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„Galapagos: Problems of an Imagined Paradise“

verfasst von / submitted by

Jonathan David Clark

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# Galapagos: Problems of an Imagined Paradise

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“A carefully devised advertising and promotion program will be necessary if the ordinary tourist is to visit the Galapagos” (Consulting report on how to promote tourism to the Galapagos, quoted in Larson: 2001: 227)

“Limited water availability, poor water quality or media portrayal of a water crisis can [...] do great harm to the image of tourism destinations” (Gössling *et al*.: 2012: 13).

*Cover photo, Blue-Footed Boobie, Galapagos, Autor's Own.

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Jonathan Clark Matrikelnummer: 1577543

# Galapagos: Problems of an Imagined Paradise:

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## List of Abbreviations:

| | |
|---|---|
| ARCA | La Agencia de Regulación y Control del Agua |
| CDF | Charles Darwin Foundation |
| CDRS | Charles Darwin Research Station |
| CGREG | Consejo de Gobierno de Regima Especial de Galápagos |
| COOTAD | Código Orgánico de Organización Territorial, Autonomía y Descentralización |
| DPWS | Department of Potable Water and Sewarage |
| GADs | Gobiernos Autónomos Descentralizados |
| GDP | Gross Domestic Product |
| GIZ | Deutsche Gesellschaft für Internationale Zusammenarbeit |
| GNP | Galapagos National Park |
| GNPS | Galapagos National Park Service |
| INEC | Instituto Nacional de Estatísticas y Censos |
| INGALA | Galapagos National Institute |
| JICA | Japanese International Cooperation Agency |
| LOREG* | Ley Orgánica de Régimen Especial de la Provincia de Galápagos |
| MDGs | Millennium Development Goals |
| NPBV | National Plan for Good Living (Buen Vivir) |
| SNDPP | National Decentralized Participatory Planning System |
| SENAGUA | Secretaría Nacional del Agua |
| SENPLADES | Secretaría Nacional de Planificación y Desarrollo |

| | |
|---|---|
| SLG* | Ley de Regimen Especial para la Conservación y Desarrollo Sustentable de la Provincia de Galápagos (a.k.a. The Special Law of the Galapagos) |
| TULAS | Texto Unificado de la Legislación Ambiental Secundaria (2003) |
| UN | United Nations |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| WMI | Water Management International |
| WWF | World Wide Fund for Nature |

* The Special Law of the Galapagos (*'Ley de Regimen Especial para la Conservación y Desarrollo Sustentable de la Provincia de Galápagos*', in Spanish), originally passed in 1998, was amended in 2015 and renamed the '*Ley Orgánica de Régimen Especial de la Provincia de Galápagos*'. Both are commonly referred to as the 'Special Law' in English. In order to distinguish between the 1998 law and 2015 law, this thesis shall refer to them as the SLG, in the case of the 1998 law, and LOREG, in the case of the amended 2015 law.

## List of Figures:

## Abstract:

This thesis looks at how cultural imaginations of the Galapagos Islands have fueled the growth of a large tourism industry to what was, historically, considered an arid and barren archipelago. The thesis agues that the previous academic literature, which tended to characterize the Galapagos Islands as 'pristine' laboratories for scientific discovery, and set conservation in opposition to development, overlooks the influence of literary and artistic canons in forming imaginations of the islands as 'paradisiacal'.

These two separate, but interlinked, characterizations have conflicting teleological implications when taken to their logical conclusions, both of which could restrict residents' abilities to deal with the problems of providing adequate clean water. Water resources are chosen as an example due to their vital importance for tourism as well as their historical scarcity on the archipelago. The thesis lays out various factors which have prevented the Galapagos Islands from being able to provide a sufficient supply of potable water and outlines areas in which there is a need for further research.

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## Abstract:

Diese Masterarbeit untersucht, wie kulturell geprägte Vorstellungen das Wachstum einer großen Tourismusindustrie auf den Galapagos Inseln begünstigten, die - historisch betrachtet - als 'trocken' und 'unfruchtbar' galten. Sie zeigt auf, wie die bisherige wissenschaftliche Literatur, welche die Galapagos Inseln tendenziell als "unberührte" Labore für wissenschaftliche Entdeckungen und Erhaltung als Gegensatz zu Entwicklung darstellt, den Einfluss von Literatur und Kunst bei der Bildung von Vorstellungen von den Inseln als "paradiesisch" übersieht.

Diese zwei unterschiedlichen, aber miteinander verknüpften, Charakterisierungen haben sich widersprechende Folgen, wenn aus ihnen logische Schlussfolgerungen gezogen werden, welche die Fähigkeit der BewohnerInnen einschränken könnten, mit den Problemen der Bereitstellung von sauberem Trinkwasser umzugehen. Die Wasserressourcen werden auf grund ihrer entscheidenden Bedeutung für den Tourismus und ihrer historischen Knappheit auf dem Archipel als Beispiel gewählt. Die Arbeit zeigt verschiedene Faktoren auf, welche die Galapagos Inseln daran hinderten, eine ausreichende Trinkwasserversorgung zur Verfügung stellen und zeigt Bereiche auf, in denen weitere Untersuchungen erforderlich sind.

## 1: Introduction:

The Galapagos Islands hold iconic status as an 'Edenic' paradise: they have been uniquely constructed as "*a perfect place* where nature can be studied and key evolutionary processes understood" (Quiroga: 2013: 24 (emphasis added)). This image of perfection has made the archipelago a magnet not just for scientists interested in their unique flora and fauna, but also for tourism. The Galapagos Islands have become world famous, they are a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site, a site of singular significance in the history of science, an item on many peoples' 'bucket list', and home to approximately 25,000 people, a figure increasing rapidly. Yet they are also "[a] struggling sanctuary with dire political, social, and environmental problems" (Mancera Autrique: 2012: 2). These problems are inextricably bound to the Galapagos Islands' population (both transient and permanent), which is, in turn, highly contingent upon developments in the tourist industry upon which many small islands such as the Galapagos are, or are seen to be, reliant (Scheyvens & Momsen: 2008: 491). The disjuncture between the two views of the Galapagos Islands, a 'perfect place' with 'dire problems', raises intriguing questions about how the two views are, or might be, reconciled by various actors connected to the archipelago, and what effects the narratives that are informed by such conceptualizations of the islands may have

on material conditions there.

The Galapagos Islands have not always been viewed in the paradisiacal terms in which they are so widely viewed today – they were historically christened “dreary barren and desolate” (Larson: 2001: 38) and an “archipelago of aridities” (Larson: 2001: 7). This thesis will seek to understand the historical and cultural processes through which the image of the Galapagos Islands has been transformed. Subsequently, the material impacts of this transformed image on the archipelago shall be investigated: the fact that a place historically considered to be lacking in water resources has become host to a relatively large population, and the socio-environmental impacts this has had. This shall lead to an attempt to consolidate existing knowledge and research on the subject of water resources on the archipelago.

Given the linkage between the archipelago's population and the problems it is experiencing, the first research question this thesis shall attempt to answer is:

'How have people been drawn to the Galapagos Islands?'

This shall address not just the immediate motivating factors that draw tourists and residents to the islands, but the underlying cultural understandings of the islands that inform

and shape those motivating factors. This thesis shall hypothesize that the Galapagos Islands have come to be located within two distinct, but closely related narratives which characterize them as: i) 'paradise', and ii) 'pristine'. It shall be seen that both narratives are, at least partially, consequences of the insular nature of the Galapagos and, furthermore, that both narratives have, to varying degrees, been appropriated by the tourism industry as a means to promote visitation to the archipelago.

The first narrative shall be seen to have grown out of (predominantly) European literary and artistic traditions relating to islands and dating back at least as far as ancient Greece. It is often applied to remote and exotic islands, which, as Western geographical horizons expanded, have come to be located predominantly in 'the orient'. The second narrative arises out of the romantic movement of the early- / mid-nineteenth century and its veneration of nature. The conservation movement that was engendered by this movement has portrayed the Galapagos Islands as of particular importance due to the fact that their isolation means their unique flora and fauna have remained exceptionally unspoiled - “95% of the archipelago’s native species remain intact today” (Galapagos Conservancy). Furthermore, due to this narrative, accounts of the significance of Darwin's visit to the Galapagos have assumed elements of a “modern secular

myth" (Quiroga: 2013: 25). Both 'paradise' and 'pristine' narratives have been co-opted and interwoven by the tourism industry to create a sacralized image of the Galapagos as a place worthy of being gazed upon by tourists. This is despite the two narratives actually having, it shall be seen, diametrically opposed teleological implications.

Once these narratives have been elucidated and understood, this thesis shall subsequently seek to analyse some of the material effects the cultural understandings these narratives engendered have had. This leads to this investigation's second research question:

'How have culturally generated understandings of the Galapagos Islands impacted upon the material / real physical archipelago?'

The first rearch question focuses on discourses and deals with the abstract. The second research question seeks evidence of a realist counter position. Merchant argues that "The material world is mentally constructed and interpreted in terms of language, but it exists as biophysical entities. Only biophysical beings, such as humans, have the tongues and brains to create and perform speech acts […] The real physical world and the constructed mental world thus exist in dialectical relation to each other. Reality and narrative, […] interact with

each other.” (Merchant: 2013: 172). It is aspects of this interaction that the second research question shall attempt to shed light upon. It shall be suggested that the culturally produced images of the Galapagos Islands have not only generated a flourishing tourism industry, but that the material impacts of increased visitation to, and associated increased habitation on, the archipelago has resulted in the emergence of new narratives and the establishment of new dialectical relationships between them and the 'paradise' and 'pristine' narratives. The effects of tourism and development on the Galapagos Islands have been many and varied. Indeed, copius literature has been produced by the conservation movement (e.g. the Charles Darwin Foundation (CDF), UNESCO etc.) highlighting the different challenges the Galapagos Islands face. This thesis shall focus on one material challenge that Benitez-Capistros *et al*. identify as posing a significant challenge for the Galapagos Islands, namely the “water basin overexploitation and decrease of water quality” (Benitez-Capistros *et al*.: 2014: 113). This choice is at least partially motivated by the author's own experience on the Galapagos Islands in 2015 during which the difficulties in obtaining a sufficient supply of potable water were experienced first-hand. Water pollution raises issues of sustainability – it provides a tangible test not just of humankind's impact on 'pristine' nature, but also on its ability to survive on the islands.

Thus, this thesis touches on globally relevant themes such as tourism, resource management, and sustainability, and applies them to show how culturally constructed imaginations of place based largely on European / Western narratives have had material impacts upon a specific location.

This thesis shall conclude by seeking to draw together insights gained through the investigation of the first two research questions in order to lay out ways in which they could potentially answer a final research question:

'how might the understandings generated by answering research questions one and two be brought together to improve understandings of the links between socially constructed imaginations of place and the material conditions, and problems, of those places?'

As the Galapagos Islands', and Ecuadorian, politics are a constantly evolving landscape, for reasons of practicality, this thesis shall only consider events up until the end of the presidency of Rafael Correa in May 2017.

## 1.2: A Structural Overview of the Thesis:

This thesis will begin by charting the evolution of images of place in Western discourse. A historical overview of first 'paradise' and then 'pristine nature' narratives shall be offered. These overviews shall draw on a wide variety of sources, taking an inter-disciplinary perspective. Once the historical evolution of these narratives has been established, an overview of the history of the Galapagos Islands shall be presented in chapter three. This shall enable, in chapter four, a synthesis to be made, in which the preceding two chapters are drawn together and deepened understandings of the Galapagos archipelago as 'paradise' and 'pristine' are generated. This shall allow the allure of the Galapagos archipelago to tourists to be explained by examining how islands, particularly remote, tropical islands, have frequently come to be constructed as paradiasical locations in popular culture. Whilst the 'paradise' narrative, it is hypothesized, in some ways is complemented by the construction of the Galápagos archipelago as a “pristine” site, which Hennessy & McCleary (2011) argue has guided attitudes to their conservation, it also establishes a seemingly irreconcilable teleological opposition. Thus, chapter four shall also lay the ground for consideration of the ways in which growth in tourism and conservation of the sites tourists wish to visit are both interdependent and, at the same time, potentially incommensurable. Chapter five shall attempt to draw

provisional conclusions on the first research question and provide a robust explanation of how people are drawn to the archipelago, emphasizing the underlying culturally constructed understandings of place that underpin their motivations to visit or settle on the islands.

Chapter six shall begin the juxtaposition of the discourse analyzed in Chapters two to four with material conditions on the archipelago. In particular, the 'paradise' narrative that has been constructed around the Galápagos archipelago shall be contrasted with earlier accounts of the islands as 'hell on Earth'. Following this, evidence shall be adduced to demonstrate that both the 'paradise' and 'pristine' narratives lack a basis in current conditions on the archipelago. Chapter seven shall look at one particular manifestation of this disjuncture: the struggle to provide access to safe drinking water to an increasing population. A brief introduction to the situation regarding water on the major islands shall be offered before three distinct issues are identified in relation to the struggle to provide sufficient potable water: water scarcity, contamination of water supplies, and complex institutional / organizational structures. It shall be seen the first two of these issues can be related back to the imaginations stemming from those discourses previously examined in relation to the first research question. It will be seen that the relationship between the third issue and the

narratives previously explored is more questionable. Once these three issues have been explored, chapter seven shall seek to identify ways in which new discourses have developed on the archipelago as a reaction to the problems caused by said issues. It shall also explore how new narratives have emerged which challenge some conservationist narratives about the islands. Once this has been accomplished, provisional conclusions shall be drawn on the second research question.

Finally, an attempt shall be made to answer the final research question based on the understandings generated by the investigation of the first and second research questions. An outline shall be given of potential avenues for further research.

## 2: The Evolution of Images of Place Through Different Narratives:

Gunn contends that popular images of place evolve through two processes: one which she labels 'organic', in which images are derived from communication such as children's books, news reports and, as this chapter will hypothesise, from literary and artistic canons; and one which she labels 'induced', by which she means “the conscious effort of development, promotion, advertising, and publicity” (Gunn, quoted in Britton: 1979: 320). A similar view is also apparent in Urry's seminal work, *The Tourist Gaze*, in which it is explained that what is merely *seen* by the eye is then subject to *interpretation* by the mind, a process “conditioned by personal experiences and memories and framed by rules and styles, as well as by circulating images and texts” (Urry & Larsen: 2011: 2). This leads Urry to suppose that places are selected as subjects to be gazed upon on the basis of anticipation fueled particularly by the fantasy of pleasure “constructed and sustained through a variety of non-tourist technologies, such as film, television, literature, magazines, CDs, DVDs and videos” (Urry & Larsen: 2011: 4). Images thus created may be of particular importance in the case of remote locations which would otherwise be under-represented in the (Western / European) media.

This chapter shall offer a brief overview of historical representations of paradise in various media such as might inform and influence the 'organic' conceptualization of islands as paradises. It shall then provide a brief overview of the evolution of the narrative which imagines 'untouched' sites, where nature has remained 'pristine', free from human interference. The terms 'paradise' and 'pristine' shall be used to differentiate these two narratives, though it should be noted that, even in the academic literature, that these images are frequently conflated, despite, as shall be demonstrated, them having quite different historical and teleological bases.

## 2.1: A Historical Overview of Paradise:

The etymology of the word 'paradise' traces its origins to Persian ‘pairidaēza’, which, by the time of Xenophon in around 360 B.C.E, had become the Greek ‘paradeisos’, referring to walled royal gardens containing orchards, gardens, and stocked with animals for hunting (Ramsey-Kurz: 2011: viii *et seq*.). It then entered the English language via Ecclesiastical Latin and French. How though did 'paradise', a word which “began its life rather obscurely to denote the park of a Persian king” (Daemmrich: 1997: vii), become such a ubiquitous term in advertising, newspaper headlines, literature, and (predominantly) Western popular culture today, particularly in relation to the conceptualization of islands, especially tropical islands, as paradisiacal? To answer this question it is necessary to turn to literary and artistic canons as both reflectors and shapers of cultural imaginations.

Daemmrich (1997) argues that the ubiquity of the paradise motif in popular culture is due to literature and its ability to “convert a universally shared dream of a place or condition of ineffable bliss into a vibrantly energetic motif that then spills over the boundaries conventionally erected between fictional and other literatures” (Daemmrich: 1997: vii). Daemmrich outlines the three possible conceptual locations of paradise in Western culture: firstly, it may be located in an afterlife (Elysian Fields, Heaven, etc.); secondly, it may be

created as a “literary, technological, or pharmacological artifact” (Daemmrich: 1997: 7); finally, it may be an actual terrestrial location - a physical place to be searched for and found in distant, inaccessible, exotic locations, a notion that Daemmrich suggests originated with St Augustine in the late-fourth or early-fifth century (Daemmrich: 1997: 7 *et seq*.). It is the terrestrial conceptualization of paradise, its enduring effect on popular culture, and association with islands with which this section shall concern itself.

The notions of distance and the exotic are highly significant. Urry & Larsen note that in tourism (the modern search for pleasure / paradise) a crucial feature is the “distinction between the familiar and the faraway and how such differences produce distinct kinds of liminal zones.” (Urry & Larsen: 2011: 13). Berg & Edelheim (2012) establish islands as spaces particularly susceptible to liminality: the experience of traveling to an island becomes, in this manner of thinking, akin to a ritual, and visitors to islands assume an ambiguous status of observing and experiencing, but of simultaneous detachment as their stay is merely temporary and experiences fleeting. Exploring a similar idea, Ramsey-Kurz quotes Schopenhauer: “The fascination of distance [...] presents a paradise, vanishing like an optical delusion, when we have allowed ourselves to be enticed thither” (Ramsey-Kurz: 2011: vii).

