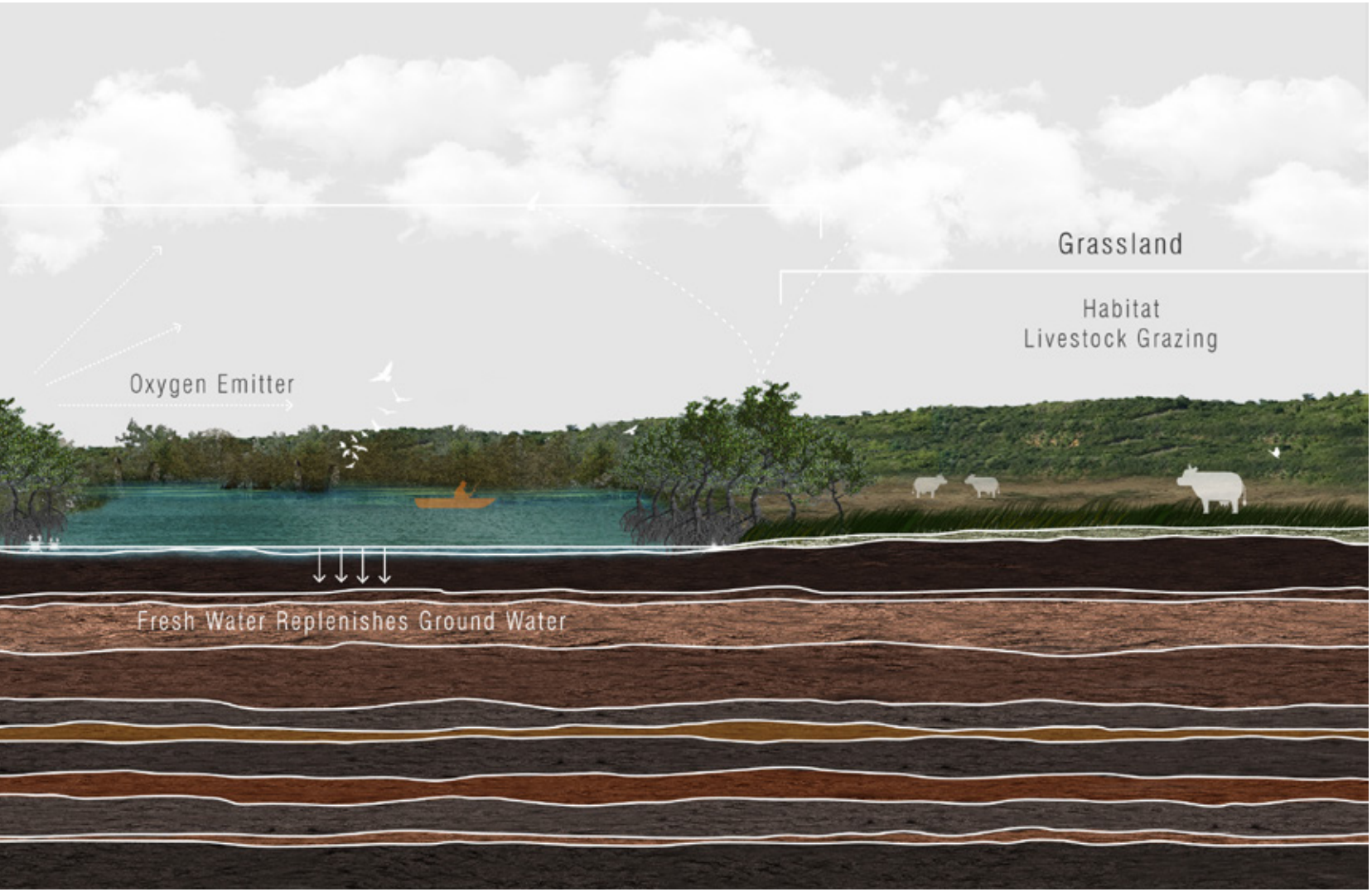


FIGURE 72
This section illustrates a typical cut through the coastal landscape in 1977 at Site Two. The purpose of this image is to make legible all the interactions that are invisible due to size or length of time, and understand the role tourism played in the landscape. In this scenario all three actors co-existed with minimal disruption to one another with tourism a minimal if not non-existent inhabitant.


The Flashes Salt Marsh
Soil Stabilization
Water Filtration
Carbon Sequestration
Diverse Habitat
Manufactured Products
Local Fishery
Photosynthesis
CO_2 Sequester
Mangrove Root System Stabilizes Soil,
Filters Water & Provides Natural Fish Nursery


The Flashes Salt Marsh
Soil Stabilization
Water Filtration
Carbon Sequestration
Diverse Habitat
Manufactured Products
Local Fishery
Precipitation &
Evaporation


Grassland
Habitat
Livestock Grazing
Oxygen Emitter
Fresh Water Replenishes Ground Water

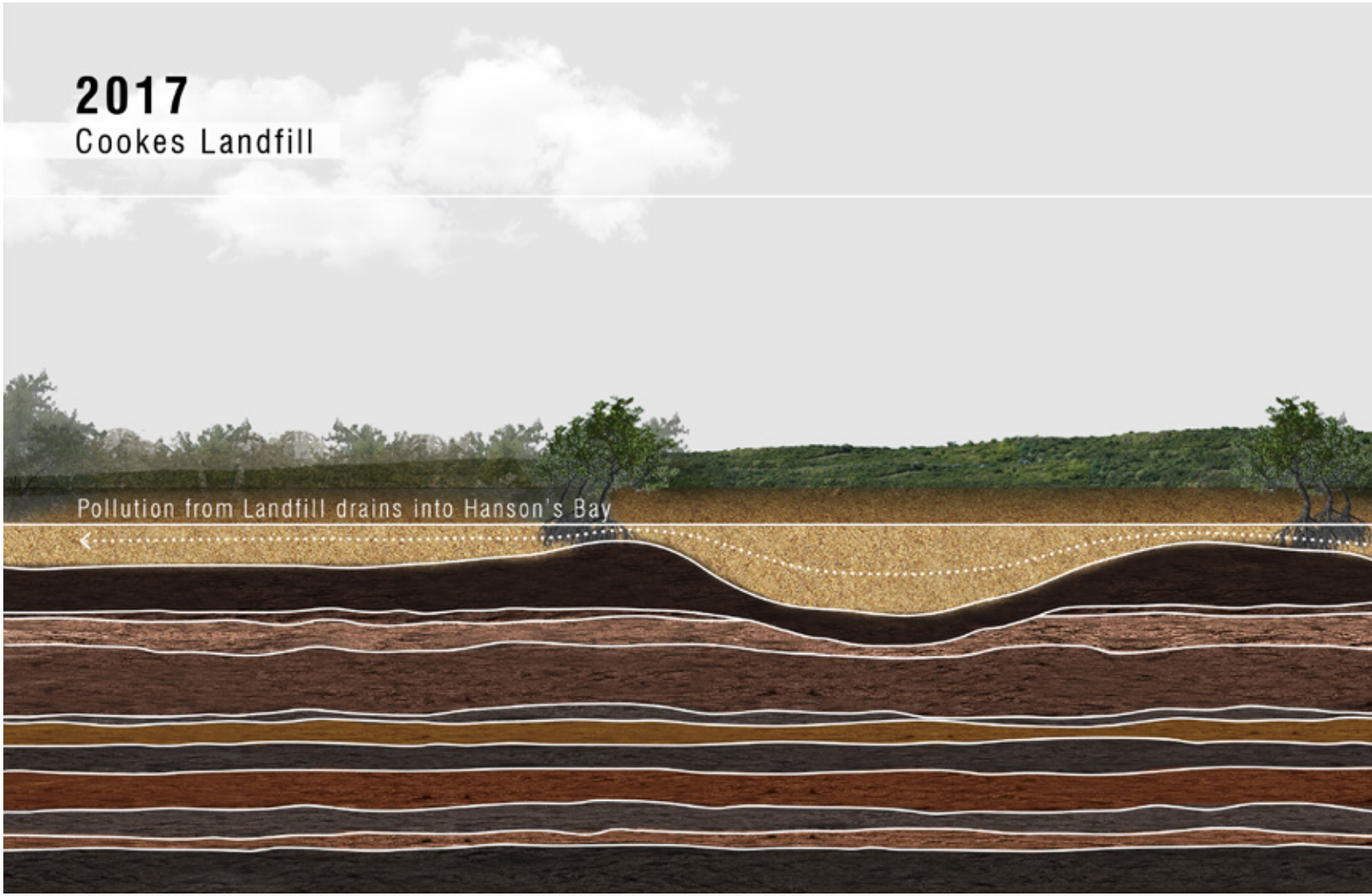
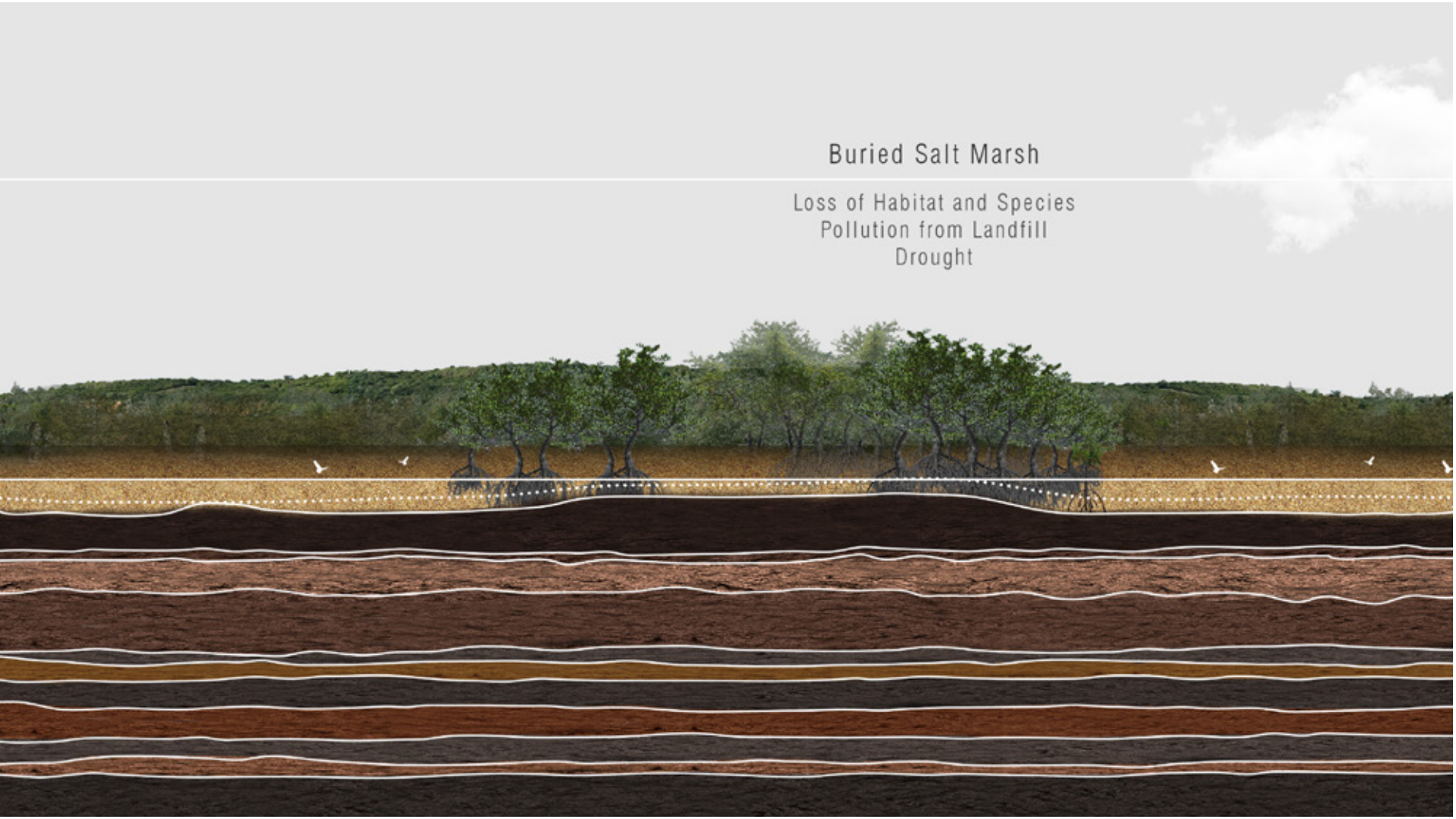
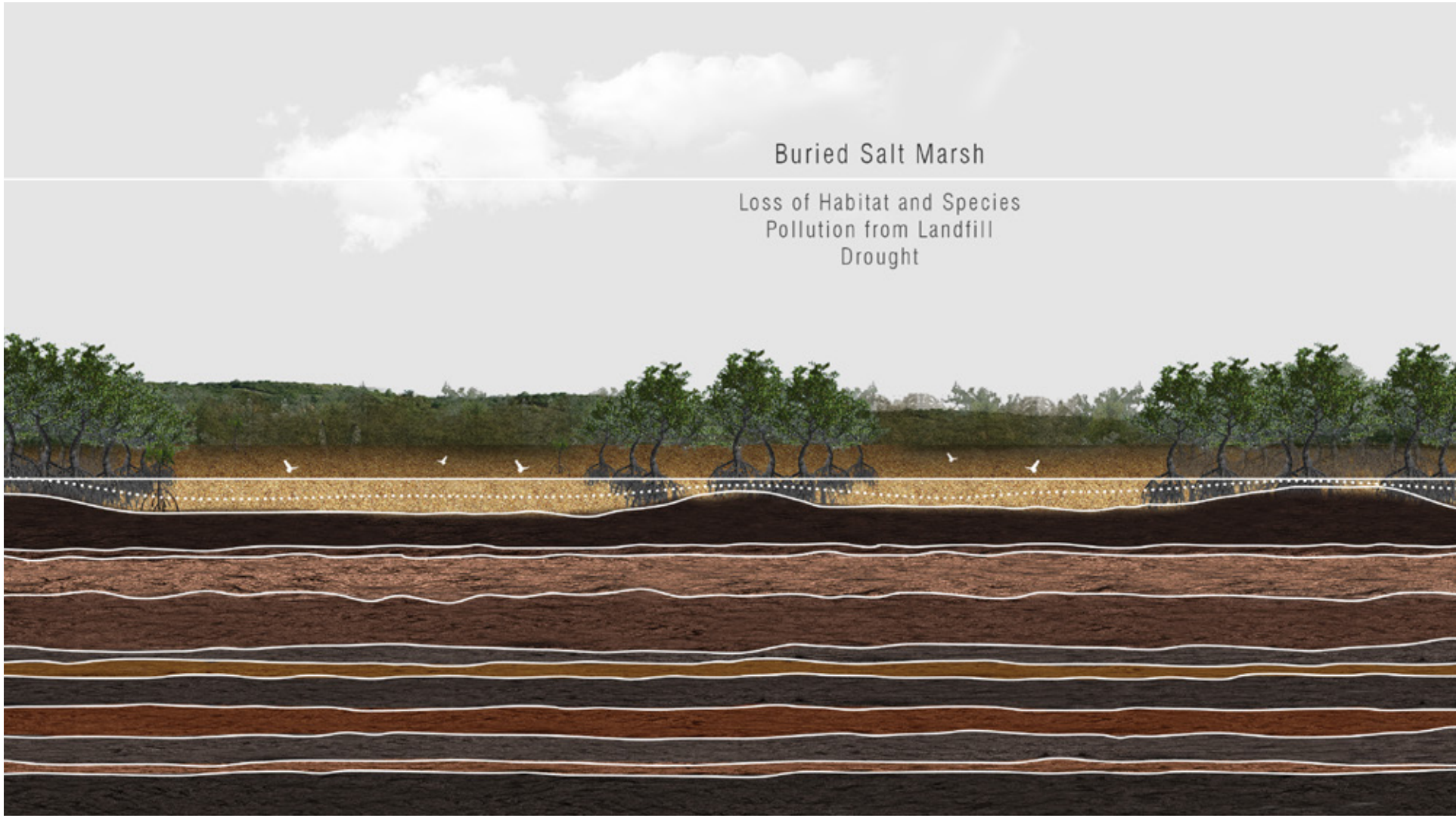
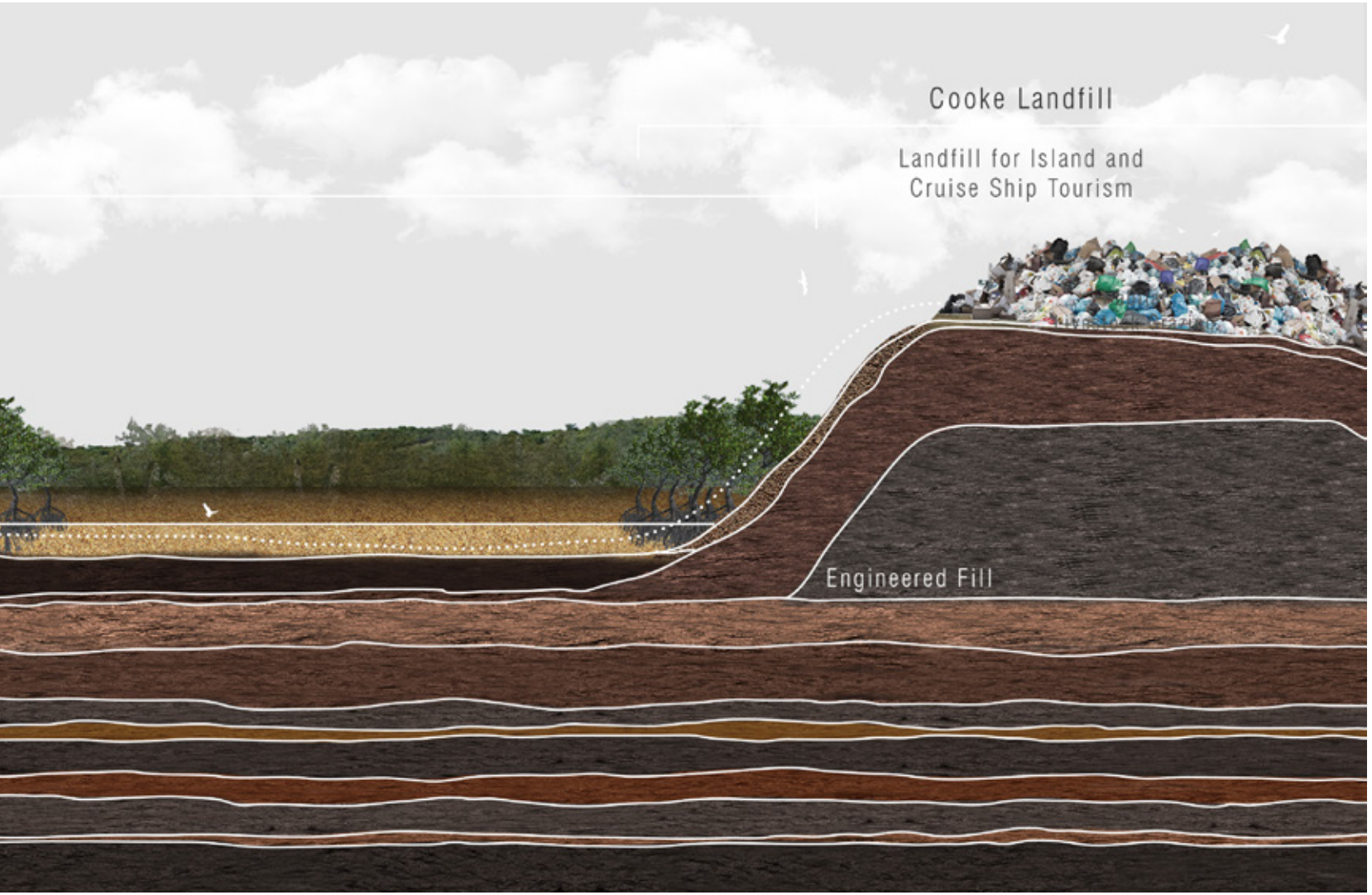


FIGURE 73

This section illustrates a typical cut through the coastal landscape in 2017 at Site Two. The purpose of this image is to make legible the impact burying the salt marsh has had on the surrounding ecosystem. Contrasted to the two other sites, this landscape does not occupy tourists. The impact here is second hand and indirect, yet just as influential.


