

Blue, Green and Everything In-between: The History of the Cape Aquaria c.1902 - 1995

by
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Declaration

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Abstract

Environmental historians have long sought to investigate the various ways humans have come to interact with the natural environment. Recently, some historians have focused their attention on the interplay of the environment, politics and socio-economic forces, over time, including the marine environment. This dissertation adds to this historiography through the investigation of a novel environmental subject namely the public aquarium. Several facets of South Africa's marine culture, including the sea fisheries industry, the professionalization of marine science and recreational fish culture can be explored through the utilization of aquaria as case studies. These aquatic institutions, as we understand them today, were shaped by the aquarium boom between 1850 and 1880 in Britain and later in European metropolises. Although several popular iterations of the public aquaria existed throughout the colonial empire, this dissertation highlights two popular trends, namely the sea-side aquaria and the biological marine station. The dissertation's focus is on three aquaria in specific, the St. James Aquarium of Kalk Bay (1902 – 1933), the Sea Point Aquarium of the Sea Point promenade (1939 – 1970) and the Two Oceans Aquarium situated at the historic Victoria and Albert Waterfront (1995 – present). By comparing the developmental patterns of Cape Town aquaria to those in Europe, this thesis analyses the connections between these two respective aquatic traditions. Emphasis is placed on the role of the South African state in facilitating knowledge transfer to modernize the country's fishing industry, the interplay between private initiative and public context, the tension between entertainment and education, and the economies of knowledge and capitalism behind establishing and changing these aquaria. It includes a tentative foray into connecting the trends of aquaria, acclimatization and leisure with the history of private fish keeping.

Keywords: Aquarium; Marine culture; Environmental history; Industrial fishing; St. James Aquarium; Sea Point Aquarium; Two Oceans Aquarium; Angling; Ornamental Fish Keeping

Opsomming

Omgewings historici streef reeds 'n geruime tyd daarna om die verskillende interaksies tussen die mens en sy omgewing te ondersoek. In meer onlangse tye het sommige historici hulle gefokus op die wisselwerking tussen omgewing, politiek en sosio-ekonomiese kragte insluitend die mariene omgewing. Hierdie tesis lewer 'n bydrae tot dié historiografiese gesprek, deur die ondersoek van 'n uitsonderlike en nuwe omgewingsonderwerp, naamlik die openbare akwarium. Verskeie fasette van die Suid Afrikaanse mariene kultuur, insluitend die seevissery industrie, die professionalisering van die mariene wetenskap, en die ontspannings viskultuur, kan ondersoek word deur die gebruik van die akwaria as 'n gevallestudie. Die akwatiese instellings soos ons dit vandag verstaan, was grotendeels gevorm deur die oplewing tussen 1850 en 1880 in Brittanje en later die res van Europa. Alhoewel verskeie populêre variasies van die openbare akwarium in die koloniale ryk bestaan het, word net twee van hierdie uitgelig in die tesis, naamlik die seefront akwarium en die biologiese marienestatie. Daar word in hierdie tesis spesifiek op drie akwaria gefokus: die St. James Akwarium in Kalkbaai (1902 – 1933), die Seepunt Akwarium op die Seepuntse promenade (1939 – 1970) en die Twee Oseane Akwarium wat op die historiese Victoria en Albert waterfront geleë is (1995 tot tans). Deur die vergelyking van die ontwikkelingspatrone van die Kaapse openbare akwaria met die van Europe, poog hierdie tesis om die verbande tussen die twee akwatiese tradisies te evalueer. Klem word geplaas op: die rol van die Suid-Afrikaanse regering met die fasilitering van kennis om die land se visbedryf vinnig te moderniser; die interaksie tussen privaatinisiatief en die openbare konteks; spanning tussen vermaak en opvoeding; en die spanning tussen die kennisekonomie en ekonomiese belange wat die vestiging en verandering van akwaria gefinansier het. Die tesis poog ook om die neigings/tendense in akwaria, akklimatisering en ontspanning met die geskiedenis van ontspanningsvissery in verband te bring.

Sleutelwoorde: Akwarium; Mariene kultuur; Omwegingsgeskiedenis, Industriële visvangbedryf; St. James Akwarium; Seepunt Akwarium; Twee Oseane Akwarium; Visvang; Ornamentele viskultuur or Ornamentele visboerdery.

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1. Chapter 1: Introduction and Methodology

1.1 General Introduction

“If there is magic on this planet it is contained in the water.”

-Loren Eiseley¹

The words of the famous American anthropologist, Loren Eiseley, speak to enduring human fascination with our marine biomes and with the alien life found inside them. The act of keeping marine life in order to display all its peculiarities has a long historical tradition. Dating as far back as 500 BCE in Greek colonies in the West and exhibited in the Tang Dynasty of China from as early as 618-907 CE.² The act of collecting marine life was conducted historically by the highest ranks of society. Such frivolities were largely lost in the so-called Dark Ages (476 - 800 CE).³ But in the ensuing age of the European Renaissance and then Enlightenment between the 14th and 18th century, European explorers set out to explore the world, and on these many ventures brought home biological specimens, including samplings from the world’s waters.⁴ Even then such samples were left to the scientific communities and wealthy members of society who could study and display those ornate curiosities.⁵

The modernisation of the Victorian age would change that world of exclusivity forever. Perhaps the greatest advance was “...the invention of devices, rustic adornments, that allowed home-dwellers, even of modest means in highly urban settings, to cultivate nature within domestic walls.”⁶ Although this refers to the smaller private aquarium as ornamental adornments for the home, the description fits aptly into a broader discussion of the public aquarium as well, as this thesis will contend. For it was in London, the epitome of the urban space, that the first public aquarium was built. The popularity of these institutions drew from the idea that marine species were generally unknown and until the popularisation of these institutions would only have been viewed by the elites of society. Public aquaria then offered the populous their first insights into what could only be described as an alien world. These new

¹ This quotation can be found on the wall of the Baltimore Aquarium.

² R. Duffy. *The Age of Aquaria: The Aquarium Pursuit and Personal Fish-Keeping, 1850 – 1920*, (Delaware: University of Delaware – M.A. Thesis, 2018). p.15.

³ *Ibid.*

⁴ B. Brunner. *The Ocean at Home: An Illustrated History*, (New York: Princeton Architectural Press, 2005). p.99.

⁵ *Ibid.*

⁶ S. Gould. “Seeing Eye to Eye”, *Journal of Natural History*, (106), (6), 1997, p.15.

species and the popular interest they engendered would help inspire the boom of aquariums across the European metropole and even into the colonies in a thirty-year period between 1850-1880. Utilizing the relatively understudied aquatic institutions of the Cape region in South Africa, this dissertation wishes to add to the growing historiography of aquaria, focusing on socio-environmental and socio-cultural trends.

1.2 Historiography

The focus of many South African environmental historians is on the intersection of social and environmental history, or ‘socio-environmental history’. Tending to investigate the interaction between human subjects and the environment in which they are situated, they have argued that prolonged interaction with either environmental spaces or their indigenous species affects human socio-cultural history and vice versa. This school of thought has grown immensely in South African historiography from the late 1980s onwards.

Jane Carruthers conducted large historical work into the foundation of the country’s most internationally recognized environmental space – Kruger National Park shown in the publication of three books between 1995 and 2001 on the subject. Including *The Kruger National Park: A Social and Political History* (1995), *Game Protection in the Transvaal, 1846 to 1926* (1995) and *Wildlife and Warfare: The Life of James Stevenson Hamilton* (2001). In these publications, the focus was not simply or solely on the institutional history of the park, but also analysed both socio-cultural and socio-political narratives. Her book on the Game protection of animals in the Transvaal was initially informed by her own doctoral thesis by the same name in 1988, in which she concluded: “the truth of the definition that environmental history is the interface between culture and nature has become apparent.”⁷ Carruthers makes a nuanced argument into the interaction between state and environmental spaces, where she shows how game reserves are a crucial part of the governments resource management strategies. She also utilizes (but with critical nuance) the “Big Man” historical approach⁸ – a narrative tool common place in the country’s natural history. Here then she argues that James Hamilton was essential in the creation of the park. Using the man’s personal history to tell the story of the wider park, evaluating how his respective political leanings informed the

⁷ J. Carruthers. *Game Protection in the Transvaal 1846 to 1926*, (Cape Town: University of Cape Town – Doctoral Thesis, 1988). p.378.

⁸ “The Big man narrative” refers to the viewing of specific historical moments through the lens of a single person’s life. Such a narrative is apparent later in this thesis with the story of John Gilchrist.

development of the park. I draw on this approach in the chapter concerning Gilchrist, to relate how his career impacted both South Africa's early marine science, as well as his direct involvement in the development of the Cape's earliest aquatic institution.

Amongst the most cited works on South Africa's environmental history is the joint publication of editors Steven Dovers, Ruth Edgecombe and Bill Guest – *South Africa's Environmental History: Cases and Comparison*. This 2002 publication opened up the field and explored the role the South African natural environment has played in the shaping of human development in the country. The book is comprised of eleven scholarly articles from a variety of authors, including Jane Carruthers, Nancy Jacobs, William Beinart, John Lambert and Gregory Maddox, thus allowing for several perspective of the role the environment plays in human development. Nancy Jacobs's article "The colonial ecological revolution in South Africa: The case of Kuruman" is the first of these articles. This article in turn drew inspiration from Jacobs's book *Environment, Power and Injustice: A South African History*, published a year later. The book (and by extension the article) looks at the interplay between society and environment investigating the story of the Kuruman district situated near the Kalahari. This book is a major work in the understanding of the relationship between environmental spaces and the people that inhabit them.

Another approach – which this thesis adopts – in South African environmental literature is the use of the subject specific approach. The author uses the lens of a specific environmental species to investigate narratives relating to South African society. A popular theme being the introduction of colonial species and the resulting impact on South African social and scientific identities. In 2016 Nancy Jacobs wrote *Birders of Africa: History of a Network*. Here the focus is specifically on the interaction between groups concerned with the study of birds. Jacobs investigates how networks were formed between a variety of bird enthusiast groups including ornithologists, guides, hunters and taxidermists. Allowing the reader to appreciate how the study of a specific environmental subject (i.e. the variety of South African bird species) can draw together people from different institutional backgrounds, thus formulating new aviary cultures. Another example of this subject specific approach can be found in Sandra Swart and Greg Bankoff's joint book *Breeds of Empire: The Invention of the Horse in South-East Asia and Southern Africa 1500 – 1950* (2008). Not only does the book discuss the introduction and breeding of the horse in two colonial regions, but also focus on the major social and economic impact these animals had in South Africa and South-East Asia. Swart and Bankoff's work

articulate how important specific environmental subjects can be in the development of differentiating one culture from another in the same environmental space. Swart furthers such an argument in the first three chapters of her book: *Riding High: Horses Humans and History in South Africa* (2010). It pioneered the focus on a particular animal (and their historical and shifting relationship with people and place in human society) in a sustained monograph and helped entrench the approach of offering alternative considerations of the socio-environmental and socio-political role of the horse as an environmental subject.

Much in the same way Swart, Jacobs and Bankoff highlighted how specific environmental subjects can influence the definition of socio-identities, Malcom Draper, Duncan Brown and Lance Van Sittert parallel this concept in a marine setting. Lance Van Sittert focuses on several marine subjects in a variety of articles. From his 2004 article: “The Supernatural State: Water Divining and The Cape Underground Water Rush, 1891 – 1910.” the concept of water divination is used as a juxtaposition to the inherent believe that colonial science was devoid of superstition and acted with complete rational. Van Sittert argues that colonial science was characterized by irrationalities much like native knowledge systems. Such an article again utilizes environmental factors in defining socio-cultural identities in South Africa, and much like Swart and Bankoff’s works, deepens the argument that certain environmental ideologies were important in the conceptualization of social difference between the colonial and native traditions. Van Sittert also makes much use of South African fisheries, in his conceptualization of South Africa’s environmental histories. In 1995 Van Sittert published an article: “The Handmaiden of Industry: Marine Science and Fisheries Development in South Africa 1895-1939.” Within the first page of the article, he again refers to a “Big Man” historical narrative but argues that the idea that marine science in the country was unified from the very beginning was a convenient myth.⁹ The article goes to show how between 1896 and 1939 marine science suffered from a series of epistemological challenges, with the only possible solution a forced adaption of European scientific methodologies to meet the uniquely challenging environment of Cape waters. Here then it is argued that colonial identities were altered from their European roots, through environmental adaptations to South African nature-scape. Another article one may point to, in strengthening the idea of environmental differentiation in cultural contexts, in Van Sittert’s 2003 article: “The Tyranny of the Past: why local histories matter in the South African

⁹ L. Van Sittert. “The Handmaiden of Industry: Marine science and fisheries development in South Africa 1895 – 1939”, *Study in History and Philosophy of Science*, (26), (4), 1995, p.532.

fisheries.” Although the article deals primarily with the realistic expectations of a co-management fisheries model in South Africa, it does discuss the relationship between the colonial industrialization process of South African waters from the 1890s onwards, and the indigenous client communities of the 19th century on the west coast. From this article we can draw on the concept of “folk biology” an indigenous knowledge basis, defined by daily interaction with their environment. These pre-scientific beliefs give the reader yet another perspective on the way environmental interaction can inform cultural differentiation. This is further investigated in chapter three, in which the native-knowledge basis concerning handline fishing intrinsic in small coastal communities eroded away, due to the modernisation of inshore fisheries.

Other South African authors have dealt with the South African marine space on a decidedly more socio-environmental level. Duncan Brown who published his now popular book: *Are Trout South African? Stories of Fish, People and Places* in 2013 explores two important themes. On one hand, Brown considers the impact humans have on environmental spaces, and the irreversible changes that are wrought as a product of human settlement. Yet, it is the other theme – in which Brown explores how our changes to the natural environment become part of our new identity – that falls into the larger historiographical framework, which is set out in this section. In posing the question whether this European fish species introduced into South African waters almost 200 years ago can now be considered South African, Brown balances the scientific notions of alien and indigenous species with our cultural understanding of the fish. This book utilizes the trout as an extended metaphor for a wider variety of colonial traditions implanted into the settler’s consciousness, thus looking to provide a deeper understanding to the sociological study of cultural separation.

In much the same socio-environmental light, Malcolm Draper utilizes the trout to discuss identity theory, in which the settler’s cultural history was informed by an environmental subject. His 2003 publication “Going Native? Trout and settling identity in a rainbow nation,” delineates how a recreational activity such as angling¹⁰ was essential in the acclimatization process of some settlers. For the settler, the trout encompassed more than just a recreation, it acted as a reminder of their ancestral homeland a sort of environmental trinket. In the same way the trout was transported from European waters to South African, so too was the colonial

¹⁰ Specifically, the catching of European species generally in the family of Salmonidae.

knowledge basis on how to utilize these animals in a recreational context. In this way, settlers believed that they were maintaining a connection to their homeland, and keeping those traditions alive, within a new natural environment. Although much has been (and should be) said about the environmental cost the importation of foreign flora and fauna like the trout have had on the colony's ecology, there is also significance in the power that these environmental "trinkets" had on preserving colonial identities within new settlements.

Environmental history seeks to investigate the relationship between humans and nature. This historiography has focused particularly on the use of environmental subjects help to define cultural identities. The authors in this section have proved that nature offers the academic a profound methodology for the investigation of socio-cultural, socio-environmental and socio-economic development within a country. The following dissertation seeks to add to this discourse through a unique environmental subject, which has seen little inquiry by the South African historian – aquariums. It is commonplace for the public aquarium to be marginalized as a marine element to the wider discourse of zoological gardens, as both are classified by the keeping of either flora or fauna not generally domesticated in urban spaces.¹¹ However, it is argued here that separating the aquarium from the wider zoo discussion, allows this dissertation the ability to add to the academic understanding of the early colonial marine period and the development of marine culture within the country from both scientific and sociological perspectives.

1.3 Study Focus

This dissertation then falls into the environmental discussion that authors such as Lance Van Sittert, Duncan Brown and Malcolm Draper have begun to develop. Due to the lack of literature on the origins of the South African aquaria, confirmation on whether these institutions mirrored European trends is necessary. In doing so this dissertation attempts to add a new institutional perspective to the relationship between local identity and marine culture.

Aquaria are unique in that they offer a varied social movement not carried out by other aquatically inclined institutions. In the case of fisheries or research institutes the movement is from human settlement into the marine environment, whether it be by vessel or through field work. The aquarium then offers a varied social movement in which the environment is brought

¹¹ A definition paraphrased from the 1981 British Zoo Licencing Act.

into human society. This social movement offers insight into human marine interaction not previously covered by other institutions. This dissertation will attempt to show that aquaria in South Africa were not only places of entertainment but were also caught up in the early development of marine sciences in the country, in doing so this dissertation does not simply look at cultural development, but also the countries scientific development. It is argued that aquaria in much the same way as Jacobs's birders, helped to define a particular scientific identity within the country.

Writing for the Bureau of Fisheries in Washington D.C in 1922, W.T. Boward discusses the popularity of the public aquarium as follows: "Public aquariums are of comparatively modern origin. It was in the late sixties [1860s] that an Englishman¹² aroused an interest which soon caused various European cities to vie one with another in an effort to establish public aquariums."¹³ Boward observed: "In the earlier days of public aquariums it was deemed most appropriate to construct them so as to produce marine-like impressions upon the visitor. Thus, cavernous and subterranean entrances and grotto-like galleries and passageways were much in vogue."¹⁴ From Boward's descriptions we accept that our understanding of the modern aquarium appears only in the 1860s onwards and originated in the major European metropolises. Furthermore, he discusses how the buildings were also constructed in such a way as to translate the watery environment into spectacle. From the 1900s, this layout would change, aquaria took on a serial taxonomic approach with tanks arranged in an orderly fashion along the walls displaying species separately, each within their own controlled environments.¹⁵ This approach is most clearly seen in Washington D.C. department of fisheries aquarium as displayed in chapter three (floor plans on which the later Sea Point aquarium would be based).¹⁶ In modern times this approach has evolved into a community approach in which species which would normally interact together in the wild will be kept in environment suitable tanks together, clearly evidenced by the Two Oceans Aquarium discussed in chapter four.¹⁷

¹² Referring here to the noted Victorian naturalist Philip Henry Gosse, who is credited with the coining of the term: "aquarium".

¹³ W. Boward. "Public Aquariums", *Transactions of the American Fisheries Society*, (51), (1), 1922, p.117.

¹⁴ *Ibid.*

¹⁵ M. Karydis. "Organizing a Public Aquarium: Objectives, design, operation and missions", *Global Nest Journal*, (13), (4), 2011, p.369.

¹⁶ See chapter 3.

¹⁷ Karydis. "Organizing a Public Aquarium: Objectives, design, operation and missions", p.369.

The public aquaria as defined above arrived in South Africa, relatively later than in other parts of the British colonial world. With the first aquarium built specifically for the purpose of entertaining a viewing public only institutionalized in the 1930s.¹⁸ This in comparison with the London Zoological societies Fish House constructed in 1854, followed by the major boom of seaside aquaria in the 1850s and 1860s. Some of the earliest colonial public aquaria arrived in colonies like Australia by the 1880s.¹⁹ America, although no longer a colony of the British Empire, was still informed by its culture and saw early initialization of public aquaria with the construction of the Belle Isle Aquarium in 1904.²⁰

This dissertation can only serve to discuss a proportionally small part of the history surrounding the South African aquarium space. Therefore, a region-specific approach is utilized here, with the focal point being Cape Town and its surrounding areas. The Cape is a natural starting point for any discussion on the country's history of marine biology, due to the regions storied history with regards to the study of marine life. As early as the 1700s there are reports of English colonists breeding the common carp (*Cyprinus carpio*) as a substitute food source in the Cape river systems.²¹ With a fast development of hatcheries in the Jonkershoek region, near the historic town of Stellenbosch since 1896.²² Expedition of European research vessels including the Eugenie, Navarra and Challenger into Cape waters in the mid-1870s are cited as some of the earliest scientific expeditions in South African waters.²³ Furthermore, the Capes specific geological location, situated between two oceans - the Atlantic and Indian, resulted in the Capes comparatively larger marine biodiversity. Early marine biologists like John Gilchrist and Keppel Barnard spent a large portion of their professional careers in the field of taxonomy, recording these specimens.²⁴ It was also the Cape to which the department of fisheries would send the first marine biologist at the end of the 19th century, and notably due to the presence of dedicated marine biologists the first buildings specifically designed for the study of aquatic life

¹⁸ Note that although the focus of this chapter is on the Cape's aquarium history that the earliest known specifically built public aquarium was situated in East London, built in 1931. Although the Cape would follow suit within the same decade with the construction of the Sea Point Aquarium in 1939.

¹⁹ Here the work of authors such as L. Pearson and C. Ford are important in understanding how the trend of the Seaside aquarium began in Britain and how the cultural of such institutions diffused into Western colonies.

²⁰ Belle Isle Conservancy. *Beyond the Glass*, [Available online]: <https://www.belleisleconservancy.org/belle-isle-aquarium>, (Accessed: 03 February 2021).

²¹ P. Britz, J. Mccafferty, B. Ellender, & O. Weyl. "The Use of Water Resources for Inland Fisheries in South Africa", *Water SA*, (38), (2), 2012, p.329.

²² *Ibid.*

²³ H. Bailey. "The Voyage of the Challenger", *Scientific American*, (188), (5), 1953, p.92.

²⁴ Their extensive double volume *The Marine Fishes in South Africa* (1927) is housed at the National Library in South Africa.

would be erected. It should also be noted that an extensive history of the South African College (today the University of Cape Town), the country's oldest tertiary institution, also played its part in the development of marine sciences in the country. A large focus on taxonomy and zoology by the earliest founders of the university's zoology department would contribute greatly to the understanding of South Africa's waters.²⁵ It is for these reasons that one does not say lightly that Cape Town proved to be the root of marine studies in South Africa.

Even with such an extensive history into the study of marine life, and such rich biodiversity, easily accessible to those early scientists, the range of marine institutions offers the historian a rather small data set. However, the limited amount of Cape aquaria does share an almost interconnected history, in terms of time placement. Giving this dissertation the ability to draw out a timeline of the institutionalization of aquariums in Cape Town. The dissertation focus is on three aquaria in specific, the St. James Aquarium of Kalk Bay (1902 – 1933), the Sea Point Aquarium of the Sea Point promenade (1939 – 1970)²⁶ and the Two Oceans Aquarium situated at the historic Victoria and Albert Waterfront (1995 – present).

1.4 Chapter Outline

In the following chapter, labelled: “Dr Gilchrist’s Aquarium – The Establishment of a Marine Base in Kalk Bay, 1902 – 1935,” we start at the very beginning in the way of marine biology and aquariums in Cape Town. One of the major themes in this chapter is the differentiation and classification of two popular trends in aquatic buildings from the 1850s onwards – i.e., marine stations and seaside aquariums – with these definitions in place, the chapter shows how the St. James aquarium although the oldest in the country, did not really meet the requirements of a public aquarium but should rather be classified as a marine station, popular in mainland Europe (especially Italy and France at the time). Importantly, it should be noted here that the dissertation has sought to focus heavily on the life and work of John Daw Fisher Gilchrist. The impact of his arrival and work in South Africa cannot be underestimated. In fact, many authors such as Ofer Gon and Lance Van Sittert, would classify the man as the ‘father of ichthyology’ in the country.²⁷ Thus, Gilchrist provides not only this work but any scholarly literature in

²⁵ The work of A. Brown on the history of the Universities Zoology department proves a major resource in this regard – and will be cited later in this thesis.

²⁶ As will be shown in chapter three the Sea Point Aquarium still exists today in the capacity as a marine station but met its end as a public aquarium in 1970.

²⁷ Van Sittert. “The Handmaiden of Industry: Marine science and fisheries development in South Africa 1895 – 1939”, p.531.

South African marine studies with a natural starting point. Important for this dissertation is to show how the aquarium was established specifically for Gilchrist's work – the St. James aquarium providing detail into how the aquariums life cycle was dependent on Gilchrist's needs. This chapter is also important in showing how the South African state was responsible for the initiation of marine biology as a science in the country, as well as showing how interconnected the regions early aquaria were linked to the science and the scientist of the day.