Not long after St Augustine, the medieval Irish legend of St Brendan of Clonfert, who “found a truly heavenly abode - paradise - on some unknown and uninhabited island” (Ramsey-Kurz: 2011: xi) helped establish the sea as the physical barrier to be overcome in the quest for Earthly paradise. That said, the 'Paradiasical Island' has existed as part of creation myths or origin stories in many cultures and has appeared frequently as a motif in literature since ancient times in “real or imaginary tales of voyages (Homer, Hesiod, Pindar, Plato, Plutarch, Thomas More, etc.)” (Cantallops & Cardona: 2015: 172). For example, Homer’s island of Scheria was a “land of bliss” (Hofmann: 1961: 363). If Daemmrich's suggestion (that the conception of paradise as an actual terrestrial location originated with St Augustine in the late-fourth or early-fifth century) is correct, then such earlier tales must have set out an alegorical / mythological foundation for later beliefs. Jumping forward from St Brendan, Dante's *Divine Comedy* (1300 C.E) envisages an earthly paradise which may be reached, although this involves the difficult ascent of the mountain of purgatory, which is located on the other side of a 'hemisphere of water' (Merchant: 2013: 42-43).

Such a literary tradition undoubtedly influenced the perceptions of explorers and, in turn, their reports of fantastic, far-away places, which then inspired further literary works.

Travel writing even became a genre in and of itself. In their remoteness and isolation, islands were, and are, easily idealized, both by writers and travelers, as Edenic locations: escapes from modern life that, due to their small, controllable size, lend themselves to utopian projects (Hennessy & McCleary: 2011: 140). It is for this reason that Crane & Fletcher claim that “the conceptual frameworks and methodologies of island studies can be enriched by engagement with literature” (Crane & Fletcher: 2016: 648).

Early supposed locations for paradise were the Near or Far East (not just the Holy Land, but India, Ceylon (now Sri Lanka), and China). In 1492, Christopher Columbus was at least in part inspired in his quest to find a sea route to India by Marco Polo's tales of the East – Columbus's journal frequently referred to the “Great Kahn” he expected to trade with, seemingly unaware that the Mongol ruler described by Marco Polo had been overthrown over a century earlier in 1368 (Wadsworth: 2016: 14). Indeed, Marco Polo's writings continued to inspire paradisiacal images of far away lands for many centuries: for example, in Samuel Taylor Coleridge's writing of Kubla Kahn's “dome of pleasure” and “milk of paradise” in 1797 (MIT: 2001).

Although Columbus had at least some vested interest in providing exaggerated reports of the wonder of the new

lands he had found (“his persistent misidentification of spices, trees, and resins displayed his frantic search to find something on the voyage that he could turn to profit” (Wadsworth: 2016: 37)), his journal of his first voyage still paints a paradisiacal picture of: “so many [islands] that they could not be numbered” (Wadsworth: 2016: 48); with a hospitable climate “it does not appear to me that there can be a more fertile country nor a better climate under the sun” (Wadsworth: 2016: 59); populated by innocent inhabitants “very well made, with very handsome bodies, and very good countenances” (Wadsworth: 2016: 46), “a loving people, without covetousness” (Wadsworth: 2016: 64), “very gentle, not knowing what is evil, nor the sins of murder and theft” (Wadsworth: 2016: 55). The trees of fruit and 'sinless' inhabitants echo the biblical story of Eden. On his third voyage, Columbus even believed he had located the Garden of Eden on the mainland of what is now South America (Columbus, at the time, could not have known that this was not just another island) (Merchant: 2013: 50). The New World was seen as full of paradises: in 1518 Alonxo da Zuarza called Hispaniola “'an enchanted island where the fountains play, the streams are lined with gold, and where nature yields her fruits in marvelous abundance.'” (Merchant: 2013: 50).

Daemmrich cites records of works by early explorers and settlers of the Americas employing similar imagery in their

calls to others to join them: one asserted of Virginia that it was “Earth's onely Paradise / Where Nature hath in store / Fowle, Venison, and Fish, / And the fruitfull'st Soyle / Without your Toyle / Three Harvests more, / All greater than your Wish” (Michael Drayton, 'Ode to the Virginian Voyage' (1606), quoted in Daemmrich: 1997: 11). Whilst Virginia is, obviously, not an island, it was, at the time, to European readers, still sufficiently remote and exotic to be imagined in paradisiacal terms. As Western geographic boundaries expanded however, paradise retreated to the most remote and exotic locations, typically islands.

The final terrestrial paradisiacal locations to be discovered by Europeans were the Pacific islands, which, due to their isolation from corrupting outside influences, and exotic flora and fauna (pineapple, passion fruit, spices, parrots, even 'birds of paradise'), were also susceptible to frequent depiction as Edenic: “The earthly paradise was removed to territories that had not yet been touched by civilization or by any of its institutions” (Hofmann: 1961: 372). The French explorer Bougainville intermingled precise descriptions of Tahiti with the paradise myth, noting the islands' verdant, fertile beauty, hospitable climate, free-loving natives, and peaceful, carefree lifestyle. However, such a depiction presented a heavily biased view of Tahiti: it overlooked the Tahitian practice of infanticide, social inequality and cruel taboos (Daemmrich: 1997: 11).

In his seminal work '*Art in the 19th- Century*', the original German title of which, *Das irdisches Paradies*, translates as *The Earthly Paradise,* Hofmann (1961) describes numerous artists, from the late-eighteenth century and throughout the nineteenth century, and how they, in different ways, portrayed 'The Earthly Paradise'. The nineteenth century was the century of the World Exhibitions (the first being in London in 1851), which were intended to demonstrate man's triumph over nature, furthering, in the process, an anthropocentric worldview in which it was believed that "the promise of paradise, of happiness and contentment, could be made good here and now. The prospect offered by religion […] [giving] place to an ambition that it could be satisfied here on earth" (Hofmann: 1961: 363). The World Exhibitions briefly created artificial paradises: "The disciples of the religion of reason hoped for a return of man's early unclouded natural state; their opponents, repelled by the industry and activity of modern civilization, sought to revive the elemental existence of exotic worlds" (Hofmann: 1961: 364). Yet these 'paradises' were very much man made, based on technological advancements. Latter visions of 'pristine' nature would be an antithetical reaction against such visions.

Of most significance, as far as the artistic portrayal of islands as paradisiacal is concerned, is Gauguin, particularly

his later works. Gauguin advanced the theme of exotic islands as paradise both through his art and writing. Gauguin “consumed the popular travel magazines” (Matthews: 2001: 78) and to “live in a tropical climate was one of his deepest desires” (*ibid*.). This supports the hypothesis of the influence of travel literature even at this early stage. Gauguin travelled to Martinique in 1887, upon which he “glimpsed paradise” (Matthews: 2001: 79) and envisioned a “wonderful life there” until poverty and illness left him “completely disillusioned” (Matthews: 2001: 84). The paintings he produced of “simple tropical scenes” (Matthews: 2001: 86) on Martinique were, he admitted, “very much from [his] imagination” (*ibid*.). Yet the commercial success of Gauguin's works from Martinique planted the seed for an eventual return to the tropics.

Just over a century after Bougainville, Paul Gauguin's paintings from Tahiti, and later, from the Marquesa islands, provided images of bucolic leisure, an image he promulgated further in his writings, such as the pseudo-autobiographical *Noa Noa* (1901), in which he told of “the life he wanted his public to think he had lived” (Matthews: 2001: 190).

During the century between Bougainville and Gauguin, the romantic movement, typified by poets such as Wordsworth, writers, such as Thoreau, and artists such a Caspar David Friedrich, which peaked around 1850, had precipitated a sea-

change in how wild nature was conceived. In the eighteenth century, the word 'wilderness' was associated with being deserted, desolate, barren, and savage – a place to which one would only go against one's will and whose only value lay in the possibility that it might be tamed and turned to human ends (Cronon: 1995: 2). Yet the romantics conceived of wilderness as Edenic – paradise went from being inside the garden wall to outside the garden wall. As shall be seen in section 2.2, this point is the point at which the 'paradise' and 'pristine nature' narratives diverge. Cronon argues this “astonishing transformation” (1995: 3) is attributable to the merger of the “older and more pervasive cultural construct” of the 'sublime' (*ibid*.) with the particularly American notion of 'the frontier'. It was against this cultural milieu that the final terrestrial paradisiacal locations, namely remote islands, came to be viewed. It was also out of this romantic imagination of nature / wilderness that the 'pristine' narrative would arise, as shall be seen in the next section of this thesis.

Gauguin's decision to embark for the “romantic isle of Tahiti” (Matthews: 2001: 145) in 1891 was influenced by '*The Marriage of Loti*' (1880), one of the most popular novels of the period, which described a romantic liaison with a native girl. The romantic movement of the nineteenth century made artists particularly interested in people and locations that civilization had not yet corrupted to provide “the picturesque

manifestations of the earthly paradise" (Hofmann: 1961: 372). Gauguin's plan in turn caught the attention of the literary world (Matthews: 2001: 157-162). Gauguin's first voyage produced images of "natural perfection" (Hofmann: 1961: 401) which cast the island as an earthly paradise, despite it offering "some of the least impressive scenery of any oceanic island" (Matthews: 2001: 168). Such consciously false depictions (Gauguin was well aware that Tahiti was not in any way a remarkable island and that its population was international and Westernised), of which Gauguin was not uniquely guilty (Gauguin was partly influenced in his choice of Tahiti by a travel brochure that depicted the natives as existing "only to sing and make love" (Matthews: 2001: 169)), would have, as Daemmrich notes, ruinous consequences for Polynesian cultures, history, and languages as they were disregarded in favour of emphasising the paradisiacal features of their islands. Paradise, it would seem, required the erasure of social history in locations in which it was proclaimed.

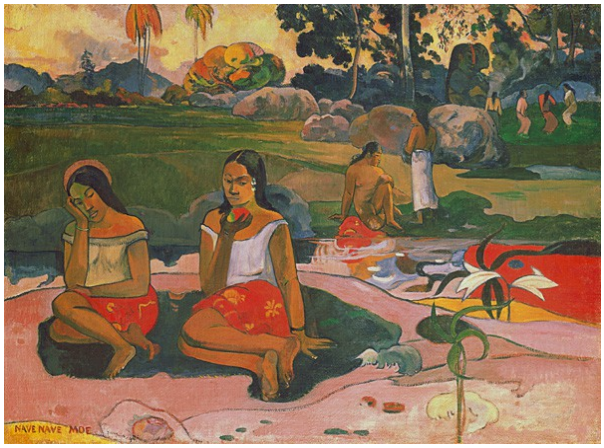


**Fig. 2.1:** Sacred Springs: Sweet Dreams (Nave Nave Moe), by Paul Gauguin, 1894
**Source:** https://www.hermitagemuseum.org/wps/portal/hermitage/digital-collection/01.+Paintings/28178 (accessed: 16.09.2017 )

Gauguin related not what he *saw*, but what he *gazed* upon: “It was not what Gauguin saw that drew him back to the island but the sensuality he felt when he was there. That, more than any visible aspect of Tahiti, inspired his paintings” (Matthews: 2001: 210). Figure 2.1 was painted after Gauguin returned to Paris following his first trip to Tahiti. However, in the aftermath of WWI, a traumatized Europe at last provided a ready audience for Gauguin's work, fifteen years after his death.

Even the US military base on the atoll of Diego Garcia in the Chagos Islands, nicknamed 'Fantasy Island' by personnel based there, is described as located upon a “tropical paradise lost in an endless expanse of cerulean ocean,” with “immaculate, powder white beaches” where

“Leathery sea turtles bob lazily offshore, and the light cacophony of birdsong accents the ambient sound of wind and waves” (Vine: 2009: 6-7) by Time magazine reporter Massimo Calabresi, though he does add: “Now add concrete. Lots and lots of concrete [...] Think early-’70s industrial park” (Vine: 2009: 7). It is worth noting that, despite the vivid description Calabresi offers of Diego Garcia, his experience of the island was limited to the interior of an aircraft hangar to which he was confined for the duration of his brief layover. The cognitive dissonance Calabresi's juxtaposition of immaculate paradise and industrial concrete generates, it shall be seen, is typically a result of the second kind of narrative this thesis will explore in section 2.2, the 'pristine' narrative.

Fantastic images and accounts of travel, pleasure and adventure have long influenced writers of literature. Although not all islands were imagined as paradises, “If one were to create a map of the world as imagined by the most influential popular novels of the late nineteenth and early twentieth centuries across all genres, it would be crowded with islands.” (Crane & Fletcher: 2016: 639). In modern romantic fiction, Crane & Fletcher (2016) suggest that small islands are depicted as...:

“...safe havens from the dangers and difficulties of life in the twenty-first century, as natural paradises in which the tempo of everyday life is managed by the seasons and not by

the artificial routines and exigencies of the 'rat race', and as contained worlds in which opportunities for genuine connectivity within one's community are increased in inverse proportion to the reduced connectivity to the mainland and the wider world." (Crane & Fletcher: 2016: 647).

Whilst in other genres, e.g. crime fiction, the island plays another role and other aspects (i.e. remoteness, security etc.) are brought to the fore, romantic fiction remains a highly popular genre of 'holiday reading'. The ideas communicated about islands in bestsellers read on beaches "spill beyond the bindings of books into broader cultural discourses about the world in which we live" (Crane & Fletcher: 2016: 648). Popular fiction may provide entertainment and distraction, but it also, in providing a system of meaning for understanding islands, has "an immeasurable impact on our geographical awareness and imagination" (*ibid*.). Such works influence tourtists' understandings and conceptualizations of the places they visit. A conveyor belt of ideas seems to be at work in which the "authors and publishers of island romance exploit the touristic idealisation of the remoteness of islands" (Crane & Fletcher: 2016: 647) and the images and anticipation engendered in tourists by the subsequent literature are in turn exploited by the tourism industry to sell holidays.

Due to the constraints of needing to keep this thesis

manageable, it has only been possible to devote a limited amount of attention to the massive fields of literature, art history and Tourism Studies; however, some interesting interactions have been established. Further inter-disciplinary research may offer the potential to join together deeper understandings of interactions between art and literature over time and how, each reacting to the other, and each informed by and informing their contemporary zeitgeist, they have been influential in establishing the Western imagination of the 'island paradise'.

This section has already hinted at the way in which, on the basis of the 'organic' image of paradise drawn from Western traditions in literature and arts, the Galapagos Islands may be imaged as paradise. Before this thought is pursued however, it is necessary to explore the origin of another narrative that is applied to the Galapagos Islands, the 'pristine' narrative. The following section shall offer an overview of this interrelated, but teleologically distinct narrative.

## 2.2: A Historical Overview of 'Pristine' Nature:

In similar fashion to the paradise island narrative, Western narratives regarding nature have been “invented and reinvented over time [and have] roots in the ancient world” (Merchant: 2013: xiii). Almost all cultures have some kind of “story of a primordial era when humanity and Nature enjoyed a condition of peace, happiness, and abundance” (Heinberg, quoted in Merchant: 2013: 218). The Genesis story of the Christian Bible sets man, cast out of the Garden of Eden, in oppostion to nature, only able to make the earth yield crops “through painful toil” and “the sweat of [his] brow” (Gen. 3:17-19) (NIV). This story “propelled countless efforts by humans to recover Eden by turning wilderness into garden” (Merchant: 2013: 2). Untamed nature, wilderness, was viewed, as late as the eighteenth century, as a place to which one would only go against one's will. The word's most common usage awoke thoughts of savagery, desolation, desertion, and barrenness (Cronon: 1995: 2). Many attempts were made to “reclaim the lost Eden by reinventing the entire earth as a garden” (Merchant: 2013: 1). The Scientific Revolution of the seventeenth century made reason and experimentation the tools for achieving this lofty goal. The Enlightenment cast progress towards a utopian future as within reach.

Although observations as to man's deleterious effects

on nature have been recorded as far back as Plato (Merchant: 2013: 6), the problem of disappearing forests and fouled waters became especially prominent as the spread of capitalism endowed the emerging bourgeoisie with the "economic tools to change the earth" (Merchant: 2013: 67) from the eighteenth century onwards. Romanticism arose as a counternarrative to the progressive 'taming of wild'. Romantics told a "new story of what went wrong – a story of decline from pristine nature" (Merchant: 2013: 2). This inverted the Enlightenment narrative of progress. Wilderness, once the "antithesis of all that was orderly and good" (Cronon: 1995: 3), became imbued with what philosophers such as Burke and Kant, as well as writers such as Thoreau and Wordsworth, and artists such as Caspar David Friedrich would conceive of as the 'sublime'. The sublime, distinguished from mere beauty in its capacity to provoke higher quasi-religious experiences, was manifested in "waterfalls, mountains, and canyons, and in sunsets, rainbows and oceans" (Merchant: 2013: 76). Thus, wilderness came to be the chosen escape of elite tourists who "brought with them strikingly urban ideas of the countryside through which they traveled. For them, wild land was not a site for productive labor and not a permanent home; rather, it was a place of recreation" (Cronon: 1995: 9). Wild nature thus gained intrinsic value that it previously lacked as something worthy of preservation for future enjoyment.

In the late-twentieth century myriad books, scientific articles, television programmes, etc. were produced documenting the “loss of wilderness, the erosion of soils, increased urban pollution, and the decline in biotic diversity” (Merchant: 2013: 4), one of the most influential was Rachel Carson's *Silent Spring* (1962). A narrative of environmental crisis emerged that closely mirrored the Christian narrative of the fall:

| **Christian narrative** | | **Environmentalist narrative** |
|---|---|---|
| Eden | = | Pristine Nature |
| Fall | = | Ecological Crisis |
| Birth of Christ | = | Environmental Movement |
| Heaven | = | Restored Earth |

It should be noted that, whilst the 'pristine' is closely related to wilderness, they are not the same. The latter implies some aspect of the sublime, whilst the former only requires that the nature in question be unsullied by human activity. Both ideas now see nature as having intrinsic value, rather than only having value in the extent to which it might be harnessed by mankind as space for production or habitation. The 'pristine' view of nature is distinct from the notion of paradise outlined in the previous section – the former is rooted entirely in the absence of human activity, the latter does not depend on this.