Buried Salt Marsh
Loss of Habitat and Species
Pollution from Landfill
Drought


Buried Salt Marsh
Loss of Habitat and Species
Pollution from Landfill
Drought


Cooke Landfill
Landfill for Island and
Cruise Ship Tourism
Engineered Fill

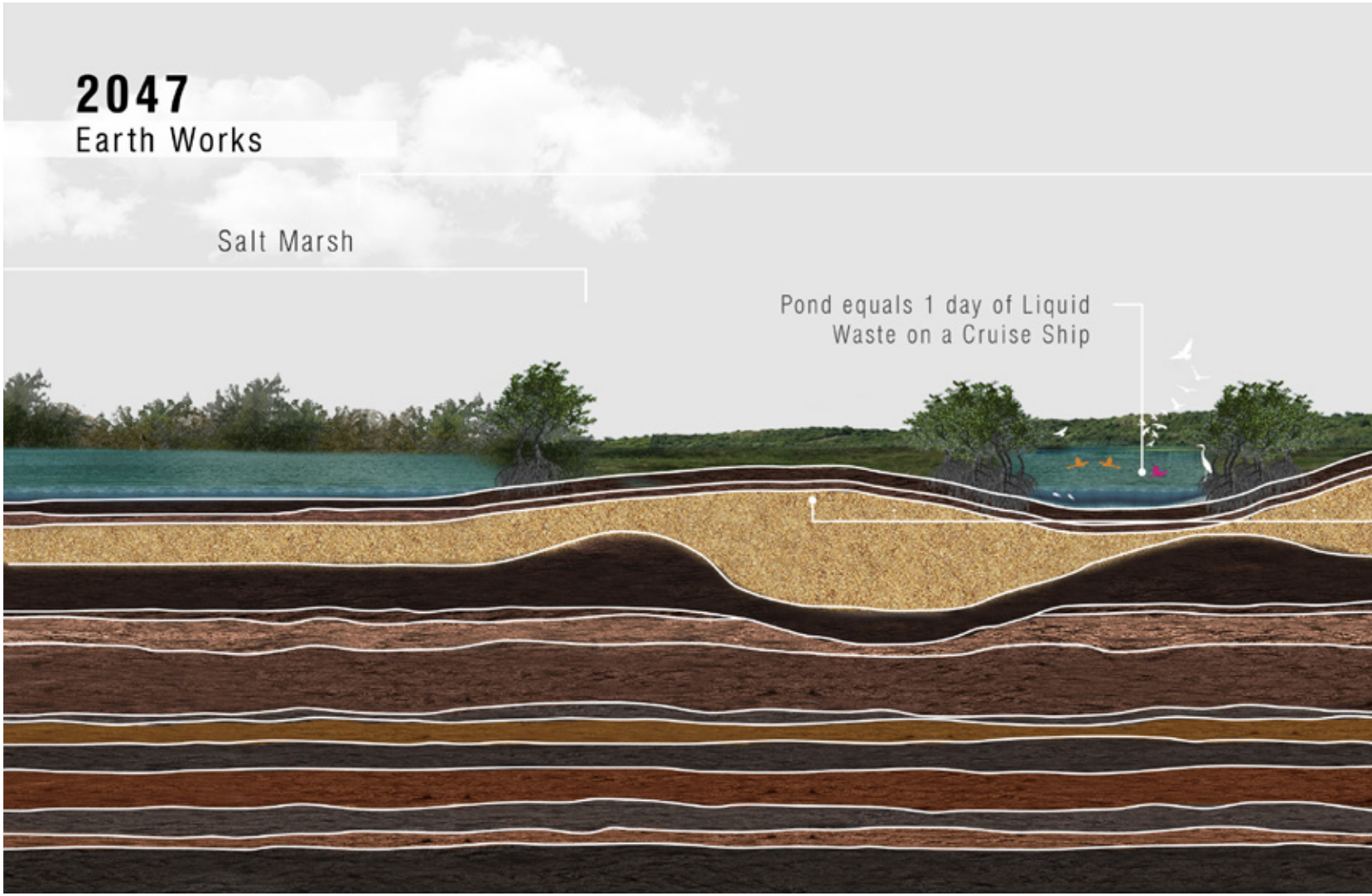
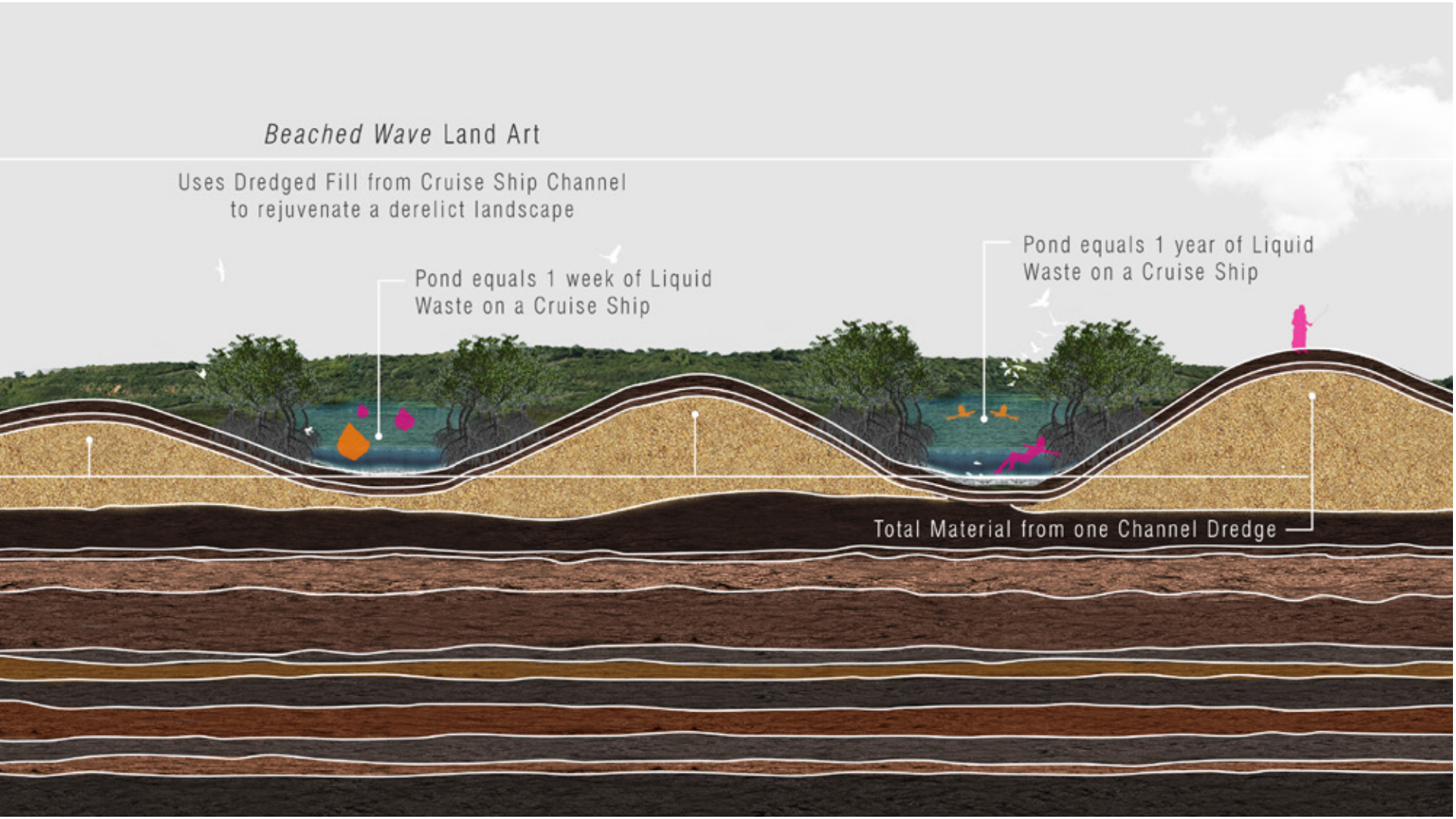
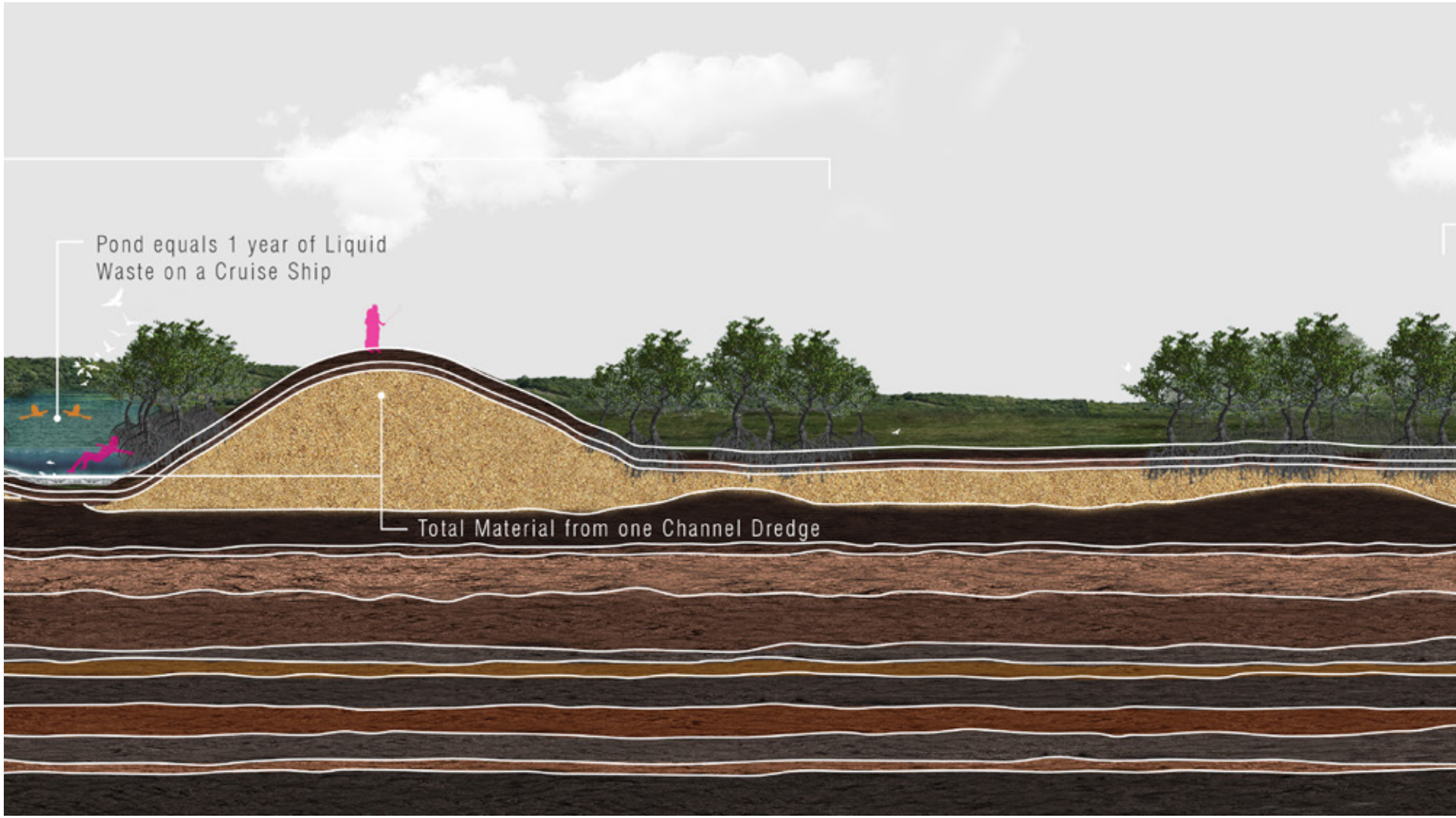


FIGURE 74

This section illustrates a typical cut through the coastal landscape in 2047 at Site Two. The purpose of this image is to illustrate the design proposal of using the waste material in a beneficial manner, and integrating low impact human activity. Through tourism and local occupation, the natural landscape can be revived to support and held accountable to the tourism industry.


Beached Wave Land Art
Uses Dredged Fill from Cruise Ship Channel
to rejuvenate a derelict landscape
Pond equals 1 week of Liquid
Waste on a Cruise Ship
Pond equals 1 year of Liquid
Waste on a Cruise Ship
Total Material from one Channel Dredge


Pond equals 1 year of Liquid
Waste on a Cruise Ship
Total Material from one Channel Dredge

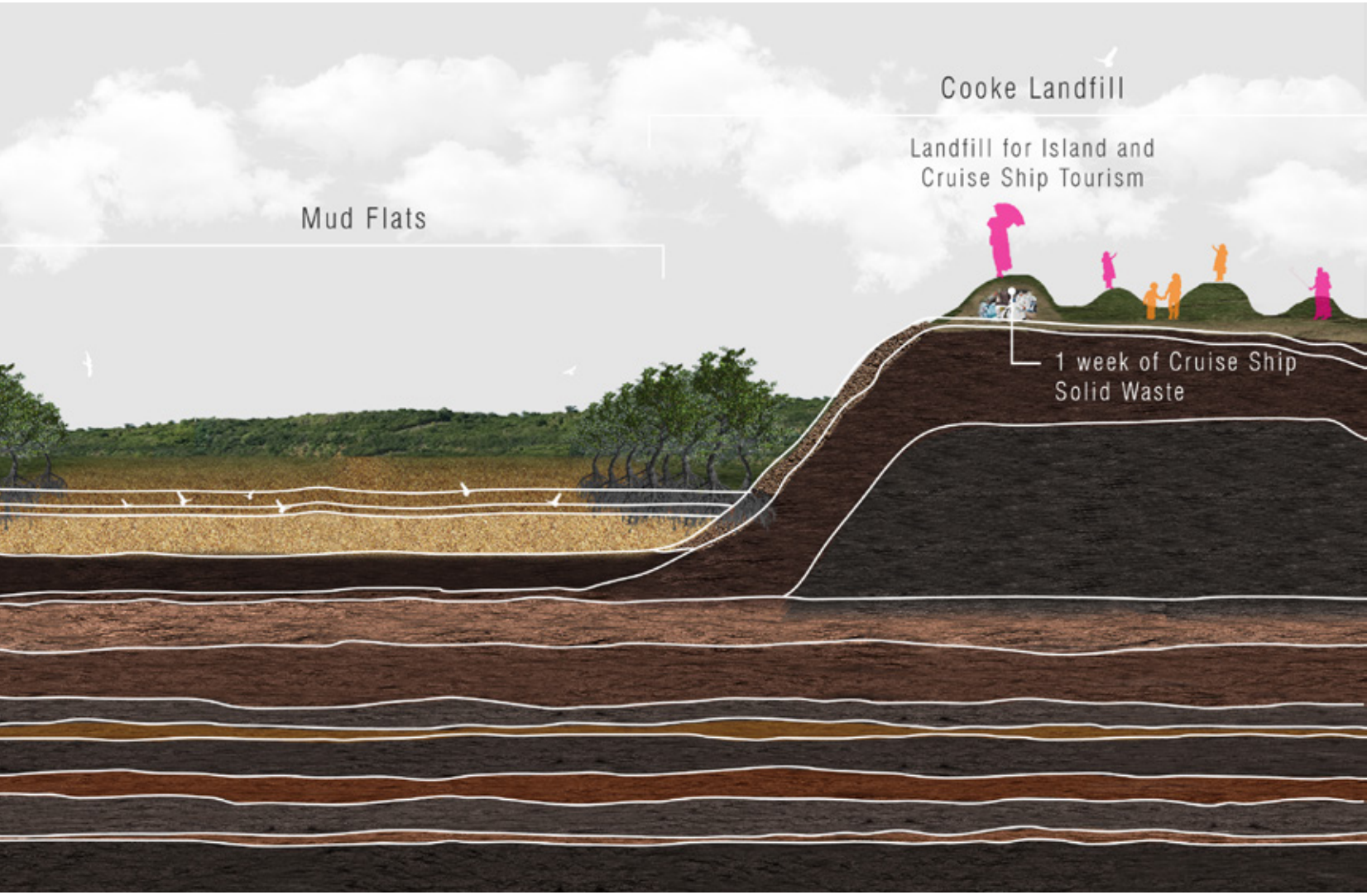

Cooke Landfill
Landfill for Island and
Cruise Ship Tourism
Mud Flats
1 week of Cruise Ship
Solid Waste

FIGURE 75
This postcard depicts the current delapitated condition of the Flashes, taken from the Cooke Landfill.

FIGURE 76
The new constructed landscape provides an interactive and educational landscape which brings awareness to the tourism footprint but also celebrates the waste as opportunity.

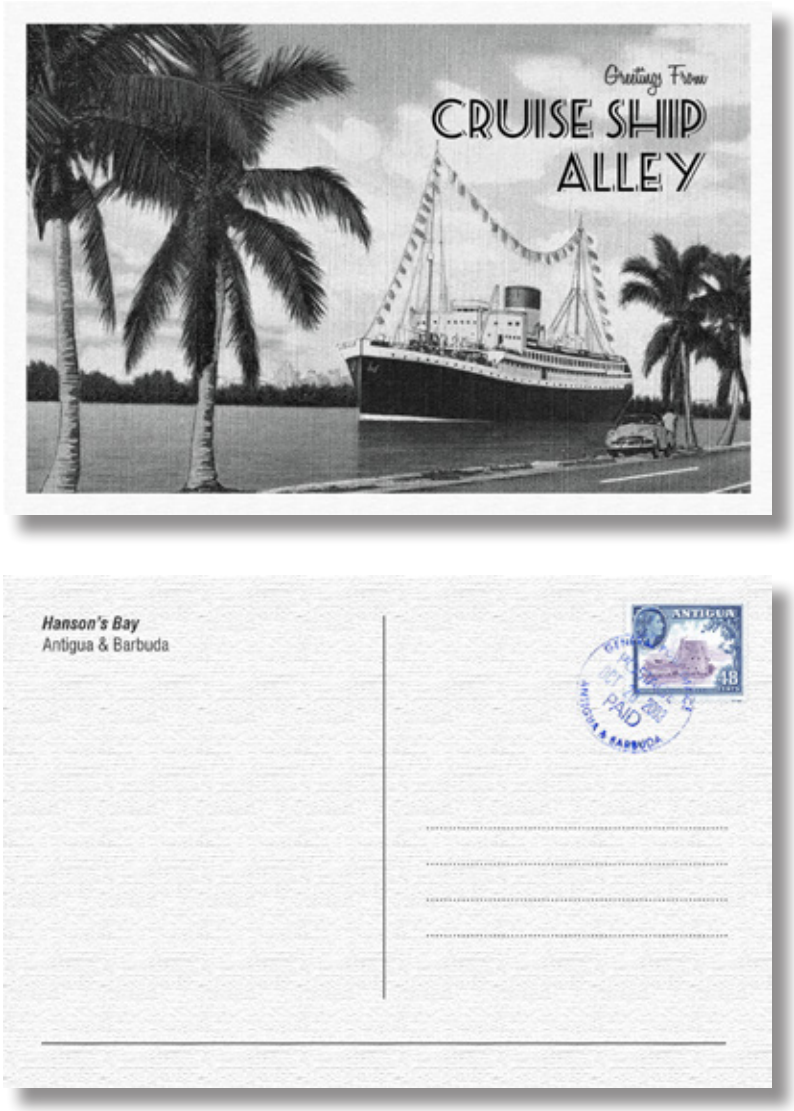


FIGURE 77
This vintage postcard depicts a traditional cruise ship image, a floating city.

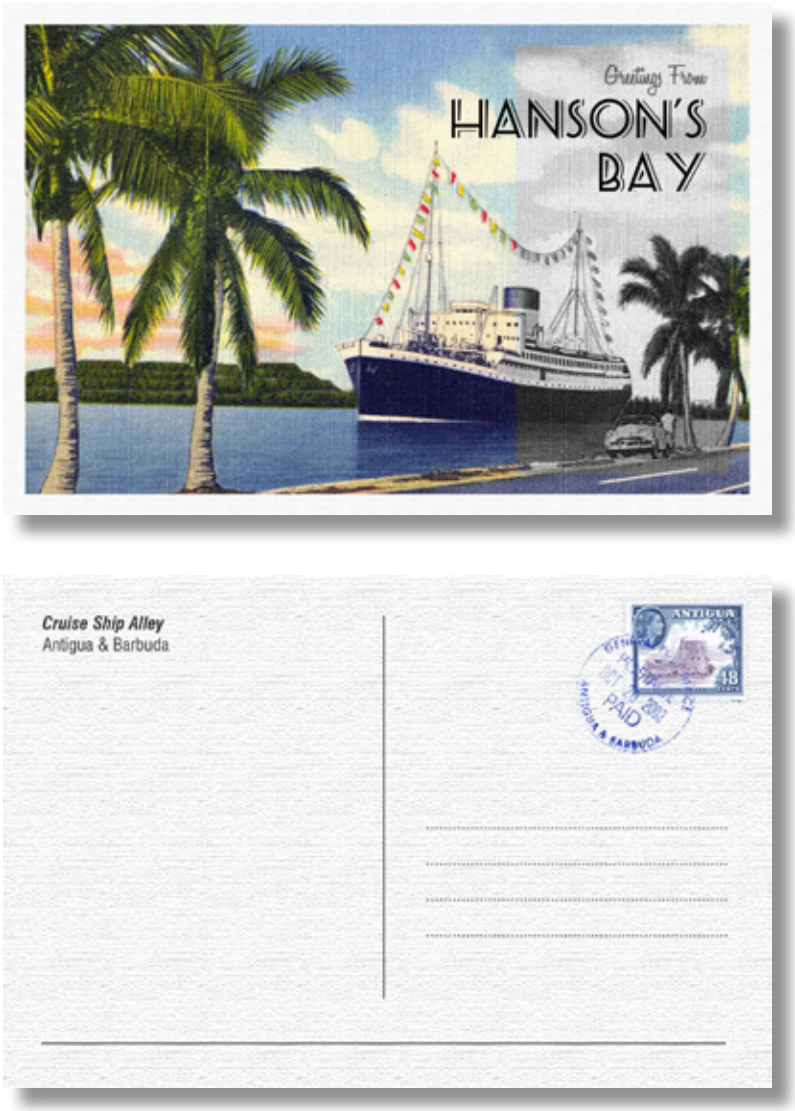


FIGURE 78
Removing the opinnion of cruise ships as singluar idenities, this image makes the generated waste visible and apart of the experience.