In chapter three, attention is shifted to what can only be classified as the natural successor to the Kalk Bay marine station – the Sea Point Aquarium. The chapter has been given the title – “The maintenance of marine biology in Cape Town” in order to highlight how the Sea Point aquarium was established in Cape Town during a time in which Marine biology had begun to experience a negative and rather turbulent era. Unlike the growth and promise shown for the field of marine science from the end of the 19th century until the mid-1920s, between the 1930s and 1970s marine science entered an era characterized by institutional in-fighting, unrealistic expectations for marine scientists and governmental scepticism. It is argued that this negative period for marine science had a direct impact on the life of the Sea Point Aquarium. Although, the Sea Point Aquarium, is the first institution in Cape Town's history to show any resemblance to an actual public aquarium, it did not experience the popularity expected of such an institution – and slowly fell into disrepair, shutting its doors to the public in 1970. It is argued in this chapter the decline of the Sea Point aquarium somewhat mirrors the environment into which it was born and that again the South African state played a large role in the eventual path the aquarium would take. Thematically important to this chapter is the role of the State in the alteration of South African marine culture. Yet, this chapter also goes to show, how rejuvenation in the field of marine biology from the 1970s onward also brought new life to the Sea Point Aquarium. By the 1990s the Sea Point Aquarium saw large scale institutional conversion and would be more accurately described as a functional marine station rather than a public aquarium.

The final aquarium but not the final chapter within this dissertation is the Two Oceans Aquarium. Chapter four argues that the Two Oceans Aquarium is highly unique amongst all three institutions. Two Oceans is the most modern iteration of the aquarium space in Cape Town, differing in several ways from its aquatic ancestors. The most prominent of these being the commercial nature of the aquarium, intrinsically removing the discussion on state interaction in this chapter. It is further shown how unlike its predecessors, the Two Oceans

Aquarium had shifted focus from marine sciences. Unlike past aquaria that could be classed as marine stations since they were vital in supporting scientific marine endeavours, the Two Oceans had no such responsibility. Rather the aquarium focuses its efforts on matching global aquarium trends of entertainment through education. Chapter four discusses how for the first time in the Capes history an aquarium must seek to shape a public image owing to its commercial necessities. It is within such a discussion that this chapter argues that the public is essential in shaping the aquarium's core principles and institutional operations. The use of environmental scholarship provides several perspectives on the growth and importance of the environmentalism movement and gives context to the modern challenges facing aquaria in the 21st century.

In the final chapter, this thesis poses the question to what extent the aquaria listed above, influenced the origins of marine culture in South Africa? The chapter investigates other areas of recreational fish culture, namely angling and private ornamental fish keeping as possible cultural barometers in gauging the Cape's introduction to aquatic recreational trends. The chapter utilizes acclimatization policy, a common colonial and environmental doctrine from the end of the 18th century onwards as lens through which to view both hobbies. It is shown within the chapter that acclimatization was fully evidenced in angling – not only did such a policy allow for the importation of both carp and trout species into South Africa but also was crucial in the creation and propagation of angling clubs, in different parts of the country. In exploring these angling clubs, we are again reminded of how environmental subjects can help to sustain colonial traditions. Ornamental fish keeping is displayed as a modern application of acclimatization, showing how the doctrine was still implemented in the 1950s onwards. Furthermore, the act of modern private fish keeping as we understand it today was a product of technological breakthroughs in 19th century aquatic science, allowing for sustainable and self-regulating aquatic environments. This chapter notes how these principles were implemented from relatively early on in South African tanks. Showing how connected the Cape settler was to their homeland, in many unexpected ways, including trends in recreational hobbies. Providing a strong case study for the diffusion of metropole knowledge into South Africa. The aquaculture industry is also shown to have played an important part in sustaining the animals needed for both hobbies. Aquaculture is an environmental subject that has garnered South African scholarly attention from the 1990s onwards but was examined in this chapter for how it related to development of these hobbies.

1.5 Methodology

The historiography indicated that environmental studies on South Africa's marine environments have been conducted in the past, but very little has been said about the aquarium space in South Africa. In approaching this literary gap, the dissertation had to be mindful of the work already done in this space, well adapting new information to fit into the wider discourse. It was this balance that informed the multi-faceted source approach. It is the duty of any academic hoping to write an objective thesis, to read widely into applicable sources on the subject. Not only in terms of published works, of which this dissertation made extensive use, but also of other academic dissertations. These prove useful in two ways: Firstly, they act as a depot of sources on the topic at hand, providing further reading suggestions of either primary or secondary nature that could prove useful in the broadening of one's own outlook on a subject. Dissertations are also generally good in their ability to summarize details or events and thus provide the reader with an academic overview of a subject. In this thesis the use of several dissertations proved useful.

On environmental subjects that deal specifically with human interaction, national archival depots will always be historically important. The national archive in Cape Town was essential in providing evidence for the induction of marine sciences into South Africa, as well as the hiring and state management of John Gilchrist. The Cape archive had its limitations, the greatest of these being the lack of documentation related to the later Cape aquaria. It was reasonable to expect such a lack of information though, in terms of the Sea Point Aquarium, later discussions would indicate that a large portion of primary documentation was housed in the archives of the Sea Fisheries Library, where annual reports were published from as far back as the 1800s. This archival data was not utilized in this thesis due to a lack of access caused by poor communication with the Department of Agriculture, Forestry and Fisheries (DAFF). Several attempts were made to make sustained contact with members in this department, including physical visits to the Fore trust building (where DAFF is housed), but very little information regarding the archive was forthcoming. Further study into the Cape's marine culture, would surely be provided with a wealth of information in such an archive. In terms of the Two Oceans Aquarium - owing to its commercial nature and relatively short institutional history, information regarding the aquarium was lacking in the Cape Archive. The lack of archival sources was a challenge to this thesis, but it was overcome by utilizing a variety of other sources as will be shown below.

The ability for field research became severely limited over 2020, due to the implementation of lock-down restrictions caused by the recent COVID-19 pandemic. Such a large and historic event happens rarely and provided many researchers with unique challenges that needed to be overcome. For this dissertation, the lockdown was especially effective in limiting the amount of time that could be spent in Cape Town. Financial restraints also added to these physical limitations. It was in facing these obstacles that the utilization of modern resources, provided this dissertation with new information inputs not generally considered by academics researching marine history in South Africa. Amongst these modern sources was the use of web pages – the utilization of which has seen much debate by historians. Particularly concerning for those that seek to limit the use of this information outlet is the historic validity that can be provided. Another concern generally is the presupposed subjective nature of information found online. In order to counteract such worries, the usage of web pages was filtered using several inclusive criteria. Firstly, the website on which the webpage was submitted, had to have some sort of institutional credibility within the field being researched. The author was either included or excluded based on their connection and experience to the field, when applicable. Furthermore, web-pages usage of sources was also considered and checked for historical validity before use. Finally, the use of “blogs” was considered as a pseudo-primary source much in the same vein as the usage of diaries, in which information must be filtered through the author’s personal experiences and relationship to the study subject.

Finally, this methodology wishes to highlight the large role oral sources played in the researching of this thesis. The tradition of using oral sources within historical writing is long and has been shown to be effective. Due to the ability of such sources to provide qualitative data not readily available in the utilization of historical documentation. Within oral sources lies the ability to draw out important societal contexts as well individual perspectives, which prove to be useful comparisons to other historical sources. Due to both the Sea Point Aquarium and Two Oceans aquarium, being institutions that have existed within the living memory of the Cape public, oral sources proved essential in bolstering the social perspective of this dissertation. The author was particularly lucky in communications with a variety of actors in the field of the Cape marine environment and was able to conduct interviews with a variety of key players. From chapter three onwards, in which the dissertation moved into the arena of living memory – oral sources were heavily relied on, specifically to counteract the lack of archival documentation as mentioned above. Utilizing modern interview techniques and

modern technologies, this dissertation was also able to overcome the limitations imposed by the COVID pandemic. It is for this reason that the dissertation has classed many of the interviews, as “digital interviews”²⁸. In the experience of this author, digital interviews offer new capabilities in the accurate recording and recollection of such information. Following ethical routes in the use of interviews was important, therefore specific requests were made in garnering the interviewee’s consent before conducting the research. The format of the consent form is in annexure A of this dissertation.

²⁸ Conducted generally on digital based video conversation services, such as Zoom or Microsoft Teams.

2. Chapter 2: Dr Gilchrist's Aquarium – The Establishment of a Marine Base in Kalk Bay, 1902 – 1935

2.1 Introduction:

The St. James Aquarium is the Cape's oldest aquarium and marks the beginning of the South African public aquarium industry. Very little historical attention has been given to the industry within South Africa. Even less attention has been paid to this tiny marine station situated in a small coastal town just outside of Cape Town, now remembered only as a few foundation stones. The most prominent academic account of this institution's history is found as part of two works. Firstly, as a chapter authored by J.H. Day, in a book titled *A History of Scientific Endeavour in South Africa*, published in 1977 simply as a commemorative piece celebrating the South African Royal Society's centenary.²⁹ In 1999 A. Brown wrote: *John D. Gilchrist, The St. James Aquarium and False Bay*, as part of a bulletin for the Kalk Bay historical association. This chapter then extends those historiographical works, by reconstructing how the St. James Marine Station developed and by comparing it to its contemporaries, especially the metropole and Australia, as a usefully comparative case study in the imperial network of knowledge.



Images 1 and 2 - Perspectives of where the St James Marine Station stood. Showing both proximity to train station and ocean respectively.³⁰

²⁹ A. Brown (ed). *A History of Scientific Endeavour in South Africa*, (South Africa: Royal Society of South Africa, 1977). pp. 85 – 108.

³⁰ L. Lennox. "Field notes from research visit to Muizenberg and Kalk Bay area", *Ethnographical field work*, 22 April 2019.

This chapter will contextualise this aquarium in its international setting, beginning with an international historiography of the public aquarium business focusing on the primary purpose for these aquaria and the imperial culture that drove them. The chapter then locates St James in its local context by explaining the choice of location (in Kalk Bay) and the local scientific and political networks behind it. Following this, its originator's Dr John Daw Fisher Gilchrist's (1866 – 1926) professional history will be explored, to explain why he was afforded a marine station of his own. The chapter then explains how the aquarium gradually became a liability to the South African government and the resulting transition to the South African Museum in 1906/1907. In essence, this chapter seeks to situate the St. James Aquarium within the field of early colonial marine biology in the Cape, and whether it differed from international scientific trends of the day.

2.2 A Wet and Wild Historiography – The Need for Aquariums Internationally

The 19th century saw the popularization and growth of the public aquarium industry, starting with the Fish House in Regents Park, London in 1853. The Fish House model was adopted rapidly across continental Europe, the United States and Australia in the coming years.³¹ Yet, the rapid growth of the industry coupled with the fact that the Fish House model was altered to suit various needs makes the discussion of early public aquaria a complex issue. Bernd Brunner has dedicated an entire book to this discussion, yet even this does not adequately capture the origins of the industry entirely. Therefore, this history seeks rather to discuss two popular adaptations of the public aquarium which became commonplace internationally from the 19th century onwards, both which help to place the early South African aquarium industry in an international context.

Of the many adaptations of the public aquarium model amongst the most popular of the late 19th and 20th century was the beachfront aquarium. Much has been said on the momentous shifts both socially and economically for the populace of Victorian England, one of these many changes was the way in which a larger section of the British population began to spend their leisure time. Thanks to cheaper transportation and the establishment of seaside resorts that focused on catering to the less affluent, the beach seaside became a place that was more

³¹ B. Brunner. *The Ocean at Home: An Illustrated History*, (New York: Princeton Architectural Press, 2005). pp.99 - 100.

affordable and accessible than ever before for larger amounts of the British public.³² This new phenomenon of the quintessential British beachside holiday had a long-lasting impact on the British beach transforming it forever. Between 1870 and 1914 this new trend accounted for 212 new entertainment buildings in 60 resorts throughout Britain.³³

The most popular way to raise capital for these new entertainment ventures was as Pearson puts it:

“...the incorporation of a joint stock company which, under the Joint Stock Companies Act 1856, could be formed by a minimum of seven people. Liability could be limited or unlimited, but it was the advent of limited liability in 1855 which led to a boom in small share ownership, and to the formation of many resort-based entertainments.”³⁴

This new company structure was quickly adopted, forty-five of these entertainment joint-stock companies were registered in the 1870s with another forty-one in the 1880s and by the 1890s sixty-five more were added to the count.³⁵ One of the earliest recreational aquariums was designed by Eugenius Birch for a site on Brighton’s west pier. The structure cost £130 000, and was built into the cliff face, Birch apparently inspired by the Boulogne Aquarium in France.³⁶ The aquarium was opened in August 1872 and was such a success that the facilities were extended in 1876 to include a skating rink, café and concert rooms.³⁷ Birch’s success saw him contracted to design a new aquarium this time in Scarborough, in 1877 the exotic Indo-Moorish Scarborough Aquarium was opened at a cost of £110 000.³⁸ These two aquaria were unique to the British seaside as they were built independently while many of the other grand-aquaria of the British coast were often built as part of winter garden developments. Famously Thomas Masey, the director of the London Royal Aquarium founded several aquaria and winter garden companies in the 1870’s and built winter gardens that incorporated aquariums at Great Yarmouth and Tynemouth.³⁹ Apart from these grand aquaria, residents of seaside towns also looked to capitalize on this aquarium trend, for instance Dr Cocker who opened his Blackpool

³² S. Granata. “Let us Hasten to the Beach: Victorian Tourism and Seaside Collecting”, *Literature Interpretation Theory*, (27), (9), p.91.

³³ L. Pearson. *The People’s Palaces: The Story of the Seaside Pleasure Buildings of 1870 – 1914*, (United States of America: Barracuda, 1991). p.1.

³⁴ *Ibid.*, p.2.

³⁵ *Ibid.*

³⁶ *Ibid.*, p.35.

³⁷ *Ibid.*

³⁸ *Ibid.*

³⁹ *Ibid.*, p.5.

Aquarium in 1876, a simple extension of his own private menagerie collection.⁴⁰ It was not long before this trend of beachside aquaria was exported overseas, most famously to Australia.

In the 1880s, Australian entrepreneurs capitalizing on the Sydney Beach culture that had begun in the 1850s, looked to model working class resorts on those found in Margate and Southend in Britain.⁴¹ In the 1880s as was with Britain in the 1850s, Sydney's working class had more leisure time than ever before and could afford to go to the beach on holiday, the first dedicated tourist attraction taking advantage of these social changes was an aquarium built in Manly in 1886. Whereas the Fish House had been built with marine exhibition as the sole entertainment value, the 1886 Manly Aquarium housed not only fish but a few annexes as well. The Manly Aquarium sported a seal house, fernery, buffet and concert hall, modelled after Raikes Hall in Blackpool.⁴² Manly was quickly followed by the Royal Bondi Aquarium and Pleasure Grounds, these grounds sported even more attractions than that of Manly, with a skating rink, merry go-round, camera obscura, shark pond as well as the amenities already mentioned in the Manly Aquarium. These aquaria were built with the purpose of providing customers with a means of escape from everyday life as in the tradition of Blackpool in Britain and Coney Island in America. But at the same time, they employed the same educative programmes which had been popular in aquaria such as Brighton and Scarborough.⁴³ It is interesting to note that these large investments on Sydney's coastline were fully supported by the New South Wales government who put out a press statement stating that these institutions were an indication that Australia was 'making progress' towards a society equal to the Anglophone metropole. This again highlighting the lengths to which Australia looked to model itself on the traditions modelled by England and America.⁴⁴

This trend in beachside aquaria has been highlighted for two reasons. Firstly, it emphasizes the ever-growing popularity of the aquarium space to the end of the 19th century, especially in conjunction with the home marine aquarium craze of the 1860s. These aquaria were a part of a larger industry though – the seaside resort, a place catering and fuelled by a new class of customer who had come to the seaside to be entertained on their leisure time. Secondly it

⁴⁰ Pearson. *The People's Palaces: The Story of the Seaside Pleasure Buildings of 1870 – 1914*, p.36.

⁴¹ C. Ford. "A Summer Fling: The Rise and Fall of Aquariums and Fun Parks on Sydney's Ocean Coast 1885 – 1920", *Journal of Tourism History*, (1), (2), 2009, pp.96 – 97.

⁴² *Ibid.*, pp.97 – 98.

⁴³ *Ibid.*

⁴⁴ *Ibid.*, p.98.

provides an interesting comparison to the St. James Aquarium. Interesting since St James had also been built on the beachfront, in one of the Capes most popular seaside destinations at the beginning of the 20th century – Muizenberg. The aquarium was even situated behind the now famous beach huts of Muizenberg as is visible in the image below, yet unlike the several aquaria described above the St James Aquarium was not a product of private funding nor did it provide the spectacle of the deep, like those designed in Brighton or Scarborough. As will be shown, the building housed only a very small public display section, with most of the space being assigned to marine research rather than public entertainment.

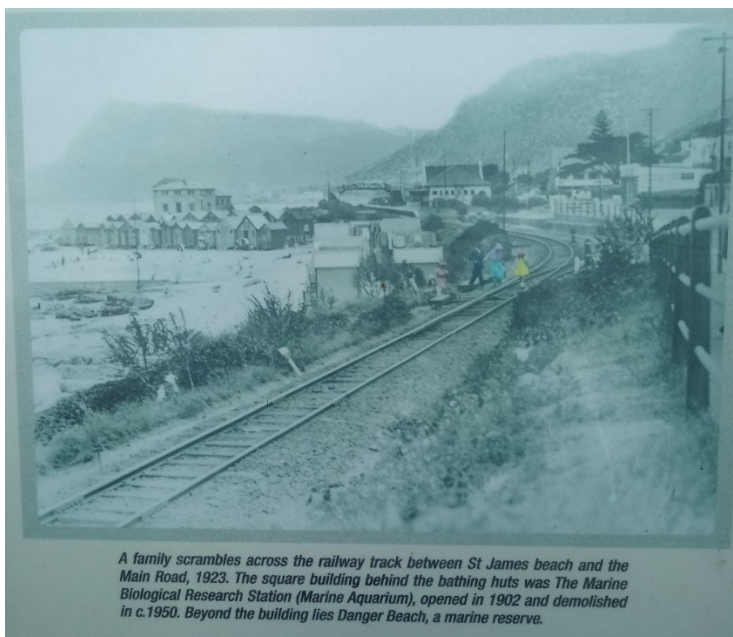


Image 3 - St James Aquarium situated behind Muizenberg huts.⁴⁵

The second popular adaption of the aquarium worth noting here is that of the biological marine station. A model that proved popular in continental Europe but seems to have been of limited success in the British Isles and America. Unlike the example of the beachside aquarium which garnered financial support from private sources, the marine stations of Europe depended on support from public initiatives.⁴⁶ Charles Atwood Kofoid, an American zoologist spent time studying European stations in 1910. He comments on several common facets of these institutions. He dictated that location was decided primarily on nearness and accessibility to the ocean as well as the need for these stations to be near lines of travel. He also mentioned the

⁴⁵ Lennox. Ethnographical field work, 22 April 2019.

⁴⁶ C. Kofoid. "The Biological Stations of Europe", *United States Bureau of Education Bulletin no.4*, (440), 1910, p.3.

need for an inbuilt aquarium, as the ample provisions afforded by one far outweighed the cost of running one.⁴⁷ It is already clear from Kofoid's report and the pictures presented above, that these were indeed common factors that the St James Aquarium shared with its European counterparts.

It is apparent from both the writings of Kofoid as well as modern historians such as Inês Amorim and Bruno Pinto that amongst the many marine stations that sprung up in continental Europe, the Naples Zoological Station offered a successful model throughout the 19th and early 20th century.⁴⁸ The station's origins are largely attributed to the efforts of the German zoologist Dr Anton Dohrn. After securing a site in the Villa Nazionale in the bay of Naples in 1870, it is reported that Dohrn spent in a private capacity 300 000 francs, while securing another £1000 from England acquaintances Mr. Balfour and Prof. Huxley. Finally, the German ministry of foreign affairs afforded Dohrn with an annual stipend of 30 000 marks which was increased to 40 000 marks in 1888.⁴⁹ Building on the marine station started in 1872 and was completed by 1874, the station was then formally opened in February 1874. The station in Naples goes to show how essential public initiatives (either through institutions of higher learning or through the efforts of governments) were for funding. Furthermore, showing how the multi-national network shared by scientists in Europe allowed for much larger sustainable stations. A factor one cannot attribute to the station in Kalk Bay, due to its relative isolation from a wider scientific community in its formative years.

Unlike Italy which had within its borders a small number of popular marine stations i.e. Naples Marine Station and The Station of Biology and of Applied Hydrobiology of Milan,⁵⁰ France housed a larger number of smaller marine stations. Amongst the earliest built in France, the marine station of Arachon had already begun work in 1867, in the next decade several stations would emerge in quick fashion. Kofoid attributes this rush to establish marine stations to two factors, firstly the example set in Naples but also due to the efforts of zoologist and anatomist Henri de Lacaze-Duithers (1821 – 1901).⁵¹ Beginning in 1872 a marine station in Roscoff was built followed by one in Wimereux (1873), Luc-sur-Mer (1874) and Marseille (1876).⁵² A

⁴⁷ Kofoid. "The Biological Stations of Europe", p.3.

⁴⁸ *Ibid.*, p. 7.

⁴⁹ *Ibid.*, p. 9.

⁵⁰ *Ibid.*, p.33.

⁵¹ *Ibid.*, p.37.

⁵² *Ibid.*, p.37.

station built at Villefranche was opened in 1880 through private funding provided by Swiss zoologist Herman Fol and French zoologist Jules Henri Barrois.⁵³ Finally France also had a number of Russian financed marine stations opened: Cette (1881), Havre (1882), Banyuls (1883) and Boulogne (1884).⁵⁴ The examples listed here illustrate two important factors: Firstly, how popular these stations became in Europe to the end of the 19th century, based on the speed at which they were built. It emphasises how such a large multi-national network of marine scientists in the European metropole could be leveraged to rapidly expand the number of dedicated marine buildings.

This popular trend of the marine station, which took form in the 19th century primarily in France and Italy shaped the historical tradition moulding the marine station in Kalk Bay. This chapter maintains that the apparent similarities of the St James Aquarium to those of the stations in Europe were in reality, completely teleological in nature. Although the founder of the St James Marine Station, Dr John Daw Fisher Gilchrist, was indeed educated in Europe between 1851 and 1892, and visited marine stations in both Naples and Monaco during that time, there is no evidence in the founding documents that indicate any deliberate reliance on the traditions set by the marine stations in the Metropole.⁵⁵ Yet, this chapter will argue, the St. James Aquarium can be closely related to those mentioned above, not only was St. James also funded by – the state at the beginning of the 20th century, it too was built on the coast line under the supervision of the zoologist and marine biologist Gilchrist. It is interesting to note here the similarities the St. James Aquarium had when held to the general principles set out by Kofoid. St. James was built near an existing potential clientele (namely the popular destination of Muizenberg), it also was built only a few meters away from the transportation hub of the Kalk Bay train station, it was fitted with a living quarters as well marine aquariums built into the marine station. Finally, being situated near the False Bay coastline, the station not only had access to clear water with correct salinity levels but was also near an ocean, which housed a large diversity in fauna and sea life, which Gilchrist would study in depth during his years in South Africa (1897 - 1925). Thus, having established the international context, this chapter discuss the St. James Aquariums institutional history in a local context. In the next section the location of the station is explored.

⁵³ Kofoid. "The Biological Stations of Europe", p.37.

⁵⁴ *Ibid.*

⁵⁵ C. Plug. "Gilchrist, John Dow Fisher," *S2A3 Biographical Database of Southern African Science*, 2014.

2.3 A Historical Contextualisation of Kalk Bay

In February of 1862, an English visitor Mrs Ross described Kalk Bay as follows:

“... a little fishing hamlet, consisting of a few old-fashioned Dutch houses, and a dozen or so of fishermen's huts straggling for a mile between the rocky beach, and the precipitous mountains that rise up almost immediately behind it. It is accounted a very healthy place, and is the favourite resort of well-to-do people ...”⁵⁶

Ross’s description of the bay is important because it clearly points to some of the defining features of this small enclave just outside of Muizenberg. The mention of Dutch influence is significant, as before Dutch intervention, Kalk Bay had been a small holding of miners working on the limestone depositories situated there.⁵⁷ But Dutch intervention would put Kalk Bay “on the map”. In 1742 the Dutch East Indian Company had established Simon’s Bay as the point of winter anchorage on its route to the east, but fatally this location suffered from a lack of access to the central hub of Cape Town. Kalk Bay between 1742 and 1795 was designated by the Company as an intermediary port between Cape Town and Simon’s Bay (Simon’s Town had not yet been established). Kalk Bay acted as a halfway point for shipping equipment sent by ox wagon from Cape Town, and then loaded onto barges, which could be sent to the ships harboured in Simon’s Bay. This important position on the transport line would see Kalk Bay converted from a small miner holding into a small coastal village with a unique vantage point for ocean expedition.⁵⁸

Between these years the town boomed, but by 1795 after the British took the Cape, the newly installed government roads directly to Simons Town lead to economic stagnation in Kalk Bay. In the 1820s the popularity of the whaling industry led to a whaling station being built in the village. The industry grew quickly in Kalk Bay and by the 1830s the town housed three of South Africa’s largest stations.⁵⁹ Again new industry led to the growth of the town as people moved there to partake in the ever-growing whaling business and the small Dutch coastal village became a town with an important economic centre. However, by 1835 such exploitive use of the environment led to extinction of the Southern Right Whale in the False Bay waters.