The former is a reaction against attempts, through various labours, to arrive at the latter.

Having differentiated the philosophical underpinnings of the distinct narratives of 'paradise' and 'pristine nature', it is now possible to turn to examine the ways in which the two narratives set out in sections 2.1 and 2.2 have become associated with the Galapagos Islands and have enabled their imagination as a location desirable for tourism. However, before this is done, chapter three shall provide an overview of the archipelago's history in order to provide a contextual basis for the ensuing discussion.

## 3: A Brief Historical Overview of the Galapagos Islands:

The Galapagos Islands form a volcanic archipelago consisting of 13 major islands, 6 smaller islands, and multiple islets and rocks, spread over an area of around 23,000 square miles, more or less on the equator, approximately 1000 km off the coast of Ecuador. The archipelago was formed as the Nazca tectonic plate was subducted beneath the South American plate. San Cristóbal, the most easterly of the islands chain, was formed approximately 3.5 million years ago, while Fernandina, the most westerly, may only be 60,000 years old (Valle: 2013: 3). As a consequence, the islands differ markedly in their topographic features. The cooling effects of oceanic currents give the archipelago a climate that is dry and moderate, with a dry season running from July to December (although in this period so called '*garúa*', or mists, may bring some moisture to higher elevations on islands such as San Cristóbal), and a hotter but wetter season between January and June, with March and April usually the wettest months, although even in these months rainfall averages rarely exceed five centimetres. These patterns are sometimes disrupted by the el niño / la niña oscellations (Ader: 2000).

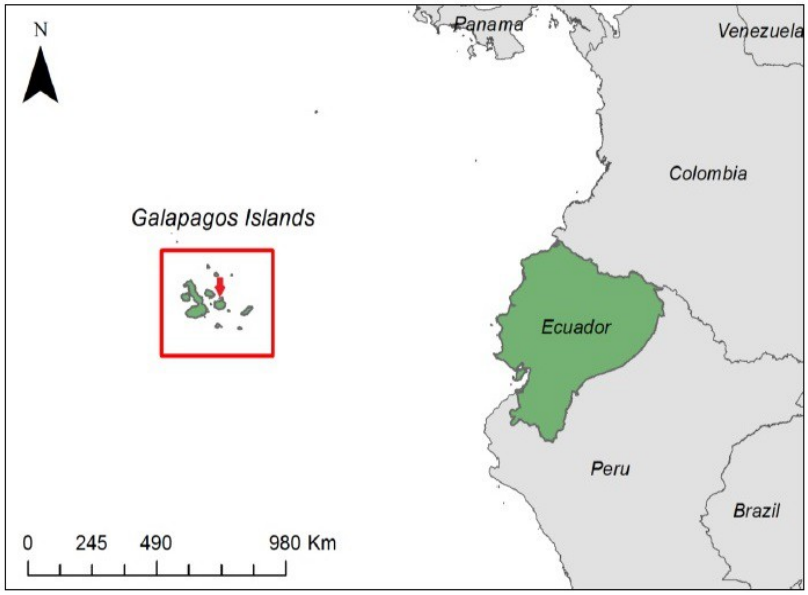


**Fig. 3.1:** The Location of the Galapagos Archipelago
**Source:** Reyes: 2017: 18

The archipelago first became known to Europeans when they were discovered by a Spanish Bishop, Fray Tomás de Berlanga, in around 1532 (Larson: 2001: 21 *et seq*.), at which time they were uninhabited. This began the introduction (intentionally and unintentional) of exotic organisms to the archipelago by humans (Valle: 2013: 12). In addition to the name 'Galapagos' (*Islas Galapagos*) in reference to the islands' various populations of tortoises, the Spanish also referred to the islands as *Las Islas Encantadas* (the Enchanted, or Bewitched, Isles). However, as they were largely lacking in natural resources, agricultural products, or other economic potential, the islands remained of little interest to colonial powers. Larson cites the example of James Cook's

expedition to survey the Pacific for Britain and look “for everything of scientific, economic or strategic value” (Larson: 2001: 38) between 1768 and 1780 which “sailed right by the Galapagos without stopping” (*ibid*.), as did French and Dutch explorers throughout the eighteenth century. The islands were apparently not, at this point, imagined to be of any value whatsoever.

Western interest in the Galapagos archipelago was initially not sparked by anything on the islands themselves: in the late-eighteenth and early-nineteenth century, the expansion of whaling made the seas around the islands particularly attractive as the cool ocean currents attracted large numbers of whales to their rich feeding grounds. By the early nineteenth century, Floreana, being one of the few islands in the archipelago with at least some supply of freshwater, as well as plentiful tortoises as a food supply, was a regular rest for whaling vessels (Honey: 1999: 102). Thus, for a few decades, “whaling brought ships, sailors and scientists to the Galapagos” (Larson: 2001: 41); however, this interest waned as petroleum was established as a substitute for whale oil by the mid-nineteenth century. In 1832, the archipelago was annexed by Ecuador and, by the time Charles Darwin arrived on the *Beagle* on 16th Sept 1835, approximately 200 people, mainly political prisoners, were living on Floreana (Larson: 2001: 68).

Darwin's publication of *On the Origin of the Species* in 1859, almost a quarter-century after his visit to the archipelago, reignited interest in the islands and, within a decade, scientists had begun visiting the archipelago to 'tread in Darwin's footsteps' as, due to their isolation, they were seen as a particularly good location for testing and confirming Darwin's theory of natural selection (Larson: 2001: 90).


| English | Spanish |
|---|---|
| South Seymour | Baltra |
| Hood | Española |
| Narborough | Fernandina |
| Charles | Santa María / Floreana |
| Tower | Genovesa |
| Albemarle | Isabela |
| Brindloe | Marchena |
| Abingdon | Pinta |
| Duncan | Pinzón |
| Chatham | San Cristóbal |
| Indefatigable | Santa Cruz |
| Barrington | Santa Fe |
| James | Santiago |

**Fig. 3.2:** The main Galapagos Islands alongside a list of their former English names and current Spanish names[1] [2]
**Source:** www.tripadvisor.com (accessed: 08.05.2017)

1 Many of the islands, over their history, have been named multiple times. For the sake of consistency, this thesis will refer to the islands by their current Spanish names, even if that name was not in use at the time referred to.

2 The islands are now divided into three administrative canons, San Cristobal, Santa Cruz and Isabela, denoted in red, blue, and green respectively, which together make up the Galapagos Province (see section 7.3). The capital of the province is Puerto Baquerzo Moreno on San Cristobal island.

In 1860, the first permanent settlement was established on San Cristóbal. De Groot (1983) suggests the relatively late settlement of the Galapagos, in contrast to other Pacific archipelagos such as Hawaii, was probably due to a combination of their remoteness and the “virtual absence of fresh water” (de Groot: 1983: 292). Despite its origins as a penal colony, this first settlement would become “a site open to colonisation for mainland Ecuadorians during the twentieth century, leading Ecuadorian citizens to view Galapagos as another remote frontier to tame through farming and ranching” (Mathis & Rose: 2016: 65). By 1870, the archipelago's ecology was already under threat as “several thousand head of wild cattle, besides pigs and goats” had decimated the tortoise population on Floreana Island and endangered the survival of native birds by consuming vegetation and destroying their habitats (Larson: 2001: 94). In the late-nineteenth century, the Galapagos Islands were deemed of little scientific importance except as locations for the “gathering [of] specimens for natural history museums” (Larson: 2001: 102). By this time, numbers of tortoises had been vastly reduced by a combination of invasive species and hunting by sailors for food – they were extinct on Santa María and so few remained on San Cristobal, Española, Santiago, and Santa Cruz that they were no longer considered worth hunting (Larson: 2001: 105). Indeed, naturalists began earnestly trying to gather those that

remained in order to document them before they disappeared, leading Larson to remark that they seemed more concerned completing their museum collections than in preserving the species in the wild.

By 1905-06 small settlements had been established on San Cristobal, Santa María, and Isabela (Larson: 2001: 135). Valle records that, by this period, approximately 100 introduced species existed on the archipelago (Valle: 2013: 12). Advancing media, including photography, motion picture cameras, and the radio enabled various fabulous accounts of the Galápagos Islands and their various strange creatures to reach an ever-broader popular audience. In the inter-war years, many private yachts and at least one regular cruise ship set a course for the archipelago, mostly for sightseeing or fishing and “without any pretensions of doing science” (Larson: 2001: 158). In 1929, some wealthy Americans even tried to buy or lease the archipelago from the poverty-stricken Ecuadorian government for use as a fishing and wildlife preserve (Larson: 2001: 158 *et seq*.). This offer came in the wake of a number of attempts by the US government to secure the Galapagos Islands as an outpost for the defence of the Panama Canal as their location, only 850 nautical miles from the Panama Canal, gave them significant strategic importance. Both plans were rebuffed by the Ecuadorian government and, in 1934, the Ecuadorian government responded to increasing

international calls for the establishment of wildlife preserves in the archipelago by outlawing the killing or capture of tortoises, fur seals, iguanas, and certain birds (Larson: 2001: 166). Two years later, under growing international pressure, uninhabited portions of the archipelago were set aside as nature preserves, although no institutions were established at that time to ensure their maintenance or that rules were enforced.

During WWII, following the Japanese attack on Pearl Harbour, the archipelago was occupied by the US. At the time of occupation, it was estimated that 810 people lived on the archipelago (Larson: 2001: 175). The US proceeded to blast an airstrip out of Baltra Island in early 1942 and eventually stationed between 1000 and 2000 servicemen there. This sudden increase in the number of people living on the archipelago both put strain on the archipelago's resources and created an economic incentive for mainland Ecuadorians to move to the islands in order to provide services to the occupying military force. Following the war's end, the access afforded by the airstrip made it much easier for study of the Galapagos to be conducted. The newly founded UNESCO made plans to found a research station to monitor the flora and fauna on the archipelago. The leader of these conservation efforts was Julian Huxley, who had a personal connection to the islands, which he considered the birthplace of Darwin's theory, through his great-grandfather, Thomas

Huxley, who was nicknamed 'Darwin's Bulldog' for his vociferous support of Darwin's evolutionary theory. The Charles Darwin Research Station (CDRS) was eventually established at Academy Bay in 1959 to celebrate the 100th anniversary of the publication of *'On the Origin of the Species'*. The CDRS is the research arm of the CDF, a Belgian-run non-profit organization for scientific research established in 1959.

By 1964, the Ecuadorian government had fully recognized the archipelago's value as a national park and had given the Darwin Centre responsibility for wildlife preservation by official decree (Larson: 2001: 194). The Galapagos National Park (GNP) covers aproximately 97% of the archipelago's surface area (Valle: 2013: 15). The remaining 3% is spread between the archipelago's five inhabited islands, San Cristóbal, Santa Cruz, Floreana, Baltra, and Isabela. Due to the lack of funds available to the Galapagos National Park Service (GNPS), it has, for many years, relied heavily upon the CDRS.

The first scheduled air service to Baltra began in 1969, which roughly coincides with when "mass tourism, at least in Europe, started to internationalise" (Urry & Larsen: 2011: 55). In 1970, 4,500 people visited the islands but by the end of the 1970s, tourist numbers had reached 17,500 a year and the resident population nearly 6000 (Larson: 2001: 226). During

the 1980s...

"...word spread on the mainland that eco-tourism was a *mina de oro* (gold mine) for the Galapagos [and] new arrivals began pouring in, lured by stories of plentiful jobs and high salaries. Even though the cost of living on the islands was several times higher than on the mainland, salaries have been as much as seventy-five times higher" (Honey: 1999: 115).

By the 1990s, although the islands' geopolitical / strategic importance had reduced in the wake of the end of the Cold War, the resident population had climbed to 10,000, and the archipelago was visited by over 50,000 people per year (Larson: 2001: 232). By the turn of the millennium, the resident population had doubled again to almost 20,000 (Larson: 2001: 234). Most of the increase in population was the result of immigration from the mainland, which caused socio-political trouble amid calls for increased local control over development and resources. In 2016, 218,365 tourists visited the archipelago – actually a drop of nearly 3% from previous year (Observatorio de Turismo de Galápagos). The growing number of visitors and expanding resident population (see Figure 3.3) both contributed to pressure on the archipelago's "limited resources such as freshwater" (Honey: 1999: 116).

This tension resulted in the Ecuadorian government,

after a protracted process, passing the Special Law of the Galapagos (SLG) in 1998 to restrict immigration and expand the marine reserve (Honey: 1999: 120 *et seq*.). However, this Law was not unanimously popular and faced fierce resistance, particularly from fishermen on the Galapagos. Despite the new laws, after a brief slowdown, both the number of residents and visitors have continued to increase. Despite concerns over enforcement, the Galapagos is the only Ecuadorian province to have a special law declaring and promoting conservation and sustainable development as fundamental principles (Valle: 2013: 16). The SLG provided the impetus to form committees that could facilitate collaboration between conservationists and locals, but it was only reforms from 2005 onwards under Rafael Correa's government that provided the tools for such work (Wolford *et al*.: 2013: 95).

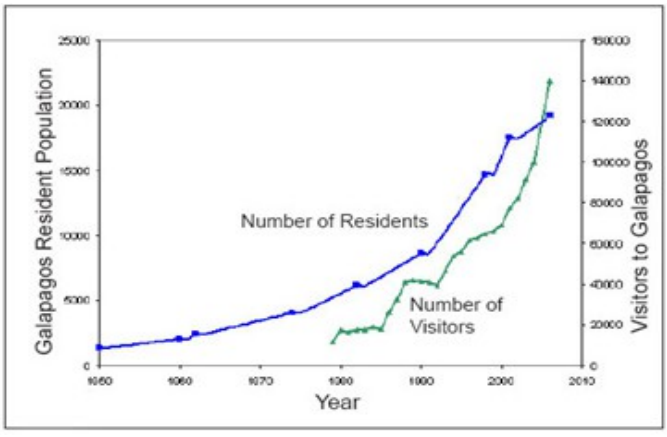


**Fig. 3.3:** Tourism and population increase on the Galapagos archipelago
**Source:**
https://www.galapagos.org/conservation/conservation/conservationchallenges/tourism-growth/
(accessed: 22.06.2017)

As the archipelago's human population has increased, new transportation links have increased its accessibility, effectively creating a “land bridge” (Walsh & Mena: 2013: 49) to the global community. There are now three airports on the Galapagos Islands. The main commercial airports are located on Baltra and San Cristóbal. The one on Baltra (the site of the former US airbase), was reopened in 2012 as Galapagos Ecological Airport due to the new terminal being built largely from recycled materials and being powered by solar and wind energy. A new terminal was built on San Cristóbal in 2014. From just a few flights per week in the 1970s, there are now six commercial flights per day as well as numerous private flights arriving from the continent. The number of ships bringing essentials such as fuel has also grown, which carries its own risk of pollution, such as occurred in 2001 and 2014 when first an oil tanker and then a cargo ship ran aground (BBC: 2014), causing great damage to marine life. The increased connectedness of the islands has seen the rate of introduced exotic organisms increase: by 2007, the CDRS and GNP confirmed the establishement of 748 exotic plants, 543 exotic invertebrates, and 30 exotic vertebrates on the archipelago (Valle: 2013: 12). None of the 19 larger islands remains free from introduced species (*ibid*.).

Tourism to the Galapagos Islands has evolved through

four distinct phases (Walsh & Mena: 2013: 59). In the late 1960s, emphasis was on 'floating hotels' (this afforded greater revenues and avoided the problem of a lack of infrastructure on the islands); in the 1980s, more economical, land-based tourism increased as tourist from lower socio-economic classes became able to access the archipelago; in the 1990s, concerns about population growth saw attempts to return to the 'floating hotel' model, which favoured first-class accommodation; the SLG guaranteed a greater portion of tourism revenue would stay on the islands and revived land-based tourism around the turn of the millennium. Each stage had different social, economic, and enviornmental impacts (Walsh & Mena: 2013: 59). Now almost as many visitors stay on land as on large cruises (Quiroga: 2013: 35), which brings benefits to the local economy, but which also puts increased pressure on water supplies[3], as shall be seen in chapter seven.

Now that the history of the Galapagos Islands has been briefly outlined, this thesis can now attempt to map how the cultural narratives explored in chapter two have been applied to the archipelago against its historical background.

3 In contrast, the cruise ships now are self-sufficient, using reserve-osmosis technology to generate their own fresh water supply.

## 4: The Galapagos Islands as 'paradise and as 'pristine':

“MacCannell maintains that there is normally a process of sacralisation that renders a particular natural or cultural artefact a sacred object of the tourist ritual” (Urry & Larsen: 2011: 12). This chapter shall explore the process through which the Galapagos islands can be seen to have been 'sacralised' and evolved to become a destination for tourists seeking paradise. It will be suggested, on the basis of various theories about the motivations of tourists, that the 'paradise' and 'pristine' narratives have been co-opted and combined in order to induce a unique image of the Galapagos Islands as a destination worthy of being gazed upon by tourists.