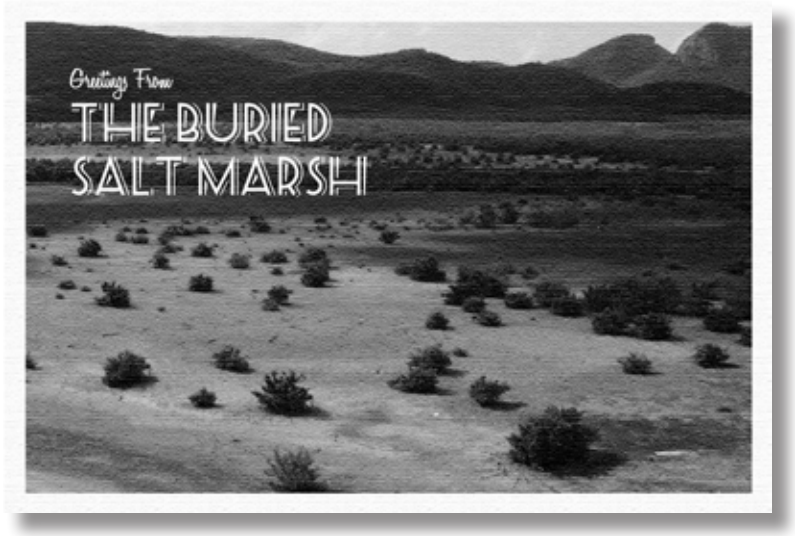


FIGURE 79
This postcard depicts the current delapitated condition of the Flashes from the Cooke Landfill.

FIGURE 80
This postcard presents how specializing the tourism industry to promote a specific activity or event like birdwatching or mating season would begin to correlate ecology, economy and tourism.

FIGURE 81
This photograph depicts the current state of wildlife at the landfill.

FIGURE 82
Comparatively, this postcard illustrates a more suitable landscape for the inhabitants.

Sunbathing in the Salt Pond

Site Three: Jolly Harbour

Proposal

Sunbathing in the Salt Pond challenges the artificial and privatized landscape created by Gated Community Tourism at the Jolly Harbour development by re-positioning tourism as a node, rather than a container, within a much larger network of public and ecological programming.

Context

Jolly Harbour, one of the highest density tourism enclaves on Antigua, has been subjected to incredible feats of human endeavours, and is an exemplary site for understanding the ways in which landscapes are altered in the name of tourism. Located on the West coast facing the Caribbean Sea, Jolly Harbour benefits from being on the leeward side of the Sherkley Mountain Range, providing calmer waters, and long stretches of white sandy beaches[8]. The Jolly Harbour Development Project encompasses villa accommodations, marina, moorings, boatyard, Customs and Immigration, restaurants and bars, grocery store, and recreation including an 18-hole golf course, to name a few of the components. The boundaries of the tourist zone trace the two parallel artillery roads and the channelized stream which runs along the perimeter of the Jolly Harbour Golf Course. However, prior to the Jolly Harbour Development stood the Jolly Hill Salt Pond which in the early 1980's was lost whilst in the pursuit of developing a larger tourism zone the government of Antigua sold 53 acres of the salt pond and surrounding area for $100 EC, approximately $50 CAD[9]. This only enhanced the socially accepted pre-conceived notion that the land was useless. To put this in perspective a couple years after, the Antiguan Historical, Recreation Sites and Conservation Commission estimated the overall value of one acre of mangrove at EC$8,400 annually[10]. Although the landscape does not have a tangible profit, the intangible benefits noted above are extremely invaluable. By 1988, majority of the Jolly Hill Salt Pond was dredged, the surrounding area was bulldozed flat removing the existing habitats, and eliminating the intertidal inlet which allowed for the salt and fresh water exchange[11]. Once dredged, the area was than in-filled. A 4 meter dredged channel was dug to allow for access of super yachts into the marina. By the 1990's, majority of the landscape creation and shaping was complete and construction continued on developing single family detached dwelling along Jolly Beach, townhouse dwellings along the perimeter of the harbour development, and the Jolly Harbour Golf Course. Today the development is almost complete with a few townhouse developments left to be constructed. The tourist zone has sprawled outwards including the land at Pearns Point to the North which is currently

FIGURE 83
This bird's eye view photograph of Jolly Harbour highlights the extent and boundary of the tourism enclave.

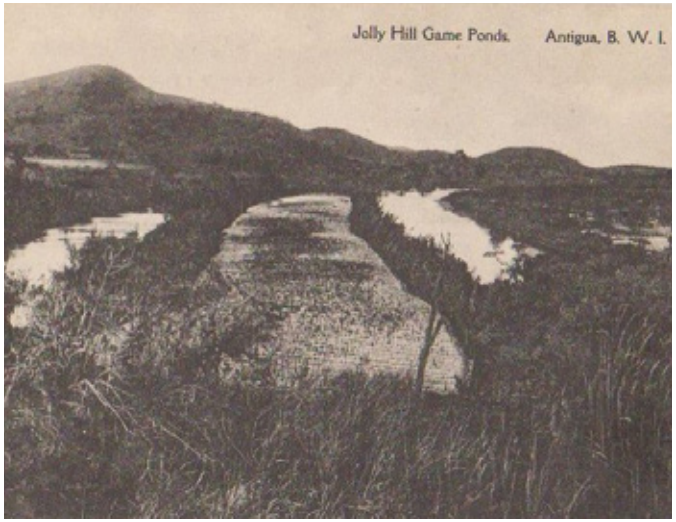


FIGURE 84
One of the few photographs of what the Jolly Harbour area looked like prior to development. Little evidence of this natural game pond can be seen today as the landscape underwent an extreme landscape creation project.

FIGURE 85
This bird's eye view of the site depicts the landscape post-dredge and fill, and the massive amount of land which was transformed.

under construction, Cocos Bay Resort to the South and Sugar Ridge Resort to the East. In this time the Township of Bolans was expanded and a new village called Jennings was established.

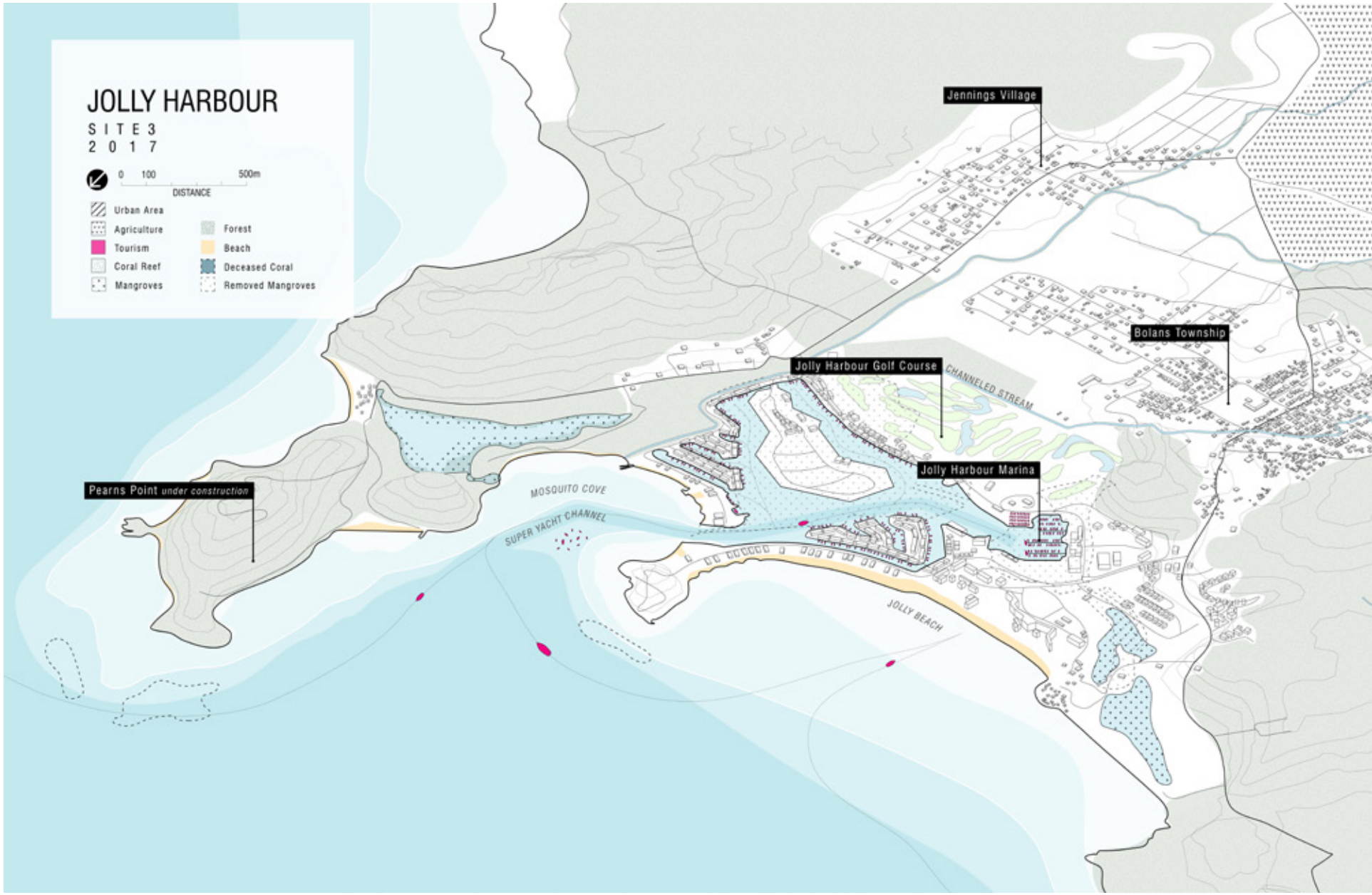
Klaus de Albuquerque also noted the impacts of the Jolly Harbour development in his article titled, "Conflicting Claims on the Antiguan Coastal Resources: The case of the McKinnons and Jolly Hill Salt Pond". Not only did he note affects to the physical surrounding landscapes, but the social and economic prosperity of the surrounding townships as well. At Jolly Harbour in the near shore environment Albuquerque noted a substantial increase in suspended particular matter, turbidity, and siltation[12]. The author claims that this sedimentation has killed the majority of coral in the area, causing a severe decline in reef fish, a noticeable absence of the long-spined black sea urchin, and an increase in algal beds, which he credits mostly to Hurricane Hugo, which struck in 1998, for stirring up the dredge material[13]. In the on shore environment Albuquerque argues that the bulldozing and burning of the surrounding vegetation to clear land, including mangroves, coconut trees, and sea grape trees, has resulted in a significant decline of wildlife[14]. He reports that many species were unreported in sightings in 1990, including the Bahama Duck, Blue Winged Teal, American Coot, Osprey, Kestrel, West Indian Whistling Duck, and West Indian Tree Duck; whereas the following

were reported to be few in numbers: Warblers, Plovers, Sandpipers, Cattle Egrets, and Blue Herons[15]. In addition to these physical visual impacts, Albuquerque argues the socio-economic impacts also produced. The first is that the government was not realistic with the economic benefit that would be provided to the local residents of Bolans, as 90% of guests to the area are on pre-packaged vacations, current statistic for 2016 was 70%[16], and therefore would not be spending money in the community, if visiting the community at all[17]. Also, the employment projected was said to be substantial for the local communities, yet, most of the jobs available were lower level positions with companies immigrating higher level staff[18]. In addition, Albuquerque reported limited beach access, disapproval local cultural practices like bathing or being topless on the beaches, fishing boats displaced for tour boats, and severe flooding and hurricane damage to the community of Bolans[19]. Therefore the major issue of the large scale artificial environment created is that it has completely transformed this once public area and made it extremely private.

FIGURE 86
View looking South with Jolly Harbour to the left, and Jolly beach to the right. The existing wildlife has been removed and palm trees have begun to be planted.

FIGURE 87
Once an undisturbed beach; Mosquito Cove is now one of the most severely eroding beaches on the island due to the yacht channel dug in front to access the harbour.

FIGURE 88
My mother on the beach in 1986.


JOLLY HARBOUR
SITE 3
2017
0 100 500m
DISTANCE
Urban Area
Agriculture
Tourism
Coral Reef
Mangroves
Forest
Beach
Deceased Coral
Removed Mangroves
Jennings Village
Bolans Township
Jolly Harbour Golf Course
CHANNELED STREAM
Jolly Harbour Marina
Pearns Point under construction
MOSQUITO COVE
SUPER YACHT CHANNEL
JOLLY BEACH

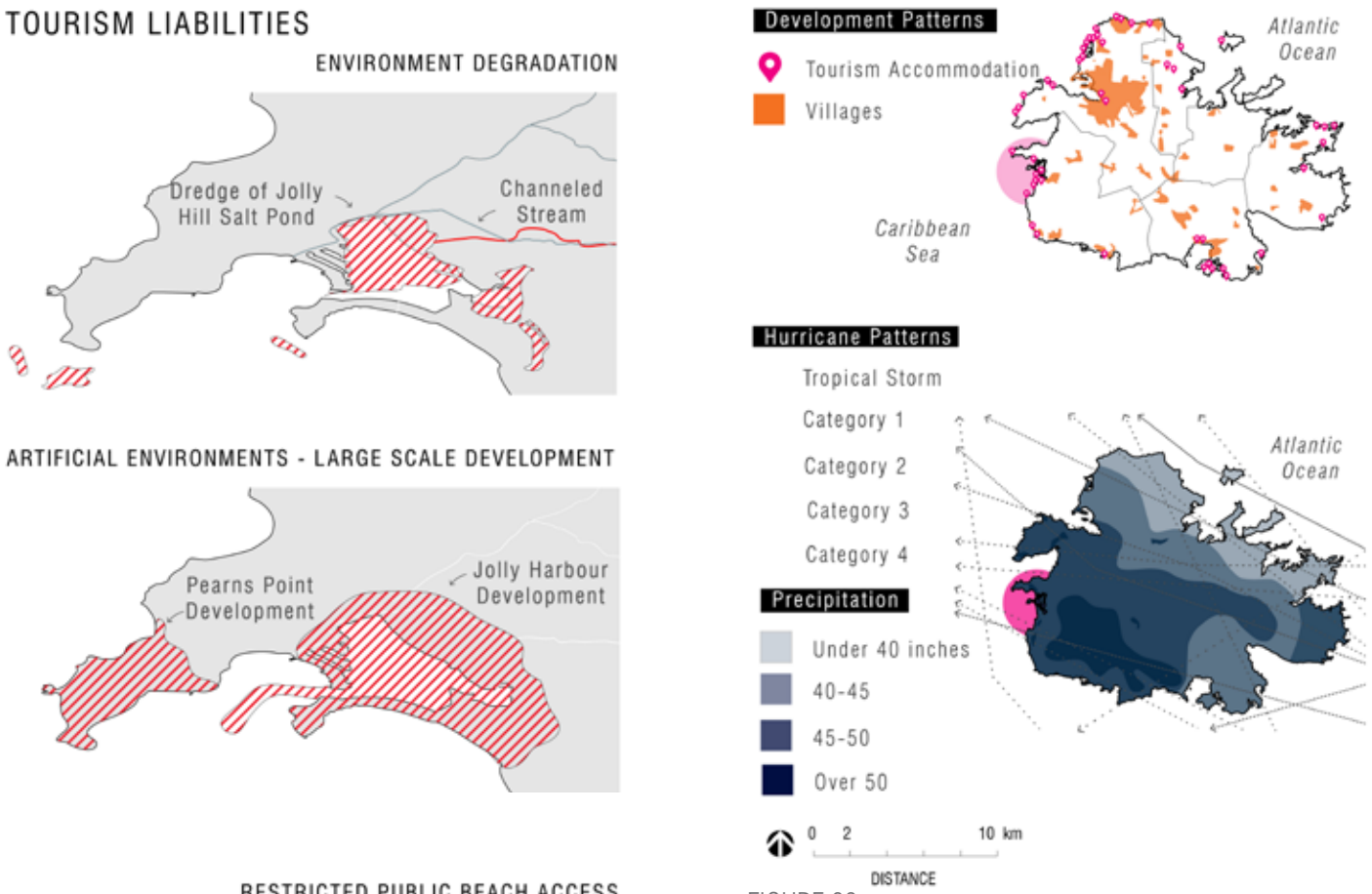
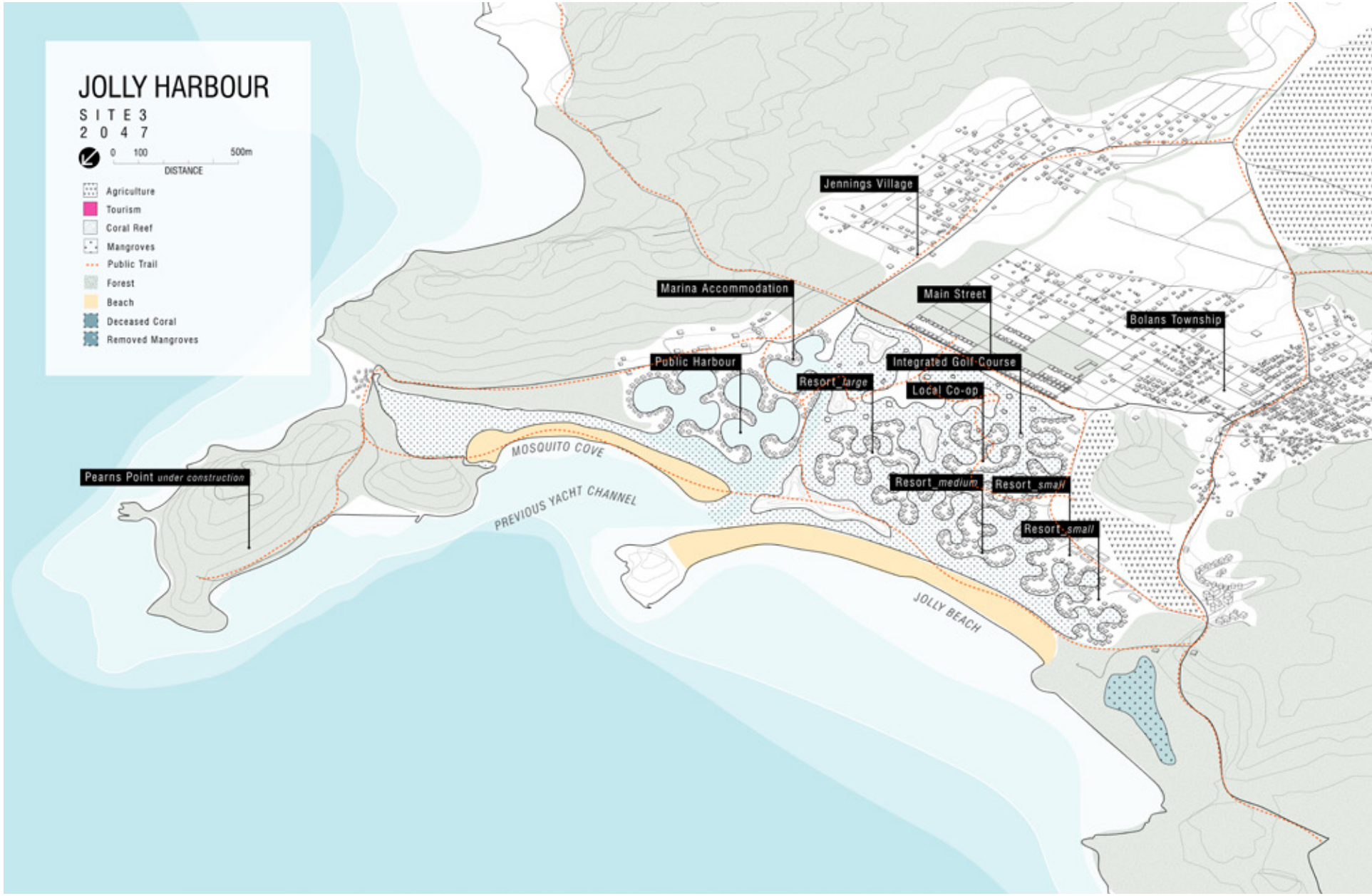
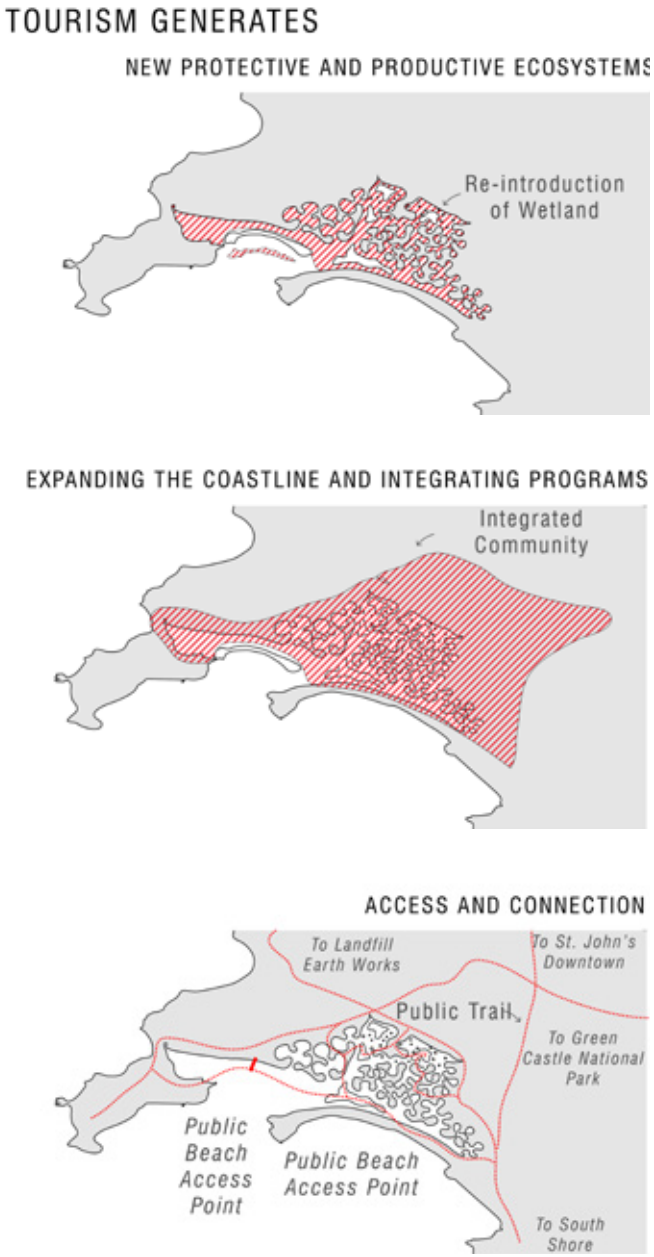


FIGURE 89

This axonometric illustrates the existing condition of Site Three in 2017 and the relationship of the artificial tourism developments, surrounding local community, and contained ecology. The diagrams to the left illustrate the three major issues caused by tourism and other factors this thesis wishes to address. Ecologically, the site has lost its protective sponge barrier. Socially, the sprawl of the tourism enclave has created a definite boundary between local and global. These illustrations highlight the major areas of concern which the design focuses on.