⁵⁶ M. Walker. *A Short History of Kalk Bay*, [Available online]: <https://www.thekalkbayportfolio.co.za/history-kalk-bay>, (Accessed 9 August 2019).

⁵⁷ The Dutch word “Kalk” means chalk, referring directly to the limestone found in the Kalk Bay region.

⁵⁸ A. Kirkaldy. *The Sea is in our Blood Community and Craft in Kalk Bay, 1880-1939*, (Cape Town: University of Cape Town – M.A. Thesis, 1989), p.35.

⁵⁹ Walker. *Kalk Bay, St. James: In Search of Rest: 1855 – 1923*, pp.5 – 6.

This again led to an economic downturn for Kalk Bay, but this was again short lived as Kalk Bay quickly became the new residence for a small Filipino crew, which had been shipwrecked in the 1840s. The Filipino crew found that the waters were a perfect fishing environment and began catching in earnest, establishing the fishing culture so evident in the Mrs Ross quote.⁶⁰ The anti-Spanish riots in the 1850s lead to even more Filipino refugees finding their way to Kalk Bay where the head of this congregation, Mr Felix Forez, welcomed them and provided them with fishing gear.⁶¹ The town's population however boomed significantly after the introduction of railways in 1883, leading the town's infrastructure to grow quickly as schools, homes, boarding houses and shops quickly followed.⁶²

Several factors were important in the eventual choice of Kalk Bay by Gilchrist. Firstly, from its early Dutch days it seems clear that Kalk Bay's location was of some strategic importance to ocean expedition. It was well situated on the coastline so that it provided ease of access to the ocean as well as to the central hub of Cape Town, a remarkable feature considering that large areas of the False Bay area suffered from "soft sand" beaches, making it initially problematic for ox wagons to travel on, as well as make it difficult to set foundations for buildings near the coastline. With both the whaling and then the Filipino fishing phases it is apparent that Kalk Bay was home to a rich biodiversity in its waters, a factor of considerable interest to marine biologists such as Gilchrist. Finally, by 1896 with the arrival of Gilchrist in South Africa, the introduction of the railway to Kalk Bay as well as the newly introduced infrastructure, provided an area where Gilchrist could live while conducting his research, with ease of access to Cape Town on the train.

2.4 Dr Gilchrist's Aquarium

Dr Gilchrist would become famous as the first appointed marine biologist for the Cape government. But, before his arrival in South Africa, there had already been a growing trend since the mid-18th century in studying the sea life particularly in the False Bay area. To the latter half of the 19th century international marine expeditions were being undertaken in earnest, as part of these research expeditions both Table and False Bay were visited by different international research vessels. Amongst these the *Eugenies*, *Navarra* and the *Challenger* being

⁶⁰ G. Stibbe. *A Traditional Way of Life: The story of the Kalk Bay Fishermen*, (Kenwyn: George Stibbe, 1998). pp.11-13.

⁶¹ By 1898, about 60 Filipino families were established in Kalk Bay.

⁶² Stibbe. *A Traditional Way of Life*, pp.11-13.

the most famous.⁶³ During these expeditions' samples of the marine life in these bays were recorded back in Europe.⁶⁴ Although these early collections were important for the scientific community, perhaps with reference to long lasting impact it was more significant that these studies proved to the South African public authorities how abundant these waters were.⁶⁵

It was these early promising indications to the rich marine life in the False Bay area that led to the Cape Government under the direct advocacy of Mr Joseph Millerd Orpen to call for the need of a qualified marine biologist at a House Assembly on the 19th June 1894, who could accurately assess the potential of establishing industrial fishery opportunities along the Cape coast line.⁶⁶ At the time of his appointment, Gilchrist was serving as an assistant lecturer at the University of Edinburgh, after completing his PhD in Zurich, Switzerland.⁶⁷ He arrived the following year in 1896 and by 1897 had imported a Scottish trawler (renamed the Pieter Faure) on which to conduct his research. His first and career defining discovery came in 1899, when he suggested to the Department of Agriculture that due to the stability and size of the stock of sole off the coast of Mossel Bay commercial trawling could begin.⁶⁸ Although Gilchrist would be officially commended for his early breakthrough and contributions, he also came under some opposition by a contingent in the Department of Agriculture who were wary of the cost for the expeditions.⁶⁹

Gilchrist's primary objective as directed by the Cape Agricultural Department was to seek out new fishery opportunities along the Cape coastline. Apart from these duties, Gilchrist also began studying the ocean as a complete environment, measuring salinity and temperatures of the water, ocean tides and creating personal collections not only of the sea life but oceanic fauna as well.⁷⁰ It was these studies into the ocean on a wider spectrum that Gilchrist found it necessary to establish a place where he could not only store his growing collections, but also conduct greater scientific endeavours near to the ocean. Eventually, Gilchrist requested from the Department of Agriculture enough funding to build a marine station in Kalk Bay. After

⁶³ A. Brown. *John D. Gilchrist, The St. James Aquarium and False Bay – Bulletin II*, (Kalk Bay: Kalk Bay Historical Association, 1999). p.19.

⁶⁴ Note: Established 1825

⁶⁵ Brown. *John D. Gilchrist, The St. James Aquarium and False Bay – Bulletin II*, p.19.

⁶⁶ *Minutes of House Assembly*, 19 June 1894, AGR, 224.

⁶⁷ Brown (ed.). *A History of Scientific of Endeavour in South Africa*, p.86.

⁶⁸ *Ibid.*, p.92.

⁶⁹ *Ibid.*

⁷⁰ A. Brown. "Gilchrist and the Early Years of Marine Science in South Africa," *Transaction of the Royal Society of South Africa*, (52), (1), 1997, pp.4 - 5.

Gilchrist received a favourable response from both the Departments of Agriculture and Department of Public Works to the end of 1901, construction officially began in 1902.⁷¹

According to blueprints still in the Cape Town archives, the building was to be located near enough to the ocean so that water could be pumped into the building, as well as be near the train station so that deliveries to the aquarium would not be difficult. Furthermore, a letter written by the surveyor general indicates the dimensions of the building, which was to be 120 feet by 100 feet.⁷² It was to have a large display room downstairs (which would eventually be fitted with three large, six medium and six small tanks), alongside the display cases an area was also to be cordoned off for a laboratory, with upstairs being a designated living space.⁷³ Gilchrist's work limited his time at the Aquarium, to such an extent that he later appointed a care taker for the aquarium. However, it should also be mentioned that annually (generally on the 1 July) Gilchrist would have the Department of Agriculture renew his yearly train pass to Kalk Bay, the documentation indicated that these tickets were always first class.⁷⁴ Gilchrist would regularly take time to visit the aquariums, yet it is difficult to know if Gilchrist did in fact stay over at the aquarium or if his work at the South African College and South African Museum kept him in central Cape Town.

After reviewing Gilchrist's career, it becomes clear that although he was industrious, he became distracted from his original mandate set out by the Agricultural Department. Between 1900 and 1905 Gilchrist was not only involved with the Cape Government's fishing operations but started exploration on Natal's coasts by invitation of Natal's Agricultural Department.⁷⁵ He had also started doing work for the new South African Museum, founding the marine science branch.⁷⁶ At the same time, he conducted scientific research at his labs in St James that led to his endeavour as an editor for a six-volume academic journal named "*Marine Investigation in South Africa*".⁷⁷

In 1905 Gilchrist's collections came under contestation when the secretary of the Agricultural Department and W.L. Sclater who at the time was serving as the Director of the South African

⁷¹ Brown. "Gilchrist and the Early Years of Marine Science in South Africa," pp.4-5.

⁷² W. H. Tooke. *Letter to Undersecretary for Agriculture by the Surveyor General*, 10 June 1897, PAN 2, 120Q.

⁷³ W. H. Tooke. *Blueprints of the St James Aquarium*, n.d., PAN 2, 120Q.

⁷⁴ F.W. Green. *Letter from Department of Agriculture to the Department of Railways*, 13 July 1910, PAN 1, A120.

⁷⁵ Brown. *John D. Gilchrist, The St. James Aquarium and False Bay – Bulletin II*, p.25.

⁷⁶ *Ibid.*

⁷⁷ Brown. "Gilchrist and the Early Years of Marine Science in South Africa," p.12.

Museum came to a head on who had rightful ownership to the *Pieter Faure* collection.⁷⁸ The argument was founded on the following facts: Firstly it had been the Agricultural Department who had funded many of his expeditions between 1899 and 1905, yet the South African Museum had made Gilchrist a honorary curator of marine invertebrates in order to rationalize space being made for his collections, as well as fund the building of a small tank at the St. James Aquarium so that Gilchrist could study live specimens.⁷⁹ Gilchrist in the meantime had been appointed as supervisor of marine studies in the Zoology Department of the South African College, today the University of Cape Town, due to his acclaimed work on the South African coast under its first zoology professor Arthur Dendy.⁸⁰

After Dendy's resignation in 1906, Gilchrist was further promoted to the position of professor and head of the entire zoology department.⁸¹ Gilchrist's new position at the South African College came at a fortunate time, when in 1907 the position of government biologist (a post he had first received with his arrival in 1897) was abolished, this did not seem detrimental to Gilchrist who still had access to his trawler due to his work conducting a marine survey.⁸² Yet, this promotion to a permanent position at the South African College in 1907 also gave Sclater ample reason to force Gilchrist in 1910 to resign from his position as curator of marine invertebrates, Gilchrist would be succeeded by Keppel Barnard.⁸³ Barnard, like Gilchrist had been educated internationally, he had been trained in the scientific fields of botany, zoology and geology and had also partially studied in the fields of anthropology, ethnology and law. Before arriving in South Africa Barnard had worked at the Plymouth Marine Laboratory.⁸⁴ Brown, the foremost authority on the life of early marine scientists in South Africa, contended that although Gilchrist had lost his position to Barnard the two quickly began to work together. While Gilchrist was in the field, the responsibility for identification of the collected specimens fell to Barnard.⁸⁵

This left Gilchrist only with his position at the college, although the museum had allowed Gilchrist to retain his place at the St. James, for both residency and research (as will be shown

⁷⁸ Brown (ed.). *A History of Scientific of Endeavour in South Africa*, p.89.

⁷⁹ *Ibid.* p.88.

⁸⁰ *Ibid.* p.89.

⁸¹ Brown. "Gilchrist and the Early Years of Marine Science in South Africa," pp.4 - 13.

⁸² Brown. *John D. Gilchrist, The St. James Aquarium and False Bay – Bulletin II*, p.25.

⁸³ *Ibid.* p.26.

⁸⁴ Brown (ed.). *A History of Scientific of Endeavour in South Africa*, p.90.

⁸⁵ Brown. *John D. Gilchrist, The St. James Aquarium and False Bay – Bulletin II*, p.26.

later in the chapter the South African Museum had taken ownership of the station by 1907).⁸⁶ Although Gilchrist found that he now had more free time, due to his lack of government funds his research slowed down dramatically. In 1909 he did not set the Pieter Faure in the water once that year.⁸⁷ By 1914, with the outbreak of the world war, his trawler was commandeered by the South African Union thus disallowing any further marine excursions.⁸⁸ He maintained his position as head of the Zoology Department after the South African College was rebranded as the University of Cape Town in 1918, but he seems to have experienced trouble there as well. There are several reports by both his colleagues and students, who stated that generally he was “aloof”, “in his own world” and “dull and uninteresting on any other subject but marine life”.⁸⁹

Even though the first two decades of the century had seen his time limited on the ocean, in 1920 his trawler the Pieter Faure was replaced with a larger vessel – a repurposed whaling ship named ‘Pickle’. This larger ship allowed him to conduct more extensive expeditions. He is known to have travelled up to (then) Lourenco Marques and Walvis Bay. With his most important discovery happening in between 1920 and 1926, where he uncovered a rich supply of hake off the west coast of South Africa.⁹⁰ It was then, in the twilight of his career, that Gilchrist was diagnosed with tuberculosis. Searching for a remedy, and then in his late 50s, he returned to Europe while his family moved northwards in South Africa in order to prevent contracting the disease. Gilchrist was unsuccessful in his attempts at a cure and with a terminal prognosis returned to the St James Aquarium in June of 1926. He died three months later in October of 1926.⁹¹

Upon Gilchrist’s death his position as chair of the zoology department at the university was taken over by Dr Lancelot Hogben who had been working as a physiologist at McGill University in Montreal.⁹² An ex-student of Gilchrist’s Dr Cecil Van Bonde, then a senior lecturer at the University of Cape Town was hired as the Director of Sea Fisheries for the Department of Agriculture, Van Bonde was also entrusted with the marine station at St.

⁸⁶ Brown. *John D. Gilchrist, The St. James Aquarium and False Bay – Bulletin II*, p.26.

⁸⁷ *Ibid.*

⁸⁸ *Ibid.*, p.24.

⁸⁹ *Ibid.*, p. 25. Yet, during his tenure as head of the Zoology department, Gilchrist married Elfreda Raubenheimer.

⁹⁰ *Ibid.*, pp.26 – 27.

⁹¹ *Ibid.*, p.27.

⁹² Brown (ed.). *A History of Scientific Endeavour in South Africa*, pp.90 – 92.

James.⁹³ The animosity between Gilchrist's successors will be further explored in the following chapter. Although Gilchrist's positions at both the government and the university had been filled, emphasis on fish and fish research slowed down, after Barnard's monograph in 1925.⁹⁴ In 1939 a new aquarium was built at Sea Point for the Department of Fisheries, this aquarium was equipped with an entirely new lab and aquarium space, the Department of Fisheries also launched a new research vessel – *Africana*.⁹⁵ This new station at Sea Point, also meant that the old station in Kalk Bay had become obsolete, which eventually resulted in its being closed in 1936. On 10 July 1951, the aquarium was released to the Municipality of Cape Town. A mere four years later it was demolished.⁹⁶

With the death of Gilchrist, the contextualization of his importance to South African marine biology is necessary. Today we can objectively state that Gilchrist's taxonomic collections of marine species were indeed essential in early understandings of fish populations in the region's oceans, yet at the same time we cannot credit Gilchrist alone. In fact, in terms of importance in the field taxonomy Keppel Barnard is an equally notable figure, and arguably made the scientific understanding of South African marine flora and fauna more accessible to a wider audience.⁹⁷ Undoubtedly, Barnard was as pioneering as Gilchrist in the history of marine biology. Yet, Gilchrist played a vital role in garnering support from both the State and the University of Cape Town. This cooperation was essential to the functioning of the marine station in Kalk Bay as it was to the many stations of Europe.

Although St James might not have been built to consciously mirror the marine stations of Europe, implicitly it seems to have been the case, since Gilchrist was applying his own experiences of time spent at the University of Edinburgh and its relatively close relation to the European network of marine stations to his situation in South Africa. Gilchrist is shown to have had a major impact on the operational history of St. James, in this way the chapter makes use of the 'Big-man' methodology, employed by environmental historians like E. Carruthers. Such a narrative helps to conceptualize how the socio-political and socio-scientific identity of environmental spaces such as St. James aquarium were directly impacted by colonial

⁹³ Brown (ed.). *A History of Scientific Endeavour in South Africa*, p.92.

⁹⁴ *Ibid.*, p. 97.

⁹⁵ *Ibid.*

⁹⁶ *Order for Demolition of Old Aquarium Premises*, 1955, 3CT 3171, B2106.

⁹⁷ Amongst his many publications, the most helpful to this dissertation were his three popular books: *A pictorial guide to South Africa Fish* (1947), *A beginners guide to shells* (1951) and *South African Shore Life* (1954).

knowledge bases. The following section explores the impact Gilchrist had on the St. James Aquarium.

2.6 From Agriculture to History: Transitional period 1907-1908

The transition of the aquarium from a Department of Agriculture -run institution to an aquarium owned by the South African Museum could be attributed to two reasons. From the section above it has already been shown that by 1905 Gilchrist's relation to the Department of Agriculture was frayed as his governmental position and subsequent funding had already been rescinded for two years by 1907. It will also be shown in the following section, from communications between the Agricultural Department and the South African Museum, that it had been considered more logical for the Museum to oversee the station, as by 1907 Gilchrist had still been employed by the Museum. Yet, the transition of the aquarium itself was not smooth, this section relies primarily on correspondence between undersecretaries Shawe and Du Toit of the Agricultural Department and Dr Peringuey who acted as a representative of the South African Museum board of trustees to trace the transitional process.

The first archival trace of this transition however was not addressed to Dr Peringuey but rather can be found in a letter written by the undersecretary of the Agriculture Department – H.B. Shawe who was writing to, as the letter puts it: “the honourable Colonel C.P. Crews, M.L.A”, in September 1907.⁹⁸ The letter seems to be a discussion of the future of the aquarium, directed to the Colonel in request for advice, it should be stated here that the Colonel's reply was missing in the archival documents. The following extract provides initial reasoning put forward by the Department of Agriculture:

“... You will no doubt remember when I sent in my report as to the working of this Department, I suggested that it might be found advisable to transfer to the control of this Station to the South African Museum and providing for the payment to that institution of a small additional annual grant to enable them to keep the place going. I find on the estimates that the only provision for that station is the sum of £60 for the salary of the caretaker but as this man is only a labourer, it is of course impossible for him to efficiently supervise this station and carry out any technical work which may be required there. I understand that Dr Gilchrist has offered his services to the Department gratis to carry out any duties in connection with biological research that may be

necessary and as he is employed in the Museum it seems to me that it would be better to place the control of St. James Station under the institution as well.”⁹⁹

This small extract provides a large amount of information. The initial plan put forward by the government was to put the “marine station” under the control of the Museum but continue to pay a yearly stipend along with the salary of the caretaker. This suggestion was bolstered by the fact that Gilchrist was willing to conduct his research at this institution “gratis” for any biological needs that the government may need in return for this stipend, as he remained in charge of the marine survey that he had begun when he had first arrived. Specific mention is made that Gilchrist is under the employment of the Museum, and Shawe makes this a specific point to why the transition should be carried over.

Another letter, written again by undersecretary H.B. Shawe, but this time addressed to Dr Peringuey on 31 October 1907 is amongst the most important in the archival collection. It goes to further detail the proposed agreement between the Department of Agriculture and the South African Museum, it reads:

“In the estimates for the ensuing financial year provision will be made for the payment of a grant to the South African Museum Authorities of an amount of £240 to be devoted towards the working and maintenance of the Marine Station. It is to be understood, as further condition, that should the government, at some future date, decide to resume the work of Marine Investigation, the station at St. James is to be handed back in as good order as present. Kindly advise me whether you are prepared to take the station in these conditions.”¹⁰⁰

Dr Peringuey responded positively to this proposition, with his only stipulation: “... that the specimens obtained and deposited in the Museum during the period commencing from the 1st instant remain the property of the South African Museum...” In conclusion to this agreement, the Department of Agriculture also promised that from November the repairs to the station would still be handled by the Department of Public Works. With these stipulations in place the aquarium was given to the South African Museum on 1 December 1907.¹⁰¹

⁹⁹ H.B. Shawe. *Letter sent from undersecretary HB Shawe to the Honourable Colonel C.P. Crews, M.L.A.*, 30th September 1907, PAN 2, A120.

¹⁰⁰ *Ibid.*

¹⁰¹ *Ibid.*

This agreement quickly fell out of order, with a notice being sent to Dr Peringuey on the 21 of May 1908 and a follow up letter sent by a new undersecretary P.D. Du Toit on the 23rd of the same month. In this letter, Du Toit states:

“..., I am directed to express regret that in view of the pressing necessity for retrenchment the government is reluctantly compelled to withdraw the grant in aid of the maintenance of the Marine Station, St. James, from the 1st July next.”¹⁰²

It was not just the promise of maintenance that was suspended, the government also refused to help subsidise equipment costs, with the most pressing example coming from the same year when a request for five new tanks at the cost of £100 was rejected by the Department of Agriculture.¹⁰³ The break in the agreement was explained by the Agricultural Department as a result of both a “lack of funds” and retrenchment.¹⁰⁴

The withheld finances resulted in a halt in the research Dr Gilchrist was able to conduct. A prime example being the fact that in 1909 Gilchrist could not afford to put his trawler – Pieter Faure in the water that year, thus suspending his marine survey.¹⁰⁵ Although Gilchrist would continue his work at the University, it is clear here that the St. James Marine station after 1907 came into a new phase, one in which research was no longer being conducted within the station but had rather morphed in a home for Gilchrist his wife and children by 1908. A far cry from the original mandate set out by the Cape Agricultural Department in 1902. However, this would not always be the fate of the station. Indeed, after Gilchrist’s death in 1926, Cecil Van Bonde was instructed by the Department of Sea Fisheries to oversee the station again.¹⁰⁶

¹⁰² P.D. Du Toit. *Letter from Acting Undersecretary to the Representative of the South Africa Museum, Dr Peringuey*, 23rd May 1908, PAN 2, A120.

¹⁰³ G. N. Williams. *Letter to Messer E.R. Syfret & Co. – Acting on Behalf of Mr A Bailey*, October 1908, PAN 2, A120.

¹⁰⁴ P.D. Du Toit. *Letter from Acting Undersecretary to the Representative of the South Africa Museum, Dr Peringuey*, 23rd May 1908, PAN 2, A120.

¹⁰⁵ Brown. *John D. Gilchrist, The St. James Aquarium and False Bay – Bulletin II*, p.26.

¹⁰⁶ Brown (ed.). *A History of Scientific Endeavour in South Africa*, p.92.

2.5 Conclusion

Today's aquaria are places of both entertainment and scientific endeavour. These modern aquaria follow the tradition of the beach-front aquarium, which cultivated a culture of entertainment situated within the larger framework of the seaside resort in countries like Britain and Australia. However, this chapter's review of South Africa's first aquarium, St. James, followed a separate tradition, one that found large popularity in Italy and France, that of the marine station. This chapter has stated explicitly that the mirroring of those stations in the European metropole was of a teleological nature, and that there was no evidence to suggest a conscious effort to model St. James after the European marine stations.

In the countries of continental Europe such an institutional structure was made valid by the close networks of science and partnerships of government agencies around the Metropole. However, in South Africa such a structure seems to have come apart, when the financial support structure (The Department of Agriculture) fell away in 1908. Yet, St James Aquarium gave way to the Sea Point Marine station in 1939, in that time marine biology became an established field of science in the Cape under the capable supervision of scientists like Barnard or Van Bonde. Their own stories, although untold in this dissertation, would provide emphasises to the manner in which 'Big-man' narratives can be tied to environmental institutions like the Cape aquaria.

The St. James Aquarium's replication of European marine stations further points to a narrative in which colonial knowledge is evidenced in the very foundations of South Africa's marine scientific identity. In such a conclusion, yet another marine case study is added to Duncan Brown's discourse in which the historical exploration of separation from colonial identities is explored. Due to these colonial characteristics being evident from the beginning of the St. James's institutional history, until its end it is surmised that the identity of St. James is wholly attributed to its colonial contemporaries. Thus, it is accurate to regard the aquarium as a historic reminder of the impact the Metropole had on the introduction of marine science in the country.

3. Chapter 3: The Maintenance of Marine Culture at Cape Town – the Role of Sea Point Aquarium, 1939 – 1995:

3.1 Introduction

In this chapter we move from Gilchrist and the St. James aquarium to its natural successor, the Sea Point Aquarium. This aquarium differed from its ancestor in several ways, which will be discussed in the chapter. Within the focus of Cape aquaria, the Sea Point Aquarium is of essential importance as it provides a bridge between the early days of Cape marine biology and where it stands today. The Sea Point Aquarium also boasts the longest life span of all three aquaria: beginning with its construction in 1939 it still operates today in a limited capacity, although its purpose has changed drastically.

Considering this timeframe and with its position within the history of aquatic sciences the Sea Point Aquarium sees very little mention in academic and historical literature. It is argued that the Sea Point Aquarium provides a valid case study in which the issues the country experienced in the early and mid-20th century within the field of marine sciences and the national fishery industry are mirrored. Primarily, the inadequacy of the state in managing marine assets and the resulting delay in marine modernization is investigated here. In this way the chapter adds to the overarching narrative in which the aquarium is used as a lens to construct a new perspective on the cultural and scientific aspects of the Cape's marine identity.

3.2 Rough Seas: A Turbulent Era for the South African Fishing Industry and Marine Sciences

Before discussing the construction and history of the Sea Point Aquarium, it is important to contextualize the two core industries of the Cape's marine culture – the fishing industry and marine research. As will be shown, South Africa did not experience the drastic growth expected, with such a rich and diverse coastline. The early and mid-20th century would be characterized by state mismanagement, the erosion of indigenous marine knowledge and a steady decrease in research output. In both these industries an inability to modernise at an international pace, would characterize South African marine culture.