Various theorists highlight the importance of image / expectation to the motivation of tourists to visit any given location. Dann, among seven elements inducing tourists to visit a location, listed “a response to that which is lacking yet desired” (Dann (1981), cited in Cooper *et al*.: 2005: 55) and “”destination pull” (*ibid*.). Both, as demonstrated in chapter two, can be regarded as constructs. McIntosh *et al*. (1995) suggest four categories of motivation, including: physical pleasure, such as one would expect to experience in paradise, and can be linked to the sun/sea/sex narrative (McIntosh *et al*. cited in Berg & Edelheim: 2012), but also to earlier characterizations of islands (as espoused by Gauguin, for

example); and, status and prestige motivators (such as places 'to go before you die'[4]). Cooper *et al*. (2005) themselves note that “the image of a destination created through various communication channels will influence motivation and subsequently affect the type of travel undertaken” (Cooper *et al*.: 2005: 60).

An individual’s image of the world would thus appear to be “critically important to an individual’s preference, motivation and behaviour towards tourist products and destinations.” (Cooper *et al*.: 2005: 62). There seems to be no requirement that the image be a true representation of the destination (although too significant a disparity might affect satisfaction). Fascinatingly, when confronted with a reality that fails to meet the ideal representation that they have been conditioned by guidebooks / postcards / television programmes / the internet etc. to expect, empirical research suggests that people actually remember the representation as being what they actually experienced (Urry & Larsen: 2011). Gauguin's return to the 'paradise' he himself had invented, and which he had experienced as far from paradisiacal, albeit not as a tourist, could been seen as corroborating this.

One vital element of the image sold to tourists relates

4 There appears to be at least anecdotal evidence that social media is changing travel patterns as people seek out particularly photogenic locations to enhance their profiles and accumulate 'likes' (Miller: 2017), though it is beyond the scope of this thesis to investigate such claims.

to escape – the sense of being separated from the mundane, from everyday concerns. This has come to be seen as “an important physical and psychological attribute of the successful vacation” (Baum, quoted in Berg & Edelheim: 2012: 95). Again, islands, by nature physically separated from the mundane mainland, lend themselves to such imaginations. But this perception of the isolation of islands does not always (or indeed often) describe the actual observable physical nature of islands. As mentioned in Chapter two, the notion of earthly paradise being located on some inaccessible and distant island(s) can be traced back to St. Augustine. However, with advances in transport technology, even the most remote islands are now frequently equipped with airports and / or other infrastructure that can facilitate the arrival of multitudes of tourists (any destination for mass tourism must, by definition, be accessible to the masses).

In their analysis of the tourist promotion of “the world’s most prestigious and sought after vacation destinations” (Cantallops & Cardona: 2015: 171) suggest the “lost paradise” as the common cultural reference point evoked. This phenomenon appears as early as the early twentieth century, when the Dutch steamship line KPM produced adverts and books in English such as:

“**Bali** / You leave this / island with a / sigh of regret / and as

long / as you live / you can never / forget this / Garden of Eden" (Vickers: 2012: 131)

This romantic image of islands was fed by the promulgation of literature employing terms such as 'tropical wonderland', 'natural paradise', 'blessed isle', and 'island of the gods' (Vickers: 2012: 142) or 'sensuous', 'untouched', 'unspoiled' (Britton: 1979: 321)[5]. The exotic is emphasised and conflated with Eden.

American Airlines adverts for the Caribbean echoed KPM's adverts for the Pacific, proclaiming the Caribbean to be full of "American's (sic) Pleasure Islands" (Britton: 1979: 323). The image of Caribbean islands as tropical paradises has developed since the sixteenth century, adapting to the growth of plantations in the eighteenth century (and the concomitant slavery and conversion of wildlands to commercial monoculture that these plantations entailed), whilst continuing the narrative of "idyllic landscapes devoid of suffering" (Guerrón Montero: 2011: 23). The fantasies "multiplied ad infinitum in tourism brochures" (Guerrón Montero: 2011: 23) are, it is already clear, highly selective in their depiction of reality on islands. Berg & Edelheim (2012) draw on a textual analysis of contemporary tourist marketing literature to identify

5 Britton's analysis looks at how the Third World is characterized. However, as most tropical islands are developing economies, this is not inconsistent with this research paper's hypothesis.

certain tropes that recur, identifying...:

"...a striking picture of continuity of well-established paradise island tropes in modern tourism literature, such as the assumption of unspoilt nature (beautiful, picturesque, wonderful), a return to a golden age where humans are in tune with nature (authentic, hospitable, real), and a simpler life free from the shackles of civilisation (traditional, peaceful)" (Berg & Edelheim: 2012: 93).

Berg & Edelheim's conclusion shows how the 'pristine' narrative (unspoilt nature) and the 'paradise' narrative (return to a golden age) are combined in the imagination of islands. In an industry in which growth in supply has outstripped demand, marketing is assuming ever greater importance (Cooper *et al*.: 2005: 550). Daemmrich suggests that the search for the lost island paradise continues through "a clichéd topos in advertisements for island vacations carried by the popular press" (Daemmrich: 1997: 12), adding that "All remote, isolated, exotic islands are candidates" (*ibid*.).

The Galapagos Islands, popularly imagined as "Darwin's Eden" and "The Galapagos Wonderland" (Larson: 2001:3), are regularly included on lists of things to do or places to go 'before you die'. Indeed, in 2003, when the BBC surveyed visitors to its website in an effort to establish a list of

'50 things to do before you die', visiting the Galapagos was listed at number 29. Interestingly, 'escape to a paradise island' was listed at number 13 (Gale & Hill: 2009: 7)[6]. This demonstrates the power of the paradise island myth in popular culture as well as showing how closely the Galapagos Islands have become associated with it.

The obvious starting point for the imagining of the Galapagos as 'pristine' would seem to be Darwin's publication of *On the Origin of the Species* in 1859, a quarter century after his visit to the archipelago. Due to their isolation and apparent lack of human influence, other scientists saw the islands as providing a potentially useful testing ground for Darwin's theory and various expeditions were launched to collect specimens for analysis. In their eagerness to differentiate specimens into new species, scientists inadvertently gave the impression that the Galapagos Islands “harboured a wealth of novel types” (Larson: 2001: 127). Thus, by 1905, only half a century after the publication of *On the Origin of the Species*, the *San Francisco Examiner* was to claim that: “The islands have long been known to scientists the world over because of their richness in plant and animal life” (Larson: 2001: 135).

6 The famous travel guide publisher *Rough Guides* list the Galapagos Islands at number 9 in their list of '50 Things to do before you Die' https://www.roughguides.com/special-features/50-things-to-do-before-you-die/ (accessed 03.09.2017), and they are also included in the popular travel book '*1,000 Places to See Before You Die*' (Schultz: 2015: 1032-33).

In the late-nineteenth century, the Galapagos Islands were deemed of scientific importance mostly as locations for the “gathering [of] specimens for natural history museums” (Larson: 2001: 102), particularly those of the 'living fossils' that most sparked the attention of public and academic audiences, such as the giant tortoises. The turn of the twentieth century saw advancing media, including photography, motion picture cameras, and the radio enable the promulgation of various fabulous accounts of the Galapagos Islands and their various strange creatures to an ever-broader popular audience. By the inter-war years, growing public interest in science, particularly in the increasingly affluent US, fueled by reports from expeditions such as that of the New York Zoologicial Society to the Galapagos Islands, which included photographers, artists and motion-picture camera crews to record sights for zoo and museum audiences, as well as a follow up expedition which took a radio and sent daily press reports to the *New York Times*, continued to add to the “growing Galapagos mystique” (Larson: 2001: 155).

The trend of popular interest in scientific discovery, if anything, increased after WWII as increasing affluence, the Cold War, and the Space Race brought science to the forefront of public consciousness, especially in the US. *Life* magazine published a highly popular series of books “*Life Nature Library*” whose first volume began with “a pictoral research paper on

the archipelago titled "*A Showcase of Evolution*"" (Larson: 2001: 185). It was against this backdrop that the islands were protected by UNESCO and the GNP established: acts which are cited by Hennessy & McCleary as a key moment in the "production of understandings of 'pristine', Darwinian nature in the Galapagos" (2011: 132). The quality of being 'pristine' is not exclusive to the Galapagos Islands, or even islands in general; however, the isolation afforded by the insular nature of the Galapagos archipelago, along with their distance from the mainland, has made them particularly susceptible to being constructed as such.

This imagination of the archipelago as 'pristine' is mediated to tourists, who "gaze upon the world through a particular filter of ideas, skills, desires and expectations, framed by social class, gender, nationality, age and education" (Urry & Larsen: 2011: 2). That is to say that they do not merely engage with some pre-existing physical conditions that are waiting for them 'out there', but that their mental frameworks condition the 'reality' they experience. Such socially constructed systems of meaning, in which islands may be constructed in various ways, provides advertisers with "ready-made term[s] to market their goods to consumers eager to purchase their bliss" (Daemmrich: 1997: 207).

A consultancy firm, charged in 1965 with reporting on

means to best exploit the archipelago's economic potential via tourism, remarked “The islands cannot offer miles of sandy beaches, towns with Spanish flavour, Inca ruins or the life of big hotels […] the main reason that tourists will visit the islands will always be to see the animals” (Larson: 2001: 226). The report continued, “A carefully devised advertising and promotion program will be necessary if the ordinary tourist is to visit the Galapagos” (Larson: 2001: 227). This clearly acknowledges the fact that the Galapagos Islands were not in and of themselves attractive to tourists and demonstrates the extent to which the 'paradise' and/or 'pristine' narratives would have to be constructed.

An example of the kind of popular writing that would aid the successful drive to inspire tourism to the archipelago can be found in Annie Dillard, one of the US's foremost nature writers, who wrote in 1975: “You come for the animals […] The animals are tame. They have not been persecuted, and show no fear of man.” (Larson: 2001: 221), which echoes the observations of the consultants a decade earlier. Dillard both anthropomorphized and romanticized the animals: of the sea lions, she wrote “theirs is the greeting the first animals must have given Adam” (Larson: 2001: 222), employing language which alludes to the biblical story of Eden. Religious metaphors are a recurring theme in references to the Galapagos. Dillard commanded tourists to “Go, and be

greeted by sea lions" (Larson: 2001: 222). Dillard seems to have been engaged in exactly the kind of 'pointing out' of things as noteworthy and worth seeing that MacCannell theorizes is the basis for the 'sacralisation' of locations as tourist destinations: "anything is potentially an attraction. It simply awaits one person to take the trouble to point it out to another as something noteworthy, or worth seeing" (MacCannell, quoted in Urry & Larsen: 2011: 10). Inclusion in 'places to go before you die' lists have similar effects. Such commodification of the Galapagos Islands' nature by contemporary travel narratives contributes to the continuing reinforcement of the paradisiacal image of the islands. The idealization of the archipelago as a place of pristine, untouched nature, or indeed as some Shangri-la, does not represent any physical reality; rather it represents a "particular way of thinking that has become deeply ingrained" (Hennessy & McCleary: 2011: 132). It is particularly convincing as its prelapsarian imagery taps into the popular understandings of islands in Western culture examined in chapter two.

Although the two narratives of 'paradise' and 'pristine' nature may both typify the islands as a 'lost paradise' almost entirely removed from modernity, an image "reinforced in nature documentaries, travel writing, and popular science discourse" (Hennessy & McCleary: 2011: 133), this appears to have paradoxical outcomes: the tourism such imaginations

generates can cause problems. The 'pristine' narrative is used as the basis for calls for preservation (which entails the restriction or prohibition of access); the 'paradise' narrative is used as the basis for inducing tourism (which entails encouraging increased visitation to the areas in question). Clearly, from a teleological perspective, the two narratives are therfore in direct opposition. That is not to say that the narratives were / are concieved with such teleological aims in mind, only that they result in them if followed to their logical conclusions.

In their report to the World Heritage Committee, which recommended that the Galapagos be added to the 'World Heritage in Danger' list, Strahm & Patry (2010[7]) identified uncontrolled growth in tourism and population as one of six issues threatening the Galapagos Islands. Newly elected Ecuadorian President Rafael Correa had previously declared the islands to be at risk, also citing concerns over the uncontrolled increase in tourist visitation and illegal migration, and pledged to make saving them a national priority (Hennessy & McCleary: 2011: 134). This led to the initiation of a process to evaluate the state of “tourism, immigration, invasive species, and the impact of human development in Galapagos.” (García *et al*.: 2013: 95). Ironically, the media

7 Whilst the report was only published in 2010, the Galapagos Islands were actually added to the World Heritage In Danger List in 2007 and were actually removed in 2010.

coverage of such declarations has often encouraged people to try to visit the islands “before it’s too late” (Hennessy & McCleary: 2011: 149), which only fuels increased tourism. It is worth noting that the description of a 'threatened Eden' implicitly accepts both 'paradise' and 'pristine' narratives. This is an example of the way in which the two narratives are confused in both the academic literature and popular discourse.

Tourism has been encouraged by the Ecuadorian government as a tool for development – small island economies, such as that on the Galapagos, are typically limited in terms of resources and market such that “there are very few viable alternatives to tourism and related construction and financial services” (McElroy & de Albuquerque: 2002: 17). Tourism to the Galapagos has increased at a steady rate of around eight percent annually (Reyes *et al*.: 2015: 213) and just over half of the Galapagos economy is based on tourism. At the same time, the permanent population of the Galápagos archipelago has grown at over six percent annually (Hardter *et al*.: 2010: 3), leading Hoyman & McCall to conclude that there is a “substantial link between tourism and migration” (2013: 36). Though some scientists and policy-makers dispute it, the 'tight link' between tourism and human population pressure on the archipelago is recognized by UNESCO (Brewington: 2013: 108). Whilst environmental impacts are not only caused by

tourism and tourism is frequently disproportionately held at fault for negative environmental impacts; the fact remains that, without tourism, and the revenue it generates, there would seem to be very little reason for anybody to settle on the Galapagos islands. Tourism is responsible for approximately 68% of the Galapagos' ecomonic growth between 1999 and 2005, whilst government accounted for a further 20%[8].

Largely as a result of the tourism-fed economy, the standard of living on the archipelago remains higher than the Ecuadorian average: most residents now own colour televisions, mobile phones, and many have personal computers (Quiroga: 2013: 43), which demonstrates both the increased connectedness of the islands to the mainland (see also section 7.4) and the amount of goods which are imported. In 2009, the archipelago had an unemployment rate of just 4.9% compared to almost 8% on the mainland (Reyes: 2017: 24-25). Thus there remains a powerful economic incentive for people to immigrate from the mainland, though the increasing population means rising income from tourism does little to rais GDP per capita on the islands, leading Taylor *et al*. to conclude that a “vicious circle of rapid economic growth and unbridled population growth” (Taylor *et al*.: 2008: 160) is a continuing threat to the archipelago.

8 This growth in government is linked to tourism as increased visitation to and habitation on the archipelago requires increasing bureaucracy to manage it.

Having now explored the development of the image of paradise and pristine nature through Western literary and artistic canons, the way such images have been projected onto the Galapagos Islands, significantly altering the popular imagination of the archipelago, and having examined how such images are encoded into promotional literature by the tourism industry, it is possible to draw some provision conclusions in answer to this thesis' first research question: how have people been drawn to the Galapagos?

## 5: Provisional Conclusions in Relation to the First Research Question:

The simple answer to the question of what has drawn people to the Galapagos, for many immigrants at least, is likely to be the financial opportunities offered by working in the tourism industry or related fields on the archipelago, though there is evidence that this was not always the sole attraction in the past (see Larson: 2001: 159). As, these financial incentives are largely a product of the tourism industry, it means it is necessary to address the question of how tourists are drawn to the archipelago. The simple answer for tourists is probably 'nature' or 'the experience', yet these rather nebulous ideas are based on understanding the Galapagos Islands in certain ways. These understandings, it has been suggested in chapters two to four, are deeply rooted in a body of circulating texts and images with a long historical tradition in Western culture. This body of texts and images pre-conditions the popular imagination of islands, especially remote, tropic / exotic islands.

Urry's seminal theory of *The Tourist Gaze* has been seen as applicable in a historical context – Gauguin's creation / invention of images of tropical paradise were clearly influenced by his own pre-conditioned views of the islands he visited based on images and texts, such as *The Marriage of Loti* and early travel literature and tourism brochures,

circulating at the time. The continuing applicablity of Urry's theory to modern popular imaginations of the Galapagos has also been established: in the preceding chapters the case has been built that the Galapagos Islands, which were once considered inhospitable and arid, have come to be seen in paradisiacal terms.

The 'pristine nature' narrative is well recognized in the academic literature on the Galapagos Islands. However, this thesis has identified another narrative, consistent with what one would expect from the academic literature of Tourism Studies, which appears to have been somewhat overshadowed in academic works related to the Galapagos: that of the paradise island. This narrative is the result of both the organic evolution of images towards the paradise island created by Western litarary and artistic canons, and the evolution of images induced by the encouragement of the tourism industry. The two narratives are closely intertwined – the 'pristine' narrative arising out of a schism between completing visions of paradise in the nineteenth century. Yet it is suggested that it is wrong to conflate the two narratives: it has been established that these two narratives are teleologically opposed. On this basis, it would seem that, while there is an established body of literature in relation to the imagination of paradise, there remains a significant gap in the current academic literature in that this does not seem to have

been adequately considered in relation to the Galapagos Islands. It would appear that the needs of conservation and tourism are frequently cited as being in opposition without adequate attention having been paid to the culturally constructed understandings of place that inform them. This thesis has provided a brief overview of the unique ways in which the narratives that underpin these understandings in relation to the Galapagos Islands are interrelated, however the breadth of the literary and artistic canon and the inter-disciplinary narture of the subject suggest that this could potentially be a significant area for further research.

The pristine narrative has been the basis for conservation efforts whilst, at the same time, the very nature upon which the conservation efforts have focused has also formed part of the paradisiacal allure which is exploited as the object of the tourist gaze. This would seem to present a problem, not just for the Galapagos, but for many islands who have based their model for economic development on tourism, as it sets their economic development model in opposition with the existential necessity (at least according to the pristine narrative) of conservation.