JOLLY HARBOUR
SITE 3
2047
0 100 500m
DISTANCE
Agriculture
Tourism
Coral Reef
Mangroves
Public Trail
Forest
Beach
Deceased Coral
Removed Mangroves
Jennings Village
Marina Accommodation
Main Street
Bolans Township
Public Harbour
Integrated Golf Course
Resort_large
Local Co-op
MOSQUITO COVE
Pearns Point under construction
PREVIOUS YACHT CHANNEL
Resort_medium
Resort_small
Resort_small
JOLLY BEACH



New Image of Tourism

This design shatters the traditional concepts of the tourism façade. The deconstruction of the resort integrates it more fluidly within the wetland landscape. The Jolly Harbour Golf Course Fairway is eroded away, eliminating the need for fertilizers and excess water consumption. Lastly, an expanded coastline allows for greater public access and public boardwalk to connect the three stakeholders of the site: local, global, and nature.

FIGURE 90
The new axonometric drawing illustrates the design proposal 30 years from today in 2047 and the diagrams highlight how the previous liabilities have transformed. Ecologically, wildlife is not just reintroduced but reinvented in an active role of production and protection. Socially, as in Site one, removing development off the beach and investing in a public boardwalk opens up the coast for true public access. Economically, what once was a tourism dominated area can support a multitude of industries helping to expand the economic portfolio.

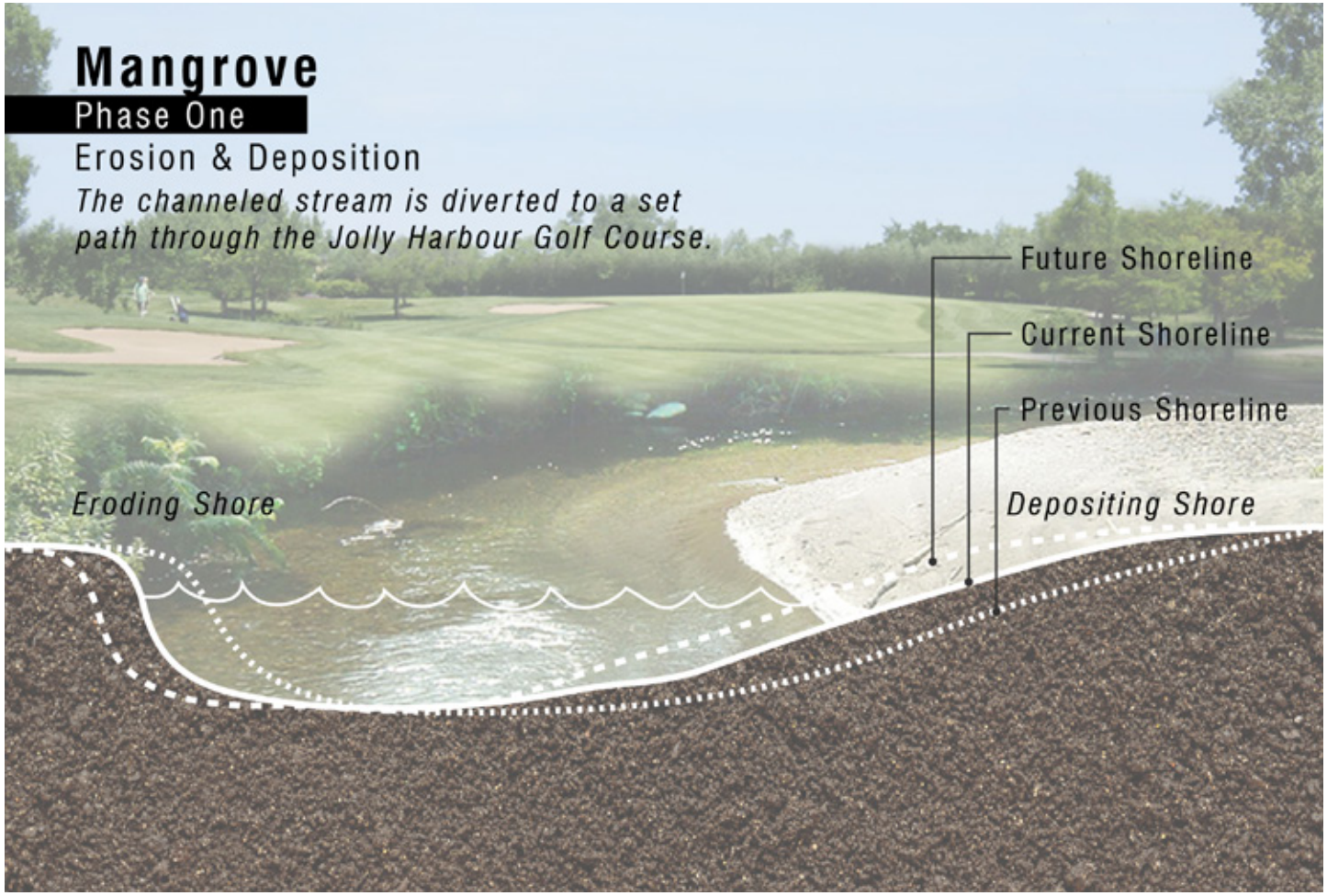
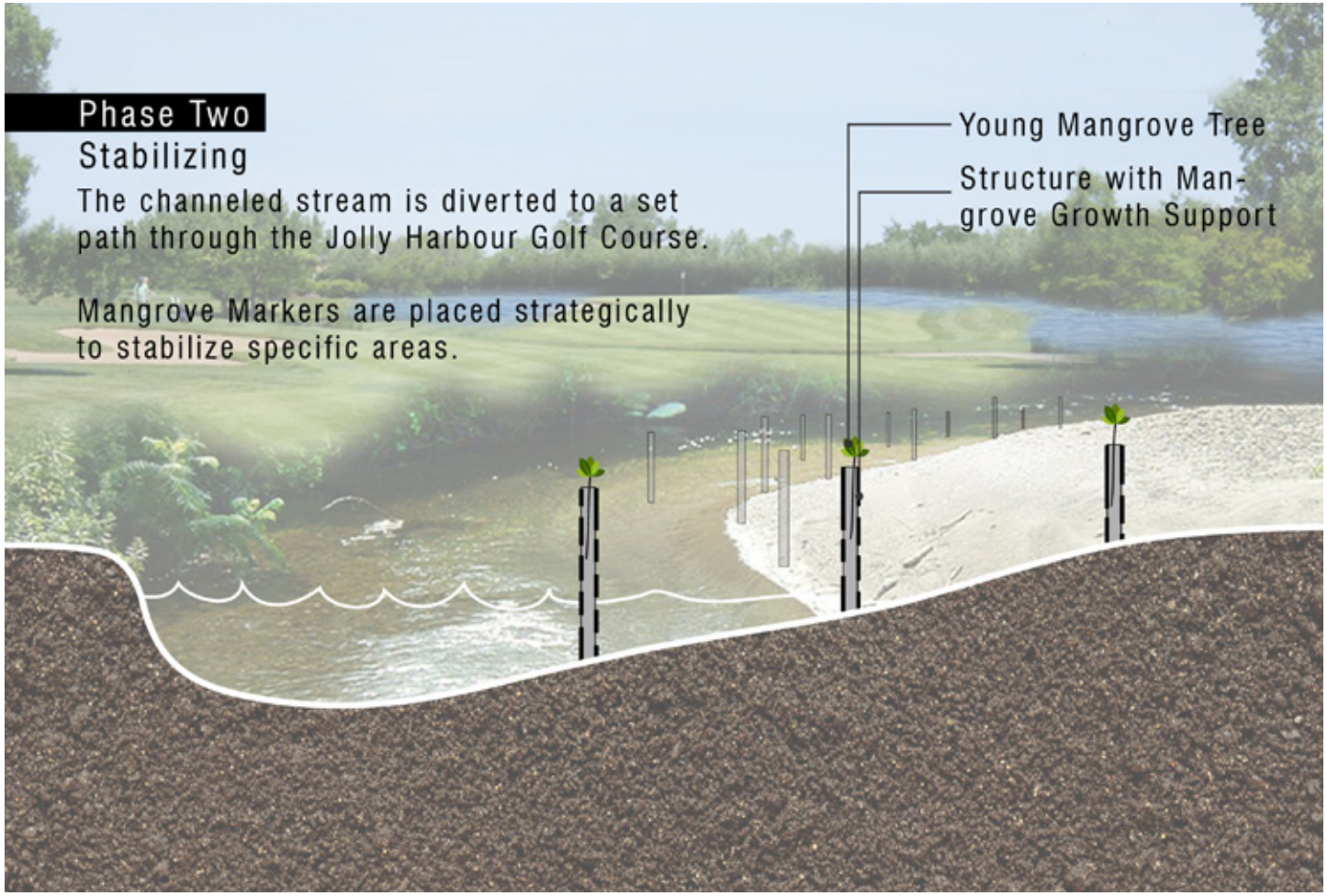
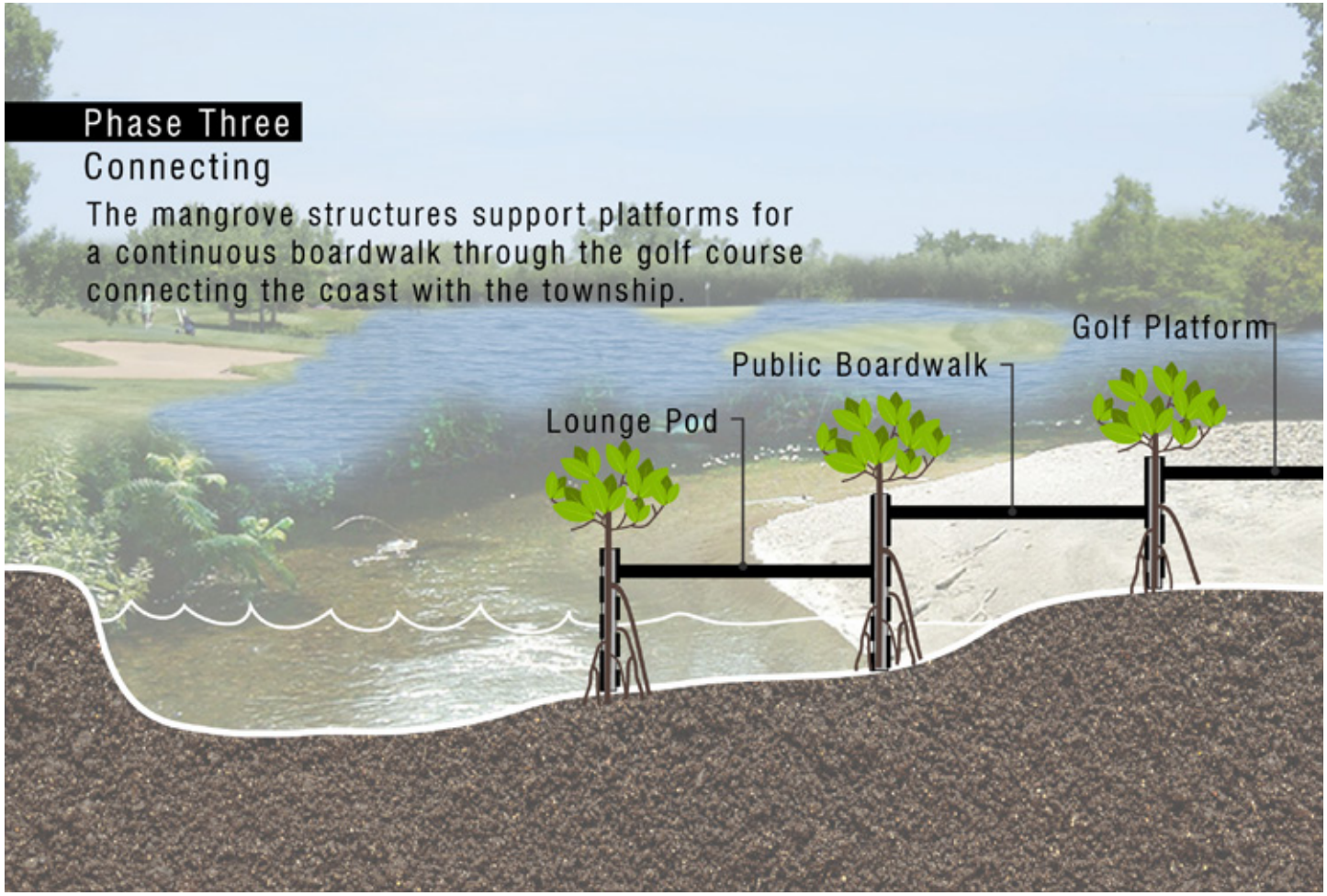
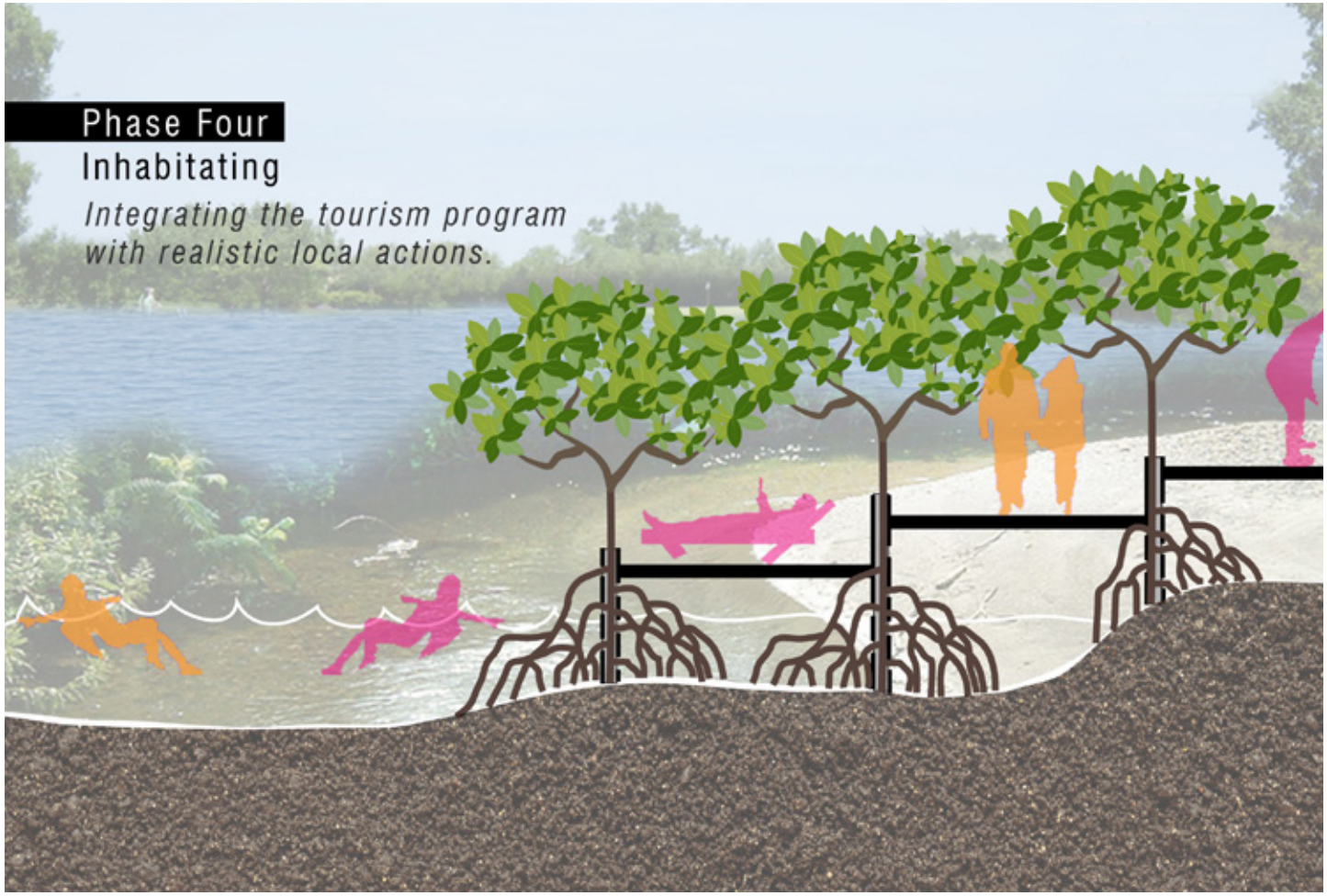


FIGURE 91

This series of drawings details out the use of the mangrove tree and the natural processes of the stream to illustrate the possibility of natural landscape creation. The stream dictates erosion and sedimentation; and the mangrove trees are placed strategically to stabilize and grow the coastline. The purpose of this intervention is to reduce the effects of large scale development and maintain a level of natural control over the landscape. Hard lines and solid materials are very imposing in the fluid landscape of the coast. This proposal suggests a less invasive and ecologically driven model of development.


Phase Two
Stabilizing
The channeled stream is diverted to a set path through the Jolly Harbour Golf Course.
Mangrove Markers are placed strategically to stabilize specific areas.
Young Mangrove Tree
Structure with Mangrove Growth Support


Phase Three
Connecting
The mangrove structures support platforms for a continuous boardwalk through the golf course connecting the coast with the township.
Golf Platform
Public Boardwalk
Lounge Pod


Phase Four
Inhabitating
Integrating the tourism program
with realistic local actions.