The early to mid-20th century (c.1910 – 1950), proved to be essential to the modernization of the fishing industry on an international scale. Visser writes: “The twentieth century saw a radical restructuring of the fishing industry worldwide on nearly all levels including fishing science, fishing technology, fish marketing and fisheries management.”¹⁰⁷ South Africa followed a different trajectory in which big fishing companies were easily able to attain a monopolistic grasp on inshore resources by 1945, with the South African government doing very little to help modernize small local fishing communities.¹⁰⁸ Modern trawling practices were held as ideal for inshore fisheries, with little public attention given to the native knowledge basis – which generally revolved around handline fishing. By 1944, the inability of the South African government to help modernize smaller fishing communities culminated in the Fishing Industries Development Act, which tended towards the facilitation of large parastatals, siphoning money to already lucrative developed fishing companies, rather than providing nationalized protection that would have helped foster smaller fisheries.¹⁰⁹ Such actions by the government would directly impact, the development of the fishing industry in the 20th century, thus irrefutably impacting the marine culture of the country.

Philip Stohr adds to this narrative by examining the development of fisheries between 1940 and 1970. Unlike the period before in which authors raised issues on the lack of state protection, Stohr focuses on the economic development in the industry post-Second World War.¹¹⁰ From 1918 onwards, the development of the South African fishing industry was propagated by successful fishing companies investing their capital into the formulation of new companies, rather than extending their own brands. By the 1930s Stohr refers to an overburdened industry overrun by numerous corporations, linked through complex management chains.¹¹¹ In the mid-1950s this kaleidoscopic industry would see serious consolidation efforts, and by the 1970s only six semi-permanent groups were left.¹¹² These groups consisted of the Oceana Group, the Kaap-Kunene Group, Irvin-Kunene Holdings, the Marine Products Group, the Ovenstone Group and the Silverman Group.¹¹³ Whether the efforts to streamline, the industry led to a

¹⁰⁷ N. Visser. “The Origins of the Present: economic conflicts in the fisheries of the South African south coast, circa 1910 to 1950”, *Maritime Studies*, (14), (9), 2015, p.1.

¹⁰⁸ *Ibid.* p.2.

¹⁰⁹ *Ibid.* p.26.

¹¹⁰ Visser’s concerns are mirrored in Van Sittert’s 2003 article “The Tyranny of the Past: why local histories matter in the South African fisheries.”

¹¹¹ P. Stohr. *The Fisheries Development Corporation and Its Influence on the South African Fishing Industry*, (Cape Town: University of Cape Town – Doctoral Thesis, 1977). p.166.

¹¹² Stohr does not go into detail on what acted as the catalyst for the drive towards consolidation.

¹¹³ *Ibid.*

relatively stable market was a question that Stohr could not provide a definite answer for. In his economic comparison between the price of fish in comparison to other food stuff as indicator for stability, his results were mixed. Stohr calculates that the price of hake did not fluctuate for the period between 1938 and 1945 whereas the price for other food groups increased by approximately 40%, but between 1945 and 1970 the cost of fish products outpaced other food sorts.¹¹⁴ The rising cost of fish from 1945 onwards, may have indicated a market struggling with a lack of competition, due to the consolidation efforts of the aforementioned holding groups in the 1950s. Efforts that were directly encouraged by the 1944 Fishing Industries Development Act.

Thus, in this brief overview of the fishing industry between 1910 and 1970, the State's mismanagement of the fishing market had caused major impacts on the country's industrial fishing culture. Arguments have been made by both Van Sittert and Visser, that there was a notable loss of native knowledge with consideration to handline fishing. In order to emphasize the loss of this knowledge basis Van Sittert mentions that during Gilchrist's time in the Cape, government oversight had been absent on the coastline and informal co-management flourished. In which time Gilchrist was able to learn from the native 'folk biology' present in those local communities. However, Gilchrist's successor, Van Bonde, was a firm believer in the modernisation of the fishing industry, his institutionalization of government oversight, effectively saw the end of the continued propagation of native knowledge bases.¹¹⁵ Also, although not explicitly mentioned in Stohr's work, control of the industry had become dictated by large established holding groups, which encompassed most of the inshore fishing resources. State intervention was not only seen in the country's fishing industries, but also in marine research.

It could be argued that in his lifetime, Gilchrist was the most prominent marine biologist in the country. His work at the University of Cape Town and the special relationship he had with the government, allowed him not only to conduct rigorous research along the African coastline, but also to act as a mediator between the research-heavy University of Cape Town and the profit-driven government sectors. Christopher McQuaid argues that in the early days of the

¹¹⁴ Stohr. *The Fisheries Development Corporation and Its Influence on the South African Fishing Industry*, p.182.

¹¹⁵ L. Van Sittert. "The Tyranny of the Past: why local histories matter in the South African fisheries", *Ocean & Coastal Management*, (46), (1), 2003, p.209.

South African state, Cape Town was the centre of marine biology.¹¹⁶ This concentration was due to several amateur European scientists, collectors and oceanographers that resided within the region. Yet, even with such a collection of hobbyists, this chapter and the previous consider the contribution of early scientists in the region, especially that of Gilchrist and Barnard's taxonomic classification of marine fauna and flora on the Cape coastline, as major professional works and would argue that it was difficult to classify these early works as amateur. Gilchrist had already received his appointment to the position of first marine biologist in the South African government in 1896, thus stepping into a professional role very early on in his own career. This indicates just how early on in South Africa's history the Cape had begun to professionalize the field of marine sciences.¹¹⁷

The professionalization of aquatic sciences would eventually lead to South African independence from European institutions. McQuaid lists the institutionalization of the division of Sea Fisheries in 1929, the South African Association for Marine Biological research in 1952, the South African National Committee on Oceanographic Research in 1956 and the JLB Smith Institute in 1968 as prominent examples of scientific separation from Europe.¹¹⁸ Although all the institutions listed were only established after Gilchrist had already died in 1926, it is argued that Gilchrist's work at the University, the St. James aquarium and the extensive collections kept at the South African museum, already indicated divergent independence before 1926.

This early formation of an independent South African marine science scene would have presented its own obstacles, especially in consideration to the lack of scientific publications. In a study published in 1938 commissioned by the Royal Institute of International Affairs the following was said about the study of marine biology: "Data on any branch of taxonomy are still so scanty that the regulation of the fishing industry cannot yet be based on a scientific footing."¹¹⁹ The sentiment of this slow drive in the field of marine sciences was echoed by the association of Scientific workers of South Africa in 1943: "The dilettantism of the authorities in regard to marine biological research is tragic. After nearly fifty years, investigation has

¹¹⁶ C. McQuaid. "Balancing Science and Politics in South African Marine Biology", *South African Journal of Science*, (106), (11&12), 2010, p.1.

¹¹⁷ McQuaid. "Balancing Science and Politics in South African Marine Biology", p.1.

¹¹⁸ *Ibid.*

¹¹⁹ E. Worthington. *Science in South Africa: A Review of Scientific Research Relating to Tropical and Southern Africa*, (London: Oxford University Press, 1938), p.239.

resulted in only a few outstanding contributions which have affected fishing.”¹²⁰ Lance Van Sittert cites the same sources to contextualizes these critiques and highlights one of the major obstacles concerning South African aquatic sciences at the time:

“Looking back at the first half of the century of marine science in South Africa from the vantage point of 1943, the view is not one of the vigorous and dynamic growth of more recent decades, but rather that of a small, fragmented discipline beset by internecine feuding and crippling financial constraint.”¹²¹

A litany of reasons for the slow development of the Capes aquatic science are discussed. Amongst the concerns brought to the fore is a deep mistrust of marine biology and taxonomy by the State.¹²² This is itself an interesting point, when one recalls from the previous chapter that it had been the state who had decided in 1894 that the appointment of a marine biologist was necessary. The thinking at the time was that it would be beneficial to study the waters around the Cape as a possible avenue of economic growth. The implementation of a state sized fishing operation had shown positive results in Australia a few years prior.¹²³

Gilchrist’s inclination as an academic to work for several employers (including the University of Cape Town and the South African Museum), rather than work strictly with the government is a possible starting point for this mistrust. Another issue raised by Van Sittert is that within South Africa, the fishing industry was destined to be marginalized. The economy had already been established on a long tradition of both agriculture and mining.¹²⁴ Both industries had grown quickly and had provided the country with a strong export market. Due to its slow start the fishing industry did not provide effective results relative to the other industries in the country. These reasons alone provide the reader with an understanding to why the South African government wanted to limit its involvement with fisheries between 1926 and 1943.

The constraints previously mentioned had a compounding effect on the layout of South Africa’s marine science throughout the 20th century. The obstacles of mistrust and marginalization, led to limited state patronage, the kind Gilchrist had enjoyed in his earlier years at the Cape. This

¹²⁰ W. Isaac. *Marine Biological Research and South Africa Fishing Industry, Volume 1 of Research Memorandum*, (Cape Town: Association of Scientific Workers of South Africa, 1943), p.1.

¹²¹ L. Van Sittert. “The Handmaiden of Industry: Marine Science and Fisheries Development in South Africa 1895 – 1939”, *Study in History and Philosophy of Science*, (26), (4), 1995, p.532.

¹²² *Ibid.*

¹²³ *Minutes from House Assembly: Address made by Mr. Orpen*, 19 June 1894, AGR, 224.

¹²⁴ Van Sittert. “The Handmaiden of Industry,” p.532.

in turn would cause marine research to be relegated to research centric museums, associations and universities in the Cape and Natal where enthusiasts had to compete for the much-needed funding to continue their research.¹²⁵ This search for funding had a profound impact as described by Van Sittert:

“The impoverishment and provincialization of marine science limited it to taxonomy and thwarted efforts to forge a standard nomenclature or agreed field of enquiry. Attempts by the central state marine survey to create a unified utilitarian science for national fisheries development from the mid-1920’s further divided the discipline between academic and practical marine science.”¹²⁶

Van Sittert is not the only academic writing about the early years of aquatic sciences in South Africa to emphasize this division. In fact, when the Foundation for Research Development conducted a review of marine sciences in 1991 it had this to say about marine scientists:

“The marine scientist’s role is twofold. Fundamentally it consists of gaining knowledge and understanding of the ocean and all that happens in it. Understanding must precede management. Secondly, the scientist should be providing the technical advice for management that facilitates man’s sustained use of the marine environment and its natural resources.”¹²⁷

This quote speaks to a pattern of development present within South African research for the last 70 years, namely that a scientist has two roles and not a unified one. A scientist is expected to perform research and at the same time provide the South African government with practical knowledge on how to maximise the utilisation of the South African coast for economic ends. This thesis argues that it was this expectation by the State, which compounded the already growing rift between the two institutions. Several authors have written on the major impact this division had on Marine science in the early 20th century, including A. Brown, J. Field and L. Van Sittert.

To replace Gilchrist as Dean of Zoology at the University of Cape Town after his death, the University hired Dr Lancelot Hogben. Hogben who had been trained as a physiologist, was appalled by the state of the zoological department with his arrival at the university in 1926.

¹²⁵ Van Sittert. “The Handmaiden of Industry”, p.532.

¹²⁶ *Ibid.*

¹²⁷ *Ibid.* p.533.

Specifically, he admonished the work and curriculum that Gilchrist had implemented at the university. Hogben dismissed Gilchrist disparagingly, as a dedicated necrophilist and personally removed all Gilchrist's specimens from the department, allowing some to be taken to the St. James aquarium by Van Bonde, whilst discarding the rest.¹²⁸ Although the arrival of the prominent Hogben benefitted the department and the university, his abrasiveness to students and staff had a negative impact on the dynamics between the University and marine work done by public sectors. Hogben's most serious opponent was Van Bonde, who had been a favourite student under Gilchrist and was even left in charge of the St. James Aquarium with his passing.¹²⁹ Both Hogben and Van Bonde had vied for the position at the Zoology Department at the University of Cape Town. With the decision made to split the power, leaving Hogben in charge of the Zoology department and Van Bonde to head the newly institutionalized Sea Fisheries Department, it has been cited by several sources that the men came to resent each other and would become intellectual opponents in the theatre of Cape marine sciences.¹³⁰

This rivalry was noted by A. Brown as the beginning of a period of ill will between the department of Sea Fisheries and the university. In fact, we notice that this period would last well into the late 20th century. When talking to Prof John Field, a retired professor of the University of Cape Town, who had also written on the history of marine biology in South Africa, he had the following to say on the subject: "There was only informal collaboration between the Zoology Department at UCT and Sea Fisheries in the 1950's and 1960's, because the head of Zoology did not get on with the Director of Fisheries."¹³¹ Although at this point Prof. Field is no longer referring to Hogben, who had already left South Africa in 1930, but rather his successor, John H.O. Day who was appointed in 1947.¹³² It cannot be substantiated that this rivalry was common place during 1926 to the 1970's, yet it is clear that the work between the Sea Fisheries Research Institute and the University of Cape Town was hampered as a result. It is interesting to note that Brown writes in his centennial history: "From the mid-

¹²⁸ A. Brown. "Centennial History of the Zoology Department, University of Cape Town, 1903-2013: A Personal Memoir", *Transactions of the Royal Society of South Africa*, (58), (1), 2003, p.14.

¹²⁹ A. Brown (ed.). *A History of Scientific Endeavor in South Africa*. (South Africa: Royal Society of South Africa, 1977). p.92.

¹³⁰ Brown. "Centennial History of the Zoology Department, University of Cape Town, 1903-2013: A Personal Memoir", p.15.

¹³¹ J. Field. Deputy Director of the Marine Research Institute at the University of Cape Town, written interview, 15 January 2021, interviewed by L. Lennox.

¹³² Brown. "Centennial History of the Zoology Department, University of Cape Town, 1903-2013: A Personal Memoir", p.17.

1920's until 1957, the Department, although known chiefly for its work in marine biology, had no access to a properly equipped vessel with which to facilitate its research."¹³³ This too speaks to the division between the two institutions, as the Sea Fisheries, who functioned as a public institution had greater access to marine research equipment. Yet, due to these institutional divisions, the University of Cape Town was constrained in terms of necessary equipment as they could not access the Sea Fisheries resources. Prof. Field stated however that by the 1970s, with the retirement of John Day, the collaboration between the two institutions did see an increase.¹³⁴

In fact, Day's retirement and the reparation between the University of Cape Town and the Department of Commercial Fisheries in the 1970s can be classified as the end of a tumultuous era in the history of South African marine sciences. In an article written by Griffiths, Robinson, Lange and Mead in which they evaluate the state of knowledge of marine biodiversity in South Africa in 2010, they identify three distinct phases. The first beginning in the 1700s attributes the knowledge of biodiversity on the coastline to European explorers with specific mention of Carl Peter Thunberg, as well as the expeditions made by the *Challenger* and *Discovery*.¹³⁵ This was followed by the period that began with Gilchrist's arrival in 1895 and is classified to have ended in 1970. This period is defined by its classification of most common marine species with the major focus of the era taxonomy.¹³⁶ Although no explicit mention is made of the divisions as discussed in this section, it would seem that the movement of academics like Gilchrist at the beginning and Day to the end of this era align well within this classification. The final period is classified as the modern phase, in which joint work between research institutes as well as the South African Government had implemented modern approaches to marine studies concentrating instead on phylogenetic and biological questions of ecological understanding.¹³⁷

3.3 The Sea Point Aquarium: Construction and Lifetime

If, as a reflection of that troublesome period for marine culture in South Africa, the Sea Point Aquarium also found itself with many obstacles to overcome. As will be revealed in this section

¹³³ Brown. "Centennial History of the Zoology Department, University of Cape Town, 1903-2013: A Personal Memoir", p.21.

¹³⁴ Field. Written interview, 15 January 2021.

¹³⁵ C. Griffiths *et al.* "Marine Biodiversity in South Africa: An Evaluation of Current States of Knowledge", *PloS One*, (5), (8), 2010, np.

¹³⁶ *Ibid.*

¹³⁷ *Ibid.*

the aquarium had several issues that would lead to it being operated differently midway through its lifecycle. As Griffiths *et al*, defined the history of marine science by three epochs, so too will this chapter show three distinctive phases of the Sea Point Aquarium. The history of this aquarium has garnered very little interest from academics, and literature or indeed any information about its construction and lifetime is sparse and only known by the scientists and other employees who worked there in the past. As a result, information was drawn from three sources. Firstly Mr. Alan Robertson, who began working with the Department of Sea Fisheries in 1959 and worked at the Sea Point Aquarium for more than 30 years. An interview was also conducted with Mr. Alistair Busby who is employed at the Research aquarium (Sea Point) as manager and control scientific technician. A basic timeline of the aquarium was constructed from these two sources. Finally, Dr Vere Shannon who had worked at the aquarium until 1995 was able to provide information on the land on which the aquarium was built.

3.3.1 A Seaside Aquarium: Construction and Early History 1939 – 1970

In the second chapter of this thesis, it is argued that between 1850 and 1920 two major trends in the construction of aquaria were present. If the St. James Aquarium mirrored the tradition of the marine station, then the Sea Point Aquarium, at the beginning of its institutional life would lean towards then tendencies of the sea-side aquaria. Although this may have been the case, there are several peculiarities at the Sea Point Aquarium that do differentiate somewhat from its colonial ancestors. Unlike most European seaside aquaria, Sea Point did benefit from public funding. Like the St. James Aquarium, Sea Point was built primarily through funding from the state. This in turn helped to dictate the mandate of the aquarium, and like St. James was also to facilitate and support marine research, although in a lesser role than its Cape ancestor.¹³⁸

In line with the popular seaside destinations of Blackpool and Brighton, the aquarium was situated near the tourist friendly and popular, Sea Point, Green Point and Moullie Point Promenade, which had become a favoured destination of the mining elite of Kimberly and the Rand by the mid-1880s.¹³⁹ The pictures below display the Sea Point promenade as a tourist destination in and around the 1930s. Although the aquarium was only built in 1939, late into the history of the promenade, it was still intended to function as a place of entertainment. In

¹³⁸ A. Busby. Control Scientific Technician and Manager of the Research Aquarium, written interview, 20 January 2021, interviewed by L. Lennox.

¹³⁹ B. O'Donoghue. & P. Buttgens. "History of the Promenade", *Heritage Western Cape Case no.17083112*, 2015, p.9.

fact, Mr. Busby replied to the question, “Whether he believed the aquarium was first built to help expand research into marine sciences?” in the following way: “Probably not, it was mostly for public display and education.”¹⁴⁰ It is then through Mr. Busby’s conclusive statement that we define the first period of the Sea Point aquarium between 1939 and 1970 as a sea-side public aquarium.



Images 4: The Sea Point swimming pool c. 1968.¹⁴¹

Sea Point was not South Africa’s first public aquarium. That honour goes to the East London aquarium, which opened its doors to the public on 2 December 1931.¹⁴² Sea Point was however, the first public aquarium in Cape Town.

The land on which the aquarium was built was originally owned by the South African government but was transferred to the city of Cape Town between 1920 and 1930. However, after it was decided by the Department of Sea Fisheries that a facility should be built to help support research on the Cape coastline, the South African government had to repurchase the land. This purchase was only in gesture and according to Dr Vere the land was bought for either a shilling or half a crown, a nominal fee even in the 1930s.¹⁴³ Furthermore in order to cut costs, it was important for the aquarium to be built on the sea front, rather than in town, due to the

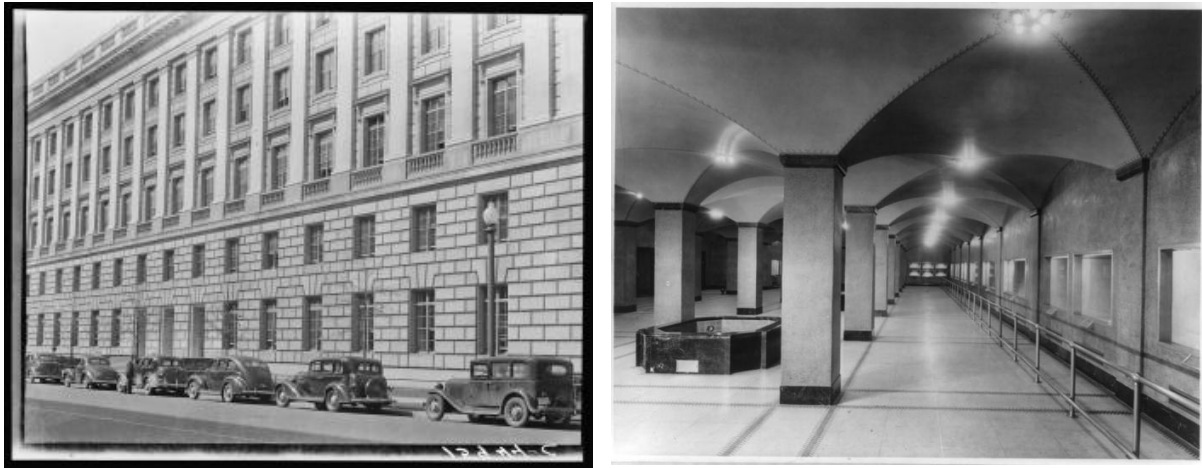
¹⁴⁰ Busby. Written interview, 20 January 2021.

¹⁴¹ The Cape Argus photographer. The Sea Point’s Swimming Pool Cape Town 1968. University of Cape Town Libraries Digital Collection. [Available: Online] <https://digitalcollections.lib.uct.ac.za/islandora/object/islandora%3A17179>, (Accessed on:23 January 2021).

¹⁴² S. Tinley. *East London – Aquarium*, [Available online]: <https://www.eastlondon.org.za/aquarium.html>, (Accessed 31 January 2021).

¹⁴³ V. Shannon. Director of the Sea Fisheries Research Institute until 1995, written interview, 28 January 2021, interviewed by L. Lennox.

need to be able to pump fresh sea water into the building consistently. The design of the Sea Point aquarium was based broadly on the plans of the Aquarium of the US Bureau of Fisheries in Washington DC, which was situated in the basement of the Department of Commerce in the United States Capital, as pictured below.¹⁴⁴ The architect in charge of the project at Sea Point was Mr. J. Schuurmans-Stekhoven whilst Mr C Church was responsible for the building of the project.¹⁴⁵



Images 5 & 6: On the left the department of commerce in Washington D.C. On the right the interior of the aquarium situated in the building's basement.¹⁴⁶

The building of the Sea Point aquarium differs from that of Gilchrist's aquarium, and the Two Oceans in that the project was designated as a group government initiative. As noted by Dr Vere the land was bought back by the government in order to start construction, yet after the building had been constructed, responsibility for the maintenance of the land would be left to the city council. The maintenance of the building, however, was left to the Public Works Department. Staff for the aquarium was to be provided by the Department of Environment, Forestry and Fisheries.¹⁴⁷ This separation of responsibility would in fact prove to work against the actual longevity of the building.

The aquarium was constructed on a narrow, rectangular piece of land as even in the 1930s the Cape's beach front properties were popular due to their commercial value and proximity to the

¹⁴⁴ R. Graney. *The Lesser-Known National Aquarium*, [Available online]: <https://boundarystones.weta.org/2019/08/06/lesser-known-national-aquarium>, (Accessed 31 January 2021).

¹⁴⁵ Busby. Written interview, 20 January 2021.

¹⁴⁶ Graney. *The Lesser-Known National Aquarium*.

¹⁴⁷ *Ibid.*

economic central hub of Cape Town. It was also situated near the Sea Point promenade on Beach Road. Both these factors limited the space the aquarium had to utilize. As previously noted, the aquarium was built on the design of the Washington D.C. aquarium which was again emphasized in the interview with Mr. Robertson. In the early days of the aquarium there were several larger tanks running the length of the room, with a few smaller display tanks situated in the centre of the floor.¹⁴⁸ Image 7 of the interior of the D.C. aquarium shows a similar sort of layout and helps the reader to picture the interior of the Sea Point Aquarium. The aquarium and its facilities took up most of the south end of the building, whilst a small office space was built on the north side to house the scientific team from the Sea Fisheries Research Institute.¹⁴⁹

None of the sources in this chapter were able to ascertain exactly how the marine species were captured in order to fill the display tanks. Furthermore, no catalogue of the species was kept, making it difficult to evaluate the biodiversity on display at the aquarium. Mr. Robertson did mention that the display tanks were generally filled with many tropical varieties of fish due to their beauty and entertainment prospects.¹⁵⁰ Mr. Robertson also stated that their largest attractions was the octopus and the sea turtle the aquarium had acquired.¹⁵¹ It should also be taken into consideration that marine biologists who had been working at the aquarium in its early years were responsible for obtaining a large percentage of the species kept.¹⁵² It is difficult to define the relationship between the Sea Point and other marine institutions around the country. As will be shown in the next chapter post 20th century, the Two Oceans Aquarium is able to acquire some of their species either through national or international connections with other aquariums and research institutes, however it is believed that the Sea Point Aquarium was never able to draw on such resources – at least not to the extent exhibited at Two Oceans.