As early as 1969, Mishan was concerned at how the "'young and gullible' are taken in by fantasies dreamt up by the tourist industry" (Urry & Larsen: 2011: 224). This raises the

interesting question, unfortunately beyond the scope of this thesis, of *why* tourists continue to buy into what is demonstrably, at best, an exaggeration of islands' appeal and only a partial view of reality. In any event, it would seem that, in a market place in which, to many, one exotic location and another may be considered largely interchangeable, i.e. in which demand is elastic, the tourism industry is likely to continue the use of the narratives proven successful and tourists are likely to continue to be attracted to imagined paradises such as the Galapagos Islands.

Having explored the ways in which the 'paradise' and 'pristine' narratives have come to be associated with the Galapagos Islands, this thesis can turn to the impact this influx of visitors and immigrants has on the archipelago. That is to say, it shall begin to consider ways in which the various narratives have produced tangible effects. The figures illustrated in fig. 3.3 already provide a demonstration of one clear consequence of the archipelago's construction as paradise / pristine. However, it is hoped that looking more closely at the ways in which the constructed image of the archipelago clashes with material reality will provide the opportunity to gain a greater understanding of the dialectical relationship between the material world and the constructed mental world that Merchant (2013) identifies. As a dialectical relationship, the two poles influence each other reciprocally.

The following chapters shall seek evidence of how this manifests itself, particularly in relation to water resources, in attempting to answer the second research question of this thesis: How have culturally generated understandings of the Galapagos Islands impacted upon the material / real physical archipelago?

## 6: The Imagination vs The Material Reality:

At the heart of the popular depiction of islands as paradises, both in literature and in promotional material, lie a number of paradoxes, one of which is that the construction of real places as Gardens of Eden relies upon the concept of paradise being “an enclosed or otherwise separated space, access to which is reserved for a few elect” (Ramsey-Kurz: 2011: x). Yet, as already noted, the growth of tourism, particularly following the spread of affordable air travel, has, since the mid-twentieth century, been breaking down distance and eroding the inaccessibility that was the hallmark of islands. This leads to paradise implying both “inclusion and exclusion, bliss and discontent, innocence and guilt, ignorance and knowledge, harmony and conflict, life and death, transience and permanence, materiality and transcendence, beginning and end” (Ramsey-Kurz: 2011: vii-viii). This chapter shall explore some of the paradoxes that have become evident throughout the history of the Galapagos archipelago.

When Fray Tomas de Berlanga discovered the Galapagos Islands, he described them as looking as if “'God had showered stones' down upon them” (Hennessy & McCleary: 2011: 135). In 1795, forty years before Charles Darwin's arrival on the archipelago, George Vancouver, of the ship *Discovery*, recalled “The interior of the country exhibited the most shattered, broken, and confused landscape I ever

beheld, seemingly as if formed of the mouths of innumerable craters of various heights and different sizes" (Larson: 2001: 38). On the same voyage, the ship's First Lieutenant, Joseph Baker described Isabela as "Nothing but a large Cinder" (*ibid*.); whilst the ship's naturalist, Archibald Menzies, called it "The most dreary barren and desolate country I ever beheld" (*ibid*.). Such descriptions are the antithesis of what one might have expected were one to have relied upon the literature explored in the chapters two and four, which imagines islands as 'paradise' and the Galapagos as 'pristine'.

Captain Robert Fitzroy, of the *Beagle* expedition on which Darwin made his visit to the Galapagos, recalled of San Cristobal: "We landed upon black, dismal-looking heaps of broken lava, forming a shore fit for Pandemonium" (Larson: 2001: 61). The difficulties of finding fresh water on the archipelago is illustrated by Darwin's record of a settler on Floreana "sitting by a well with a switch in his hand, with which he killed the doves and finches as they came to drink" (Larson: 2001: 72) which, Larson suggests, indicated that fresh water was so scarce that any available water source "even one with a switch-bearing settler" (*ibid*.) would attract the local fauna, although such behaviour could also be at least partially attributable to the fauna's famed lack of instinctive fear of man. In any event, Darwin recalled: "Nothing could be less inviting than the first appearance", and even compared the islands to

hell: “The country was compared to what we might image the cultivated parts of the Infernal regions to be.” (Larson: 2001: 61). There can hardly be a clearer antithesis to the 'paradise' narrative than comparison to hell.

Herman Melville, who visited the Galapagos Islands shortly after Darwin in the mid-nineteenth-century, described them as populated by “scattered runaways and castaways” (Larson: 2001: 5) who “struggled to survive in rock huts on islands with little fresh water” (*ibid*.). The diaries of early settlers on the archipelago remained filled with lamentations because, as Larson remarks, “there simply are no pleasant places to go on foot in the Galapagos” (Larson: 2001: 135) and “there was not enough fresh water on the Galapagos to wash, ever.” *(ibid.).* Descriptions of the Galapagos Islands as an “archipelago of aridities” (Larson: 2001: 7) stand in stark contrast to, for example, Columbus's account of the Caribbean islands he visited on his first voyage to the Americas:

“Here there are large lagoons with wonderful vegetation on their banks […] The songs of the birds were so pleasant that it seemed as if a man could never wish to leave this place. The flocks of parrots concealed the sun; and the birds were so numerous, and of so many different kinds, that it was wonderful. There are trees of a thousand sorts, and all have their several fruits [and] I am well assured that they are

all valuable” (Wadsworth: 2016: 50).

The previously mentioned claim by the *San Francisco Examiner* that: “The islands have long been known to scientists the world over because of their richness in plant and animal life” (Larson: 2001: 135), is jarringly at odds with Darwin's description of Isabela, but one which demonstrates how the myth that the Galapagos Islands' unique fecundity had always been common knowledge had already taken root. The acceptance of this myth remains evident in contemporary academic literature: Reyes *et al*. state that the Galapagos archipelago “has always been admired for its beauty, uniqueness and biodiversity” (Reyes *et al*.: 2015: 212). McElroy & de Albuquerque (2002: 16) describe the Galapagos as “the naturalist’s paradise”, which is again at odds with the early descriptions of the archipelago provided by, amongst others, Darwin himself. Darwin stated bluntly of Isabela that: “it would be difficult to find in the intertropical latitudes a piece of land 75 miles long, so entirely useless to man or the larger animals” (Larson: 2001: 74).

As Chapter three has already demonstrated, even in the 1870s, the archipelago was in far from 'pristine' condition, with hunting having already decimated the tortoise population (see also figure 6.1) and invasive species, on some islands at least, threatening the native flora and fauna. By the time the

*San Francisco Examiner* was painting its picture of the archipelago's plentifulness, permanent settlements had been established on San Cristobal, Santa María, and Isabela. The archipelago attracted a number of eccentric Europeans who gained notoriety in the late 1920s and early 1930s by settling on Floreana island: an Austrian baroness and her two German lovers, who christened their home 'Hacienda Paradise', and a German dentist and his patient-turned lover, who simply named theirs 'Eden' (Larson: 2001: 159). Such names are arguably reflective of the developing image of tropical islands, and the Galapagos in particular, in the broader public consciousness as places unsullied by the industrialization and conflict that had so recently consumed Europe. Additionally, the fact of their presence on the archipelago (the Austrian baroness reportedly brought, amongst other things, cows, donkeys, and chickens to Floreana island (Schalansky: 2012: 161)) again demonstrates the extent to which the 'pristine' narrative is required to overlook historical evidence.

**Fig. 6.1:** Remains of tortoises killed by hunters, Galapagos Islands, 1903.
**Source:** https://theconversation.com/galapagos-giant-tortoises-make-a-comeback-thanks-to-innovative-conservation-strategies-67591 (accessed: 06.10.2017)

The disparity between the popular imaginations of the islands (as either pristine or as paradise) and their physical reality is highlighted by British ornathologist David Lack, who later gained worldwide fame for his book 'Darwin's Finches' and observed in 1938 that:

“The Galapagos are interesting, but scarcely a residential paradise […] the biological peculiarities are offset by an enervating climate, monotonous scenery, dense thorn scrub, cactus spines, loose sharp lava, food deficiencies, water shortage, black rats, fleas, jiggers, ants, mosquitoes, scorpions, Ecuadorian Indians of doubtful honesty, and dejected, disillusioned European settlers” (Larson: 2001: 167).

This contrast of 'biological peculiarities', which is somewhat dismissive, with the list of discomforts is worthy of comment as it provides another refutation of the 'paradise' narrative that has become so engrained in the Western imagination of the Galapagos.

A 5-month expedition by UNESCO scientists to survey the islands in 1957 noted the increasing number of immigrants “arriving on these desolate shores” (Larson: 2001: 185) in the wake of the construction of the airbase on Baltra, yet the very language used reveals the truth that the islands were not conceived of in paradisiacal terms, at least not for humans. The increasing population (it was estimated to have doubled from its pre-War level to around 2000) mostly lived, according to the report, in “such poverty that they all but had to plunder the environment to survive” (Larson: 2001: 186). Again, the language used is revealing of the fact that this was no bucolic land of milk and honey, neither was it an untouched, pristine wilderness, nor, significantly, was it thought of as such by the UNESCO scientists. However, the average member of the public was arguably far more likely to encounter the glossy photographs of exotic creatures in *Life* magazine (see chapter four) than they were to read the UNESCO report.

When the Charles Darwin Research Centre was

established at Academy Bay on Santa Cruz Island in 1959 to celebrate the 100th anniversary of '*On the Origin of the Species*', it's location was described as “about two hundred people living a meagre existence plagued by food and water shortages” (Larson: 2001: 186). The flood of publicity aided the establishment of the scientific, legal, and social frameworks to “transform the archipelago into a model site for field research, wildlife conservation, and eco-tourism” (Larson: 2001: 195-196). Paradoxically, at the time, Santa Cruz was one of the less spoiled islands, but the research station spurred development and the introduction of non-native flora and fauna by settlers. The 1957 UNESCO survey had concluded that: “on the whole colonization conflicts with nature protection” (Larson: 2001: 186); yet it was also noted that “Ecuador is interested in developing its tourist trade […] The Galapagos Islands can become an import (sic) asset for attracting tourists, but only if they are preserved and protected” (Larson: 2001: 186). A decade later, the 1967 edition of the *Encyclopedia of World Travel* informed readers that, “'the Ecuadorian government has plans to make the Galapagos a health and vacation resort'” (Larson: 2001: 225).

The 1975 'Master Plan of the Galapagos National Park' called for a maximum of 12,000 tourists per annum (de Groot: 1983: 295). The figure is now over ten times that: obviously the program to promote the archipelago as a tourist destination

has been highly successful. Even to atheistic believers in evolution, the archipelago is now spoken of in quasi-religious terms: as “holy ground” (Larson: 2001: 228) due to its connection with Darwin. Tourists are described in religious terms as “modern-day pilgrims” (Larson: 2001: 217). The archipelago has become “a kind of eco-tourist Lourdes” (Denby, quoted in Larson: 2001: 217). An element of 'pilgrimage', Urry & Larsen (2011) suggest, is integral to tourism; the tourist moving from a familiar location to a distant place in which some sacred object is venerated. This process of reverential observation imbues the experience with positive feelings (Urry & Larsen: 2011: 12). Certainly, most tourists seem impressed by what they experience on the Galapagos Islands:

- “The whole environment, I would say, is as near as one could get to paradise on earth as is possible” (tourist to Galapagos Islands, quoted in Honey: 1999: 111);
- “It’s really nice to see what the earth looks like without man’s imprint” (tourist to Galapagos Islands, quoted in Honey: 1999: 111).

The first quote clearly accepts the 'paradise' narrative of the islands. The second quote clearly accepts the 'pristine' narrative. The views of both tourists stand in marked contrast

to those expressed by a director of the Charles Darwin Biological Research Station, who remarked of the crowds “it's a bit like being in a theme park” (Honey: 1999: 112). Figure 6.2 is illustrative of what both the tourists and the director of the research station mean.

Figure 6.2 clearly shows that a walkway has been constructed across the 'untouched' nature – incontravertible, physical evidence of the fact that the islands are not 'without man's imprint'. Perhaps the group remains small enough not to impinge too much on the feeling of exclusivity integral to the paradise narrative, but the tangled mass of dry scrub and bushes surely cannot be 'as close to paradise on Earth as it is possible to get'. It is certainly at odds with images of paradise reproduced in Gauguin's paintings: sensual, and promising pleasure. This photograph, in conjunction with the quotes above, seems to offer some support for Urry's theory that people's gaze is strongly informed by their prior conceptions: they see what they arrive expecting to see.

**Fig. 6.2:** Tourists group on Frigate Bird Hill, Galapagos Islands.
**Source:**
http://static2.bigstockphoto.com/thumbs/5/5/8/large1500/85507424.jpg
(accessed: 16.06.2017)

Cain (2001) describes the persistence of the "idea of the Galapagos that emphasizes pristine and unspoiled landscapes" (Cain: 2001: 768) as "strange" (*ibid*.), noting that over four hundred years of human contact has wrought sustained and significant disruption upon the native flora and fauna. A fire set by a whaler in 1820 on Floreana left nearly the whole island in flames and is thought to have contributed significantly to the extinction of the islands' native tortoise. According to a report by the Charles Darwin Research Foundation, "More than 800 plant species have been intentionally introduced into the Galapagos Archipelago since people started colonising these islands in the 1800s" (Izurieta Valery *et al*.: 2016: 25). Furthermore, the presence of an airbase, which, along with the introduction of goats, cats, and

dogs, had contributed to the extinction of the native iguanas on Baltra, is impossible to square with the island being in any way pristine (Galapagos Conservancy). The archipelago's human population also generates a significant amount of waste, which on small islands can be a serious problem due to the lack of adequate facilities for disposal (see figure 6.3).

Thus, Cain is very much justified in asking: “In what sense are these places untouched?” (Cain: 2001: 768). Indeed, it could be argued that, since 1945, no place on earth is entirely devoid of some sign of man's presence in the form of tell-tale atmospheric radiation released by the first nuclear weapons tests. A similar argument could be made that we live in the Anthropocene – climate change / post-Industrial Revolution rises in carbon dioxide are detectable in geological records. Some, like McKibben, argue that “nature has come to an end in the sense that even the remotest and wildest parts of the environment now bear the mark of human occupation of the planet” (Soper: 2010: 223). This represents the “cessation of hope that a pristine world, majestic and beautiful, untouched and unaltered by humanity exists somewhere on earth.” (Merchant: 2013: 166). Yet, despite the obvious imperfections documented here, and discoverable with little effort, the narratives of paradise associated with the Galapagos archipelago are so strong that it appears to be easier to imagine the Galapagos Islands as the “one place where we can truly see nature's sketchbook and not just its final work”

(Mancera Autrique: 2012: 2), than to see their reality as a "struggling sanctuary with dire political, social, and environmental problems" (*ibid*.).

**Fig. 6.3:** The 'pristine' Galapagos Islands... Junk Yard in Puerto Ayora, Galapagos Islands © WWF/Ulf Hardter
**Source:** Hardter *et al*.: 2010: 4

It would seem evident by now that the conceptualization of the Galapagos Islands as either 'pristine' or as 'paradise' requires their dislocation from their historical and/or social context. Hennessy & McCleary (2011) make this point forcefully, stating that:

"First, the notion that Galapagos is a natural sanctuary devoid of people, as it is presented in nature documentaries, or that it was such before Darwin's visit, is false. The landscape has been shaped by people directly and indirectly since its discovery in 1535. Second, that the value attributed to

the islands' nature has changed so dramatically - from being cursed because they were inhospitable to life to holding the secret of the very origins of life - demonstrates that the nature of nature cannot be taken to be self-evident, but must be understood in relation to particular historical and cultural contexts." (Hennessy & McCleary: 2011: 136).

The islands are, at best, misunderstood if no attention is paid to their history. Such misunderstandings bode poorly of the preservation of the islands and/or the sustainability of tourism to them. Yet, in general, the majority of the archipelago's population is hidden from tourists, as is their waste and that of visitors, the myriad goods that must be imported by cargo boat each week, and the infrastructure necessary for both a thriving tourism industry and a functioning local economy. Britton noted that:

"If places are perceived either as composed of nothing more than beaches, sun, and obsequious, smiling locals, or, at the other extreme, as some mystical paradise, visitors are much less likely to learn anything about the real place. The experience is reduced to validation of clichés and stereotypes." (Britton: 1979: 323).

Yet the report advizing Ecuador's main travel agency on how to promote tourism to the Galapagos in the 1965

advized that “cruises should steer clear of other humans and let the passengers commune with nature among themselves” (Larson: 2001: 226). This suggests that the reduction of the Galapagos to a clichéd stereotype, as long as it could be conveniently applied to the selling of vacations, was quite intentional.

The two narratives of the Galapagos Islands that have emerged, the 'paradise' narrative that has been perpetuated by the tourism industry, and the 'pristine' narrative propounded by conservationists (and co-opted by the tourism industry) take a similarly myopic approach to history. As a result, the islands’ human inhabitants do not form part of the imagined Galapagos. Indeed, as the archipelago became ever more closely associated with the two narratives, locals were increasingly perceived as “a disruptive force that needed to be dealt with” (Quiroga: 2013: 29). For this reason, many outsiders fail to appreciate the extent to which the impacts of conservation, tourism, and development impact upon the lives of residents (Mathis & Rose: 2016: 69). The result of this was that many residents developed an antipathy towards conservation efforts and outright hostility broke out at times between 1995 and 2005 (Quiroga: 2013). Such confrontations have become rarer as a new understanding of environmentalism emerged – one based not on the preservation of resources for its own sake, but for the benefit

of those living in proximity to them (Quiroga: 2013: 39).