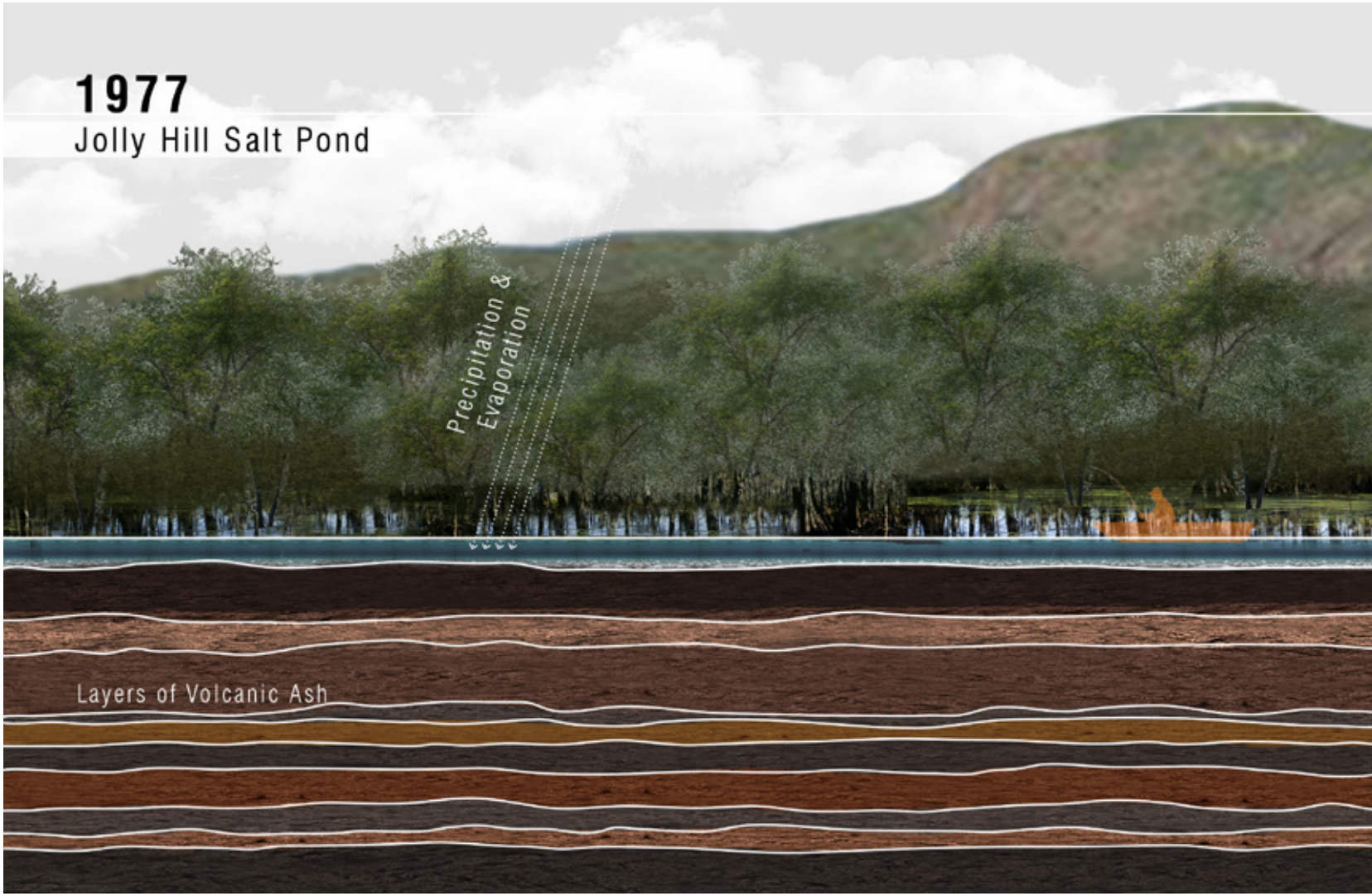
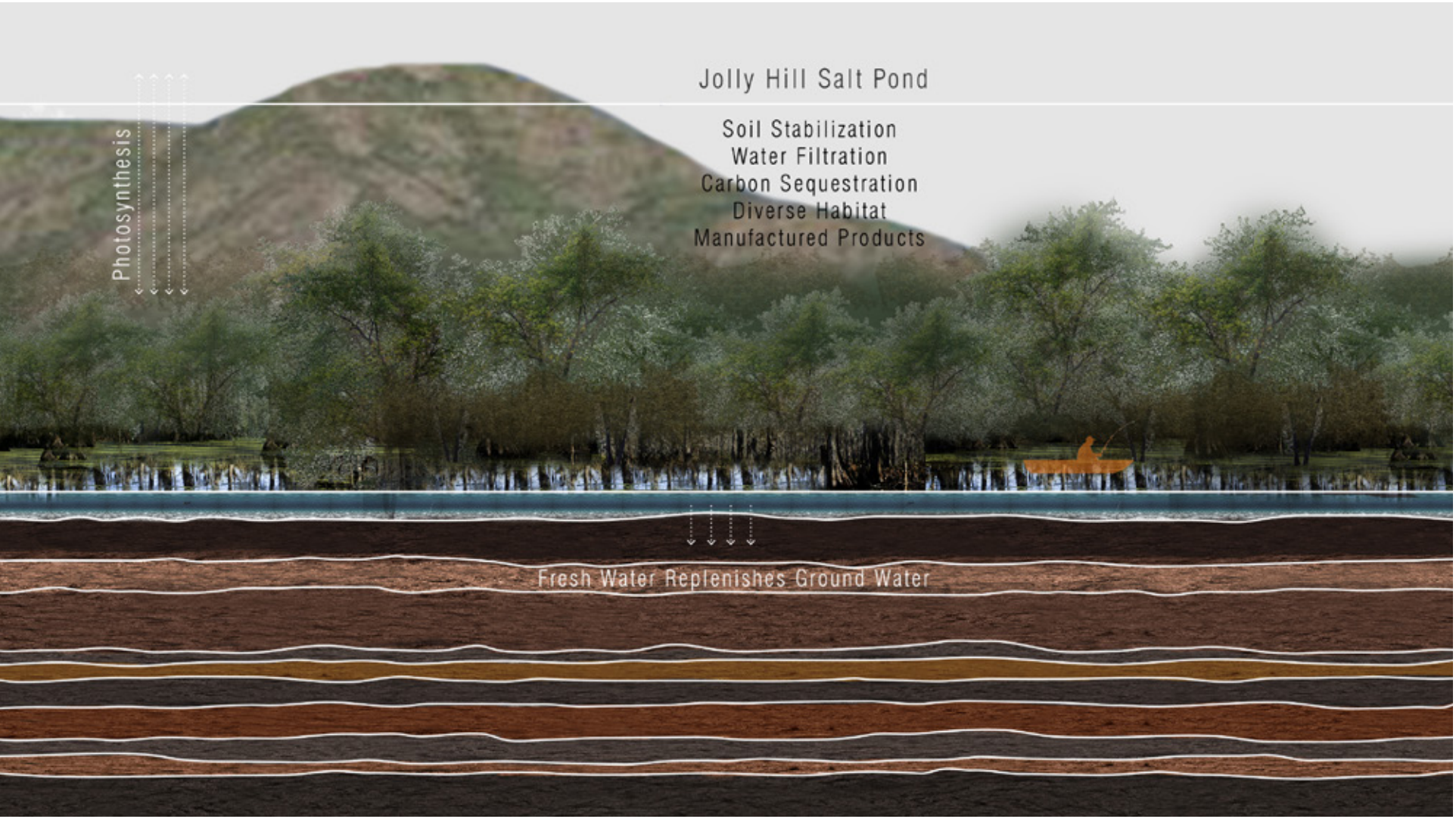


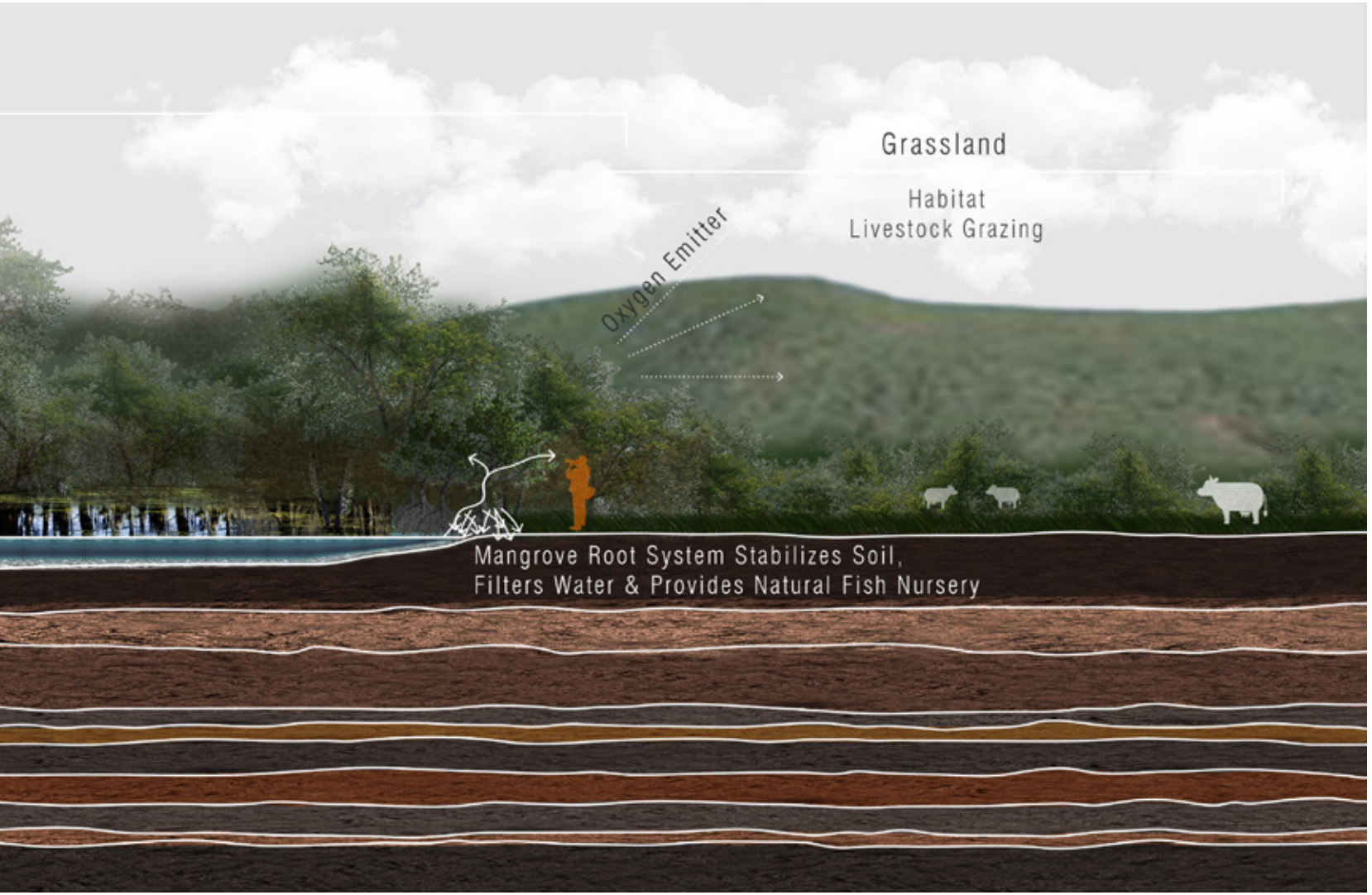
FIGURE 92

This section illustrates a typical cut through the coastal landscape in 1977 at Site Three. The purpose of this drawing is to illustrate the found condition before tourism arrived at Jolly Hill. The original salt pond was a thriving game pond which supported local and ecological programming. Salt ponds are extremely misunderstood as their benefits are intangible. This drawing just



scratches the surface of making legible the benefits of salt pond and mangrove ecosystems.


Jolly Hill Salt Pond
Soil Stabilization
Water Filtration
Carbon Sequestration
Diverse Habitat
Manufactured Products
CO_2 Sequestered


Grassland
Habitat
Livestock Grazing
Oxygen Emitter
Mangrove Root System Stabilizes Soil,
Filters Water & Provides Natural Fish Nursery

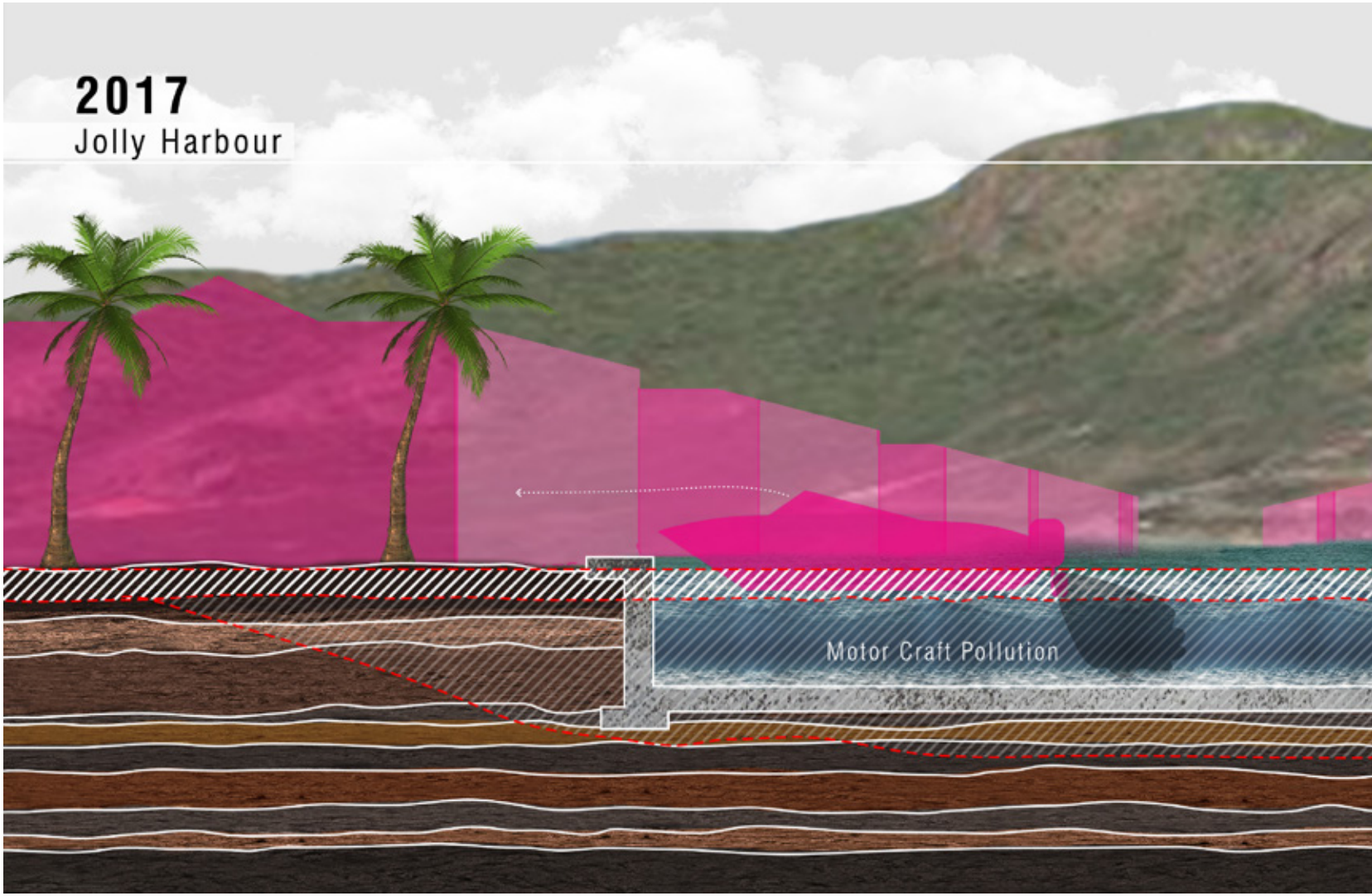
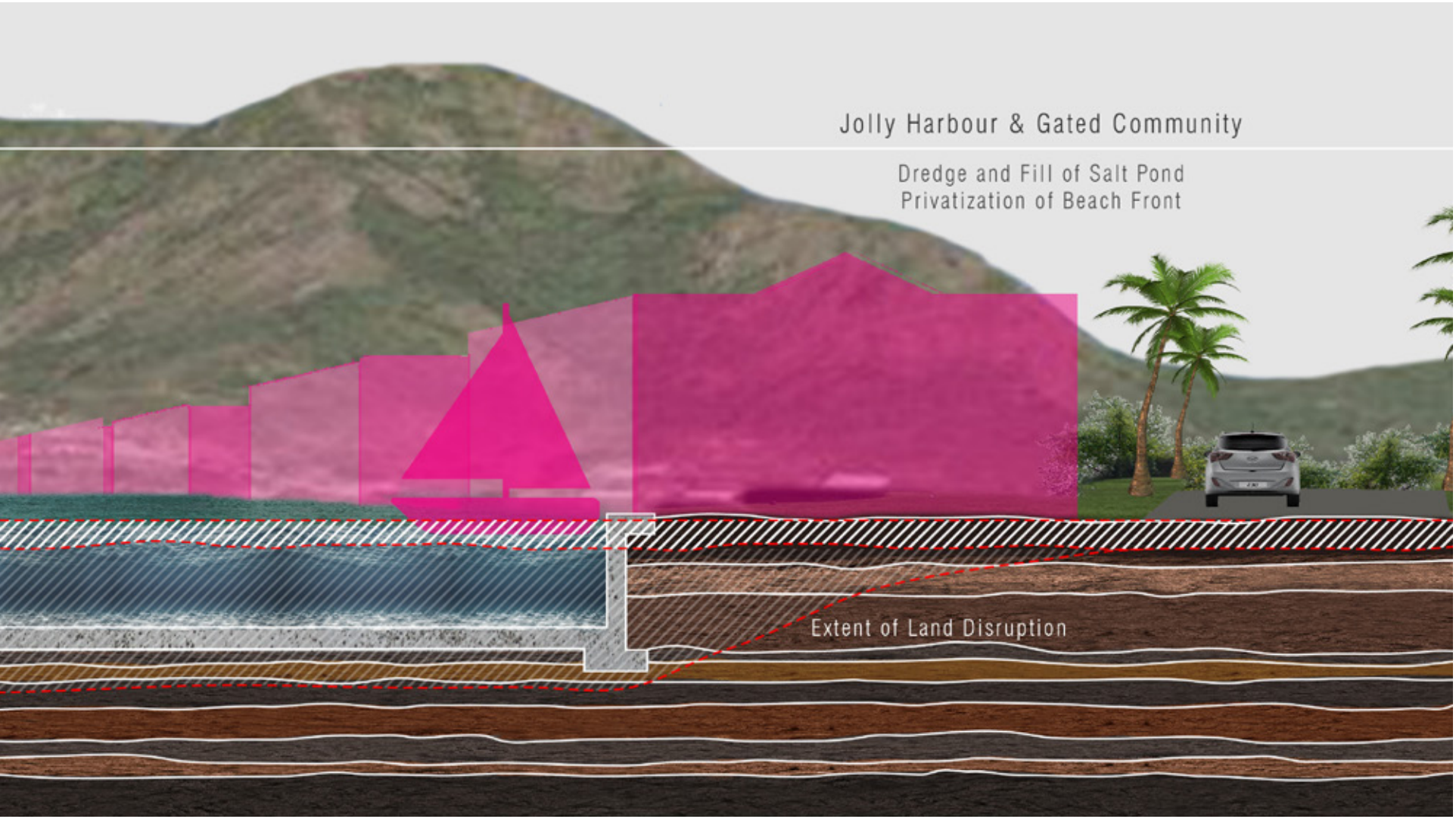
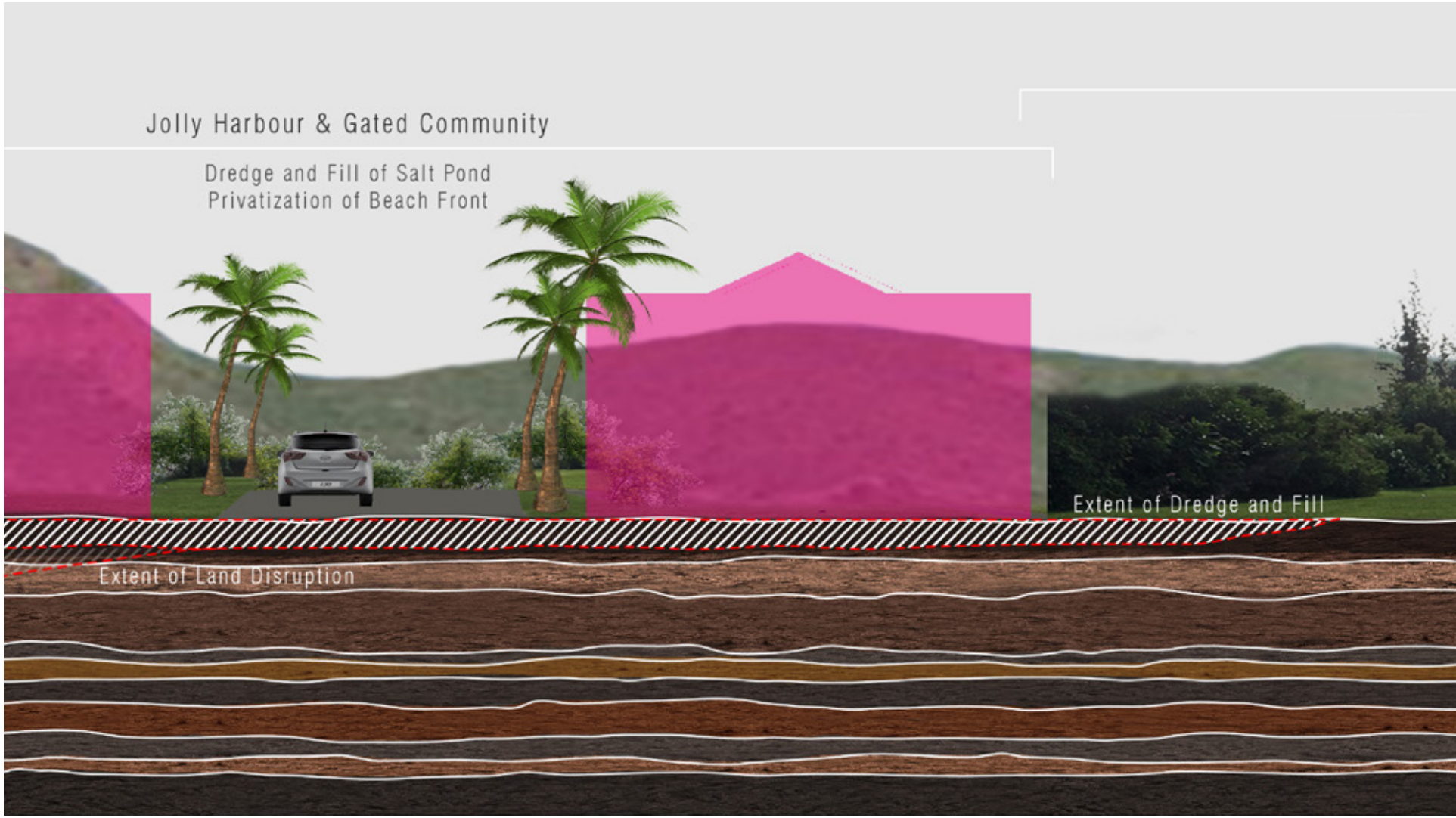


FIGURE 73
This section illustrates a typical cut through the coastal landscape in 2017 at Site Three. The purpose of this image is to present the reader with the scale and degree of manipulation of the landscape by these large scale infrastructure projects. Tourism is a direct occupant and leaves an extremely tangible footprint. Ecology is contained within the tourism agenda, and in tourism enclaves



many locals occupy this landscape as employees rather than users. Although, the Jolly Harbour townhouses are occupied by a significant portion of locals, this is not the case usually.