The aquarium was to partially sustain itself on the profit made by public viewings. This in turn led the aquarium having to acquire species that would add entertainment value and unlike its predecessor could not only house species that were being studied at the time. In more modern aquariums the drive to obtain species with entertainment value came to be balanced against environmental and animal rights concerns. However, in the 1940s environmental issues

¹⁴⁸ A. Robertson. Technician at the Sea Point Aquarium from 1958 – 1970, oral interview, 27 February 2020, interviewed by L. Lennox.

¹⁴⁹ Busby. Written interview, 20 January 2021.

¹⁵⁰ Robertson. Oral interview, 27 February 2020.

¹⁵¹ *Ibid.*

¹⁵² *Ibid.*

concerning marine life in South Africa were not as prominent as they are today, and the aquarium was only restricted by the size of the building. As a result, it was impossible for the aquarium to house larger “megafauna” species such as dolphins or sharks.

The aquarium, according to Mr. Robertson, was open to the public seven days a week, opening later, on a Wednesday so that the building could be cleaned.¹⁵³ He also mentioned that one of the major features of the aquariums public viewing was the educational program that was implemented. From the 1950’s onwards school groups were encouraged to visit the aquarium and be provided with basic lessons on the marine life they could see there. Not only schools from the Cape would visit but on several occasions school groups from the North of the country would also come to the aquarium.¹⁵⁴ Although it is not possible to speculate on the impact this sort of educational program would have had on the youth of South Africa, one can assume however that for many of the children this would be the first time they had seen many of the fauna housed at the aquarium.

3.3.2 Stagnant waters: The fate of the Sea Point Aquarium in the 1970s

In the previous section the period of turmoil within the Cape’s marine culture was explored, with the root cause being the State’s mismanagements of marine resources, and scepticism towards marine science. Split between both practical and theoretical expectations, the marine scientist also found it difficult to balance their dual purposes. This combined with the fact that funding was severely limited, left many marine scientists without the ability to modernise quickly and adopt international trends.

In a similar way there was a period starting from around the 1970s where the operations of the Sea Point Aquarium were practically halted. It is argued that a division in terms of labour at the aquarium was the primary reason for its downfall.¹⁵⁵

It is difficult to determine how commercially successful the aquarium had been, but it can be surmised that it had not achieved the expected success hoped for in 1939. Mr. Robertson states that during his stint at the aquarium there was consistent public interest.¹⁵⁶ However, in the

¹⁵³ Robertson. Oral interview, 27 February 2020.

¹⁵⁴ *Ibid.*

¹⁵⁵ *Ibid.*

¹⁵⁶ *Ibid.*

same interview he only refers to the aquarium having one cashier who handled customer traffic.¹⁵⁷ Furthermore, for the almost thirty years before its eventual decline, both Mr. Busby and Mr. Robertson, could not recall any real plans to have the building expanded or major new attractions being added. This proves to be concerning when one considers from the 1950s onward there was a new surge of interest in fish species, especially exotic ones due to the ever-growing popularity of home kept ornamental aquariums in South Africa— a trend that is detailed in chapter five. This is contrasted to the introduction of ornamental aquaria and literature about marine species into Europe during the 1850s, which would help fuel interest into aquatic life, thus contributing to the popularity of public aquaria. There is no indication, other than the educational program, which had been institutionalized from the beginning of the aquarium's life in the 1940s, that steps had been taken by the aquarium to motivate public interest in marine life.

The aquarium's lack of ability to grow, even when it benefitted from an already established marine culture in South Africa, as outlined in chapter five, and a naturally beneficial location in a popular seaside destination, necessitates investigation. There are two possible causes. Firstly, as we have noted the aquarium was primarily funded through government subsidies and one must question to what extent the department sought to drive profits. The aquarium did not seem to have any real intentions to capitalize on interest raised by other marine hobbies. If we compare this to the privately owned Two Oceans Aquarium that will be discussed in chapter four, we will see how that it had from its very earliest days sought to give the public what it wanted. Two Oceans has always been very conscious about prevailing trends, aligning itself as an eco-friendly institution, thus endearing itself to the public. This could be attributed to the fact that the aquarium is wholly run on the profits it can generate thus creating an economic incentive to actively update and keep the public's attention. To what extent that same economic incentive was present at the Sea Point aquarium is questionable.

¹⁵⁷ Robertson. Oral interview, 27 February 2020.

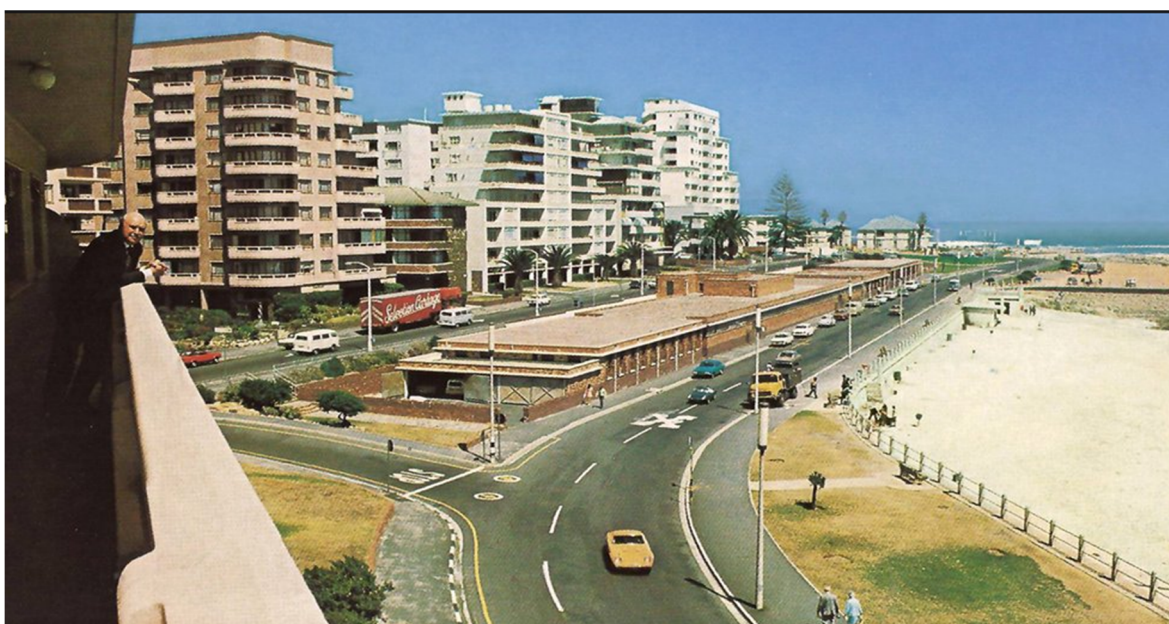


Image 7. Sea Point Aquarium c. 1968.¹⁵⁸

The first cause as discussed above is based primarily on speculation and comparison. The second cause however is based wholly on the experiences of Mr. Alan Robertson. From Mr. Busby's interview it was determined that the maintenance of the building was divided into two groups of duties. The City Council would manage the infrastructure of the aquarium, including the pumps, compressors, and electrical systems, whilst the Department of Public Works was tasked with maintaining the physical structure of the building.¹⁵⁹ Mr. Robertson points to this arrangement as the single largest contributor to the decline of the aquarium. In the interview Mr. Robertson was asked the following question:

“It seems through its institutional history, there was a decrease in interest or a loss of funding at the State level. Maybe political factors played a role in changing the amount of work that could be done. Did you ever experience this sort of thing?”¹⁶⁰

Mr. Robertson replies as follows – the entire answer has been included here in order to capture his opinion as accurately and fairly to the interviewee as possible:

“The impression I got was that neither the City Council nor Public Works wanted to spend any money on the building at all. It got to the stage where we would have electrical failure, us technicians would call the city council and mention how all the

¹⁵⁸ E. Du Plessis. Photograph of the Sea Point Aquarium, 1968. [Available: Online] <https://www.flickr.com/photos/8270787@N07/9422391731/>, (Accessed on: 23 February 2020).

¹⁵⁹ Busby. Written interview, 20 January 2021.

¹⁶⁰ Robertson. Oral interview, 27 February 2020.

pumps were down. The City Council would send out the electrician, but the city electricians would say that it was not their job because the spec works are failing due to all the pillars dripping from the permeation of the sea water from the storage tanks. This is not our problem because it is a structural problem. Public works comes along and says that it was not their problem. The electrical pipes should be removed from the concrete. Both parties were equally complicit in the demise of the old aquarium.”¹⁶¹

From this feedback we can surmise that there was a lack of interest from both government departments. Mr. Robertson’s description points to both departments’ avoidance of spending funds as a major issue. This division between the maintenance of the building worked to create loopholes in which work could be held off. Furthermore, in those cases where maintenance was clearly delegated to a specific department, bureaucratic processes would stall much needed repairs.¹⁶² This led to major delays in essential work for the aquarium, only leading to further damages. Mr. Robertson then emphasizes a narrative in which the lack of State intervention was the root cause for the aquariums eventual demise. In such a narrative, we are again reminded of the way in which the Sea Point Aquarium seemed to mirror the wider issues exhibited in core marine industries in the Cape.

Dr Shannon Vere who would come to serve as the Sea Fisheries director confirmed that the aquarium finally closed to the public in the 1970s, due to sever structural degradation.¹⁶³ We also know that the Department of Agriculture, Forestry and Fisheries would relocate to the new Fore Trust building, in the early 1970’s.¹⁶⁴ With its doors shut to the public it is impossible then to keep the Sea Point aquarium classified as a seaside aquarium as defined in chapter two. This then brought to end a rather large period of the aquarium’s history, and meant that at least within central Cape Town, no public aquarium was present until the construction of the new Two Oceans aquarium in 1995.

¹⁶¹ Robertson. Oral interview, 27 February 2020.

¹⁶² *Ibid.*

¹⁶³ Shannon. Written interview, 28 January 2021.

¹⁶⁴ Robertson. Oral interview, 27 February 2020.

3.3.3 Turn Around Station: From Seaside Aquarium to Marine Research Station 1970 - 1997

Although the aquarium would remain closed to the public, the building did not fall into disuse and would not share the same fate as the St. James aquarium. The building would take on a new function. Mr. Robertson noted that Deon Hostman was appointed as the manager of the new joint research centre and that the aquarium was drained of all its water with the bottom storage tanks converted into holding pens for fisheries.¹⁶⁵ At this point the building could no longer be labelled as a seaside aquarium but rather as a research marine station just like its predecessor in Kalk Bay.

From the 1970s onwards, the field of research would be expanded due to the partnership with the University of Cape Town, as well as other tertiary institutes, including – over time – Stellenbosch University, Rhodes University, Limpopo University, University of the Western Cape and the Cape Peninsula University of Technology.¹⁶⁶ When asking Mr. Busby what he believed was some of the most important research to come out of the new research station he listed the following: the conditioning, spawning and growth of urchins, scallops and finfish, animal health and disease research, ocean acidification experiments utilizing lobsters and other invertebrates. He also included research into harmful algal bloom (HAB) research, fish respiration and other environmental research topics as stand out subjects.¹⁶⁷ Here we see the expanded range of topics the station would house. In the 21st century, the aquarium also began its contributions to South Africa's aquaculture research, assisting researchers in identifying commercial opportunities in aquaculture and in assessing the suitability of indigenous organisms as potential culture species in the development of an environmentally responsible aquaculture industry. Today labelled as the Department of Environment, Forestry and Fisheries (DEFF) rather than the Department of Environmental Affairs and Tourism (DEAT) the goal is to develop an industry that will continuously add towards the state's economic growth.

As Busby explained, in 1997 the Sea Point Aquarium finally saw the long sought-after upgrades and expansion it needed. Through an initiative by the DEAT, the building was converted into a station with the express purpose of modernizing research in South Africa.¹⁶⁸

¹⁶⁵ Robertson. Oral interview, 27 February 2020.

¹⁶⁶ Busby. Written interview, 20 January 2021.

¹⁶⁷ *Ibid.*

¹⁶⁸ Busby. Written interview, 20 January 2021.

Today the facility consists of three levels, containing several purpose-built wet and dry laboratories, six temperature-controlled laboratories, phytoplankton culture laboratory, an auditorium and a variety of serviced open plan research areas. The floor area covers 1600 square meters and is serviced by natural and controlled light conditions and access to filtered sea water. A computerized controlled control system continuously monitors the volume of sea water in the reservoirs, interior temperature and that of the constant temperature laboratories. The aquarium also includes a stand-by generator in order to keep the systems running.¹⁶⁹

3.4 Conclusion

The amount of research conducted at what is today called the Marine Research Aquarium by most scientists in Cape Town, as well as the serious upgrade to the facilities, transformed the old Sea Point Aquarium. It became a centre for both practical benefits to the South African economy as well as a place in which serious research is being conducted on the marine life in South Africa. The government also seems to have shed much of the worried mistrust of marine sciences in the early years of the 20th century, as argued by Van Sittert.

The Sea Point Aquarium became an important institution in the history of Cape aquaria. As mentioned in the introduction it acted as a bridge between the very earliest years of marine culture in South Africa represented by the St. James Aquarium and a more modern era of marine culture, mirrored by the Two Oceans Aquarium. The history of the aquarium is interesting in that one can mirror the experiences of the aquarium to the core marine industries at the Cape. Although the time frames are not the same, marine industries had a prominent start in the region, followed by a period of turmoil and a downturn in their effectiveness, ending in a resurgence to the end of the 20th century. So too did the Sea Point Aquarium which followed a similar pattern, first as a public seaside aquarium, which through its inability to change resulted in a commercial failure but has in more modern times found new impetus in its role as a modern marine station. This chapter has also sought to draw out the role in which the public sector and its practical driven nature, impacted not only the marine culture in the Cape but also the failure of the Sea Point Aquarium.

¹⁶⁹ Busby. Written interview, 20 January 2021.

4. Chapter 4: Inventing the ‘Green’ Aquarium? The History of the Two Oceans Aquarium, 1995 - present

4.1 Introduction

The thesis so far has explored two Cape-centric aquaria. Yet, both previous iterations are hard to classify strictly as public aquariums. As argued in chapter two, St. James Aquarium had been classified within this dissertation as a ‘marine station’ rather than a public aquarium owing to its tendency to be focused heavily on marine research, with very little space made for exhibition purposes. Compared to the truly scientific and academic leaning of the St. James Aquarium, first-hand accounts from the Sea Point Aquarium do indeed point to a more welcoming atmosphere to paying customers. The aquarium even planned for schools to bring touring groups from the 1950s onwards. Yet even with a few interesting specimens (such as the octopus and several tropical species of fish) which lent themselves to entertainment, as Chapter 3 has asserted; entertainment was not the only pursuit of the Sea Point Aquarium, built by the Department of Fisheries, the aquarium was also meant to support the marine research of the Cape scientist, although this was a supplementary goal in its earliest days. Furthermore, the aquarium did not maintain its public viewing policies, closing its doors to the public in the 1970s.

It was only in 1995 with the construction and opening of the Two Oceans Aquarium that the Cape finally had a dedicated public aquarium. Within its relatively short life span the aquarium became a major tourist destination as part of the Victoria and Albert (V&A) waterfront in the city of Cape Town. The popularity of this aquarium can be attributed to its ability to bring marine fauna to the public. Such an aquarium is also unique in that it is able to bring such a variety of indigenous species to the public’s attention. The Two Oceans Aquarium faced challenges that its Capetonian predecessors never did. The unique challenge of public perceptions towards captive animals informed by the new wave of environmental enlightenment focused on ‘animal rights’ in the 21st century being chief among them, as this chapter contends. This is not a challenge faced exclusively by the Two Oceans Aquarium, but rather by all animal parks on a global scale. So, this chapter explores the historical development of the Two Oceans Aquarium in the context of the rise of ecotourism. It first sketches the history of the Two Oceans Aquarium, highlighting its commercial nature and its essential differences to its predecessors. Then it highlights the ecotourist influence on the aquarium. Finally, the chapter will analyse several recent academic arguments over the nature of

ecotourism and analyse the Two Oceans Aquarium with these debates in mind. By investigating this interplay between eco-tourist trends and zoological spaces, it is argued that Two Oceans Aquarium is a good case study in how the ‘green identity,’ which seems to characterise popular socio-environmental trends, is informed by public interaction with environmental spaces. Pointing to environmental consciousness as an important factor in the development of a responsible social identity in the 21st century.

4.2 The History of the Two Oceans Aquarium

4.2.1 Institutional History

Two Oceans Aquarium opened its doors on 13 November 1995 – one year into a post-Apartheid democratic South Africa.¹⁷⁰ With a history of 26 years, this aquarium is relatively young in comparison with other aquaria in the country. Yet Two Oceans has seen massive growth in its popularity in that brief period. A historian investigating this aquarium will note two important features of an aquarium that was established in living memory. Firstly, the number of secondary sources on this institution is extremely limited – although mentioned in newspaper articles and other broad based media outlets, academic literature is scarce to not existent. However, on the other hand, the institution also provides the reader with a wealth of primary sources. In fact, this section concerning the history of the Two Oceans relies heavily on oral history of which two – will be utilized here. The first was conducted between the investigator and Ms. Maryke Musson who served at the aquarium from the beginning, Ms. Musson took on the role of aquarium curator in 2016 and today serves as the CEO of the Two Oceans Educational Foundation.¹⁷¹ Secondly this chapter was also able to contact Mr. Tony McEwan who acted as the co-ordinator in the building of the Two Oceans but would also serve as the aquariums first operations manager.¹⁷² Both these interviews are supplemented by the field work conducted by the author, in order to validate the claims made in the respective interviews.

Alongside the oral interviews, the chapter also made use of digital news articles as a primary source of information regarding the social context of the aquarium, of which a rather large

¹⁷⁰ R. Leeuwner., D. Bowen. & J. Marnewick. *22 Years Ago, the Two Oceans Aquarium was Born, Look at How We have grown!* [Available online]: <https://www.aquarium.co.za/blog/entry/22-years-ago-the-two-oceans-aquarium-was-born> (Accessed 6 December 2020).

¹⁷¹ M. Musson. CEO of Two Oceans Aquarium Educational Foundation, digital interview, 16 October 2020, interviewed by L. Lennox.

¹⁷² T. McEwan. CEO of Ushaka Marine World, telephonic interview, 02 November 2020, interviewed by L. Lennox.

archive of information is available. As argued in the methodology, due to the modern nature of the aquarium, the application of modern sources was also necessary. Much of the information regarding the Two Oceans aquarium is kept online, a large proportion of newspaper articles regarding the aquarium, did not see physical print but rather were entirely recorded through digital means. Therefore, the use of such articles falls into the same primary source classification as the printed Newspaper article, and must be evaluated as such, taking into consideration the validity of the media outlet. Also making consideration for the time differentiation between the events physical date and the date on which the article was published.

What separated the Two Oceans Aquarium from predecessors in the Cape was its commercial nature. The aquarium has never received funding from public sources and continues to remain a private company today. The major drivers of this aquarium's institutionalization are attributed to the Victoria and Albert Waterfront board (V&A Waterfront), with funding provided initially by the Transnet pension fund.¹⁷³ Up until that point the V&A waterfront was just a well know drinking spot, with the locally famous bar, Quay 4, situated there.¹⁷⁴ However, the V&A was looking to transform the area into a larger tourist destination by the early 1990s. It was decided then that a commercial aquarium would uplift the surrounding area.¹⁷⁵ The V&A contributed to the project by providing a dry dock in 1991 that had been standing derelict for some time. Mr. McEwan highlights that the dock itself was built approximately 150 years before then and was the result of prisoners from the famous Breakwater prison, which was constructed in 1859, but only held prisoners from 1891 working to construct the specific dry dock.¹⁷⁶

The building project came at the cost of R50 million, the sum was provided by two large investment groups. Namely the Transnet pension fund that invested two thirds of the total amount with the other third being provided by Norwich Life.¹⁷⁷ At the same time the investors created a board which would be the primary decision makers not only in the construction of the Two Oceans Aquarium but also the running of it thereafter. The board was led by Russel

¹⁷³ K. Tarr. "The Two Oceans Aquarium, 25-year-old", *News 24*, 09 February 2020, [Available online]: <https://www.news24.com/news24/go/the-two-oceans-aquarium-25-years-old-20210112>, (Accessed 6 December 2020).

¹⁷⁴ McEwan. Telephonic interview, 02 November 2020.

¹⁷⁵ *Ibid.*

¹⁷⁶ H. Deacon. *A History of Breakwater Prison From 1859 to 1905*, (Cape Town: University of Cape Town – Honours Thesis, 1989). pp.1-2.

¹⁷⁷ Deacon. *A History of Breakwater Prison From 1859 to 1905*, pp.1-2.

Upton who would serve as the first CEO of the board with Michael Farquhar serving as vice president.¹⁷⁸ It is interesting to note that investors were initially afraid that the aquarium would not be successful enough to warrant the high price tag and therefore when the call was sent out to architect firms to submit plans for the aquarium, the brief stated explicitly that the aquarium was to be built in such a way that if it was to fail, that the building could be easily transformed into a hotel and conference centre.¹⁷⁹

Some major differences can already be highlighted, between the Two Oceans Aquarium and its predecessors at Sea Point and St. James. Due to Two Oceans commercial nature the formation of a board of management was inevitable – this board counteracted problems that were evident in the previous aquaria. In the case of Gilchrist’s St. James Aquarium – we notice from chapter two in this dissertation that Gilchrist’s death can be linked to the closing and eventual demolition of the St. James Aquarium. The aquarium was very much owned and run by Gilchrist and after his passing, there were no parties left who had an invested interest. In the case of Sea Point Aquarium, responsibility for the running of the aquarium was shared by multiple government departments including the City of Cape Town and the Public Works Department. In this case bureaucratic processes lead to complications in the maintenance and running of the building. This eventually led to the building being unfit for public viewing by the 1970s.¹⁸⁰ Both these issues were resolved by the leadership hierarchy intrinsic in privately run institutions. However, one must also be cognisant of the fact that this aquarium had a duty to repay the initial investment, which if it failed to do, would lead to its immediate demise. Thus, in many ways the board of directors served as stabilisation factor in the construction and running of the aquarium but at the same time also served as its driver for profits.

Due to Mr. McEwan’s involvement as co-ordinator of the building project, this chapter can discuss the finer details of the project with most of the people involved listed here. But requires the chapter to lean heavily on what was noted by Mr. McEwan, as these details are not readily available in other sources. For instance, it is noted that the architecture firm – Mitchell Du Plessis was awarded the contract by the board. Furthermore, we know that Bev Mitchell (the managing director of the firm) was made official project lead, Ian Taylor a partner of the firm

¹⁷⁸ McEwan. Telephonic interview, 02 November 2020.

¹⁷⁹ *Ibid.*

¹⁸⁰ A. Robertson. Technician at the Sea Point Aquarium from 1958 – 1970, oral interview, 27 February 2020, interviewed by L. Lennox.

was also involved in the plans for the building.¹⁸¹ Mitchell Du Plessis firm was helped in part by David Jack who at the time was also an architect for the City of Cape Town. It is also interesting here to note, that although the aquarium received no public funding, that the lead electrical engineer on the project was a man by the name of Frank Van Der Velde, who serving at the time as the elect mayor of Cape Town.¹⁸² Therefore, although the aquarium was not to be run by public parties in Cape Town, its construction seemed to be of enough significance to the City that it received help from high serving council members. Arguably, noticing the impact the aquarium might have on developing the V&A waterfront and the surrounding area. Finally, the building contract was awarded to OFCOM. The project which begun in early 1994 was completed in only 18 months and this led to the eventual opening of the aquarium in 1995.¹⁸³

When asked of Mr McEwan what the most expensive part of the project was, McEwan designated the large glass acrylic windows that was to be used in the aquarium's largest tank, measuring in at 2 million litres. Due to the specialisation of these acrylic windows, the team had to look internationally for a supplier. Only two companies in the world could design such unique and specialised products. The firm decided to award the contract to Reynolds Acrylics in the United States of America. The contract detailed the need for four of these large acrylic windows which came out to \$1 million per window.¹⁸⁴ In these purchases we also note a major difference from previous aquariums. Two Oceans Aquariums was designated as an entertainment centre first and foremost, thus it was integral for the architects and later builders to produce areas of spectacle throughout the aquarium, these spectacles were to facilitate an entertainment factor that would not only generate a viewing audience but that would create something that would be talked about and ensure substantial growth in viewing numbers.

Mr. McEwan was singlehandedly in charge of exhibit accrual for the aquarium. Mr. McEwan hired Lex Fearnhead, who had experience in animal management science since he was previously part of the Natal Parks Board. Lex was designated as first director of the Two Oceans Aquarium on the 1 May 1995 and began in June of the same year.¹⁸⁵ With Mr. Fearnhead running daily operations, McEwan was now able to focus on finding suitable

¹⁸¹ McEwan. Telephonic interview, 02 November 2020.