It is estimated that if current migration patterns continue, the archipelago will be home to almost 118,000 people by 2030 – this represents a near 400% increase from the current population of approximately 25,000 (Hoyman & McCall: 2013: 43) and a staggering 14,500% increase in under a century. In environmental terms, such movements are, Urry & Larsen suggest, "enormously costly" (2011: 7). The main concern is not with the size of the tourism industry on the archipelago *per se*, but with the speed of its expansion preventing the authorities from “devising and implementing appropriate policies to help manage [it]” (Strahm & Patry: 2010: 26). Pressure on resources, such as water, is further magnified by “new and increased consumption patterns” (Hardter *et al*.: 2010: 8), particularly those of tourists.

It would seem that at the heart of the chosen model for development lies a conflict between the two narratives. The problem is as so: the idealizations of the archipelagos pristine nature have been made the basis for a reimagining of the islands as a paradise. The pristine narrative has the dual impact of highlighting the Galapagos as a unique site of scientific and natural importance, whilst simultaneously, through the booming tourism industry it stimulates, endangering that prized nature (Hennessy & McCleary: 2011:

149). The fragile ecosystems of the archipelago depend upon physical isolation, but the human societies they attract, as seen in chapter three, “multiply contacts linkages, and exchanges [and] The contradiction only grows” (Ospina, 2006, 12, quoted in Taylor *et al*.: 2008: 142).

Tourism is not the “clean, unproblematic ‘industry without smokestacks’” (Carey: 2010: 115) that it is sometimes considered to be. Its inherent conflicts have long been recognized: as early as 1969, Mishan was citing the destruction of Lake Tahoe in the USA by sewage produced by the hotels built around its edges[9] as an example of “‘the conflict of interest [...] between, on the one hand, the tourists, tourist agencies, traffic industries and ancillary services [...] and all those who care about preserving natural beauty on the other’ (1969: 140).” (Urry & Larsen: 2011: 223).

This chapter has confirmed that the Galapagos Islands have not always been viewed as paradise islands, and they are clearly not pristine. It has also reiterated the extent to which the 'paradise' and 'pristine' narratives have become intertwined in popular imaginations of the Galapagos Islands. It has been suggested that this has been problematic in terms of the relationship between conservationists, the tourism

9 “There are countless other examples of such localised environmental damage caused by tourism development, especially documented by NGOs such as Tourism Concern” (Urry & Larsen: 2011: 223).

industry, and locals. In the next chapter, this thesis will turn to look in closer detail at one particular way in which the growth in tourism, and the growth in population it has spurred, has caused difficulties on the archipelago: namely, the provision of water resources.

## 7: Material Conditions on the Galapagos Islands: The Supply of Water on the Galapagos Islands as an Example of the Problems Caused by Increased Population:

One of the inspirations for undertaking this investigation was the cognitive dissonance caused by descriptions of the Galapagos Islands as an inhospitable "archipelago of aridities" (Larson: 2001: 7) and both common imaginations of islands as paradisiacal, and the fact that the Galapagos archipelago has become home to both a relatively large permanent and transient population. It has already been established that this population is, to a large part, the result of the tourism industry. As Gössling *et al*. note:

"[tourism] depends to a considerable degree on water, which is both a resource needed to provide services related to basic human needs, such as hygiene or food, as well as a precondition for fuel production, and an asset essential for a wide range of tourist activities, such as swimming in lakes or pools [...] Limited water availability, poor water quality or media portrayal of a water crisis can consequently do great harm to the image of tourism destinations" (Gössling *et al*.: 2012: 13).

Reyes states that "water resources and their dynamics are an essential link between the natural systems and the

human ones" (Reyes: 2017: 20). As such, they provide an excellent focal point for an investigation into the ways in which the human, constructed imagination of the archipelago interacts with and has impacted upon the archipelago's material realities. This thesis has already established that, through the tourism it inspires, a direct link can be drawn between the discourse surrounding the archipelago and its imagination in Western popular culture and the presence of a the current large population on the archipelago. Cole notes that "[water] is one of the most critical and scarce resources for the tourism industry" (Cole: 2014: 89). Again, this suggests the importance of water resources to gaining a full appreciation of the ways in which the discourse surrounding the Galapagos and the archipelago's material realities are intertwined.

As already noted in chapter three, the archipelago has a generally warm and dry climate, with rainfall rarely exceeding five centimeters per month even in the rainy season between January and June. Tourism is relatively stable throughout the year, without the large seasonal peaks seen on some islands. This chapter shall focus on the archipelago's largely arid nature and examine the material problems it faces as well as the socio-political difficulties of providing potable water. The "treadmill of income growth and immigration" (Taylor *et al*.: 2008: 141), which was also highlighted in

chapter three, places increasing stress on the infrastructure for potable water, sewage, and waste disposal which is so important for the enviornmental sustainability of the inhabited areas of the islands.

In 2007, Epler's report on tourism on the Galapagos Islands for the CDF noted that “The meager supply of drinking water is heavily tapped and shows signs of being polluted. Several hotels on San Cristóbal [have been] closed due to a lack of water” (Epler: 2007: 40). Although on a global scale direct tourism-related water use accounts for under 1% of consumption and is likely to remain relatively insignificant even as the tourism industry grows, on a local level, tourism frequently concentrates people, both temporally and spatially, in locations where water resources are limited (Gössling *et al*.: 2012: 1). Thus, the provision of reliable water infrastructure is identified as one problem posed by tourism (McElroy & de Albuquerque: 2002: 22). This problem is exacerbated on small, arid islands.

Althought water scarcity is not a problem that is unique to the Galapagos Islands as islands, but a common difficulty faced by various islands (Cashman & Moore: 2012; Reyes: 2017; Viola *et al*.: 2014), the Galapagos Islands are unusual in the fact that habitation is restricted on the vast majority of their surface area. As only a small percentage of land on the

Galapagos is set aside for inhabitation, the pressure on sanitation and water supplies generated by the rapid growth of tourism and the associated near-exponential growth in residential population is more concentrated in these areas than would otherwise have been the case. The Galapagos archipelago has an area of ca. 8,000 km², but only 3.3% of this (i.e. ca. 264 km²) is avaialble for human activity due to the restrictions of the GNP. Given the population of 25,124 recorded in the 2010 census of the archipelago, this gives the non-GNP zones of the Galapagos an average population density of approximately 95 people per km² (though as the population is not distrubuted evenly, the built up areas such as Puerto Ayora on Santa Cruz island will have densities considerably above this figure). Indeed, overcrowding has become the most common complaint of urban residents on the archipelago, even more so than dissatifactory sanitary conditions (CGREG: 2015: 86). In comparison, the average population density for Ecuador as a whole is ca. 58 people per km².

Despite the acknowledged potential for tourism to impact negatively on the environment, there is no consensus on how the environment ought to be protected from the impacts of tourism (Cooper *et al*.: 2005: 212). In the following sections, this thesis shall look at three particular issues faced by the Galapagos Islands, water scarcity, water quality, and the infrastructure for the provision of potable water.

Subsequently, section 7.4 shall return to considering discourse related to the islands, this time looking at the local discourse, thus opening another dialectical opposition between the European / Western discourses examined in chapters two to five and the narratives of the archipelago's residents.

## 7.1: Water Scarcity:

Water scarcity can either be outright, in that a certain location (e.g. the Atacama desert) suffers a lack of precipitation or other notable supply of water, or it may be relative, in that a certain location has a plentiful supply of water but also suffers from high demand and conflicting uses that mean even an apparently abundant supply is insufficient to meet needs. Although the entire archipelago was traditionally seen as suffering from outright water scarcity, it should be noted that there is a high degree of variability in access to fresh water, both from island to island, and even in different locations upon some of the islands:

San Cristobal is the only islands to have a permanent surface freshwater source, in the form of streams that run from the island's highlands. These streams provide water for both human consumption and domestic use. San Cristobal is also home to the only freshwater lake on the archipelago, El Junco, although, contrary to the belief of some residents, El Junco is not tapped as the source for water supplies of any kind. Further research is required in order to ascertain the depth and amount of water stored in San Cristobal's aquifers as this is currently unknown (CGREG: 2015: 41).

Santa Cruz is mostly reliant on water from subsurface brakish basal aquifers, extracted from subterranean fissures

though, due to contamination with fecal coliform, at least one of these has now been closed to extraction. Santa Cruz does have a small permanent spring in its highlands though this is low outflow. Additionally, there are some temporary subsurface springs (sporadic streams have been recorded during the rainy season or during heavy mists, known as *garúa* (d'Ozouville: 2009: 146)). Alongside small private desalination plants, there is now also a large municipal desalination plant on Santa Cruz island (Liu & d'Ozouville: 2013: 76, and López & Rueda: 2010: 107). In terms of water resources, Santa Cruz is by far the most studied island.

Isabela was traditionally reliant upon the extraction of brackish water from fissures but, as on Santa Cruz, these are showing signs of contamination with human waste and at least one crevice has been closed to extraction. Isabela now has a desalinization plant.

Floreana has permanent groundwater springs, but no permanent surface streams. The two springs that supply the population on floreana are small out-flow springs. Although they historically played a significant role for bucaneers, pirates and early settlers, they no longer supply the island's current demand (CGREG: 2015: 41). Water from the two springs is collected in storage tanks and distributed to the island's inhabitants twice a week (*ibid*.).

According to some sources, both Floreana and Isabela must import their drinking water (Discovering Galapagos: 2017), leaving supplies vulnerable to disruption. Baltra, with its airport and small military station, relies solely on bottled water from desalination plants. However, the most urgent issues remain the same across all the islands: “pollution, waste, and scarcity of fresh water.” (d’Ozouville: 2007: 149).

Historically, residents on the Galapagos struggled to find enough water for survival. Yet, according to the latest census, they now they have a municipal network supplying tapped water which reaches almost 90% of the population, with water distribution tankers serving a further 4%, leaving a little over 5% of the population solely reliant on rain water or other sources (INEC: 2015: 37). Guyot-Téphany *et al*. report that 93% of households on San Cristobal, 88% of households on Santa Cruz, and 81% of households on Isabela receive their water via the piped municipal system (2013: 68). In the port areas most frequented by tourists, and which have seen the most rapid development, the municipal system is the only means of water supply for 75% of households. Still, such statistics may present a misleading impression of the situation: unlike many mainland systems, water is distributed by gravity rather than under pressure; although the vast majority of the population now receive their water from the municipal network,

that network does not have 24 hour functionality – in Puerto Ayora, the archipelago's largest settlement, water is, on average, only available from the municipal system for three hours each day (Reyes: 2017: xxiii). Losses from the system are also high: due to the restricted availability of water from the piped municipal system, many residents have installed rooftop tanks to store water from the piped system - such practices lead to considerable wastage: “61% of respondents who have a tank in Santa Cruz, as well as 47% in San Cristóbal and 21% in Isabela, confirm that they allow their tank to overflow once it fills” (Guyot-Téphany *et al*.: 2013: 68). This has the effect of putting additional strain on supplies. Leakage and overuse due to the absence of water meters in many locations, particularly Puerto Ayora, meaning consumers do not need to pay per m3 consumed, results in estimates that a greater quantity of water is lost or wasted in the system than is actually consumed (Guyot-Téphany *et al*.: 2013: 68). In Puerto Ayora, losses have been estimated as being as high as 74% (GIZ: 2013: 1). This problem is compounded by the fact that municipally supplied water is subsidized, meaning that users do not pay the full price for inefficient usage. Furthermore, as shall be seen in section 7.2, the water that is supplied is frequently of such poor quality that it is considered unfit for human consumption.

The expansion of the municipal water system network

has seen changes in the practices of water collection. Fewer and fewer people collect rainwater for example. Although “rainwater collection is perceived as a necessary solution in rural areas [it] is disappearing rapidly from the port towns, where this type of water has acquired a negative connotation” (Guyot-Téphany *et al*.: 2013: 68). Residents “could collect water in rain barrels, but they do not, according to the leaders” (Hoyman & McCall: 2013: 42). Receiving piped water has become “synonymous with comfort and development” (Guyot-Téphany *et al*.: 2013: 68). However, the system's leaky pipes not only allow water to escape, they also allow contamination in, e.g. from leaking septic tanks, a problem that shall be explored in section 7.2.

The implementation of a continental supply model, whilst it has facilitated development, has created its own problems, leading to “the evolution of a relationship between people and water that is poorly adapted to the Galapagos environment” (Guyot-Téphany *et al*.: 2013: 72). It has been criticized for breaking the link between source and consumer and, in doing so, having led to a lack of responsibility-taking when it comes to sustainable usage: if people “don’t know where the resource comes from, they don’t take responsibility for preserving it” (d’Ozouville: 2007: 146).

The impact of immigrants from the mainland failing to

adapt their water usage to insular life cannot be overlooked: seventy-five percent of respondants to one survey complained that they were unable to use water as on the mainland. Indeed, perceptions of the archipelago's water have changed radically along with its population: whereas the brackish nature of the water on Santa Cruz and Isabela was once accepted as an integral part of the islands' identities, it is now a source of complaint. Only a minority of respondants to the survey recognized the the need to alter their water consumption patterns in response to the realities of insular life (Guyot-Téphany *et al*.: 2013: 70-71).

Nevertheless, when it comes to water, it is not residents, but tourist accommodation that prove to be the biggest consumers (Reyes *et al*.: 2015: 220). Such patterns are not unique to the Galapagos: Cole notes that in many destinations “tourists’ per capita water use far exceeds that of local people” (Cole: 2014: 89). Tourists are typically far more extravagant in their water usage whilst on vacation than they are at home (Cooper *et al*.: 2005: 199). This may be attributed to the differing activities in which they engage whilst on vacation.

The US FAO (Food and Agriculture Organization) guidelines recommend 50 liters per person per day as a minimum for domestic use[10], though the value can range

10 This includes between 2 and 5 liters for drinking, 20 liters for sanitation,

between 60 and 150 liters/person/day in developing countries, and between 300 and 800 liters/person/day in some developed countries (d'Ozouville: 2009: 148). Figures for consumption in Bellavista, on Santa Cruz, range between 45 and 87 liters/person/day, although this figure fails to consider unauthorized tapping of the water system and rainwater collection/use (d'Ozouville: 2009: 148-149). In Puerto Ayora, usage appears to be significantly higher (with an average of 802 liters/person/day) (d'Ozouville: 2009: 150). This is despite the fact that the port areas of the islands lack surface water resources (Guyot-Téphany *et al*.: 2013: 72). The reasons for such a vast difference in consumption is not apparent. However, what should be immediately concerning is that a group of arid islands in a developing country appears to be supporting at least the same water consumption as a developed country. At this point it is necessary to distinguish between different kinds of water usage, particularly direct water usage and indirect water usage, the latter accounting for considerably more than the former (see figure 7.1). This means that, in addition to the rather wasteful practices already outlined, residents and tourists alike are likely to have an 'uncounted' indirect consumption that adds to the burden on the archipelago's water resources.

washing clothes, etc.; 15 liters for bathing, and 10 liters for cooking (d'Ozouville: 2009: 148).

| Water use category | Description | L/tourist/day |
|---|---|---|
| Direct use | Accommodation (shower, bath, toilet, spas, pools, landscapes, sport and health centers, laundry, restaurants) | 84-2000 |
| | Activities (e.g. golf, skiing) | 10-30 |
| Indirect use | Fossil fuels (water use for energy consumption and/or production) | 750 (per 1000 km by air/car) |
| | Biofuels (water use for biofuel consumption and/or production) | 2500 (per L of bio fuel) |
| | Food (water use for food consumption and/or production) | 2000-5000 |
| | **Total per tourist per day** | **2000-7500** |

**Fig. 7.1:** Water use categories and estimated use per tourist per day.
**Source:** Gössling *et al*. (2012)

Yet, despite historical problems with water scarcity, Reyes *et al*. (2015) conclude that the existance of relatively large underground aquifers means that there is, in fact, no absolute scarcity of water resource on the islands, merely a "deficient management of water supply and demand" (Reyes *et al*.: 2015: 221). On this basis, it would be more appropriate to say that the Galapagos Islands suffer from relative water scarcity. However, the Galapagos Plan 2015-2020 expresses concern over the development of towns, whose concrete surfaces increase runoff and prevent water entering the ground to rechange the aquifers beneath. It states there is currently no accurate data on the effect this might be having and thus the possibility of reduced extraction capacity from the aquifers cannot be ruled out in the future (CGREG: 2015: 52).

The quantity of water available to the population of the Galapagos is not the only concern: the quality of the water is also a significant issue. The combination of inappropriate patterns of water consumption and the huge growth in tourism and migration has meant that demand has outpaced infrastructure development, especially for wastewater and sewage systems. The next sections shall explore this further, it shall be seen that the issue is compounded by the concentration of increasingly large numbers of people in a relatively small area and the failure of infrastructure and planning to keep pace with the changes.

## 7.2: Water Quality:

It is difficult to offer meaningful direct comparison of water quality among different islands in the Galapagos due to the differing sources of water on each (e.g. rainwater vs brakish water extracted from underground fissures). This situation is further complicated by a lack of data – there is a lack of literature and research into the archipelago's water supply, with resources more generally directed towards “the study of evolution and other traditional biological and geological issues” (Quiroga: 2013: 41) rather than “the problems and issues that affect people” (*ibid*.). However, there has been regular water quality monitoring on Santa Cruz since 2005, when the GNP, with the aid of the Japanese International Cooperation Agancy (JICA), began monthly monitoring. This was extended to Isabela and San Cristobal in 2007 (López & Rueda: 2010: 103). What research has been done appears to have focused overwhelmingly on Santa Cruz island. Nevertheless, this section will attempt to review all the available literature to derive a broad, overall picture of water quality and issues that surround it on the archipelago.