Jolly Harbour & Gated Community
Dredge and Fill of Salt Pond
Privatization of Beach Front
Extent of Dredge and Fill
Extent of Land Disruption


Jolly Harbour Golf Course
Clearing of Natural Vegetation
Implanted Typology
High Dependency on Fertilizers & Water
Fertilizers seep into Ground Water

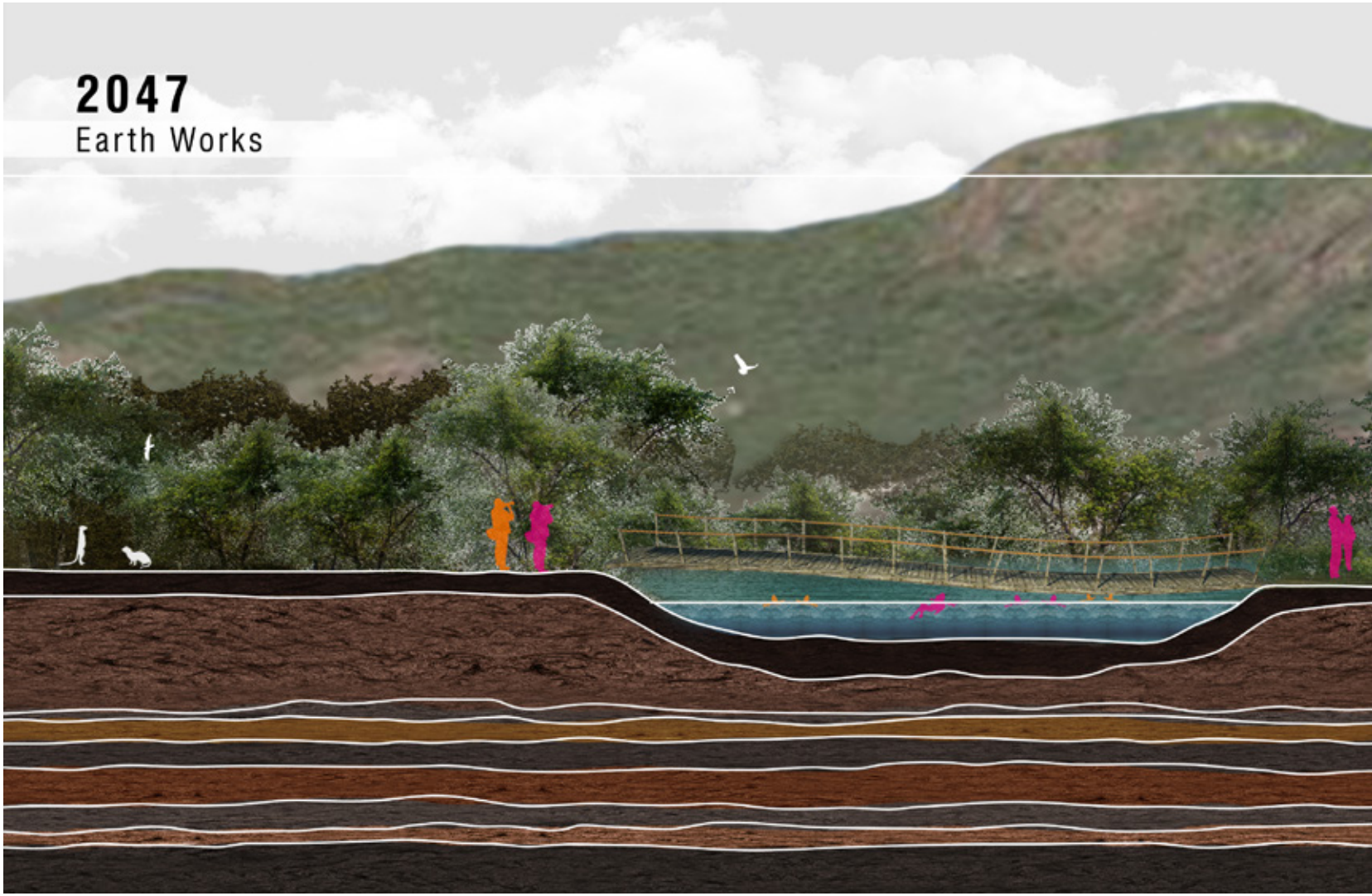
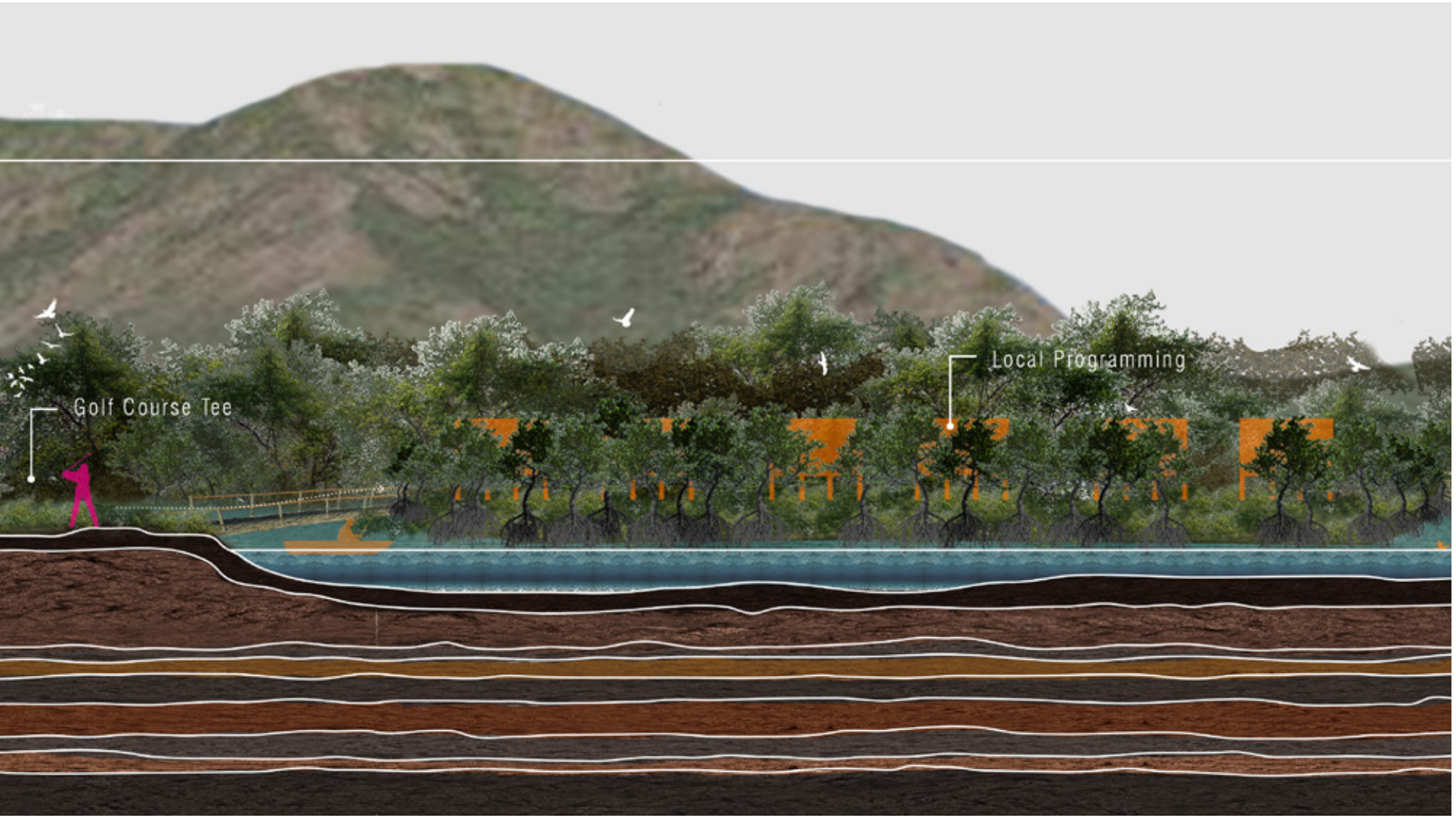


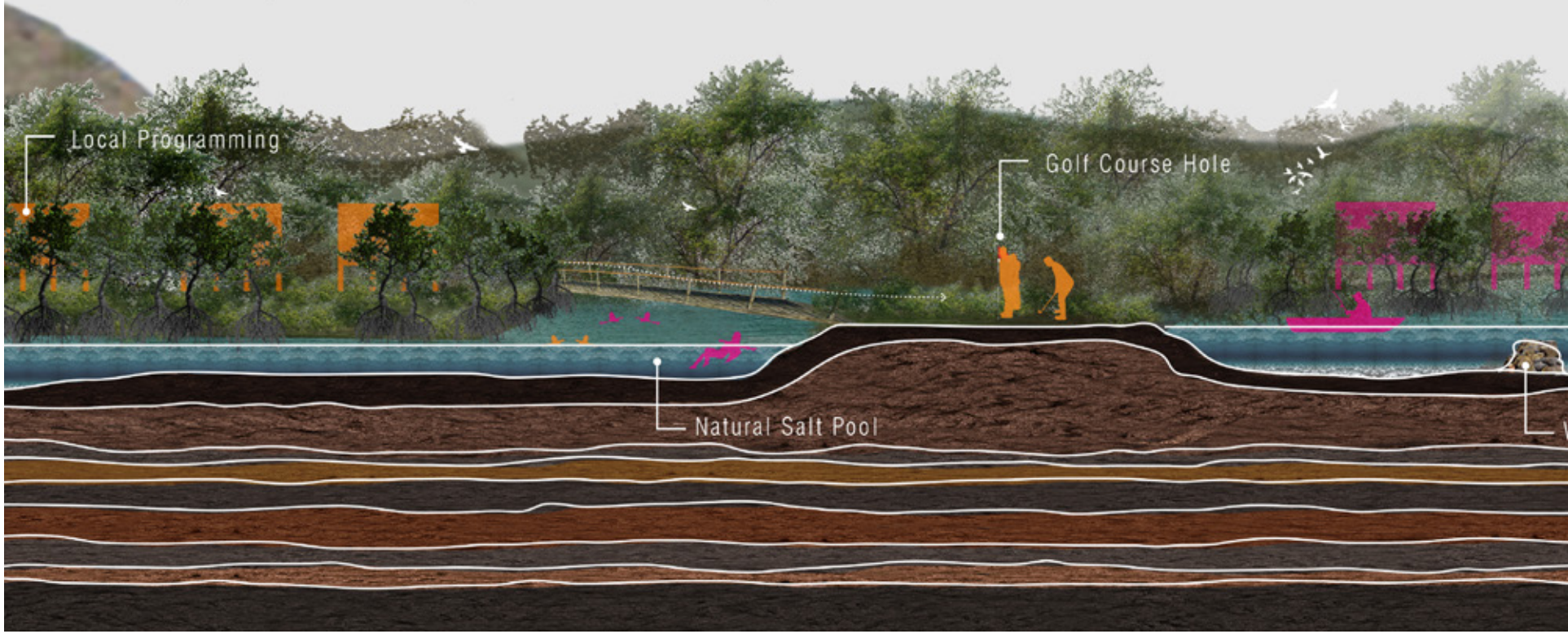
FIGURE 94

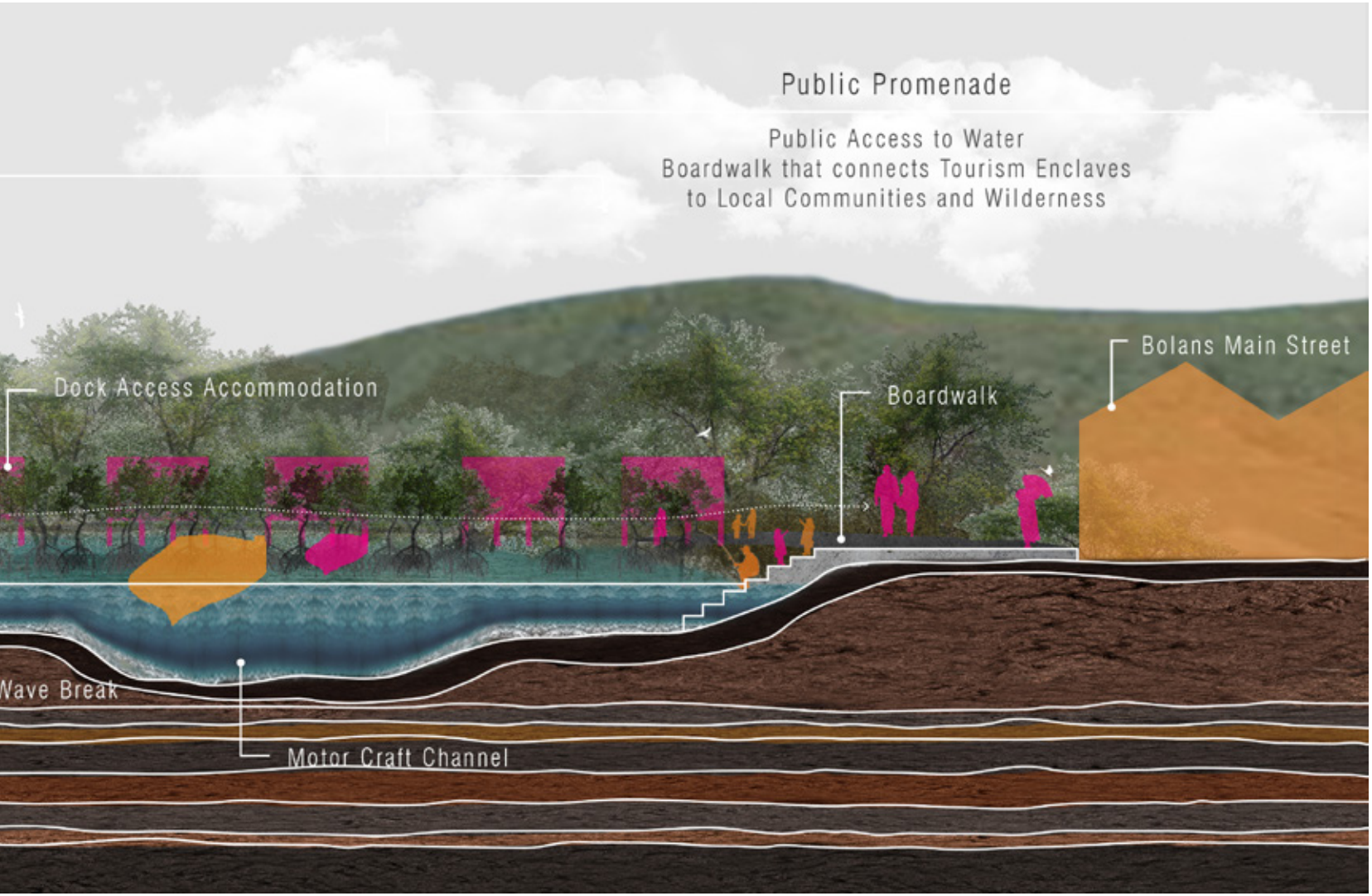
This section illustrates a typical cut through the coastal landscape in 2047 at Site Three. The purpose of this image is to illustrate the possible integration of users through the disintegration of the golf course. By re-imagining the pond as a network of actors, tourism no longer dominates the landscape and is able to feedback into the local community.


Golf Course Tee
Local Programming

Jolly Hill Salt Pond & Harbour Network

Integration of Tourism and Local Programs within Designed Natural Landscape
Fairways relinquished to use only as much land as necessary




Public Promenade
Public Access to Water
Boardwalk that connects Tourism Enclaves
to Local Communities and Wilderness
Dock Access Accommodation
Boardwalk
Bolans Main Street
Wave Break
Motor Craft Channel

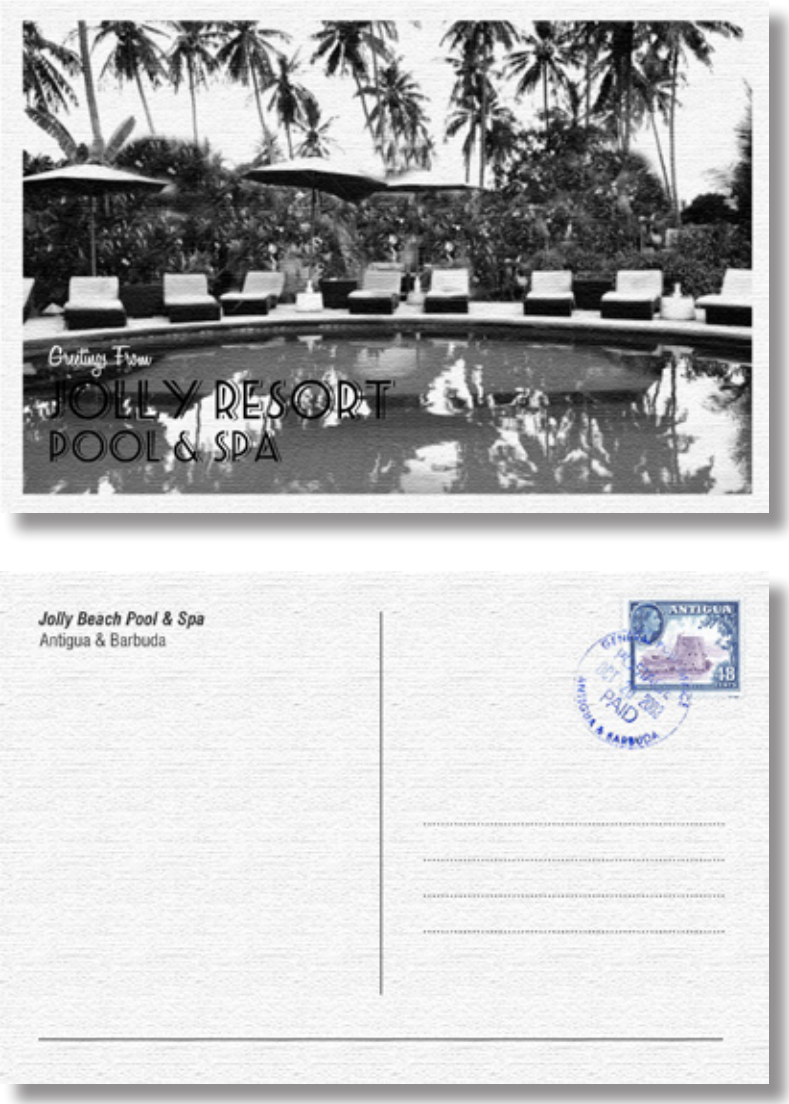


FIGURE 95
This postcard depicts the current resort pool typology and adjacent support furniture.

FIGURE 96
This postcard imagines similar programming but within the salt pond environment. In contrast, the same experience results in a 100% natural landscape

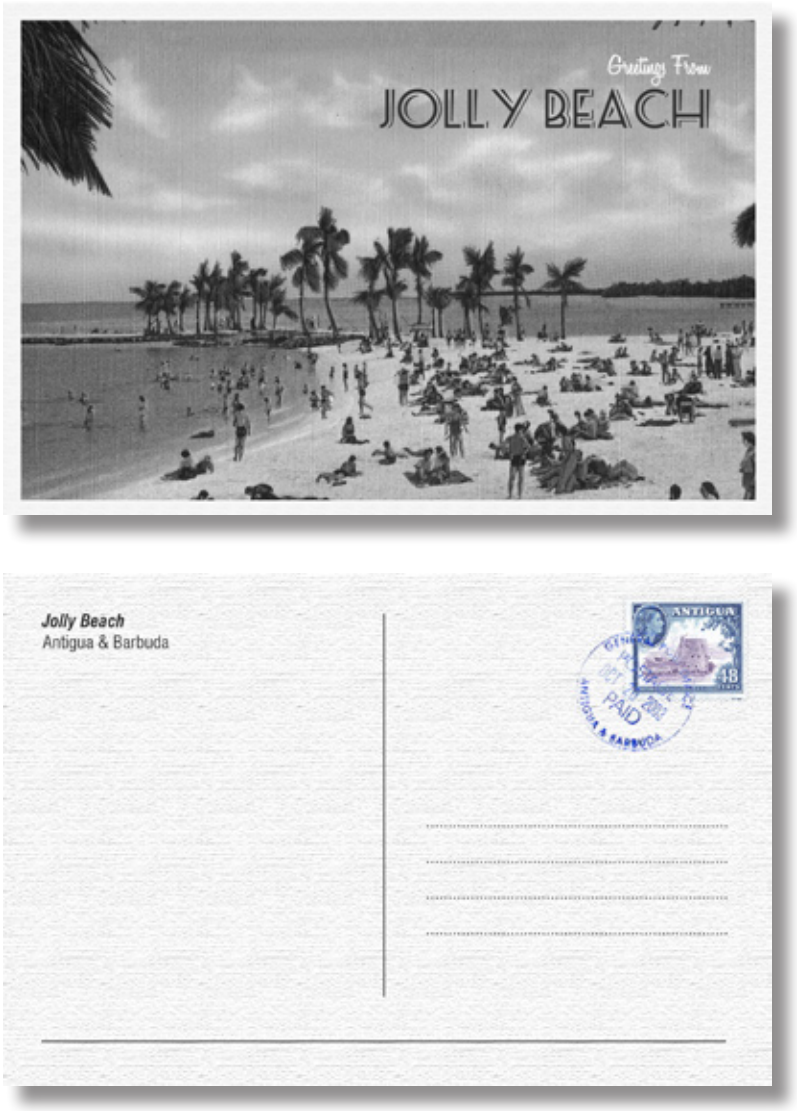


FIGURE 97
This vintage postcard depicts the typica beach going experience.