¹⁸² *Ibid.*

¹⁸³ *Ibid.*

¹⁸⁴ *Ibid.*

¹⁸⁵ NAUSICAA. "New Behaviour Towards the Ocean: An Objective for the Future", *1st International Meeting of Aquariums, Museums and Science Centres*, Brochure, 1999. p. ii.

animals for the exhibit. This process was facilitated in three ways from the end of 1994 onwards, firstly the aquarium purchased the old Cape Power Boat Club which was converted into a storage house with several holding tanks.¹⁸⁶ Secondly, the aquarium hired out a quay at the Simon's Town yacht club in which a 10mx10m trout cage was installed, the cage was donated by the I&J company. Finally, McEwan with the help of the Cape Natures Service, installed an inflatable pool at the small harbour in Struisbaai which is situated in the Cape Agulhas region.¹⁸⁷ The sites at Simon's Town and Struisbaai however, only served as temporary holding spots before the aquarium could quarantine and introduce the marine animals into the aquarium. These several sites had the primary purpose of allowing for as wide as possible specimen collection range from Cape waters. The aquarium, however, had to follow bureaucratic regulation, and their operations were informed through the acquisition of specific permits obtained in 1995 from two government departments: Including the Department of Agriculture, Forestry and Fisheries and the Cape Nature Service. The same permits are still held today.¹⁸⁸

Of some importance to the discussion of its departure from previous patterns of Cape aquaria, is the need for entertainment specific animals. Here Two Oceans had two goals it had to meet, firstly the aquarium had to acquire enough animals to fill the vast array of exhibits built, secondly the aquarium had acquired a broad spectrum of flora and fauna, in so much that the variation among these species would serve as both educational and entertainment attractions to the wider public. These factors in conjunction meant that the acquirement of substantially interesting fauna such as the seals, penguins and sharks were a necessity. In relation to the necessities of previous aquaria in which entertainment was not of major importance the animals served a dual purpose as both exhibits and research subjects. This allowed previous institutions the ability to exclude themselves from such a major cost necessary to facilitate such biodiversity. Although this is completely true for the St. James aquarium, it should be noted that for the Sea Point aquarium, some efforts had been made to find environmentally interesting subjects for its displays, but never operated at a level paralleling the Two Oceans.

¹⁸⁶ McEwan. Telephonic Interview, 02 November 2020.

¹⁸⁷ *Ibid.*

¹⁸⁸ "Guide to the authorisation requirements for aquaculture in South Africa", *Department of Agriculture, Forestry and Fisheries*, 2017, p.32.

However, these are not the only significant differences between the two sets of aquaria. We must also allude to how the Two Oceans Aquarium is run today, specifically to note how the institution is a product of an environmentally aware 21st century and the unique differentiations caused by this scope in comparison to its predecessors.

4.2.2 Running a Modern Aquarium

Ms. Musson provide insight into the running of the aquarium today but also into the peripheral projects this chapter argues are essential for an aquarium to maintain a positive environmental image. This section is also supplemented by notes from the field research conducted by the dissertation's investigator. As well as several digital articles commenting on the aquarium's daily operations. These primary sources help to construct an environmental image of the aquarium necessary for later discussion in this chapter.

In the short life span of the Two Oceans Aquarium, it has been relatively successful not only in terms of other South African aquariums but in terms of aquariums worldwide. After opening its doors in 1995, the aquarium has catered to over 10 million visitors, of which 6 million were local customers.¹⁸⁹ The aquarium is also of substantial importance to the African aquarium scene as it is a voting member, representing the larger African continent, on the board of the World Aquarium and Zoos Association (WAZA). Along with U'Shaka Marine World the two aquariums also represent South Africa at the International Aquarium Congress that is held every three to four years.¹⁹⁰ With such success garnered by the aquarium in the past 25 years it is interesting that the aquarium has not seen massive expansions in that time.¹⁹¹ The largest upgrade taken by the aquarium has been the installation of a waterway tunnel in 2014 shown in image 8 and 9 below. The construction of these were done in accordance with the wishes of the public who requested this feature for some time.¹⁹² The tunnel was constructed so that it connected to the aquarium's largest tank in which the ragged tooth shark (*Carcharias taurus*);

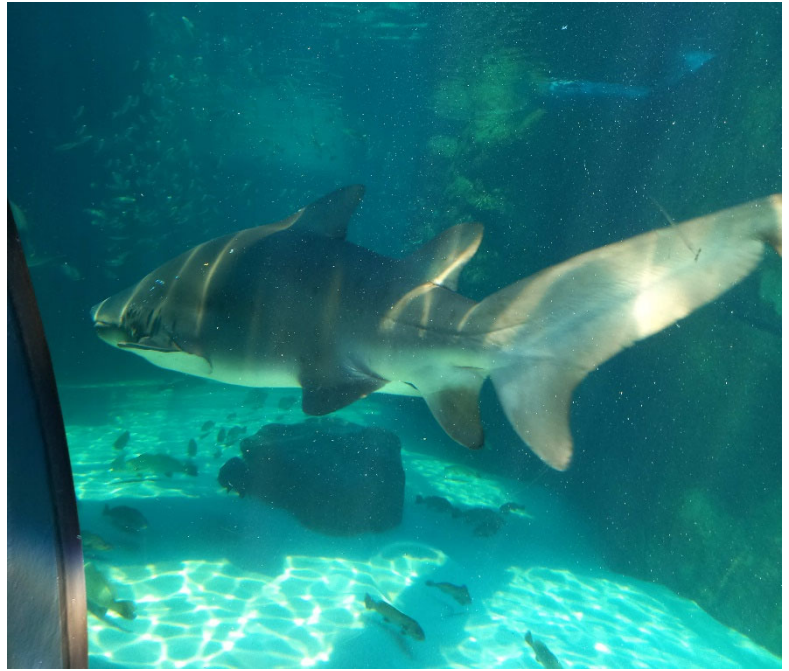
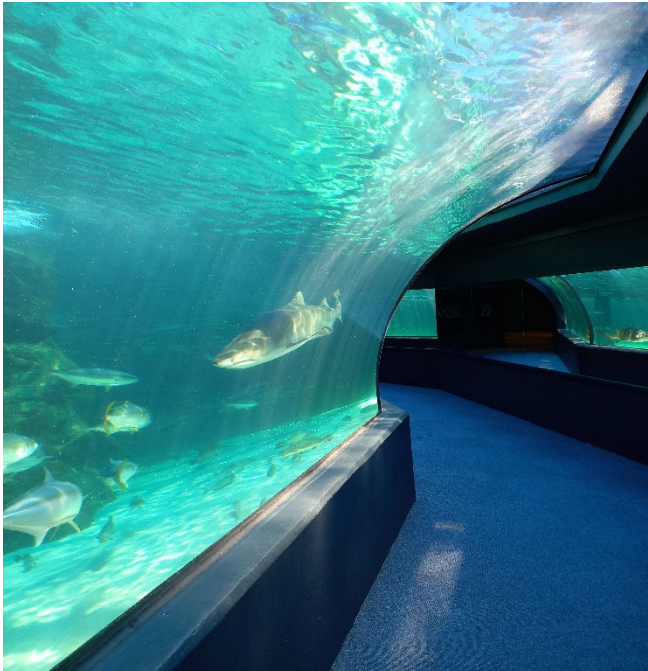
¹⁸⁹ "Two Oceans Aquarium Celebrates 25 years", *Cape{town}etc*, 12 November 2020, [Available online]: <https://www.capetownetc.com/cape-town/the-two-oceans-aquarium-celebrates-25-years>, (Accessed 8th December 2020).

¹⁹⁰ "8th International Aquarium Congress: Voices for the Future of the Oceans Video Conference", *Blooloop*, 10 September 2012, [Available online]: <https://blooloop.com/theme-park/news/8th-international-aquarium-congress-voices-for-the-future-of-the-oceans-video-conference/>, (Accessed 6th December 2020).

¹⁹¹ L. Lennox. "Field notes on the Two Oceans Aquarium during site visit", ethnographical field work, 11 November 2020.

¹⁹² "The Two Oceans Aquarium Begins Work on Expansion Project", *Blooloop*, 3 February 2014, [Available online]: <https://blooloop.com/animals/news/the-two-oceans-aquarium-begins-work-on-expansion-project>, (Accessed 8th December 2020).

a variety of manta rays, and sea turtle species (both loggerhead - *Caretta caretta* & leatherback - *Dermochelys coriacea*) are exhibited thus putting their more extravagant species in the spotlight.¹⁹³ This glass tunnel is a major and popular exhibit for the aquarium and are displayed in images 8 and 9 below.

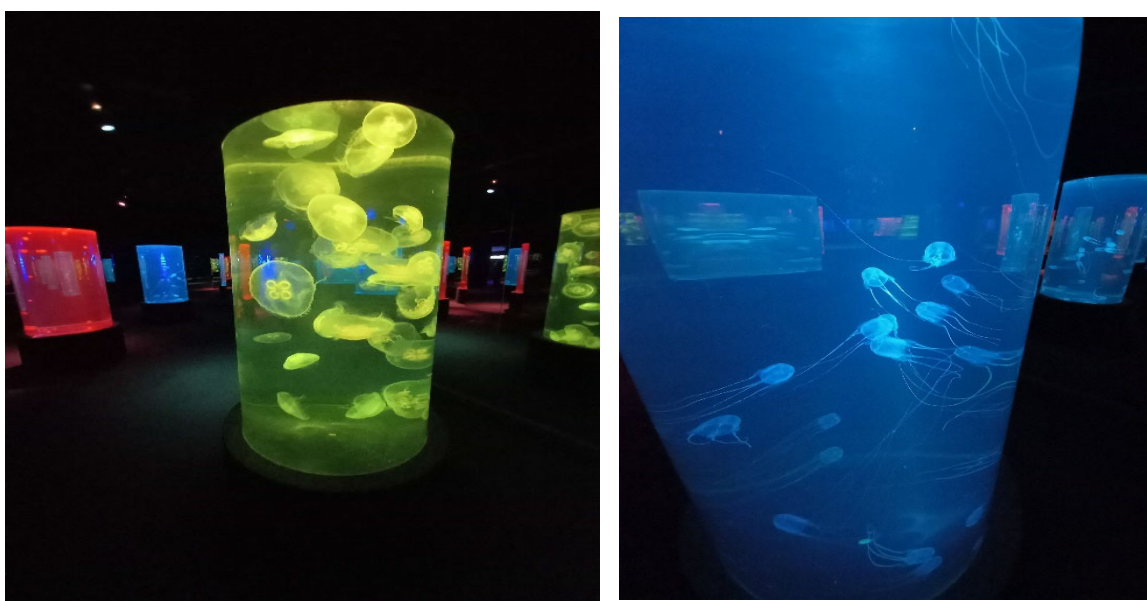


Images 8 & 9: Glass waterway tunnel constructed in 2014- photographed 11 November 2020 by L. Lennox.

Another more recent exhibit is portrayed in images 10 & 11 below – the aquariums modernized jellyfish room, which houses three species of jellyfish namely the South African box jellyfish (*Carybdea branchi*); the root-mouthed jellyfish (*Eupliema inexpectata*) and the moon jellyfish (*Aurelia aurita*). Installed in 2018, this feature, although not as large a renovation as the water tunnel, makes use of lights; mirrors and a darkened room – to highlight the ethereal nature of the jellyfish and provided viewers with another entertaining spectacle.¹⁹⁴

¹⁹³ Lennox. Ethnographical field work, 11 November 2020.

¹⁹⁴ *Ibid.*



Images 10 & 11: Jellyfish Exhibit photographed 11 November 2020 by L. Lennox.

Although the creation of entertainment-based exhibits which provide the viewer with some sort of spectacle as the two noted examples above, see images (8-11) are essential to the aquarium, the management is constrained by several factors. Most importantly, is the creation of exhibits that are sustainable. The animals kept in the tank must co-exist in relative harmony (thus natural predators and prey cannot be exhibited together). Displaying groups of animals together in a manner reflective of their natural habitats, is a modern technique, meant to convey a more environmentally conscious approach, diverging from the early modern serial taxonomic approach that was present in the Sea Point Aquarium, a method in which species are kept apart by species.¹⁹⁵ Furthermore, due to the large variety of species held at the aquarium, it is imperative that species are kept in tanks in which water temperature, water salinity and other bio-factors are suitable to their living conditions. A good example of this is the exhibit room termed the ‘eco-room’. Within this room there is an exhibit labelled the water ways of South Africa.¹⁹⁶ The exhibit is comprised of a three-tank system each representing a different area of South African rivers and the fish that can be found in those areas namely the higher river reaches, middle river reaches, and the lower river reaches. These tanks – unlike the majority of

¹⁹⁵ M. Karydis. “Organizing a Public Aquarium: Objectives, Design, Operation and Missions”, *Global Nest Journal*, (13), (4), 2011, p.369.

¹⁹⁶ Lennox. Ethnographical field work, 11 November 2020.

other tanks in the aquarium – need temperate fresh water rather than ocean-simulation.¹⁹⁷ The aquarium’s large kelp forest exhibit, on the other hand, requires specific nutrients, which it receives through artificially enriched water.¹⁹⁸ All these conditions are met through the aquariums extensive water management system in which all bio-factors must be consistently measured.¹⁹⁹ The aquarium’s consideration of multiple environmental factors emphasizes the institutions commitment to providing their display animals the most naturally realistic environment possible. Such a commitment is necessary, in order to help strengthen the environmentally responsible branding of the aquarium.

They also must prove conscientiousness towards environmental issues and provide some sort of positive feedback to the environment from which they extract their exhibited material. To achieve such a goal the aquarium conducts its business in several ways that allows for it to promote itself as such to a public that demands sustainable practices. A trend that has been noted by several notable academics in the field of green tourism - a topic that will be discussed in greater detail in the following section of this chapter. Yet here then it is imperative to mention how the aquarium sells itself as an ‘environmentally conscious organization’.

One of the most noticeable features of the aquarium’s environmental messaging, and an aspect for which the aquarium has been lauded by the international aquarium scene, is the strict keeping of local species. The aquarium has only two exhibits’ in the entire aquarium that houses species that are not originally from South African waters. These are spider crabs (*Macrocheira kaempferi*), which were brought over from Japan in a marine cultural exchange between the Two Oceans Aquarium and the Tokyo Sea Life Park.²⁰⁰ Also the clown fish (*Amphiprion ocellaris*) generally endemic to the Indian ocean specifically waters around Southeast Asia. This clownfish exhibit according to Ms. Musson was of such an ‘unnatural nature’ to the core message the aquarium attempts to exude that it had previously attempted to remove the exhibit. However, due to the popular demand especially of a younger audience who had been informed about the fish in the popular film *Finding Nemo*, the aquarium was forced to bring the exhibit back.²⁰¹ Both these alien species are interesting discussion points with the spider crabs we are given a hint to the international network of public aquaria, a resource that the Cape aquaria of

¹⁹⁷ Lennox. Ethnographical field work, 11 November 2020.

¹⁹⁸ *Ibid.*

¹⁹⁹ *Ibid.*

²⁰⁰ *Ibid.*

²⁰¹ *Ibid.*

the past were not able to tap into. With the case of the clown fish, we are not only shown how media impacts a viewing public's perception of wild animals (indeed the clown fish are commonly referred to as "Nemos" today) but also a public pressure to view certain animals.

Yet even though clownfish are popular especially with a younger audience, there are two species of megafauna that the Aquarium has had consistently asked about since their opening. That would be the great white shark (*Carcharodon carcharias*) and the bottlenose dolphin (*Tursiops aduncus*). Here then is another point in which the aquarium applies ecologically sound and environmentally friendly policy. According to Ms. Musson, initially in 1995 the decision to not have dolphins was due to the space limitation.²⁰² However, even when the growth of the aquarium's popularity, an explicit decision was made against the keeping of dolphins. Ms. Musson mentioned how difficult mammals like the dolphin or seal are, requiring continual specialized attention. The aquarium which at first did have seals also sent them away to U'Shaka as it did not have the capacity or space to adequately take care of the animals.²⁰³

In the case of the great white shark, the decision to not keep them was easy according to Mr. McEwan. McEwan went on to mention how difficult it is to keep this apex predator, referring to the inability to keep the animal with any other species. These animals need a lot of space and are generally territorial, thus they are dangerous to whatever animal they are kept with.²⁰⁴ At the aquarium today none of these megafaunas are kept. In terms of an environmentally conscious image – this is a positive rather than a negative. In recent years, the public outcry in relation to aquaria keeping large mammals (seals, dolphins and especially the orca) has increased dramatically. Much of this outcry has been informed by popular documentaries like *Black Fish* (2013), directed by Gabriela Cowperthwaite which brought to light the condition and dangers of keeping large mammals like the orcas at aquaria.²⁰⁵ Or *the Cove* (2009), directed by Louie Psihoyos which brought to light the thriving industry in Japan, in which dolphins are corralled and sold to aquariums around the world.²⁰⁶ These documentaries have created a negative public bias towards large marine animals in captivity, their absence allows for the

²⁰² Lennox. Ethnographical field work, 11 November 2020.

²⁰³ *Ibid.*

²⁰⁴ McEwan. Telephonic interview, 02 November 2020.

²⁰⁵ *Black Fish* (2013), [Available online]: <https://www.imdb.com/title/tt2545118>, (Accessed 09 December 2020).

²⁰⁶ *The Cove* (2009), [Available online]: https://www.imdb.com/title/tt1313104/?ref_=tt_sims_tt, (Accessed 09 December 2020).

Two Oceans Aquarium in recent years to emphasise and utilize that public perception to its advantage.

The largest animals kept at the aquarium are arguably the ragged tooth sharks (as seen in images 9&10 above) and the loggerhead & leatherback sea turtles.²⁰⁷ The ragged tooth unlike the Great White is a much smaller, docile shark and can be kept with other species of fish. However, with both these species the aquarium maintains a ‘catch and release’ programme. In reference to the sharks Ms. Musson indicated how generally the sharks are raised from their embryonic sacks and are kept only for the first 10% of their life, before being released into the ocean.²⁰⁸ In this way the aquarium maintains a conservation image rather than an image of entertainment – although the sharks fulfil a double roll. With regards to the turtle species the aquarium does not actively capture them, but rather house the animals in situations where the turtles have been injured, stranded or need rehabilitation. Here the aquarium will step in rehabilitate the animals before they are released back into the wild.²⁰⁹ The aquarium has received international notoriety from both the field of science and the international aquarium scene for their turtle programme. As part of a wider public awareness programme with the release of several turtles the aquarium has kept satellite tracking of these animals. The turtles have travelled collectively 83 000 kms.²¹⁰ Yoshi is the most widely recognized from this programme, and Musson has been on a variety of South African television programmes and radio broadcasts, talking about his journey. These programmes are beneficial in that they again help to emphasize the conservation image the aquarium has tried to construct.

Again, there is a clear example of differentiation between the aquaria of the past and the Two Oceans today. Media has in many ways informed the public before they have even visited the aquarium (either in a positive light as with *Finding Nemo* or in a negative light such as *Black Fish or the Cove*). The public then has a preconceived notion by the time they visit the aquarium. Although literature may have been available to the public of St. James and Sea Point days, messaging was not as broad based as it is today. This chapter has not even mentioned the impact social media can also have on these views. Thus, the Two Ocean Aquarium must meet

²⁰⁷ Musson. Digital interview, 16 October 2020.

²⁰⁸ *Ibid.*

²⁰⁹ Lennox. Ethnographical field work, 11 November 2020.

²¹⁰ M. Musson. *Where are Yoshi and Alvi now? Follow the Turtles Sea Journeys*, [Available online]: <https://www.aquarium.co.za/blog/entry/track-the-journeys-of-two-oceans-aquariums-released-sea-turtles>, (Accessed: 09 December 2020).

the expectations of the public both for entertainment and environmental purposes. One may argue here than those previous iterations of Cape aquaria, which did not have to meet preconceived expectations of a viewing public, where more able to impress their customers with the animals they had without having to play to a conservation tone as in the case of modern aquaria.

The final aspect this chapter wishes to discuss in the paradigm of running a modern aquarium is the ability of the institution to impact its surrounding community. The Two Oceans aquarium, especially under the leadership of Ms. Musson sought major development in its education programme. The programme that was originally funded through Old Mutual corporate social responsibility programme, received new impetus when Ms. Musson returned to the aquarium in 2016.²¹¹ With her return Ms. Musson sought out new investment for the aquarium's education programme. Musson noted that due to the programme being designated as non-profit, large sponsorships were increasingly difficult to obtain.²¹² Thus the decision was taken to separate the Education Programme from the running of the aquarium and operate them as two separate entities. The aquarium itself was an easier prospect to receive sponsorship, due to its sustained reputation and ability to turn a profit. The aquarium would then in turn sponsor the education programme.²¹³ Ms. Musson in 2020 retired her position as curator of the aquarium and became the CEO of the educational foundation. It is objective here to note the relative success of the programme, within its time (as part of the aquarium and as a separate entity) it has reached between 60 000 and 70 000 South African youths.²¹⁴ The programme focused not only inviting these youths to the aquarium, in which two classrooms were constructed for that purpose, but also heading into townships with marine specimens and educational material as well.²¹⁵

In 2020 with the advent of the COVID global pandemic, the aquarium alongside other popular tourist destinations suffered greatly. The aquarium was noted to have experienced a 56% drop in visitor attendance during 2020. Furthermore, 2020 would be the first time in the aquariums

²¹¹ McEwan. Telephonic interview, 02 November 2020.

²¹² Musson. Digital interview, 16 October 2020.

²¹³ *Ibid.*

²¹⁴ *Ibid.*

²¹⁵ *Ibid.*

institutional history that it would close its doors to the public since 1995.²¹⁶ Yet even during this troubling time the aquarium focused on reaching out to the surrounding community through educational means - transforming into a digital platform, in which online classes are still being given.²¹⁷ This programme is another tool in the construction of the conservational image built by the Two Oceans Aquarium.

As with most of the initiatives discussed up until this point, the aquarium has had to balance the constraints of being a profit driven business and the resulting need for commercial success with the need to meet public perceptions and meet expectations of a sustainable and environmentally responsible business. This balance between these two necessities can be argued is the greatest and most constant difference between the Two Oceans Aquarium and previous Cape aquaria.

With this extensive outline of the Two Oceans Aquarium, from its construction to date, and the variety of initiatives in place indicating its environmental leanings, the chapter now turns towards academic literature. The purpose thereof is to situate the Two Oceans in environmental landscape of ecotourism, a popular topic in academic literature today. By doing so this chapter wishes to evaluate the aquariums balance between commercialization and environmentalism.

4.3 Greener Waters: Two Oceans Eco-Tourist leanings?

4.3.1 Defining the Aquarium as an Eco-Tourist Destination

As shown above in some detail, the Two Oceans Aquarium does indeed have an environmentally conscious brand. Yet, the question must still be asked does this green image fit into the definition of ecotourism? Authors have pointed out the fact that due to the relative popularity of the term within the tourist industry, many places have applied the label without meeting the criteria.²¹⁸ In fact the trend of mis-selling the concept is of such significance that it has been labelled as “greenwashing”.²¹⁹ The issue with greenwashing is not only physical in

²¹⁶ “Cape Town Tourism Sector lost R2bn during peak season – report”, *IOL*, 18 February 2021, [Available online]: <https://www.iol.co.za/travel/south-africa/western-cape/cape-town-tourism-sector-lost-r2bn-during-peak-season-report>, (Accessed 20 February 2021).

²¹⁷ *Ibid.*

²¹⁸ D. Merskin. *Green Business: An A-to-Z Guide Chapter on Ecotourism*, (Thousand Oaks: SAGE publications, 2011), p.180 -181.

²¹⁹ A. Stronza., C. Hunt., & L. Fitzgerald. “Ecotourism for Conservation”, *Annual Review of Environment and Resources*, (44), 2019, p.234.

that it has a real-world impact on eco-sensitive areas, but furthermore it impacts the research and critique of ecotourism.²²⁰ Furthermore, due to the extensive literature on the subject so too have there been many attempts to define “eco-tourism”. For the purpose of this chapter the author looks not to a strict definition but rather a set of guidelines published by the International Ecotourism Society (TIES), here the society lists six requirements that should be in place for an organization to meet the minimum requirements of ecotourism. These include: a conscious effort to minimize environmental impact; build environmental awareness; provide direct financial benefits and empowerment for local people; respect local culture and support human rights.²²¹ These requirements allow for a broad understanding of what can be classified as ecotourism.