A combination of factors leads to poor water quality on the Galapagos archipelago: the amount of accessible sources of water on the islands is limited, and extraction by private users is not properly regulated (Hennessy & McCleary: 2011: 148); additionally, poor infrastructure for disposal of human

waste, including the lack of wastewater treatment facilities, means there is a high risk of contamination of the water supply. Due to this, what water is supplied via the municipal system is largely unsuitable for human consumption (see fig. 7.2).

At the end of the 1970s, the OECD laid out a framework for assessing the impact of tourism on the environment. One of the four main categories highlighted was waste product generation (Cooper *et al*.: 2005: 196). The economic development of and population growth on the Galapagos archipelago has led to an increase both in consumption of resources and the generation of waste, which is frequently dumped either directly into the subsoil or the sea. Little thought appears to have been given to integrated water management as the settlements on the archipelago have expanded (d'Ozouville: 2007: 147). The result has been the contamination of sea and fresh water, which threatens both human health and fragile local ecosystems (López & Rueda: 2010: 103).

Over the last decade, the Galapagos Islands, despite their physical limitations, have seen an increase in housing units double the Ecuadorian average (Villacis & Carrillo: 2013: 78). The strain such growth (as well as the growth in population) puts on infrastructure is demonstrated in one

report of the failure of a resident's home septic system: “The house had a system designed for five users, but when 15–20 residents were living under one roof, the septic system failed” (Hoyman & McCall: 2013: 42). The islands in general lag behind the mainland in terms of access to basic services, especially in terms of potable water and sewage networks. In 2001, just 30.8% of homes had network sewer service (*ibid*.), and by 2010 this percentage had actually fallen to 26.8% (*ibid*.), as a result of rapid building without commensurate expansion of municipal facilities. This compares to rates of 48% and 53.6% on the mainland in 2001 and 2010 respectively. The conditions are worst on Santa Cruz. Santa Cruz is home to 61.3% of the archipelago's population, but its sewage system only includes 3.5% of households (Villacis & Carrillo: 2013: 79). Even these households are not connected to municipal sewers but to a privately build system which ultimately ends in a septic tank (CGREG: 2015: 92). Those without access to the public sewage system use septic tanks, however, these are generally not built to any specific standards. The archipelago's porous volcanic rock means any leakage can potentially contaminate nearby aquifers. The problem is not confined to urban areas: in rural areas, farming is a great source of contamination to the water supply: there are currently no rules for the treatment of effluents on farms – accumulations of chicken manure have contaminated the aquifers and pools used to supply Puerto Ayora (CGREG:

2015: 52-53 & 92).

On both Santa Cruz and Isabela, the groundwater supply has been contaminated due to the basal aquifer being located beneath urban settlements (since the mid 1980s, high concentrations of Escherichia coli have repeatedly been identified in the aquifer that supplies Puerto Ayora), the absence of effective wastewater treatment, and seawater infiltration. The poor water quality has caused health issues in those communities (Liu & d'Ozouville: 2013: 76). In 2008, eight sites across the three islands on Santa Crus, Isabela, and San Cristobal were monitored and it was found that fecal coliform exceeded the World Health Organization's recommendation for human consumption of zero coliform colonies per 100ml in all but one location. Even the less stringent levels of less than 600 colonies per 100ml permitted under the TULAS (Texto Unificado de la Legislación Ambiental Secundaria), which establishes basic environmental standards in Ecuador, were exceeded in three locations as an average over the entire year, whilst other locations exceeded the TULAS recommendations at various times, mostly during April, at the end of the hydrological year, when effective rainfall is lowest (d'Ozouville: 2009: 147). Following the study, recommendations were made and meetings, workshops, and conferences were held with the authorities and general public and mitigation measures were implemented. It was

recommended that one crevice, from which Puerto Ayora extracted 27% of its water for the local population, should be “no longer used for human consumption and domestic use” (López & Rueda: 2010: 107). It was also recommended that recreational use of the Ninfas Lagoon (i.e. swimming and snorkeling) on Santa Cruz also be avoided due to fecal contamination (López & Rueda: 2010: 107).

The water supplied by the municipal network, at least on Santa Cruz, the most heavily populated island, is not treated. Although the Municipality of Santa Cruz finally completed the installation of sewage pipes for the main (central) neighbourhood in Puerto Ayora in 2012, and renewed approximately 40% of the town's aging water pipes, the planned potable water project remains unfinished (despite an initial deadline in 2015) and “wastewater recollection and treatment have not been considered yet” (Reyes: 2017: 50). Without such wastewater systems, “residents frequently experience intestinal problems” (Brewington: 2013: 109) and “acute diarrheal diseases remain one of the most common causes of illness in the Galápagos Islands” (Hennessy & McCleary: 2011: 149). San Cristobal and Isabela do at least have a waste water recollection network and sewage treatment plants, however, there appears to have been little research into their efficiency and coverage. If not properly managed, the disposal of human waste (sewage) in particular

can be a major source of degradation to coastal areas, lakes, rivers, and aquifers (Cooper *et al*.: 2005: 199). But as illustrated by Figure 6.3, there is a general problem on the archipelago with the lack of adequate facilities for waste disposal. At various sites, waste is simply dumped or burned. These dumpsites, in addition to household refuse, “contain chemicals and biohazardous hospital waste” (Hardter *et al*.: 2010: 5), which then leach toxins into the ground, adding another potential source of contamination.

The fact that most municipally supplied water is of 'non-drinking quality' (see Fig. 7.2) has resulted in the local population turning to alternatives such as bottled water and water supplied by trucks as their main sources of drinking water (Reyes *et al*.: 2015: 213). Reyes *et al*. have found that 92% of households in Puerto Ayora and 75% of households in Bellavista, the two main town on the island of Santa Cruz, now supplement their municipally supplied water with bottled water (Reyes *et al*.: 2015: 215). Thus, whilst people do have access to piped water for domestic use, e.g. washing etc. in reality, buying drinking water is a regular, even daily, necessity for many (Guyot-Téphany *et al*.: 2013: 67). Residents make an effort to acquire water that is considered fit for human consumption (such a rainwater, purified water, or home-boiled water) in order to cook and drink, even if this involves added costs (in purchasing or fuel for boiling etc). Other water, such

as that supplied by pipe, is used for washing etc. but this “has little economic value and is considered contaminated” (Guyot-Téphany *et al*.: 2013: 70). This is almost certainly another reason so much water is wasted on the islands.

| | Quality of the water supply | | | | | |
|---|---|---|---|---|---|---|
| **Water quality** | **San Cristobal** | | **Isabela** | | **Santa Cruz** | |
| | **Number** | **%** | **Number** | **%** | **Number** | **%** |
| **Very good** | 18 | 0.90% | 8 | 1.40% | 78 | 2.10% |
| **Good** | 321 | 16.40% | 38 | 6.50% | 297 | 7.90% |
| **Average** | 943 | **48.30%** | 188 | 31.80% | 1041 | 27.50% |
| **Poor** | 671 | 34.40% | 357 | **60.30%** | 2366 | **62.50%** |
| **Total** | 1952 | 100.00% | 592 | 100.00% | 3783 | 100.00% |

**Fig. 7.2:** Quality of the water on various islands in the Galapagos archipelago by household
**Source:** Plan Galapagos 2015-2020: 92

The largest consumers of bottled water are tourist accomodations (Reyes *et al*.: 2015: 220). However, even the purchase of bottled water does not solve the quality problem - whilst the water supplied by purification plants may be free of bacteria such as E.coli, it frequently become recontaminated en route to consumers (e.g. in reuseable bottles for water coolers): the combination of unclean, reused containers and tanker trucks and poor storage habits in homes provide obstacles to the provision of safe drinking water free of pathogens (Liu & d’Ozouville: 2013: 80, Guyot-Téphany *et al*.: 2013: 68). Varying quality in sterilization practices and the

condition of reusable water containers leaves both tourists and local residents at risk of water-related illness: “Any given restaurant, household, boat, or hotel could have contaminated bottles, which could have consequences for human health and private businesses.” (Liu & d’Ozouville: 2013: 82).

Liu & d'Ozouville report that six private purification companies are in operation on the island of Santa Cruz. These companies “provide water for homes, offices, restaurants, hotels, boats, and shops [...] An estimated 30 cubic meters [30,000 liters] of desalinated water is sold daily across all water purification companies” (Liu & d’Ozouville: 2013: 79). The desalinated water is distrubuted via water truck, in reusable 20 Litre containers, and in new, single-use 2 Litre, 1 Litre, and 500 ml bottles. However, “water stored in reusable [20 Litre] containers and bottles indicated highly variable levels of contamination” (Reyes: 2017: 33). Thus, as well as failing to solve the original problem, resorting to bottled water actually creates a second problem: creating large costs and the potential for plastic pollution. Although recycling, led by the municipal governments, is relatively advanced in the Galapagos, the costs of importing single-use bottles, recycling them, and returning them to the mainland, has not been sufficiently analysed.

For such reasons, Villacris & Carrillo conclude that “It is

urgently necessary to have a public policy intervention in the islands" (Villacris & Carrillo: 2013: 84). The next section will attempt to understand the governments attempts to address the issue of water quality and explore the complex regime responsible for the provision of water.

## 7.3: The Institutional Infrastructure for the Provision of Potable Water:

As has already been noted, the Galapagos archipelago is divided into two distinct areas: the environmentally protected areas of the national park, and the inhabited zones. The division of the archipelago into these two distinct areas means that tourism has quite different impacts in each area. The Galapagos Conservancy, a US non-profit organization dedicated to the islands' protection, observes that the impact of visitors and residents on the protected areas of the archipelago has actually been “fairly well managed through standard protected area management techniques, including trails, guides to accompany visitors, fixed itineraries, and a limited number of tourism concessions” (Galapagos Conservancy). However, impact in the inhabited areas of the archipelago has been considerably greater and has “resulted in a rapid growth in physical infrastructure and ever-increasing demands for public services” (*ibid*.). The small percentage of land on the archipelago set aside for development concentrates the pressure on sanitation and water supplies generated by the massive growth of tourism and the associated growth in residential population. The division of the archipelago into two distinct areas also means the institutional infrastructure for the different areas is different. The GNPS is frequently cited as the body with most responsibility on the archipelago (e.g. Hoyman & McCall: 2013), which, as the

national park accounts for ca. 97% of the archipelago's area, may be true in many ways, but its responsibility for conservation only extends to the national park. The main authority for the development of policies regarding conservation and management of water resources in the inhabited zones is CGREG. However, there is a “complex and multifaceted” (Hoyman & McCall: 2013: 37) network of institutions on the islands. It is the goal of this section to understand the ways in which this complex network of actors affects material conditions with regards to the water resources on the archipelago.

Since the 1970s, when new municipalities were created, the Galapagos Islands have been developing their municipal water systems. As seen in the previous sections, most residents are now supplied by these systems. Since the SLG was enacted in 1998, the local authorities have been trying to address both the problems of water scarcity and water quality; however, initiatives have largely failed “in large part because their design, financing and technology [were] not adapted to local needs and realities” (Guyot-Téphany *et al*.: 2013: 72). Thus, again underscores the importance of understanding the institutional frameworks that have produced this continued failure. The institutions of the Galapagos are “fragmented, they are plural, they lack capacity, and the local institutions are overlaid by international organizations”

(Hoyman & McCall: 2013b: 130).

The SLG (1998) established the National Institute for Galapagos (INGALA) as the central planning organization and the INGALA Council, made up, amongst others, of the governor, mayors of the three cantons, Ministry of the Environment, Ministry of Tourism, representatives from the fishing and agriculture sectors, and CDF, as the leadership, policy setting, and coordinating body for the archipelago. However, according to Watkins & Martinez (2009) over 50 central government organizations and nine local organizations, alongside a growing number of NGOs, had some form of decision-making responsibility on the archipelago. This “complex, confusing and often conflicted decision-making framework” (Galapagos Conservancy b) and the inadequate planning and unsustainable tourism development it fostered was cited as one reason for the World Heritage Center's decision to place the archipelago on its 'World Heritage Sites in Danger' list.

In 2007, Ecuador elected Raffael Correa to be President after he campaigned on a platform promising a referendum on establishing an assembly to draft a new constitition. The referendum approved the assembly and it was convened in Montecristi in Novemeber 2007, producing a draft constitution in July the following year. This Constitution,

enacted in 2008, guaranteed various fundamental rights, which Miño (2015) splits into three non-hierarchical categories: civil rights, socio-economic rights (based on principles of 'Buen Vivir'[11]), and rights to participation. It was the first Constitution in the world to recognize Nature as having legally enforceable 'ecosystem rights'.

The new Constitution provides for the establishment of 'special systems' for “reasons of environmental conservation, or ethnic-cultural or population factors” (Art. 242) and recognizes the Galapagos as constituting such a system. This is echoed in the Organic Code of Territorial Organization, Autonomy and Decentralization (COOTAD[12]), Art. 10. Under the new Constitution (Art. 258), INGALA is dismantled and its functions assumed by the Governing Council of the Galapagos (CGREG), a change “widely seen as positive in the islands [as it removes] one electoral and therefore political layer” (Strahm & Patry: 2010: 7) in the decision-making process. The CGREG is now responsible for overall management of the inhabited areas on the archipelago, including planning, zoning, and resource management to ensure conservation under the principles of 'Buen Vivir'. The CGREG is headed by a

11 '*Buen Vivir*' is based on the indigenous principles of '*Sumak Kwasay*' (Villalba: 2013: 1429 *et seq*.). Two of its major features are the recognition of the rights nature, from which humans are not seen as separate, but as existing as part of a collective social body; and the rejection of standard development models in favour of of an alternative social / solidarity model.

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Governor appointed by the President and is “comprised of mayors of the municipalities of the province of Galápagos, the representative of the parish boards and the representatives of the bodies stipulated in the law” (Art. 258). The '*Ley del Agua*' (Water Law)[13] establishes the Secretaría Nacional del Agua (SENAGUA) as sole authority over water policy and resources (Art. 2). Thus, with regards to water, the body 'stimpulated by law' in Art. 258 of the Constitution is SENAGUA.

The updated Special Law (LOREG) (Art. 4) also provides that CGREG is responsible for, *inter alia*, inter-institutional planning and coordination in the Galapagos. The LOREG codifies all of the CGREG's powers and functions. Alongside CGREG, “numerous international nonprofit groups play a significant role in local affairs and politics” (Hoymann & McCall: 2013b: 129). Local actors and international groups often differ in their vision of the acceptable balance between economic development and conservation – even when they may value conservation principles, locals frequently cite more immediate concerns that can only be met by development (Hoyman & McCall: 2013b: 130 *et seq*.).

The Constitution's second chapter, on 'Buen Vivir' rights, recognizes the right to water (Art. 12) and links the provision of water to the right to a healthy life (Art. 32) and to the right to a dignified life (Art. 66). Art. 314 make the state

13 Reglamento ley recursos hidricos usos y aprovechamiento del agua.

responsible for “the provision of the public services of drinking and irrigation water [and] sanitation” (*ibid*.). The state, through SENAGUA and the Water Regulation and Control Agency (ARCA[14]), is responsible for producing a National Water Plan and regulating water quality. However, exclusive jurisdiction for implementing the goals set out therein is delegated to municipal governments by Art 264(4) of the Constitution. The delegation of responsibility for providing potable water to decentralized autonomus regional governments (GADs[15]) is also enshrined in COOTAD Art. 137. Rafael Correa transferred responsibility for the supply of drinking water and sanitation to SENAGUA by executive decree. Since 2012, SENAGUA has had two zonal centers in the Galapagos, located on San Cristobal and Santa Cruz; however, these are understaffed. Furthermore, SENAGUA is yet to develop any “specific policies or regulations for the Galápagos Islands, regarding the ecosystem’s fragility. The regulations that are applied are the same ones as in the mainland” (Reyes: 2017: 51). This supports the critique offered by Guyot-Téphany *et al*. of the lack of adaptation of initiatives to local conditions. The problem of water pollution is not unique to the Galapagos Islands – it is a nation-wide issue in Ecuador: “[as] of 2010, six out of every ten municipalities in the country had no treatment for their sewage, and only 13% were doing any monitoring of their raw sewage discharges (INEC−Senplades, 2010). Without

14 La Agencia de Regulación y Control del Agua.
15 Gobiernos Autónomos Descentralizados.

implementing the proper measures, the surface water conditions in Ecuador can be expected to worsen in the medium- and long-term" (SENPLADES: 2013: 42). Nevertheless, the unique vulnerability of the Galapagos Islands' ecosystem makes it imperative that national plans be adapted to local circumstances.

The Constitution, established a new national planning structure, through the establishment of the System of National Decentralized Participatory Planning (SNDPP), whose highest authority is the National Planning Council made up of a body of representatives of the executive, representatives of the GADs and citizen representatives whose main role is to approve the National Plan for Good Living (*Buen Vivir*) (NPBV). Thus, the shaping of public policy is a two-way process between the national and local institutions. The SNDPP established by the 2008 Constitution, whilst in many ways admirable in allowing participation, remains prone to slow decision-making due to the need to consult so many actors and stakeholders. The "[engagement] of local community and other stakeholders in tourism and conservation decision-making is neither simple, cheap nor guaranteed to achieve sustainable use objectives" (Bushell & Eagles: 2007: 20). Furthermore, the decentralized governance structure and confusion over the distribution of responsibilities has resulted in irregular exchange of information and communication

between the various institutions (Reyes: 2017: 40). In addition to complex and slow decision making, the fact that many of the institutions on the Galapagos are underfunded means there is often a lack of oversight. For example, out of 159 accomodations on Santa Cruz, 106 were unregistered as of December 2013 and only 40 were connected to the water network under the category 'hotels' (Reyes: 2017: 30).