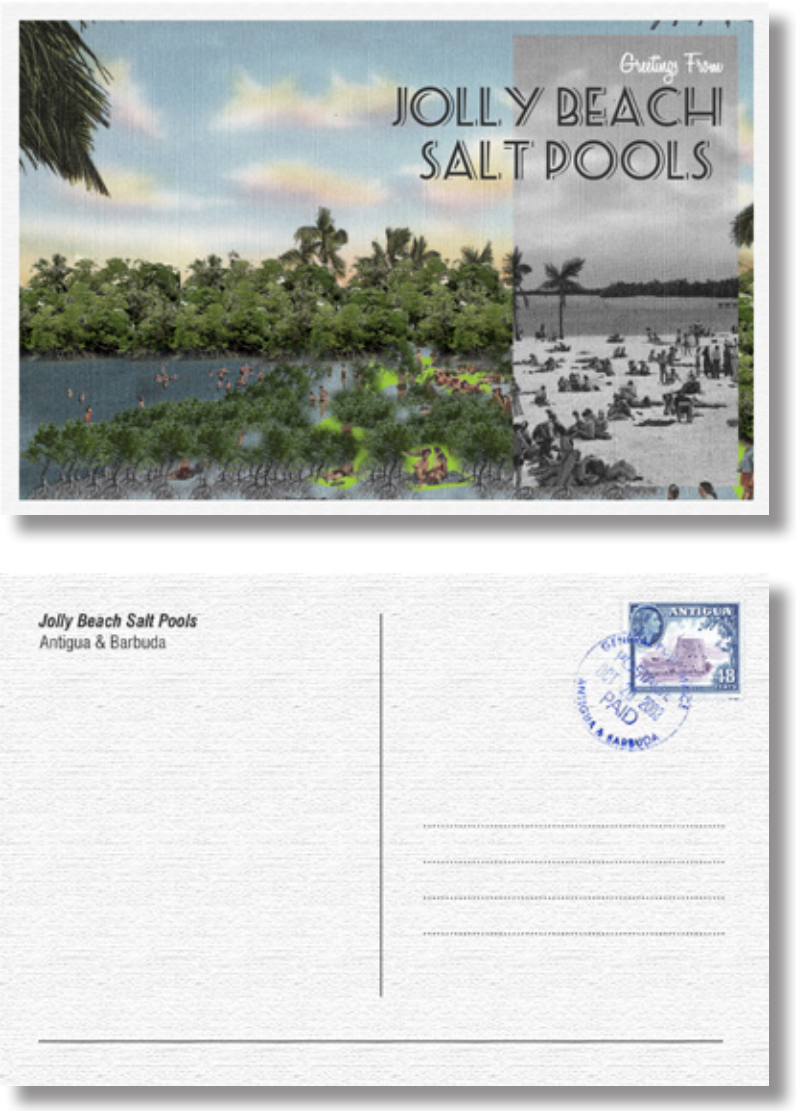


FIGURE 98
Comparatively, this postcard illustrates the same programming within the salt pond. Much like the last set of postcards, these images attempt to re-invent the brand image of salt ponds.

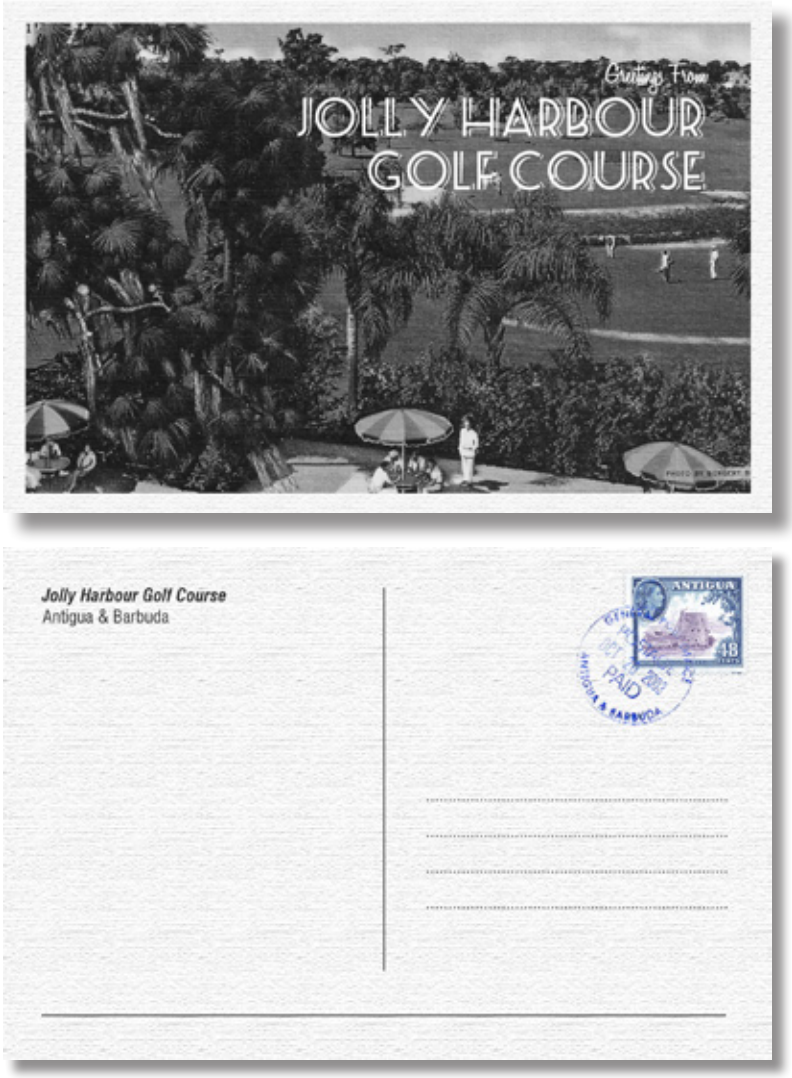


FIGURE 99
This vintage postcard illustrates a typical golf course view.

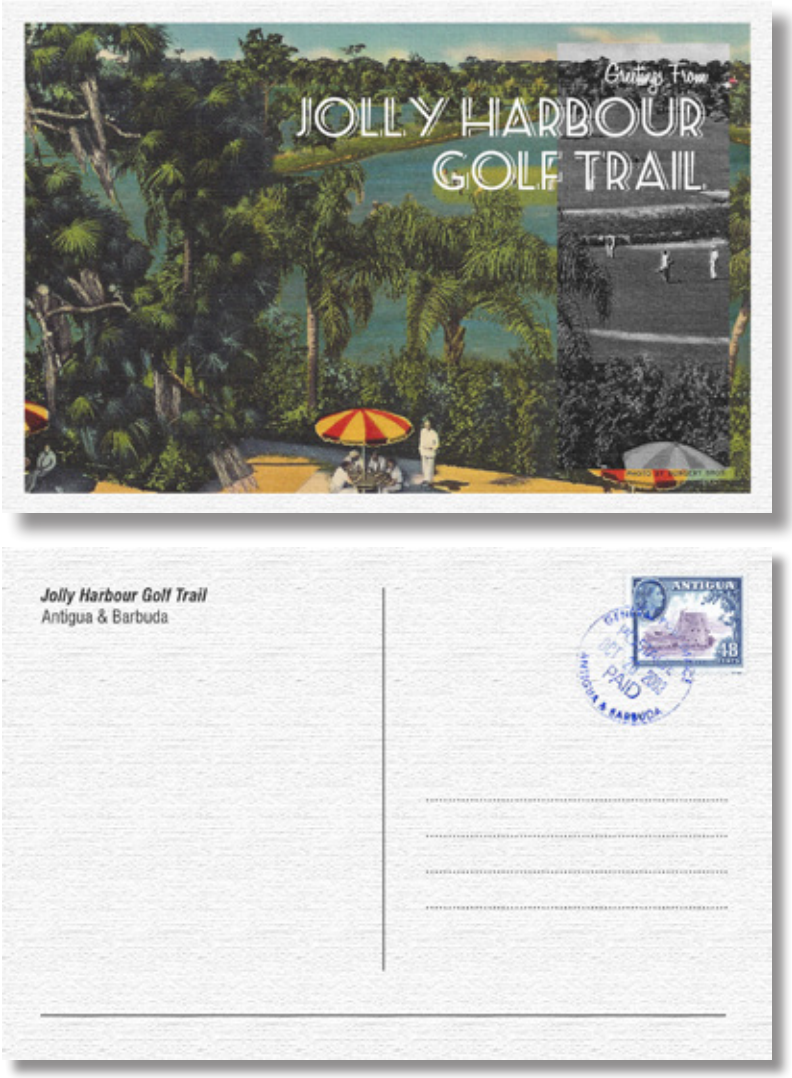


FIGURE 100
This postcard presents the erosion of the golf course and the resulting island effect. This re-positions the salt pond as a nextwork and connector.

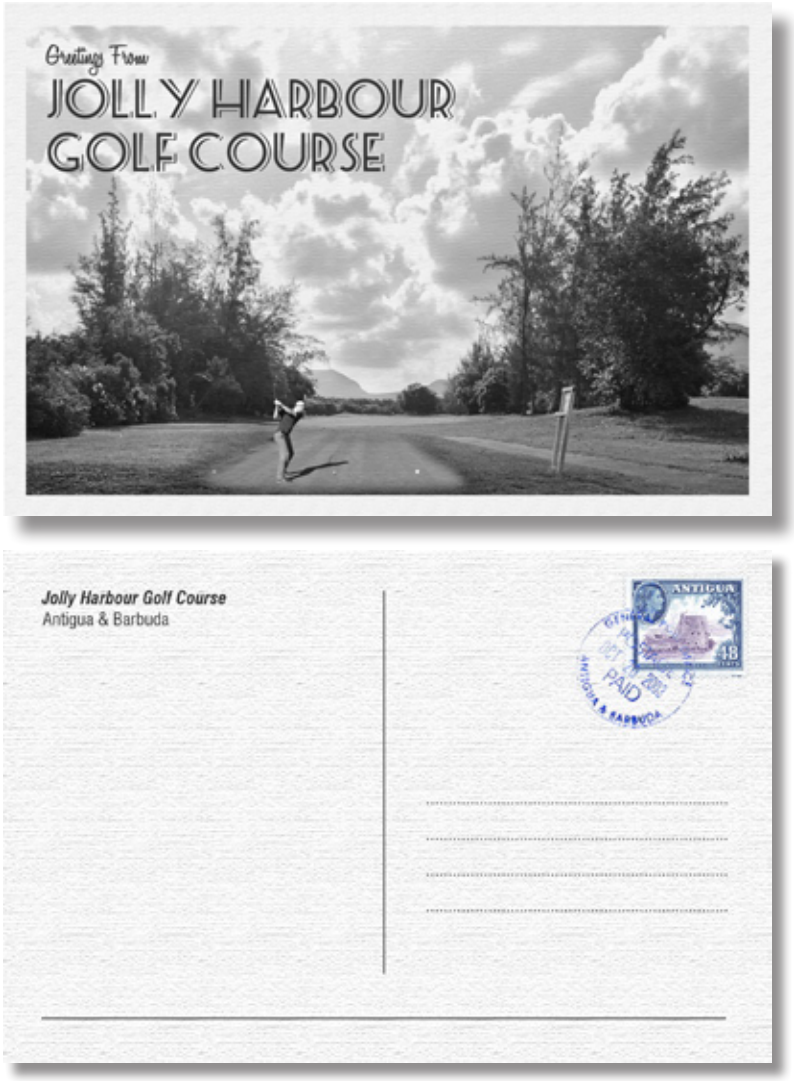


FIGURE 101
This modern photograph depicts a typical fairway view.

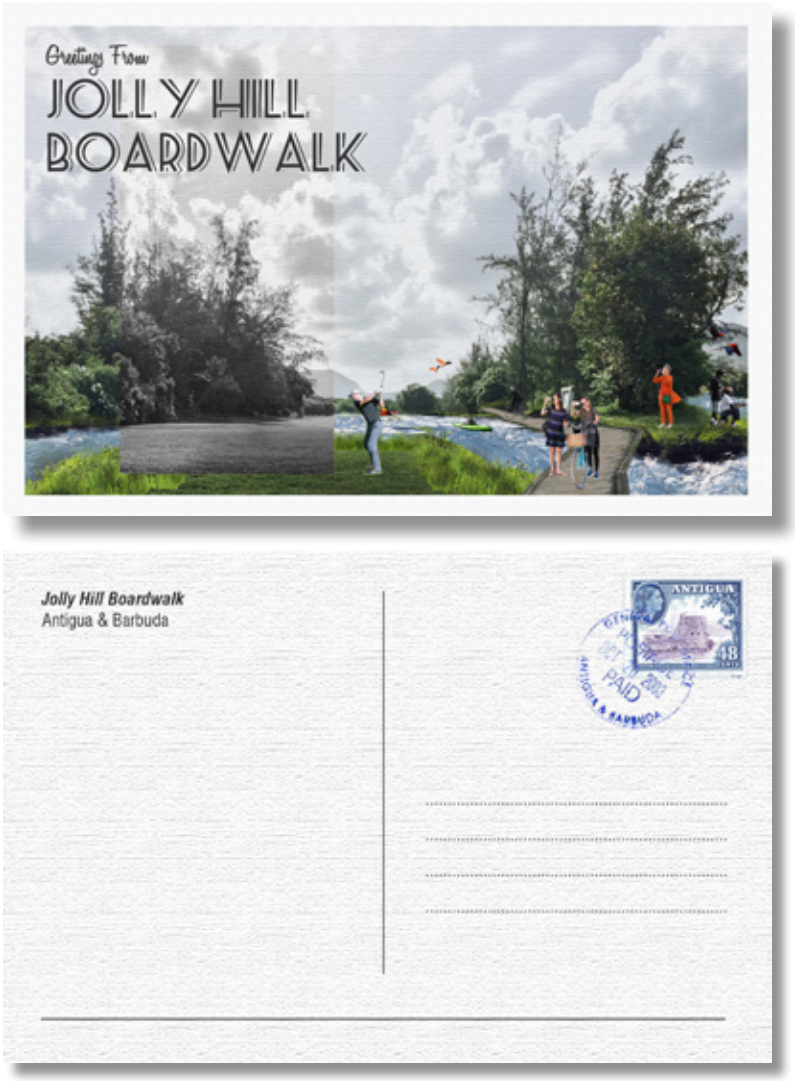


FIGURE 102
Comparatively, this postcard illustrates the ability of the golf course to take on multiple roles within the ecological and social networks.

FIGURE 103
Prior to the 1980's, the Christian Valley Watershed operated very typically; precipitation from the mountains was carried via streams downhill and eventually out into the sea. Due to the flat elevation of the site, ponds developed at the base of the mountain and seasonally breached the beaches to exchange with the sea water. These salt pond wetlands mediated in high precipitation periods, offered a sponge space during storms, and provided habitat to countless species.


HERMITAGE BAY
PEARNS BAY
EXHAUSTED QUARRY
THE COVE
-1m
-2m
-3m
-4m
MOSQUITO COVE
STREAM
JOLLY HILL SALT-POND
STREAM
TOWNSHIP OF BOLANS
JOLLY BEACH RESORT AND SPA
CARIBBEAN SEA
VALLEY CHURCH BAY
LIGNUM VITAE BAY

FIGURE 104
In 1987, majority of the Jolly Hill Salt Pond was dredged, bulldozing the surrounding mangrove forests and eliminating the intertidal inlet. The coral reefs are beginning to deteriorate as construction and extreme weather events have caused sedimentation.


STREAM
JOLLY HARBOUR
STREAM

FIGURE 105

In 1997, the dredged material was used to form the current artificial islands and peninsulas which support a marina, tourism and yachting related industries, and accommodation with mooring. A four meter dredged channel was dug to allow for access of super yachts to the marina. The dredged material could also have been used to construct the Jolly Harbour Golf Course which was also under-construction at this time and apart of the Jolly Harbour development.

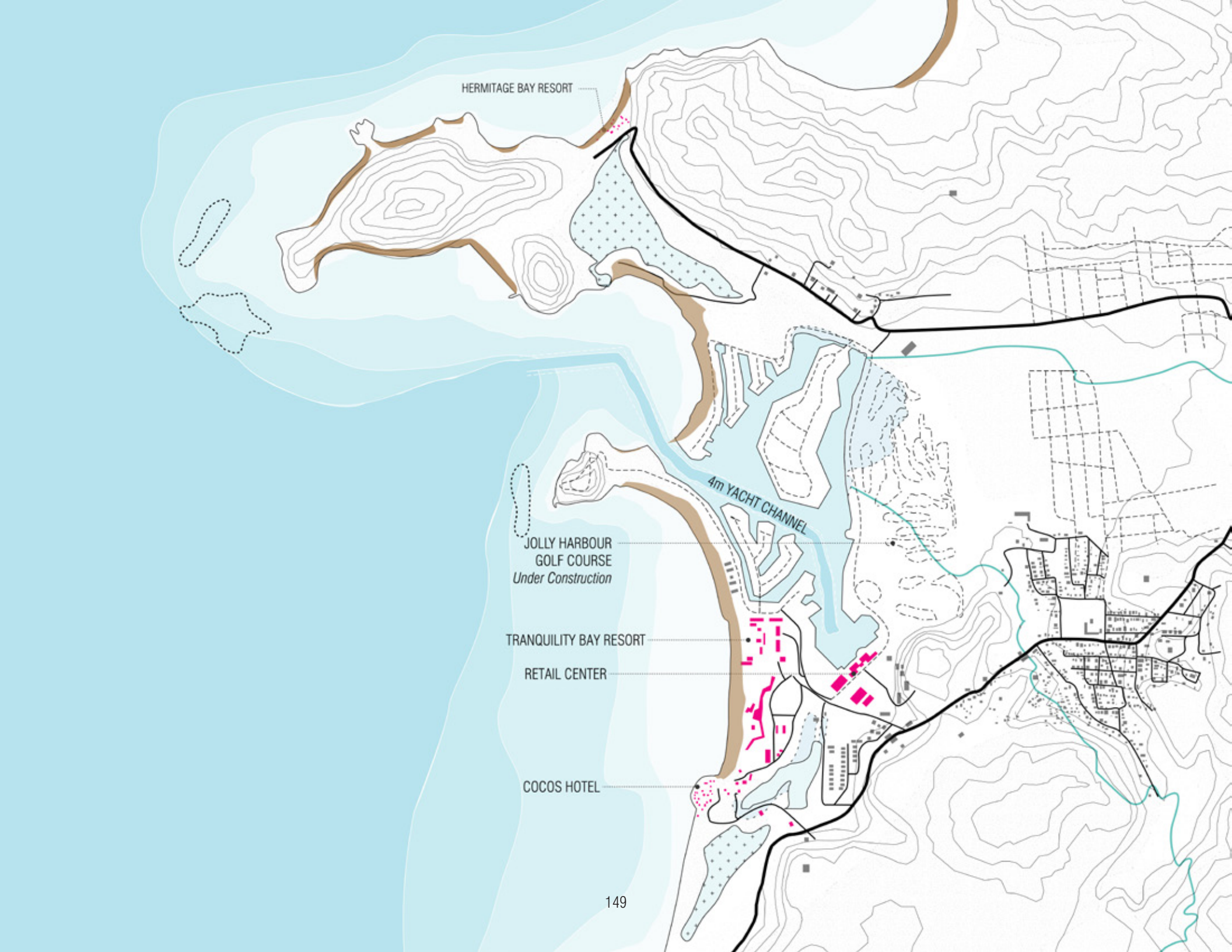
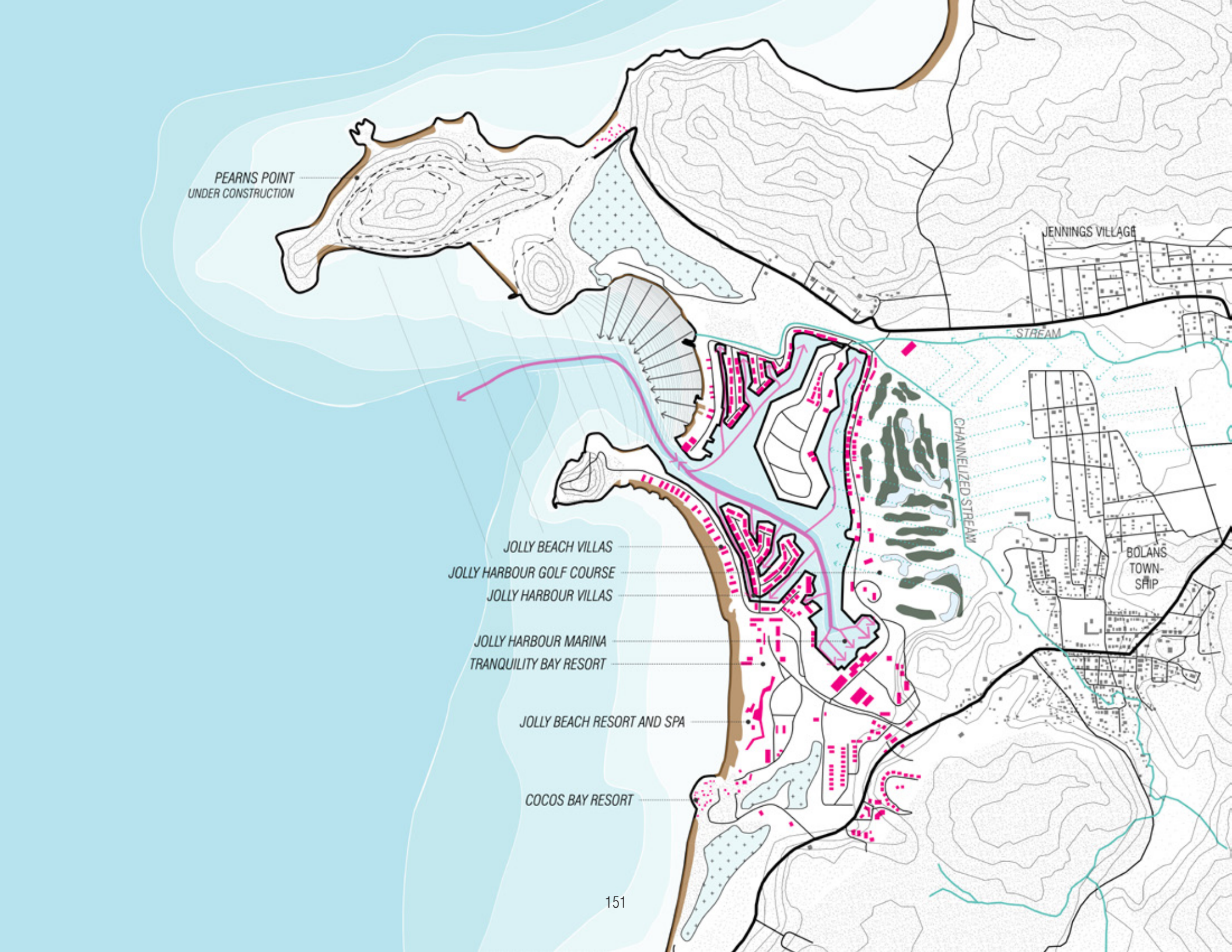