This chapter must rely on a broader definition since much of the literature does not include zoos and aquaria within that definition. Generally, ecotourism operations referred to in literature include those operations that are conducted either for or at national wildlife parks (Kruger National Park), nationally protected natural areas (The Floridian Wetlands) or areas of cultural significance (Ankara in Madagascar). Furthermore, areas observed by studies are also generally rural and situated away from major city centres or areas of extreme urbanisation. Aquaria and zoos are thought to be problematic to define as ecotourist friendly due to the core principle being the enclosed retention of their animals. This chapter argues that although it is true that there are a proportion of animal exhibit centric institutions that do not meet even the minimum standard of an eco-tourist destination, and are in fact causing their exhibited species distress, it is naïve to exclude all of them. Institutions like the Two Oceans Aquarium conduct themselves in an environmentally conscious way, as shown above, also providing a net positive contribution to the environment in which they operate and do in fact uplift the surrounding community. Although generally situated within urban areas, these green wildlife exhibits do indeed still fit the cast of an eco-tourist frame. Furthermore, the Two Oceans Aquarium is not a random outlier, in fact for the continued survival of aquaria and zoos in today’s environmentally conscious landscape, it is imperative that both animal exhibition centres conduct themselves in a similar manner to the Two Oceans Aquarium. On the World Association of Zoos and Aquariums website, of which the Two Oceans is a voting member, the association lists the following priorities: “...[WAZA] is dedicated to the care and

²²⁰ Stronza, *et al.* “Ecotourism for Conservation”, p.234.

²²¹ Merskin. *Green Business: An A-to-Z Guide Chapter on Ecotourism*, p.180.

conservation of animals and their habitats around the world.”²²² Also stating “WAZA provides support for species-conservation management and husbandry of animals in human care, will encouraging the highest standard in member institutions.”²²³ This wording goes to emphasize how the trend of environmentally conscious organizations is prominent today and thus literature should look to include (even if differentiating it from other forms of eco-tourism) rather than exclude these animal exhibits.

The critic of eco-tourism might point to its natural subsidiary, green marketing as the most prominent driver of an institute’s willingness to classify and sell themselves as a ‘green’ business. The concept of eco-tourism has been around for several decades already. An early example of people’s inclination towards using the environment as a selling point, can be noticed in 1975 – when the American Marketing Association held its first conference for ecological marketing. The purpose of the conference was for interested parties to examine how the natural environment could impact marketing.²²⁴ Green marketing showed a steady increase in popularity through the 1980’s and 1990’s, as literature on the worsening state of the planets natural environment increased.²²⁵ Popularity for this marketing method was also boosted by industry leading firms employing these methods in more recent years. British Petroleum’s (BP) – campaign to spending \$350 million on developing energy efficient products or Starbucks announcing its \$10 million campaign for clean water are some of the popular examples, yet other firms like General Electric; 3M and Home Depot have all been known to use this method of marketing.²²⁶ The question must then be asked does Two Oceans employ green marketing principles? The answer to that is conclusively in the affirmative – as already discussed above, not only is the brand of the Two Oceans Aquarium cantered on the institutes impact on South African oceans, many of their public campaigns in which animal ambassadors like the turtles discussed in the previous section or the ragged tooth – Maxine – who was released in 2004, are done in order to generate public interest and also fall into an environmentally positive image.²²⁷

To further emphasize this point, one only needs to look at the awards displayed on the aquarium’s web page, which are mirrored in the front entrance where the awards are hung. We

²²² [Available online]: <https://www.waza.org/#>, (Accessed: 10 December 2020).

²²³ *Ibid.*

²²⁴ A. Roy. *Green Business: An A-to-Z Guide Chapter on Environmental Marketing*, (Thousand Oaks: SAGE publications, 2011). p.231.

²²⁵ *Ibid.*

²²⁶ *Ibid.*

²²⁷ Lennox. Ethnographical field work, 11 November 2020.

note that the Two Oceans Aquarium was awarded gold for best responsible tourism attraction and silver for best global goals reporting at the 2019 WTM responsible tourism awards.²²⁸ The Aquarium is also a certified diamond member of the Heritage Environmental Rating programme, which they were awarded in 2017.²²⁹ These do not only give the institution credibility as an environmental institution but also add to the marketability of the Aquarium. Again, the Two Oceans Aquarium must seek to balance the demands of a profit driven business with the expectations of being environmentally conscious. With that balance in mind, the need for green marketing in this aquarium's portfolio is vital.

4.3.2 Eco Literary Critical Arguments – Evaluating Eco-Tourism at Two Oceans Aquarium

Shown in the chapter is the manner in which the aquarium has to conduct itself in a modern green society. This chapter has made the argument that the Two Oceans aquarium must sell itself as an eco-tourist product in order to balance the expectations of an environmentally conscious viewing public with the needs of a commercial and profit run company. Thus, with the aquarium now designated, for the purposes of this chapter, as an eco-tourist product, it now looks to expand on the topic of ecotourism. This is done through the detailing of three academic arguments that add to the complexity of the topic. By doing so the chapter hopes to further discuss the nuances of the Two-Oceans Aquarium as an eco-tourist product.

The first of three critiques this chapter looks at is from a paper written by S. Place and looks at the inherent paradoxes within the eco-tourism industry. Place argues that a contradiction exists based on the capitalistic system that drives eco-tourism.²³⁰ The contradiction Place discusses is founded in the fact that although consumers in “centre countries” (here referring to generally developed countries) demand a variety of commodities today, this necessitates that countries generally in the periphery (developing countries) especially in South East Asia and South America meet those demands.²³¹ In order to meet these demands, developing countries must look to expand and develop the means for processing. This act of development according to Place has a well-documented direct linkage to the destruction of natural (would be

²²⁸ Lennox. Ethnographical field work, 11 November 2020.

²²⁹ *Ibid.*

²³⁰ S. Place. “Ecotourism for Sustainable Development: Oxymoron or plausible strategy?”, *GeoJournal*, (35), (2), 1995, p.162.

²³¹ *Ibid.*

environmentally sensitive) areas. Yet at the same time there is an increasing dynamic in which consumers from centre countries, wish to experience unique cultures and environments. These unique experiences (or eco-tourist operations) are generally found in those periphery countries, which require those developing countries to protect natural areas, as well as areas of cultural significance.²³² Place argues that these two dynamics are contradictory to one another, with the demand for environmentally rich areas by a growing and developed tourist population, obstructing the need to develop.

Place goes on to argue that when eco-tourism demands the protection of natural habitats, this directly excludes the land being used for other resource extraction activities, including farming; fishing; forestry; mining and to some extent hunting. This in turn leaves many of the locals without their traditional resource base for their own livelihood.²³³ They are then forced to depend on the income generated from these eco-tourism operations. However, these environmentally protected areas generate very little income for locals as a large proportion of the eco-tourist operations generates income for foreigners who arrange the experiences e.g., tour operators, hotel owners and airlines.²³⁴

As mentioned earlier Two Oceans is not situated in an environmentally sensitive area, but rather a relatively modern settlement at the V&A waterfront. Furthermore, the Aquarium does not directly impact the livelihood of South Africa locals by barring local resource extraction, but rather as already shown has proven to uplift the surrounding community. Place's argument is not a unique one, the impact of the eco-tourism industry on locals and their own livelihoods is a primary concern for many academics, writings by Budowski,²³⁵ Nations and Komer,²³⁶ and Lipske²³⁷ all show similar arguments. Major works by authors such as Lindberg, Sproule and Enriquez²³⁸ in which the economics of eco-tourism in developing countries have been explored point to the same arguments made by S. Place.

²³² Place. "Ecotourism for Sustainable Development: Oxymoron or plausible strategy?", p.162.

²³³ *Ibid.* p.163.

²³⁴ *Ibid.*

²³⁵ G. Budowski. "The Socio-Economic Effects of Forest Management on the Lives of People Living in the Area: The Case of central America and some Caribbean Countries", *Socio-Economic Effects and Constraints in Tropical Forest Management: The Results of an Enquiry*, ed. E. Hallsworth (New York: John Wiley and Sons, 1982), p.82.

²³⁶ J. Nations. & D. Komer. "Central America's Tropical Rainforests: Positive Steps for Survival", *Ambio*, (12), 1983.

²³⁷ M. Lipske. "How a Monkey Saved a Jungle", *International Wildlife*, (22), 1992.

²³⁸ K. Lindberg., J. Enriquez. & K. Sproule. "Ecotourism Questioned: Case Studies from Belize", *Annals of Tourism Research*, (23), (3), 1996.

With so much academic focus on this issue, it is important for this chapter to evaluate the Two Oceans Aquarium in line with those concerns. The ability for the Two Oceans Aquarium to avoid such critiques, allows for a positive evaluation of its eco-tourist practices. Since South Africa is indeed still classified internationally as a developing country, thus the ability for the aquarium to retain money within the country's borders – as the profits generated by the aquarium are directly linked back to the development of the V&A waterfront is essential in counteracting Place's concerns. The aquarium has also been noted to help rather than hinder local livelihoods. Emphasized not only by its education programme, but also its ability to draw international focus on South Africa's environmentally friendly practices. Leading this chapter to argue for the effectiveness of the Two Oceans Aquarium as a case study in developing country eco-tourism. Not only proving to be profitable but also staying relevant in academic discourses on the economic impact of eco-tourism in these areas.

The second paper this chapter wishes to highlight is written by B. Bücsher and V. Davidov. The paper in contradiction to the last one does not sit within a body of like-minded discourse. But rather offers a unique and compelling argument for the interplay between eco-tourism and resource extraction, adding to the complexity of eco-tourism in a much-needed way for future discussions on the topic. The paper begins by arguing that in academia today there are common assumptions between eco-tourism and extraction industries. Firstly, that the two industries are diametrically opposed, eco-tourism which is generally seen a sustainable form of development and extraction industries which are unsustainable.²³⁹ Although these biases may not be explicitly stated by scholarship, it is apparent that critical literature has struggled with the full scope and interplay between ecotourism and extraction industries. Due to the lack of study around these two conceptions the paper argues that the industries are “epistemologically decoupled”.²⁴⁰ Bücsher and Davidov show that through the utilization of Environmentally Induced Displacements (EID's) we can better understand the interplay between eco-tourism and extraction.²⁴¹ The article explicitly states two arguments which it wishes to address in

²³⁹ B. Bücsher. & V. Davidov. “Environmentally Induced Displacements in the Ecotourism-Extraction Nexus”, *Area*, (48), (2), 2016, p. 161.

²⁴⁰ *Ibid.* p.163.

²⁴¹ For clarification EID's are defined by the editors of *Area* (the journal in which this article appeared) as: “A form of displacement whereby specific populations find their use of land irrevocable altered, whether as a living space, as a livelihood resource, as cultural site, or any number of other claims to territory due to some form of environmental change.”

relation to EID's. Firstly, that: "EID's in the ecotourism extraction nexus are never one-sided or unidirectional."²⁴² This then fits into their second broader argument in which:

"EID's within the ecotourism extraction nexus help both problematise and recognise the fluidness, commensurabilities and tensions that inhabit these often-deemed incommensurable dynamics, while allowing us to complicate familiar narratives of how particular environmental industries whether conservation or extraction-orientate ones create or mitigate displacement."²⁴³

The interest shown for the points made in this article are apparent when considering the Two Oceans Aquarium. As proved above the very public image of the Two Oceans Aquarium is that of eco-tourism. Thus, by most scholarly standards, the institution should be well removed from extraction-based industries. Although the article itself does not consider the example of the aquarium, rather focusing its energies on human populations. It can be argued that the core principles of both aquariums and zoos add to the argument - that eco-tourism (environmentalism) and extraction-based industries are not always diametrically opposed but rather form a nexus in which environmentally induced displacements can occur. The core principle of any zoo or aquarium is the removal of animals generally found in the wild extracted from their natural habitats. But this extraction process is generally supplemented by the argument that, these practices protect the species and its future survivability. Here then within this core principle we can note how notions of environmentalism are impacted and necessitate the use of extraction-based exercises.

Another way in which EID's are present within aquaria and zoos is the ever-increasing trend in which a variety of species both land and marine based are experiencing their natural habitats becoming irrevocably altered, whether it be through deforestation, pollution or from natural disasters. These animals are being forcefully displaced through such activities, and thus zoos and aquariums through green initiatives step in, to help rehabilitate the animals. A major example of this is the oil spill between Dassen & Robben Island on the 23 June 2000.²⁴⁴ The oil spill caused when the MV Treasure, a ship carrying iron ore, sank off the northern coast of Cape Town – this caused over 19 000 penguins to become oiled. The Southern African

²⁴² Bucscher. & Davidov. "Environmentally Induced Displacements in the Ecotourism-Extraction Nexus", p.162.

²⁴³ *Ibid.*

²⁴⁴ *MV Treasure Oil Spill: 20 Years Commemoration*, [Available online]: <https://sanccob.co.za/20yr-treasure-oil-spill-anniversary>, (Accessed 13 December 2020).

Foundation for the Conservation of Coastal Birds, together with an international team, including governmental and conservation authorities, as well as the Two Oceans Aquarium, worked together to de-oil and rehabilitate these birds – the largest animal rescues operation in the world to date.²⁴⁵

Finally, in lieu of EID's and the complexity they bring to an investigation on the eco-tourism, extraction nexus, one can also note the utilization of expertise or messaging by either side to help further the processes of the other. For instance, I&J is one of South Africa's largest fisheries, a large extraction-based industry within South Africa. Yet, since the inception of the Two Oceans Aquarium, I&J, have looked to garner a partnership with the environmentally sustainable institution. As mentioned during the previous section of this chapter I&J supplied the aquarium with netted cages in which they could keep their initial exhibit specimens at Simon's Town.²⁴⁶ Furthermore I&J sponsored the second largest viewing tank within the aquarium which bares its name today.²⁴⁷ These acts are generally seen as corporate social investment, a method in which large industries give back to society using funds to sponsor causes which align with the company's interests. Here I&J can utilize the green branding of the Two Oceans Aquarium to which they can attach their own image brand to emphasize environmentally conscious and sustainable practices.

This section has not only pointed out how aquaria such as the Two Oceans, overcomes many of the economic critiques of other eco-tourist operations but also how it can contribute to a discussion on EID's and the ecotourism-extraction nexus. Both articles utilized so far have shown the aquarium in a majorly positive light. The final article like the one before brings about an interesting consideration when contemplating eco-tourism. R. Fletcher in an article entitled "Eco-tourism After Nature," asks the reader to consider whether the messaging and core drivers of eco-tourism has not changed subtly over time. Whereas scholarship generally notes the messaging of eco-tourism to be: 'conserving nature so that we have it for tomorrow,' Fletcher contends that this is no longer the case. Rather Fletcher writes:

"I contend a common strategy seems to entail shifting from selling an encounter with nature to selling an experience of the end of this nature as a novel tourism product, I

²⁴⁵ *Ibid.*

²⁴⁶ McEwan. Telephonic interview, 02 November 2020.

²⁴⁷ Lennox. Ethnographical field work, 11 November 2020.

argue the rise of Anthropocene tourism can be understood as a significant form of disaster capitalism.”²⁴⁸

The topic of the Anthropocene is a popular one and is a subject matter that Fletcher seeks to build on within this article. At its core, the Anthropocene era is seen as a new geological epoch in which, it is argued, humanity has irrevocably altered the way in which nature works and thus our impact as a species on earth should be differentiated from the previous geological epoch i.e., the Holocene period.²⁴⁹ Since Gren and Huijben first applied the concept of the Anthropocene to tourist studies looking at how this shift in broad environmental terms would impact the industry other authors have added to this line of thinking.²⁵⁰ Discussion of the Anthropocene is particularly relevant then to the topic of the aquarium, in which there is a forced interaction between the human and the marine environment. Aquariums by their nature are human constructs of natural environments, and thus can be viewed as an absolute impact on nature – the removal and exhibition of nature from a purely human perspective. But these aquariums do not only have an environmental impact but also a major social impact, in that they are many times the first point of contact between the public and marine species which are rarely encountered outside these institutions. Aquariums then for the general populous act as a knowledge basis of marine life, in which their quantitative information is unquestioned. Here then Anthropocenic theory in which it is believed that nature is irreversibly tied to human interaction is seen in full display. The aquarium along with other zoological institutions that are purpose-built as tourist destinations provide unique case studies in the role of the Anthropocene on the wider tourist market.

Fletcher highlights a point made by Purdy who in 2015 asked the question: if the Anthropocene is seen as after nature, what then does this mean for the future of eco-tourism?²⁵¹ According to Fletcher this question takes on even more importance when one considers that eco-tourism is seen as a primary method of financial and institutional support for protected areas.²⁵² Building on the points made by Gren, Huijben and Purdy – Fletcher argues that the utilization of disaster capitalism is the way in which eco-tourism maintains itself in an Anthropocene era moving

²⁴⁸ R. Fletcher. “Ecotourism After Nature: Anthropocene tourism as a new capitalist fix”, *Journal of Sustainable Tourism*, (27), (4), 2019, p.523.

²⁴⁹ Fletcher. “Ecotourism After Nature: Anthropocene tourism as a new capitalist fix”, p.523.

²⁵⁰ *Ibid.* p.524.

²⁵¹ *Ibid.* p.525.

²⁵² *Ibid.*

forward.²⁵³ Fletcher believes that through the use of the large scale destruction of nature offered by an Anthropocene world as a major crises, tour operators now sell the very end of nature referred to by Purdy to the paying public as the destination and the prize.²⁵⁴ To emphasize the rapid expansion of these methods Fletcher, refers to a number of modern tourists methods that sell the end of nature. These include dark/disaster tourism where tours are conducted in areas which have been stricken by disaster, of course Chernobyl is the most famous of these. Fletcher also mentions last chance or extinction tourism, in which the experience sold to the tourist is the imminent disappearance of a species or landmark (e.g., Icebergs). Anthropocene tourism has even taken route in still exhibition locations like museums in which the impact humans have had on nature are displayed.²⁵⁵ The application to an aquarium or zoo is clear. In relation to the last article this chapter suggested the core argument made by many aquaria and zoos today is that if these animals are not protected at their institutions, they face extinction in the wild, due to a variety of reasons. This by its very nature is an argument for the end of nature. Aquaria and zoos no matter their green messaging and environmentally conscious practices are still man made, thus the fact that they retain animals that would otherwise be in a natural environment emphasizes the very end of nature facilitated by the Anthropocene.

To what extent the Two Oceans Aquarium explicitly makes use of this narrative is questionable. It is argued that Two Oceans is aware of the impact it has on nature. The aquarium focuses on messaging emphasizing the sustainability of nature and the role in which society can help foster natural environments, rather than the end of it. Yet there are elements within the aquarium that implicitly refer to the Anthropocenic impact humans have had on nature – with specific focus on water and industrial pollution. One of the aquariums very few “still” exhibits (an exhibit without living specimens) is a multi-level walkway “dedicated” to the impact pollution has had on the oceans. As part of the exhibit the aquarium has had a whale skeleton crafted completely from human garbage.²⁵⁶ This is an apt artistic portrayal of that end of nature narrative explicit to Fletcher’s argument.

²⁵³ Disaster capitalism is a term first coined by Naomi Klein in her book in the *Shock Doctrine* in 2007. It refers to the trend in neo-liberal economics to take advantage of major disasters in order to adopt economic policies that would generally not have been accepted before said disaster.

²⁵⁴ Fletcher. “Ecotourism After Nature: Anthropocene tourism as a new capitalist fix”, p.526.

²⁵⁵ *Ibid.* p.527.

²⁵⁶ Lennox. Ethnographical field work, 11 November 2020.

4.4 Conclusion

The primary purpose of this chapter was to differentiate the Two Oceans Aquarium from its Capetonian predecessors. This chapter has argued that although St. James Aquarium and Sea Point Aquarium may have both been classified as aquariums, their function and purpose were institutionally different. This chapter concludes that it has successfully accomplished that task in several ways. Firstly, by defining the aquarium as a commercial institution rather than a public aquarium, it is noted how the management structure of the aquarium and the economic drivers of the aquarium are unique. The chapter went on to show how due to its commercial nature the aquarium had to please a paying public. This in many ways informed how the aquarium is run. From the variety of entertainment specific species like the turtles, sharks, penguins and clown fish that are needed to sate the demands of a viewing audience, to the ability of the aquarium to brand itself as an eco-tourist destination to meet green expectations of an ever-growing environmentally conscious public.

The chapter then argued that by defining the aquarium, along with other international aquariums that have similar messaging to the Two Oceans Aquarium as eco-tourist destinations we can add not only to the growing body of literature on the topic – through the novel view that certain aquaria and zoos do meet the requirements of eco-tourism. Moreover, it further explores the environmental branding of these aquariums through this eco-tourist lens. This thesis then sought to evaluate the Two Oceans Aquarium as an eco-tourist's product through the literature from three academic sources. This chapter more than any other strongly relates to the overall dissertation's argument that aquariums are a unique way in which to study the interaction between environment and human elements. Specifically, in indicating how public identities (in this case environmental conscientious) is reflected through the way in which aquariums and other such environmental institutions brand themselves.

5. Chapter 5: Can Fish Be Fun? The History of Fish-Based Recreation in South Africa

5.1 Introduction

This thesis so far has attempted to create a suitable timeline of public aquaria within the Cape region. The dissertation has sought to highlight the peculiarity in the origins of the Cape's aquaria, as both St. James Aquarium and Sea Point Aquarium were situated within a sort of limbo in the nexus of public viewing. Two Oceans Aquarium was the first dedicated public aquarium, but its late arrival in the 1990s only emphasizes the unique trajectory of Cape aquaria in relation to Britain and Australia.

This chapter then seeks to further the discussion on marine culture, particularly the way colonial ideologies influenced recreational marine identity in South Africa. This is done through the perspective of aquatic hobbies, which had their own unique impact not only in the marine culture of the country but also South Africa's waterways. Therefore, not only are socio-political and socio-cultural aspects discussed here, but also socio-environmental concerns. The hobbies discussed in this chapter include angling practices and ornamental fish keeping.

Both hobbies have a significant historiography both at a South African and international level, yet the interplay between the two is understudied. This chapter proposes that through the utilisation of natural acclimatization theory we can better understand how private recreational fish culture in South Africa began and importantly provides a useful method of situating it within the wider international context. Thus, the chapter asserts that South Africa has a deep and complex history with regards to recreational fish culture, one that was deeply entrenched into the psyche of many South African's before the arrival of aquaria in the country.

5.2 Why there are Alpacas in Britain and Antelope in Australia – A History of Acclimatisation Policy

Acclimatisation is complex in its definition. Today the broadest modern definition can be found in most dictionaries: "*to adjust or adapt to a new climate, place, or situation.*"²⁵⁷ Yet the complexity of the word derives from its varied uses in different fields. The British Medical Journal had already indicated the inclusion of literature on the subject in relation to British

²⁵⁷ Merriam-Webster Dictionary. *Define – Acclimatisation*, [Available online]: <https://www.merriam-webster.com/dictionary/acclimatize#h1>, (Accessed 21 September 2020).

colonists who had been settling in the vaguely termed tropics. In 1897 Mr. G. Sherman Bigg, considered two possible derivatives of acclimatisation.²⁵⁸ He mentions that if the Englishman was seeking to take care of himself and act upon necessary precautions to avoid sickness such as: “select his place of residence and to change it with the changing of the seasons.”²⁵⁹ Then not only is the idea of acclimatisation possible, but settlers are already accomplishing such feats. Yet, if when referring to acclimatisation one means to say that the settler could be, “trained to withstand the effects of climate as the native of the place does...”²⁶⁰ Then in the professional opinion of Mr. Bigg that was an impossibility. To the scientific mind of the 18th and 19th century acclimatisation was not a means of fully immersing oneself in the new environment, as one might say: “going native”, but rather a process by which a settler could through careful practises utilise the environment without terminal effect.

Although the term and its complexities have long been debated, scholars are certain about its origins. As with so many modern scientific concepts, acclimatisation found its origins in the period of French enlightenment in the late 18th century.²⁶¹ According to Abbé Féraud in writings from 1787, the term acclimatised was first coined by the renowned French critic of European colonization tactics – Guillaume–Thomas Raynal, and by 1835 had gained academic legitimacy by being included as a verb in the dictionary of the Académie Française. At that point the term according to Féraud was defined as an organism being habituated to a climate. But the utilisation of the term by both Féraud and Raynal had no larger discourse attached to it other than its definitive meaning. Rather the theory of acclimatisation as used within this chapter is attributed to Isidore Geoffroy Saint-Hilaire, a naturalist at the Paris Muséum National d’Histoire Naturelle.²⁶² His work was informed by both the animal evolutionary theories of contemporary scientist Lamarck and Cuvier, yet he positioned his own theories on physiological and genealogical transformation as a moderate centre point between the radical theories of the two scientists.

²⁵⁸ G. Bigg. “Acclimatisation of Europeans in the Tropics”, *The British Medical Journal*, (1), (1881), 1897, p.176.

²⁵⁹ *Ibid.*

²⁶⁰ *Ibid.*

²⁶¹ M. Osborne. “Acclimatizing the World: A history of the paradigmatic colonial science”, *Osiris*, (15), 2000, p.137.