In addition to the problems caused by the complex network of institutional actors, the policies they do produce are often, at best, only partially realized. The first Summit of Sustainable Tourism was held in Puerto Baquerizo Moreno in September 2010 and produced a set of common goals which the Governing Council of Galapagos (CGREG) formally adopted in January of the following year. These goals included objectives, targets and actions related to tourism marketing and reengineering of popular destinations (García *et al*.: 2013: 95 *et seq*.). Furthermore, the Summit recognized that “[water] is a scarce resource in Galapagos and traditional tourism greatly affects its availability and quality. Ecotourism must decrease both the use and pollution of water.” (García et al.: 2013: 97). Yet, despite goals being set, implementation of strategies to ensure the goals are met does not appear to have been realized. This appears to be a recurring pattern, from the international level right down to the local level.

At the international level, the UN's Millennium Development Goals (MDGs) called for a halving of the proportion of people without access to safe drinking water and basic sanitation by 2015 (Gössling et al.: 2012: 1) and to achieve universal access to safe, affordable water by 2030 (Water and Sanitation – United Nations Sustainable Development). The right to water and sanitation are also recognized by International bodies such as the UNHCR (Resolution A/HRC/15/L.14). In order to fulfill the right as set out by the UNHCR, water should be “safe (free from micro-organisms or other hazards)” (Cole: 2014: 91). It is clear from section 7.2 that municipally supplied water on the Galápagos would fail this test (d’Ozouville: 2007; d’Ozouville: 2009; López & Rueda: 2010). Yet neither the UNHCR resolution nor the MDGs have any binding force on either individual states or other actors.

At the national level, the NPBV, which has the status of law, and is thus binding on municipalities, recognized the “qualitative deficit” in both water supply and sewer coverage, aiming to improve both by 40% (SENPLADES: 2013: 39). It also notes that, in the Galapagos:

“[the greatest problems are [...] environmental deterioration in the areas with human intervention, rapid, disorderly population growth that is expanding urban

boundaries, an increasing “floating” population due to tourism, and the deficient treatment of solid wastes and liquid effluents” (SENPLADES: 2013: 94).

It goes on to note that: “[guaranteeing] access to a safe water supply and sanitation for the entire population is crucial due to its multiple benefits: social, economic, environmental and public health” (SENPLADES: 2013: 105). Yet, as has already been seen, national institutions such as SENAGUA are yet to adopt any region-specific plans for the Galapagos and responsibility for implementing national policies is devolved to the GADs.

At the regional level, the Plan de Galapagos 2015-2020, which is based on the NPBV, states that one goal of the NPBV that applies specifically to the Galapagos is the improvement of systems of sanitation and water resources management to ensure the provision of basic services (CGREG: 2015: 20). The Plan de Galapagos 2015-2020 outlines policies such as insuring that adequate systems of drinking water and environmental sanitation are guaranteed in accordance with the restrictions of the insular ecosystem, which includes increasing the coverage of potable water and sewage systems, improving waste management, and promoting recycling (CGREG: 2015: 236). The Plan remains silent on precisely how these goals are to be achieved, though

here, at least, some steps forward appear to be being made: recently, the Municipality of Santa Cruz has partnered with private a institution, Water Management International (WMI), to implement potable water and sanitation systems. WMI provides technical assistance and financial support has been obtained from the GIZ (GIZ: 2013).

Whilst the international, national and local policy goals are all admirable, it would appear that little has changed since Hennessy & McCleary commented in 2011 that:

“Despite recent discussions of developing regional water strategies and management plans for the archipelago, attempts to create clean drinking water systems, and political promises of improved facilities, the water and sewer situation remains a threat to the health of local people and the environment” (Hennessy & McCleary: 2011: 149).

The NPBV claims that “in such services as water supply, sanitation or garbage collection” (SENPLADES: 2013: 109) economies of scale must be achieved for efficient operation to be practicable. Reyes *et al*. (2015) propose the introduction of meters and also an increase in the prices charged for water provided by the municipal system as a solution to wastage such as that caused by residents allowing their private water storage tanks to overspill. However, Reyes

concludes that, on Santa Cruz at least, the only solution capable of meeting projected demand over the next 30 years as well as improving the quality of the water supplied would be the installation of a seawater desalination plant (Reyes: 2017: 208). The issue is made more difficult as different stakeholders prefer different strategies for tackling the problem (Reyes: 2017: 209). In terms of the contamination issue, Liu & d'Ozouville (2013) recommend ceasing to use septic tanks (that frequently overflow and are, in any event, costly to install) in favour of alternative sanitation systems, such as “collecting waste from individual houses and taking it to an “off-site” treatment plant” (Lui & d'Ozouville: 2013: 82). Nevertheless, despite investments in physical infrastructure, mainly focused on sewage (San Cristobal) and desalination (Santa Cruz, Floreana, and Isabela), the complex institutional infrastructure on the Galapagos archipelago appears to remain a factor in the lack of progress made in implementing a coherent water strategy from a regional perspective.

This section has sought to provide a clearer picture of what actors are involved in the institutional network for the provision of potable water on the Galapagos archipelago. The material effect of this complex system has been the continued difficulty in provision of potable water and the increased contamination of underground aquifers as population growth and tourism growth outpace the ability of the institutional

infrastructure to adapt and plan.

## 7.4: The Impact of Water Issues on Attitudes on the Archipelago:

The previous sections in this chapter have set out the problems faced by the Galapagos in terms of relative water scarcity, contamination of the water supply, and inefficient institutional infrastructure. Other physical infrastructure, such as that for transport and communication, that cater predominantly for tourists rather than local residents has, not been similarly neglected (Hennessy & McCleary: 2011: 147). This has resulted in the situation in which “[restaurant] owners cannot drink water from the tap, yet are encouraged to provide Wi-Fi for tourists” (Mathis & Rose: 2016: 72).

There have been various instances of tensions between the residents of the Galapagos and scientists and other instituions charged with conservation on the islands, particularly in the 1990s, when the CDRS was attacked and tortoises killed as protests over conditions on the archipelago (in those instances related to economic opportunities and restrictions on extractive activities such as fishing). Such acts do still occur, but they are less common (Brewington: 2013: 105 *et seq*.). As discourse claiming tensions between extractive and non-extractive activities are the main threat to the Galapagos Islands has become less relevant, the issue of isolation vs connectivity has become more important. The archipelago now faces the threat of becoming 'continentalized'

as a result of tourism, immigration and the importation of goods. That is to say that residents of the archipelago are adopting more continental attitudes with regards to consumption[16], as previously noted in chapter four. As seen in section 7.1, such shifts in attitudes also apply to water.

The clash of expectations with the material conditions on the archipelago could potentially be a potent source of resentment on the archipelago. Mathis & Rose report that the “lack of basic services in San Cristóbal has led many residents to resent Galapagos nature” (2016: 73). The resentment over the perceived neglect of the basic needs of the archipelago's human population is heightened as “giant tortoises and sea lions are closely monitored to ensure their species thrive and continue to attract tourists” (*ibid*.). Residents have begun to question why scientists should prioritize investigations into 'the genetics of Blue-footed Boobies' rather than “studying the cleanliness of the water supply and its effect on the Island population” (Hoyman & McCall: 2013: 40), especially as the archipelago is suffering “high rates of breast cancer, skin cancer, and urinary tract infections among the population as compared to the Ecuadorian mainland – all of which [...] may be linked to the quality of the water” (*ibid*.). Such resentment has not yet boiled over in the way that protests did in the

16 People are, however, responding to 'continentalization' through the concept of 'tranquilidad' (Quiroga: 2013: 42), though this varies from island to island, with residents in San Cristobal complaining about the consummerism on Santa Cruz.

1990s, however, previous instances of discontent show that the residents' frustrations ought not to be taken lightly. It would appear that the majority of the archipelago's population continue to see science as potentially beneficial, but, at the same time, consider that, rather than concentrating on the traditional subjects of evolution, biology, and geology, scientists should “be directed to solve the problems and issues that affect people” (Quiroga: 2013: 41).

The gap between local discourse and expectations and global / Western discourse and expectations is increasing. The latter views the Galapagos, as set out in chapters two to five of this thesis, as something between a pristine laboratory for the investigation of evolution and a paradise island for the delight of tourists; the former view the islands as a place to make a comfortable living for a growing population. Despite the fact that that quality of life on the archipelago is in may respects better than in the rest of Ecuador[17], there is still a strong impulse towards closer connection to the mainland and the adoption of mainland lifestyles and habits (Quiroga: 2013: 43). It is such a desire to live a continental lifestyle that prevents residents from 'backwards' habits such as collecting rainwater, even though this could potentially be cleaner than the municipally supplied water (Hoyman & McCall: 2013: 42). Thus, this section has identified a further dialectical oppostion

17 In the Galapagos, 20% of people are classified as in poverty, while in Ecuador, the average is 38% (CGREG: 2015: 86). See also chapter four.

between in relation to the imagination of the Galapagos Islands and how such imaginations are both having material impacts on the archipelago, but are also shaped by those material conditions. Based on this and the previous chapter, the chapter eight can now draw some provisional conclusions in relation to this thesis' second reseach question.

## 8: Provisional Conclusions in Relation to the Second Research Question:

Chapter six demonstrated the disjuncture between the imagination of the Galapagos Islands, which is based upon narratives explored in earlier chapters, and the archipelago's phsyical realities. Urry shows that tourists are capable of almost Orwellian 'double-think' in their ability to experience the material reality yet adhere to the constructed image in discourse, though what tourists gaze upon is, in many ways, carefully curated so as to fit with the narratives: for obvious reasons, issues such as fecal contamination of the water supply are hidden from tourists. As Gössling *et al*. (2012) make clear, such an image could do immense damage to the tourism industry that Ecuador has worked hard to establish on the archipelago.

Whilst it cannot be said that water scarcity and an economy based on tourism are only to be found on the Galapagos Islands, the interactions between different discourses and material conditions on the Galapagos, arguably are unique. Chapter seven examined in greater detail one particular instance in which expectations that one might have of 'paradise' diverge from actual conditions on the islands: in relation to drinking water. Furthermore, it considered the difficulties faced by the islands residents and planners seeking to improve the situation. Differences between

the conservationist narratives (and the effect they have of pushing research towards certain objectives) and local needs and the new discourse this generates has also been highlighted.

The relative scarcity of water on the archipelago is at least partially attributable to the rapid increase in population linked to tourism. The relative scarcity is compounded by issues of contamination, which are also inextricably linked to the heightened human presence – as is evident from the closure of certain points of extraction around heavily populated areas on San Cristobal and Santa Cruz. The inability of institutions to deal with the increased population and the pressures it puts on water resources by implementing planned water management systems may not directly be linked to tourism, but rather the complex institutional framework and decentralized, participatory political system in Ecuador. Ecuador's general poverty is also almost certainly an issue. However, all these issues are clearly exacerbated by the presence of both large transient and permanent populations compressed into small urban zones on remote islands: pressures generated by tourism have clearly played a role in overwhelming the institutions' capacity to deal with problems. Hence, the visitation encouraged by the narratives identified in chapters two to four play at least some role in all three of the difficulties related to the provision of potable water identified in

sections 7.1, 7.2, and 7.3. Nevertheless, despite the importance of access to water to the tourism industry, and the importance of tourism to the archipelago's economy, there has been “very little academic research about the links between tourism and the impact of water scarcity on destination populations” (Cole: 2014: 90). What research has been completed has mostly been on Santa Cruz island, leaving San Cristobal and Floreana in particular as gaps in the literature in terms of the data necessary for water resource management to succeed.

Section 7.3 detailed a number of solutions that have been proposed to ameliorate the problems of water wastage, poor water quality, and contamination on the Galapagos Islands. Each of these proposals has problems, however. The economies of scale sought by the NPBV may not be possible on small islands – thus this seems to be another example of planning not being sufficiently adapted to local conditions. Increasing the price of water supplied by the municipal system as suggested by Reyes *et al*. (2015) would essentially be a regressive form of taxation and hit the poorest residents hardest whilst doing little to affect the behaviour of larger hotels and tourist accomodations, for whom water makes up only a small percentage of outgoings “in comparison to other operational costs” (Gössling *et al*.: 2012: 13). The desalination plant ultimately recommended by Reyes (2017) is also, Reyes

herself admits, far from ideal in the fragile Galapagos environment due to the problems caused by disposal of brine after desalination and the high energy demand such a plant would have (Reyes: 2017: 209). The suggestion of Lui & d'Ozouville (2013) that wastewater could be collected for off-site treatment would still necessitate the construction of a waste treatment plant somewhere on each island as well as complex arrangements for collection and additional vehicles for said collection, all of which are likely to be prohibitively expensive.

It would seem, based on section 7.4, that continuing dissatifaction with the lack of solutions to the issues identified in sections 7.1 and 7.2 in particular could have the potential for a renewed discourse challenging the value of conservation and sustainability on the archipelago. For this reason, as well as reasons of the health of both residents and visitors, it is imperative that the situation with regards the water resources of the archipelago be addressed.

## 9: Final Conclusions:

The third research question this thesis sough to address was 'how might the understandings generated by answering research questions one and two be brought together to improve understandings of the links between socially constructed imaginations of place and the material conditions, and problems, of those places?'.

Chapters two to four exposed the connections between various historical narratives characterizing certain places as either paradisiacal or pristine and the images constructed by the tourism industry based on them, specifically in relation to the Galapagos Islands. It was shown that the two narratives, though closely related, are teleologically incompatible when taken to their logical conclusions. Furthermore, it was established that the impact of the 'paradise' narrative and its historical roots has been neglected in literature on the Galapagos Islands as it has been overshadowed by discussion of the tension between conservation and tourism. Finally, it was established that the population growth experienced by the Galapagos Islands over the past seventy-five years is fundamentally attributable to tourism. As such, the narratives that have inspired tourism to the Galapagos should be considered an important subject for research.

Chapters six and seven built up the case that a rift

exists between imaginations of the archipelago and its actual material conditions. It was seen that imaginations of the islands have changed greatly over time. Subsequently, water resources were chosen as an appropriate example of one way in which the population growth caused by tourism, and hence ultimately based upon the narratives explore in chapters two to four, can be seen to have impacted upon material conditions in the Galapagos Islands.

Throughout this thesis a number of dialectical relationships have been identified:

| | | |
|---|---|---|
| The constructed mental world | <-> | The 'real' physical world |
| Paradise | <-> | Pristine nature |
| Tourism / Economic development | <-> | Conservation |
| Global narratives of the Galapagos | <-> | Local narratives on the Galapagos |

In some ways, the example of water resources could, in each case, provide the context for a synthesis demonstrating the interreaction between the two dialectical poles. For example: certainly improved wastewater management is, at least partially, in line with conservationist impulses, and thus can be linked to the 'pristine' narrative. However, at the same time, improved wastewater management is also in line with the development of

infrastructure to improve the quality of life on the archipelago and with the facilitation of increased tourism. Thus, it is also in line with the 'paradise' narrative. This illustrates the way in which many, even apparently opposed, interests overlap and the extent to which the different narratives that inform them are entangled in material reality.

In his book, *The Politics of Climate Change*, Giddens proposes a method of addressing problems to which opposing interests have made solutions seem impossible (in that case, similarly to the conservation / development opposition on the Galapagos, the opposing interests pit the environment against economic growth). Giddens outlines the notions of political convergence and economic convergence (Giddens: 2011: 72). Both refer to the extent to which policy goals relevant to limiting climate change may overlap with either other political goals (such as energy security) or economic goals (such as improved competitiveness). The previous paragraph demonstrates the possibility of such convergences being present in relation to solving the problems of supplying potable water on the Galapagos Islands.

However, convergence is impossible if rigid imaginations are maintained in relation to the islands: the 'pristine' narrative would deny the continued practice of human habitation on the islands, excluding supplying residents with

clean water from the goals of conservation. The 'paradise' narrative meanwhile would deny the fact that there is a problem to be solved – as long as tourists can afford bottled water, the condition of water resources on the islands is largely immaterial.

Pragmatic approaches must avoid imaginations that characterized the archipelago as an “anachronistic [space] outside of, [and] threatened by, modernity” (Hennessy & McCleary: 2011: 152). Instead, islands should be conceptualized as speaking to the “inseparability of nature and society, even in the most far-flung of places. This re-imagination [...] is key to beginning to effectively address the issues that jeopardize the health of island natures and populations” (*ibid*.). There has been a shift towards emphasizing 'sustainability' in the discourse surrounding development on the Galapagos, but the current discourse itself, built upon twin narratives with opposing teleological conclusions, arguably remains unsustainable.

The volume of tourists in a given location (along with the type of activities in which they engage), will always impact directly on sustainability. Some measures of carrying capacity define it as “the maximum number of people who can use a site without an *unacceptable* alteration in the physical environment and without an unacceptable decline in the

quality of experience gained by visitors" (Mathieson & Wall: 1982, quoted in Cooper *et al*.: 2005: 268 (emphasis added)). This acknowledges that tourism is always likely to produce some degradation and that the goal must be to limit this to 'acceptable' levels. Whilst the question of to whom that degradation should be 'acceptable' (the government? Local stakeholders? Scientists? etc.) remains moot, the acceptance of some degradation to the physical environment (even if in terms of building water treatment facilities on 'pristine' land) shifts discourse away from the dialectical 'pristine' / 'paradise' poles. What may be deemed acceptable is fluid - it changes over time: 200,000 tourists per annum would have been unacceptable to the 800 residents of the Galapagos in the 1940s. It is accepted by the 25,000 residents now.

Clearly, there remain "conflicting notions about how tourism in unique and fragile environments should be realized" (Brewington: 2013: 106). It is beyong the scope of this thesis to offer solutions to such conflicts. However it is hoped that reiterating them, and linking them to the socially constructed imaginations of place that have been instrumental factors in generating many of the pressures that contribute to them, will provide impetus for continued academic attention to them.

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