HERMITAGE BAY RESORT
4m YACHT CHANNEL
JOLLY HARBOUR
GOLF COURSE
Under Construction
TRANQUILITY BAY RESORT
RETAIL CENTER
COCOS HOTEL

FIGURE 106

By 2000, the majority of the landscape creation and shaping was complete and construction continued on developing single family detached dwelling along Jolly Beach and on the island in the middle of Jolly Harbour. This map shows the extent of the landscape moves and construction to date in 2017. In this time the Township of Bolans was expanded and the new Township of Jennings was established.


PEARNS POINT
UNDER CONSTRUCTION
JENNINGS VILLAGE
STREAM
CHANNELIZED STREAM
JOLLY BEACH VILLAS
JOLLY HARBOUR GOLF COURSE
JOLLY HARBOUR VILLAS
JOLLY HARBOUR MARINA
TRANQUILITY BAY RESORT
JOLLY BEACH RESORT AND SPA
COCOS BAY RESORT
BOLANS TOWN-SHIP

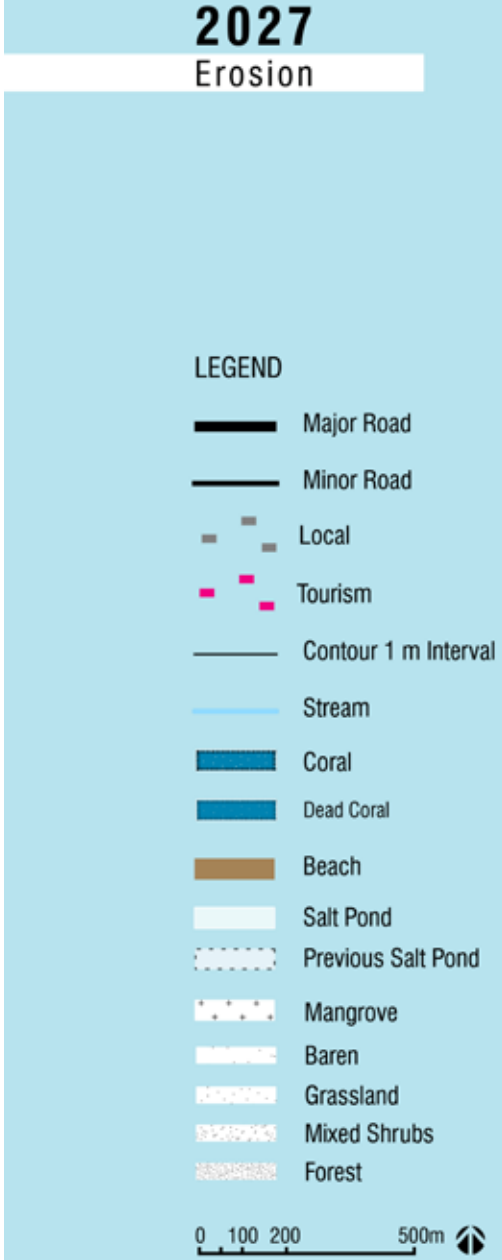


FIGURE 107
Design Strategy:
1. Implement a Living Breakwater to reverse beach erosion caused by the Super Yacht Channel.
2. Unchannel the stream and lead it through a strategic path to naturally erode the land back into the wetland it wants to be.
3. Shave the width of the golf course to lessen the need for fertilizers and water.

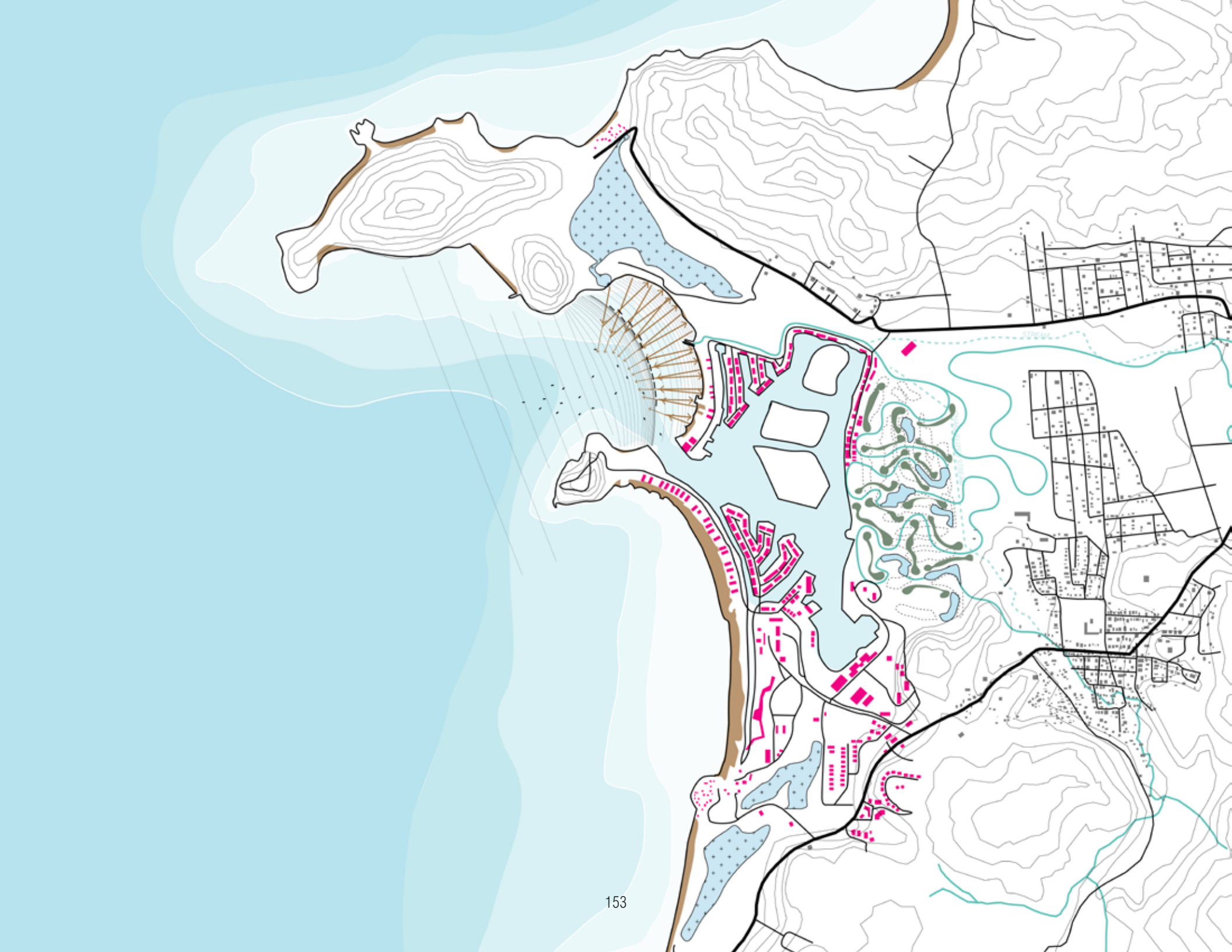


FIGURE 108
Design Strategy:
1. Re-establish sponge/wetland space between sea and land.
2. Remove development off of the beach to remove the monopoly of beach access.
3. Extend the Coastline inland for greater access and connection between the locals and the water.

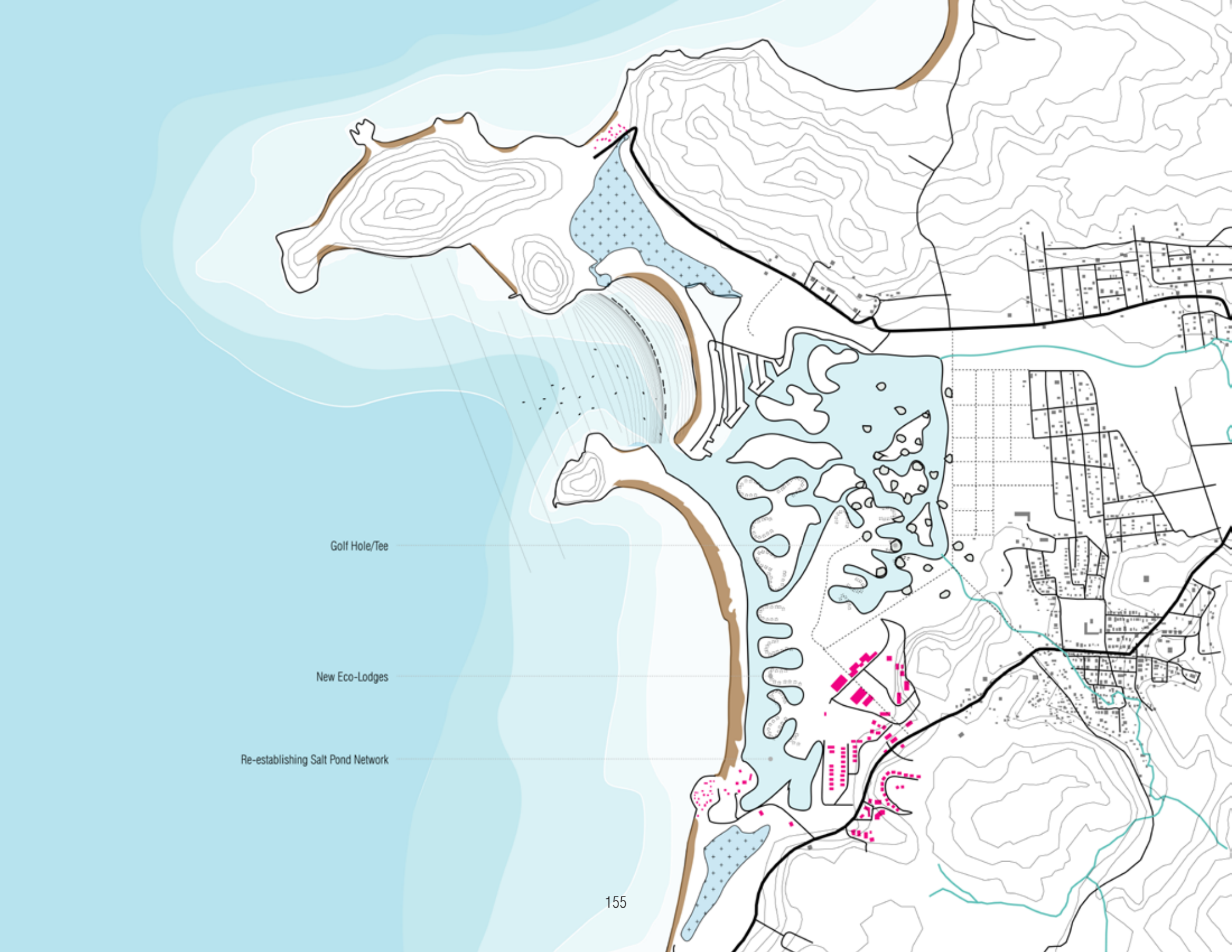

Golf Hole/Tee
New Eco-Lodges
Re-establishing Salt Pond Network

FIGURE 109
Design Strategy:
1. Now stands an integrated coastal environment of ecology, tourism, and local programming.
2. A Coral Nursery is implemented behind the living breakwater. This provides a new economic activity, tourism experience transplanting coral, and ecological habitat.
3. A public promenade connects the coast with the inland, and laterally along the North and South.


Trail through "The Flashes"
HERMITAGE BAY RESORT
PEARNS POINT
EXISTING
Nature Reserve, Private Homes, and Resort
HAWKSBILL SEA TURTLE NESTING SITE
CORAL NURSERY
LIVING BREAKWATER & CORAL REEF
JOLLY HARBOUR MARINA
Trail to
Green Hill
National Park
PUBLIC PROMENADE
GOLF TEE
GOLF HOLE
LOCAL CO-OP HOUSING
AGRICULTURE
RESORTS WITH SALT POOLS
LOCAL PROGRAMMING
COCOS HOTEL
EXISTING
SUGAR RIDGE RESORT
EXISTING

Part 04

Reflection

Concluding Thoughts

An integrated Future of Tropical Tourism.

Global Tourism has been the greatest asset and weakness to the development and stability of the small developing nations in the Caribbean. The intention of this thesis was to address the impacts of tourism and begin a discussion of how change could be fostered through a re-design of the tourism landscape, rather than by political or economic motivations. This led to re-making the traditional images of tropical tourism; the very images that have dictated coastal development for the last five decades. The strategy of this thesis was to select three sites that had each been altered by tourism in a different way and use design to expose and mediate its shortcomings. Each intervention attempts to find new opportunities for local economic growth, ecological regeneration, and social responsibility. The outcome of the thesis shifts the ground of the tourist by changing their preconceived perceptions and expectations to reflect a more authentic spatial experience.

The scale of tourism is its primary barrier to change. One of the main limitations of this work has always been why such a large scale intervention is needed and who would pay to change something that is profitable. Although this thesis presents a very compelling argument for why the current system is actually failing long term, the design is limited in presenting an argument for how the new landscape would evolve out of the old. The design proposals for Site 1 – Sleeping on the Reef and Site 3 – Sunbathing in the Salt Pond result from the subtraction of the existing structures. The assumption of the thesis is over time as the buildings degrade they would be disassembled and salvaged for the construction of the new buildings. However, the logistics and reality of this has not been actualized. An opportunity when continuing this research would be to survey the existing buildings and integrate their existence or demolition within the design proposal. This could then result in a greater systems diagram of energetic gains and losses within the entire network of ecology, economy and society. The next steps of this research would be to develop one or all sites in greater detail and accuracy over shorter time intervals. At present the design jumps time quite quickly and glosses over the intricacies of the natural systems and sequence of events which occur in the background. Providing more space to showcase the power harnessed by the natural systems (i.e. wave action, stream erosion, etc.) would strengthen the argument that these large scale landscape creation projects can be derived from the existing site and not be entirely artificial.

Another application of the design work in the future that also addresses the issues of cost and demolition would be to apply the design principles to islands which must rebuild after a natural disaster. This year, the Caribbean was hit devastatingly hard by a number of hurricanes; included in this is Antigua's

sister island Barbuda which saw 95% of its buildings damaged or destroyed by Hurricane Irma1. Social media has been instrumental in providing storm information, degree of destruction, and relief efforts; which can all be accessed in real time all over the world. The influence social media will have in shaping the future of information distribution is undeniable. Moving forward, this work would benefit from expanding the postcard design portion to include other mediums of visual material used in social media. Although the postcard is the most widely accepted and used form of tourism promotion, the "selfie" image and "Snapchat" video are more likely to dictate the desires and expectations of future tourists.

Lastly, establishing a term and framework for the proposed specialized tourism model would help place this research within the existing literature discourse. The opportunities of this thesis lie in its acceptance of the Mass Tourism Model as a necessary component to any alternative. This is one of the greatest weaknesses of the alternative models like eco- and agro-tourism as their rejection of the Mass Tourism Model hinders their ability to utilize and/or match its scale. Currently, eco-tourism is seen as luxury or backwoods experience that does not appeal or is not accessible to the modern tourist. Creating niche specialized markets would not only spread out tourism arrivals but also bring ecological and social responsibility into the mainstream tourism model. However, a limitation and assumption of the work is the legitimacy of Mass Tourism to take responsibility of local ecosystems like the artificial reef in Site 1 – Sleeping on the Reef. Although this provides a beneficial opportunity to combine the two programs of ecology and tourism, it may take a natural disaster or significant disruption in the industry to generate change.

Consumers are extremely important players in the growth of these tourism destinations and should be demanding for ecologically aware, socially inclusive, and culturally respective spaces in which we spend our time, energy, and in these cases most importantly money. This thesis attempts to shift our perspective by exposing the ugly side of tourism, while embracing and re-evaluating our position on nature's value. The goal is in reading this thesis the reader is provoked to reject the status quo and foster a new position on traditional tourism. The future of Tropical Tourism in the Caribbean relies on these small island states to reclaim control of their future.

Back Matters

Endnotes

Abstract

1 Jeff Baldwin, "Tourism Development, Wetland Degradation and Beach Erosion in Antigua, West Indies," in *Tourism Geographies* 2, no. 2 (2000): 194.

Forward

1 Jeff Baldwin, "Tourism Development, Wetland Degradation and Beach Erosion in Antigua, West Indies," in *Tourism Geographies* 2, no. 2 (2000): 194.

2 Ibid.

3 Ibid., 197.

Introductory Essay

1 Jamaica Kincaid, *A Small Place* (New York: Penguin, 1989), 12-14.

2 World Tourism Organization (WTO), National and Regional Planning Methodologies and Case Studies, 1993, quoted in Victor T. C. Middleton and Rebecca Hawkins, *Sustainable Tourism: A Marketing Perspective* (Oxford; Woburn, 1998), 248.

3 Jackman, Mahalia, "Output Volatility and Tourism Specialization in Small Island Developing States," in *Tourism Economics* 20, no. 3 (2014): 527.

4 Victor T. C. Middleton and Rebecca Hawkins, *Sustainable Tourism: A Marketing Perspective* (Oxford; Woburn, 1998), 115.

5 Seyhmus Baloglu and Ken W. McCleary, "A Model of Destination Image Formation," in *Annals of Tourism Research* 26, no. 4 (1999): 870.

6 Ibid.

7 William Cannon Hunter, "A Typology of Photographic Representations for Tourism: Depictions of Groomed Spaces," in *Tourism Management* 29, no. 2 (2008): 356.

8 Seyhmus Baloglu and Ken W. McCleary, "A Model of Destination Image Formation," in *Annals of Tourism Research* 26, no. 4 (1999): 871.

9 Katharina Petra Zeugner-Roth and Vesna Žabkar, "Bridging the Gap between Country and Destination Image: Assessing Common Facets and Their Predictive Validity," in *Journal of Business Research* 68, no. 9 (2015): 1844.

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11 Marion Markwick, "Postcards from Malta: Image, Consumption, Context," in *Annals of Tourism Research* 28, no. 2 (2001): 420.

12 William C. Hunter, "A Typology of Photographic Representations for Tourism: Depictions of Groomed Spaces," in *Tourism Management* 29, no. 2 (2008): 361.

13 Ibid.

14 Ibid.

15 Ibid.

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