²⁶² *Ibid.* p.139.

Harriet Ritvo is succinct in her explanation to why theories espoused by naturalists such as Saint-Hilaire and his contemporaries gained such traction in the 18th and 19th century, she writes:

“To put it in a nutshell, in the course of the eighteenth century (and at least in the view of some fortunate people in some contexts), wild nature began to seem less terrifying and more exhilarating. As has been frequently recognised by scholars, Romantic art and literature provide profuse evidence of this major transition in Western sensibility. This shift also affected activities and institutions whose professed focus was more pragmatic. It can, for example, be traced in the practices of the nineteenth-century zoos and, especially, in the acclimatisation societies with which they were often associated.”²⁶³

Ritvo shows how European sensibilities about the “wild” had changed. With major scientific breakthroughs in both natural theory and scientific equipment, modern scientific perceptions of the zoological world were becoming more apparent. In this way the European public began to ‘acclimatize’ to a tamer image of their colonies varied natural landscapes. To a point where collectors, began to investigate the possibility of keeping these exotic specimens within their own private collections. It is then this shift in perception that would impact the way in which acclimatisation theory would become closely associated with menageries and zoological gardens.²⁶⁴

Colonial acclimatisation policy would become so popular that in 1860 famous French botanist August Hardy who was renowned for his position as director of the Jardin d’essai in Algiers, would say: “the whole of colonization is a vast deed of acclimatization.”²⁶⁵ The two major agents of the process being Britain and France. It should be noted here, however, that as with so many other colonial policies, the French and British were at a disagreement to what the theory of acclimatisation meant and how it should be applied in their colonies. The French saw acclimatisation as a largely biological shift, where the term came to signify a forced adaption of a new environment. However, the British tended towards seeing it merely as a rational and scientific explanation for the transfer of exotic flora and fauna either from Britain to the colonies or vice versa.

²⁶³ H. Ritvo. “How Wild is Wild?”, *RCC Perspectives*, (1), 2014, p.19.

²⁶⁴ Osborne. “Acclimatizing the World: A history of the paradigmatic colonial science”, p.136.

²⁶⁵ *Ibid.*

Of these two proponents of acclimatisation Ritvo designates France as the more dominant implementer. British acclimatisation societies such as the Society for the Acclimatisation of Animals, Birds, Fishes, Insects and Vegetables had already begun to lose their financial backing and support by the 1860s.²⁶⁶ In contrast however, the prominent Société d'Acclimatation was supported at the executive level due to its extensive colonial network. In 1874 the French society would see the opening of the Jardin Zoologique d'Acclimatation, which within Europe would be sure to stand apart from other zoological gardens. Although it did have its public exhibitions of animals that spectators had come to expect including big cats, elephants and the lot, the garden was designated as a laboratory in which to study the impact and effects of acclimatisation. It was said that early exhibitions at this zoological garden situated at Bois de Boulogne emphasized the economic importance and potential of the French colonies, displaying those flora and fauna thought to be pragmatic in their use for French development.²⁶⁷

Although Britain did not find the same success at home as France did, within the colonies this was not the case. By 1900, worldwide there existed 50 such acclimatisation societies noted in the following colonial regions: South America, Australia, New Zealand, South Africa, Algeria and India.²⁶⁸ Academics place specific emphasis on those situated in Australia and New Zealand. The most famous of these being the Victorian Acclimatisation Society which was initiated in 1861.²⁶⁹ The primary reason for the popularity of those acclimatisation societies in Australia and New Zealand was explored by Ian Tyrrell.

Tyrrell does so through his investigation of the famous American conservation pioneer George Perkins Marsh. He explained how acclimatisation was not much associated with America during the 19th century due to the newly founded country breaking ties with Britain prior to the popularization of acclimatisation theory in 1776, at which point America had declared intellectual independence from the European continent.²⁷⁰ But for Tyrrell a more prominent reason was that of recreational habits of the British gentry. Tyrrell writes that academics have long attributed British acclimatisation in Australia to the recreation of hunting: “Unsatisfied

²⁶⁶ Ritvo. “How Wild is Wild?”, p.20.

²⁶⁷ *Ibid.*

²⁶⁸ Osborne. “Acclimatizing the World: A history of the paradigmatic colonial science”, p.136.

²⁶⁹ Although not cited here, the book: P. Minard. *All Things Harmless, Useful and Ornamental: Environmental Transformation through Species Acclimatization from Colonial Australia to the World*, (North Carolina, North Carolina University Press, 2019). Provides a detailed history of the Victoria Acclimatisation Society.

²⁷⁰ I. Tyrrell. “Acclimatisation and Environmental Renovation: Australian perspectives on George Perkins Marsh”, *Environment and History*, (10), (2), 2004, p.159.

with Australia's native wildlife, the gentry introduced foxes, deer and rabbits for their gentlemanly pleasures."²⁷¹ In America this was not the case, Tyrrell points to the fact that there was a large number of wolves, bears and other large game, which provided suitable substitutes for British hunters.²⁷²

Acclimatisation was then wildly popular as it provided a rationale for the increased transportation of animals and plants around the colonial empire. This was done under the pretence that there was value to be had if they could acclimatise economically valuable flora and fauna to different areas of the European colonial network. A good example of this can be found when examining the importation of antelope from Europe and the large curassow bird from South America to Australia in the 1860s. Reasoning that these animals would provide Australian inhabitants (especially colonial settlers) with a break in the monotony of meats already available in Australia such as mutton and beef. The curassow was also designated as a potentially economically viable species due to its superior size to other poultry, thus providing larger yields.²⁷³ European settlers also sought to partake in recreational activities such as hunting and angling in much the same way they had in their homelands. Thus, when the colonies wildlife was not able to offer the same experiences, the settlers turned to indigenous species from their own homeland that would provide a suitable alternative.

A final note on acclimatisation must be made on its ecological impact. It is indeed this factor that would spell the end of the large and unchecked transportation of animals worldwide. Osborne writes:

“Acclimatization activity, like colonization itself, forced consideration of environmental issues, including the conservation and preservation of indigenous flora and fauna. Acclimatization was a part of colonial agriculture, whose practices have been identified as responsible for both massive environmental degradation and the birth of environmentalism.”²⁷⁴

The concept of environmental degradation and environmentalism plays a pivotal role in modern environmental history literature today as shown in chapter four of this thesis. Studies

²⁷¹ Tyrrell. “Acclimatisation and Environmental Renovation: Australian perspectives on George Perkins Marsh”, p.159.

²⁷² *Ibid.*

²⁷³ Ritvo. “How Wild is Wild?”, p.21.

²⁷⁴ Osborne. “Acclimatizing the World: A history of the paradigmatic colonial science”, pp.140 – 141.

on ecological damage caused by alien species, dominating an environment to which they have acclimatised is not a new one. Famously it was noted in a copy of *Nature* from 1870:

“The English Acclimatisation Society fortunately came to an end, before it had time to do any harm here...”²⁷⁵

Acclimatisation policy of the 19th century still sees its longstanding impact on wildlife today. Ian Tyrrell cites the case of the infamous ware rabbits which were introduced into Australia in the 1850s and are still a noticeable issue for conservation efforts today. Closer to home and a history that will be discussed in larger detail in the following section is that of Trout and Carp that were introduced into South African waters in the 1870s, and today still plague conservation efforts to rehabilitate indigenous species.

5.3 The King’s Sport and its Introduction into South Africa

5.3.1 Historiography:

Within this short section on the contextual history of angling the focus is not to give a detailed account for the timeline of angling. Fishermen have been present in human culture from as early as the concept of society and civilisation have been around. Thus, in such a broad and somewhat obscure history it is essential for this section to situate itself with some particularity. Attention will be given to angling rather than fishing.²⁷⁶ Furthermore, as this chapter attempts to argue that colonial acclimatisation policy was a major factor in the introduction of angling in South Africa, the focus should be on evaluating the popularity of the sport within the British homeland. Even this is a rather dubious task as light research into the topic of English angling provides for an overwhelming body of literature. To put this in perspective J.I. Merritt in an article for the *Princeton University Library* writes specifically on the variety and essential books regarding angling. Merritt notes:

“The proliferation of angling titles since the 15th century speaks for itself. The total number of editions of books in English on fish and fishing may well run to five figures; some seven thousand of these may be found in Firestone Library...”²⁷⁷

²⁷⁵ Osborne. “Acclimatizing the World: A history of the paradigmatic colonial science”, p.140.

²⁷⁶ The distinction is made by the objective of the activities, whereas fishermen partake in the act of fishing with the express purpose of providing a form of sustenance for either themselves, dependents or for commercial value. Angling and anglers are denoted by its main motivation of recreation or competition.

²⁷⁷ J.I. Merritt. “Angling Books”, *Princeton University Library Chronicle*, (41), (1), 1979, p.30.

Here then two essential facts are apparent: firstly, that fishing, and angling have been studied and transcribed to literature as early as the 15th century, proving to some extent how ingrained into British culture the recreation truly is. Secondly, it seems that one must situate themselves with even greater precaution in British angling culture. In this section that task will be accomplished by pointing to the creation and proliferation of angler's clubs in Britain from as far back as the early 19th century.

The idea to highlight the popularity of British anglers' clubs came about after coming across an article written by a team from the British Canal and River Trust. The article attempted to pinpoint Britain's oldest angling club. Although the article is very informal in its composition, it does go on to list a number the clubs' information that might have been impossible to obtain otherwise. The article refers to a list initially drawn up by Michael Nadell in his book: *Poles Apart: The History of London Roach Pole* (2013). The list is of angling clubs already established by 1881, on which Nadell had made 127 entries.²⁷⁸ These clubs received initial impetus after the passing of the Friendly Societies Act. The act initially established in 1793 and implemented by Member of Parliament, George Rose, had the express purpose of reforming poor laws in Britain to the end of the 18th century.²⁷⁹ The purpose of the act was to encourage the formation and registration of 'friendly societies' revolving around common interests – with the hope that through such communality social mutual aid would be made more readily available, with the goal being a bottom-up welfare programme.²⁸⁰

This act then may not have been the origin of angling societies but at least allowed for this historical recording of them. From these registrars Nadell and in turn this article was able to trace at least some of these clubs' histories. It is proposed that the oldest British society came after the 1817 reiteration of the Friendly Societies Act with the establishment of a friendly society in Salford for the benefit of local anglers, they obtained fishing rights on the river Irwell, but no further details are given.²⁸¹ Following this the article points to the Newcastle-on-Tyne

²⁷⁸ Canal and River Trust. *Which Really is the World's Oldest Angling Club*, [Available online]: <https://canalrivertrust.org.uk/enjoy-the-waterways/fishing/related-articles/the-fisheries-and-angling-team/which-really-is-the-worlds-oldest-angling-club>, (Accessed 23 September 2020).

²⁷⁹ M. Gorsky. "The Growth and Distribution of English Friendly Societies in the Early Nineteenth Century", *The Economic History Review*, (51), (3), 1998, p.491.

²⁸⁰ *Ibid.*

²⁸¹ Canal and River Trust. *Which Really is the World's Oldest Angling Club*.

based Waltonian Club,²⁸² which was established somewhere between 1822 and 1824, although today the society no longer exists. The title for the oldest society which still fishes in the same waters was given to the Amwell Magna Fishery Company which was established in 1831. Within London two groups are still in existence today - the True Waltonian Society established in 1830 and the Piscatorial Society founded in 1836.²⁸³

These clubs are just some of the more noticeable out of the list of 127 clubs drawn up in 1881. But it does go to prove the popularity of angling in Britain in the 19th century. Although generally referred to as the Kings sport due to its practise by the British nobility in the 15th and 16th century, from the end of the 18th century onward the sport of angling was of much broader appeal to the British public. It stands to reason then with the growth of the British empire in the 19th century, and the advent of settlers (not just explorers and missionaries) moving to the colonies so too would their recreational hobbies follow them. Thus, within this voluntary diaspora, this chapter argues, clearly lies the origins of the South African angler.

5.3.2 The 'Barren' Waterways of South Africa Become Alien

This chapter then moves onto anglers in South Africa. Here colonial acclimatisation takes place in two distinctive ways. Firstly, under what was termed by Ian Tyrell as the “Australasian method”, it will be shown how European settlers who sought to practise the sport of angling in South Africa were unsatisfied with the fauna of South African rivers and waterways, and brought in fish that they were more accustomed to from their home land as a substitute.²⁸⁴ The work of Malcolm Draper is of utmost importance, as his article on trout, its importation and the resulting sociological impacts clearly define the Tyrell Australasian approach in South Africa. This is a topic which not only Draper emphasizes but so too does Duncan Brown in his book: *Are Trout South African? Stories of Fish, People and Places* (2013). The section will then also point to the institutionalization of angler’s societies, as the sport grew in popularity so too did the amount of people partaking – this then would lead to the formation of groups with likeminded individuals, who could share their experiences or information as it related to

²⁸² Note that several of the societies in England refer to themselves as Waltonian societies, these clubs are named after Izaak Walton who many in Britain see as the first true angler after he released his work *The Compleat Angler* in 1653.

²⁸³ Canal and River Trust. *Which Really is the World's Oldest Angling Club*.

²⁸⁴ Tyrell. “Acclimatisation and Environmental Renovation: Australian perspectives on George Perkins Marsh”, p.159.

the sport. This in its own way helped to acclimatise European settlers to their new colonial environment by creating social and supportive networks.

In 2003, environmental sociologist Malcolm Draper²⁸⁵ showed how settlers sought to adapt their new surroundings with environmental ‘trinkets’ from their homeland – i.e., European cattle and sheep or the planting of imported trees.²⁸⁶ Importantly for this section, the article mentions that the King’s fish - the salmon has never been acclimatized to the South African waters – for the angler this was a permanent symbol of their distance from their ancestral homeland. The cultural importance of acclimatising the lesser Salmonidae – the trout successfully is referenced by Draper:

“I want to show that the acclimatization of trout is a powerful metaphor for appreciating, at the level of the elite at least, a search for identity in a settler society. What piscatorial naturalists wanted to see was not so much an empty landscape, but a vacant ecological niche into which their favourite fish not only harmlessly slotted but, in so doing, enriched life in the southern hemisphere.”²⁸⁷

According to a study on the status of the aquaculture environment in 2007, conducted by the Department of Trade and Industry (DTI): The earliest recorded history of acclimatisation practices comes to South Africa as early as 1896 when trout were imported for recreational purposes.²⁸⁸ This fact is emphasized by both the Food and Agriculture Organization of the UN who further informs the reader that it was the rainbow trout species (*Oncorhynchus mykiss*) that was introduced in 1896,²⁸⁹ We are also provided information by the tourist website titled simply: *South Africa* which coincides with the previous two sources, it further mentions the fact that these trout introduced in 1896 were sent to a farm built by Mr. John L. Scott, who had already built a hatchery in the Jonkershoek valley just outside of Stellenbosch in 1894 which today is a natural heritage site.²⁹⁰ It is clear then that Draper’s sentiments are here echoed with the main purpose for the importing of trout simply to meet a recreational objective.

²⁸⁵ M. Draper. “Going Native? Trout and Settling Identity in a Rainbow Nation”, *Historia*, (48), (1), 2003, p.57.

²⁸⁶ *Ibid.* p.56.

²⁸⁷ *Ibid.* p.57.

²⁸⁸ Enviro-Fish Africa (Pty) Ltd (prepared). “A Study of the Status of Aquaculture in South Africa – Volume 1”, *Department of Trade and Industry of South Africa*, 2007. p.7.

²⁸⁹ “National Aquaculture Sector Overview – South Africa”, *Food and Aquaculture Organization of the United Nations, Fisheries and Aquaculture Department*, 2015.

²⁹⁰ *Freshwater Fish Farming in South Africa – Aquaculture in South Africa*, [Available online]: <http://southafrica.co.za/freshwater-fish-farming-south-africa.html>, (Accessed 10 June 2020).



Images 12 & 13:(Left) showing Mr. Watermach looking on as trout are netted, (Right) Showing Adam Adams who worked on the hatchery for many years.²⁹¹

Although all three of these sources cite an article written by authors T. Hecht and P. Britz in 1990,²⁹² in a later article published in 2012 authors P. Britz, J. McCafferty, B. Ellender, and O. Weyl provide conflicting information that shows that the history of recreational fish breeding in South Africa dates even further back to as early as the 1700s. The article reads as follows:

“The common carp, *Cyprinus carpio*, was the first of the popular alien recreational angling species to be introduced into South Africa. It was initially introduced in the 1700s by British Colonists for ornamental purposes, and for its believed potential to provide food from South Africa’s apparently ‘barren rivers’.”²⁹³

The common carp was also farmed at the hatchery in Jonkershoek in 1896 at the same time as trout were being introduced.²⁹⁴ Both fish species served the same purpose. The fish were to be tools used in a concerted effort to ‘normalize’ South African waterways with species that they better understood, providing a recreational outlet in the form of angling for the settler.

Above, only the reasoning behind the importation of these fish species was explained. However, the process was more complicated and included several acclimatisation pioneers. Lachlan MacLean was the first to experiment with acclimatising trout in South Africa. Although, many of his attempts ended in failure he proved the viability of the fish species in

²⁹¹ R. Weaver. “The Historical Jonkershoek Hatchery”, *Piscator*, (140), 2008, pp.25 – 27.

²⁹² T. Hecht. & P. Britz. “Aquaculture in South Africa: History, status and prospects”, *Aquaculture Association of South Africa*, 1990.

²⁹³ P. Britz., J. McCafferty., B. Ellender., & O. Weyl. “The Use of Water Resources for Inland Fisheries in South Africa”, *Water SA*, (38), (2), 2012, p.329.

²⁹⁴ *Ibid.*

the country.²⁹⁵ Ernest Latour – a professional piscicultures from England, had been hired by the Cape Government in 1892 to oversee the rearing a consignment of 70 000 brown trout at a Newlands hatchery. This would prove to be the first successful attempt to bring the fish to correct catching size in the colony.²⁹⁶ J.D. Ellis had made attempts in 1882, to acclimatise trout to the Eastern Cape waters, with a small-scale operation attempted in King Williams town – although like MacLean, this operation had ended in failure.²⁹⁷ The purpose of referring to the Jonkershoek fishery, rather than other operations in South Africa, is due to its relation to the foundation and beginnings of the ornamental culture in South Africa that will be discussed later in this chapter.

5.3.3 Finding Friends that Fish – South African Angling Acclimatisation societies

The primary objective of acclimatisation societies in the colonies was to bring to the colony key species to which they were accustomed. To evaluate the popularity of the sport in South Africa, this chapter applies the same method used in the British case study above. By investigating the introduction and evolution of angling clubs in South Africa, one can make some deductions of the success of the sport within South Africa.

Unlike in Britain in which clubs were recorded in a central place, due to the establishment of registers to keep track of friendly societies, the history of South African angling clubs is a lot more scattered. Thus, tracing an exact history of the development of clubs is difficult, however there is clear evidence of these angling clubs being introduced from the end of the 19th century. According to the website “Tight Lines”, a self-professed list of most angling clubs in South Africa there are at least thirty-four clubs listed. This does not seem to be a completed list as there seems to be several even smaller clubs in the Natal province that were not recorded. This list does depict clubs from all around South Africa and even the establishment of one in Swaziland, providing a picture in which angling as a sport grew to be enjoyed in every part of the country, giving some indication to both its popularity and its success.²⁹⁸

²⁹⁵ “The Early History of Trout Acclimatisation in South Africa”, *Piscator*, (108), 1981, p.8.

²⁹⁶ E. Herbst. “The History of the Cape Piscatorial Society”, *Cape Piscatorial Society*, p.1.

²⁹⁷ “The Early History of Trout Acclimatisation in South Africa”, p.8.

²⁹⁸ Tight Lines. *Anglers Clubs in South Africa*, [Available online]: <http://www.tightlines.co.za/Angling%20Clubs.htm>, (Accessed 28 September 2020).

Of all the clubs, two stand out with some distinction. Firstly, the Port Elizabeth Angling Society, amongst the oldest in South Africa established in 1883.²⁹⁹ Later changing its name to the Port Elizabeth Angling and Acclimatisation Society.³⁰⁰ In the newspaper article from the *Cape Daily Telegraph* in 1908 we receive some important information about the success of this angling association. Firstly, the noted change of the club's name to include the term "acclimatisation", again speaks to how influential this policy was to the sport in South Africa. The membership of the club given is about a 100 although only fifty of these members met for the club's annual function.³⁰¹ Indeed, 100 European members in a small frontier town on the Eastern Cape would be classified as relatively large. The article referenced above listing the South African angling clubs shows an average membership, even in this modern era at just above 30 to 40 members on average.³⁰² This club then with almost double the members in 1883 would point to a thriving community and more importantly to the popularity of the sport to the end of the 19th century. The newspaper article does make explicit mention to the fact that the club had seen a decrease in member numbers.³⁰³ Also to be noted in this article is the membership of Mr FW Fitzsimmons, who is more famous for being the major curator attributed with popularizing and updating the Port Elizabeth Museum from the end of the 1870s onwards. To create a larger collection of taxidermized specimens of local fish from the region, he had joined the society with a promise that for every 6 specimens sent to him, he would install one specimen into the museum in honour of the association.³⁰⁴ This agreement is of historical relevance in so far as it goes to show the interplay between early public nature-centric institutions in South Africa, both trying to come to terms and study the vast biodiversity of South African wildlife for their own purposes. Furthermore, reflecting similar trends apparent in Cape Town during Gilchrist's tenure at the South African Museum.

Also, of essential importance to the history of South African angling is the Cape Piscatorial Society (CPS), which was formally established in 1947, but saw a much longer legacy tracing its origins to the implementation of Act 10 of 1867.³⁰⁵ The act expressed the need to introduce fish that were not local to Cape waterways, closely after the introduction of trout into Australian waterways. The establishment of this club in the Cape region also received initial impetus

²⁹⁹ "Classifieds", *Port Elizabeth Telegraph*, 13 October 1883.

³⁰⁰ "P.E. Angling and Acclimatisation Society", *Cape Daily Telegraph*, 1 February 1908.

³⁰¹ *Ibid.*

³⁰² Tight Lines. *Anglers Clubs in South Africa*.

³⁰³ "P.E. Angling and Acclimatisation Society", *Cape Daily Telegraph*, 1 February 1908.

³⁰⁴ *Ibid.*

³⁰⁵ Herbst. "The History of the Cape Piscatorial Society", p.1.

through State legislature seeking to improve the usage of South African waters.³⁰⁶ It was then that the first iteration of the CPS was formed. Rather than angling as its primary directive as with its sister society in Port Elizabeth, the Western Districts Game Protection Association was formed to oversee a greater overall attempt to introduce trout into Cape waters than those of previous years.³⁰⁷ It was only in the second iteration of the CPS in 1902 when the club began to represent the Cape's angler interest. This second iteration would give way in 1931 to a third era under the leadership of Arthur Cecil Harris who had arrived in South Africa in 1917.³⁰⁸ Harris was himself a proficient piscatorialist and would go onto to write several scientific papers on trout, bass and exotic fish. Later also serving as the advisory officer for the Cape Inland Fisheries Department.³⁰⁹ In 1947 Harris would also establish *the Piscator*, a journal that sought to study angling and inland fish in South Africa, which would be a dedicated part of the Cape Piscatorial Society.³¹⁰ The CPS much like the early Cape aquaria served a dual purpose, although representing the interests of the hobby by 1902, the society had also been institutionalized in order to supplement marine research in the region.

It is again important to relate this back to the policy of acclimatisation. When doing so for both the Port Elizabeth based Angling and Acclimatisation Society and the Cape Piscatorial Society, it should be noted that even within the same country there was a differentiation in the application of acclimatisation policy. In terms of the Cape Piscatorial, acclimatisation was an important tool that would help naturalize the trout and carp to South African waters, with the focus being on improving economic yields in South African water ways. Yet, the Port Elizabeth Acclimatisation Society seems rather to focus on the anglers, the purpose of this club was to find likeminded enthusiasts to share the hobby with, and very much in the footprints of the British Friendly Societies, create a supportive social structure for the fisherman in this far-removed new environment for European settlers. Secondly, this paper asserts that both societies were amongst the oldest in the country and are the clearest in showing the European connection. However, that is not to say that there were no other angling clubs being founded in South Africa during the 20th century.

³⁰⁶ Herbst. "The History of the Cape Piscatorial Society", p.1.

³⁰⁷ *Ibid.*

³⁰⁸ *Ibid.* p.2.

³⁰⁹ *Ibid.* p.2.

³¹⁰ Cape Piscatorial Society. *From the Piscator*, [Available online]: <http://www.piscator.co.za/CPS2/from-the-piscator/>, (Accessed 29 September 2020).

According to the list set up by Tight Line, which does take information directly from these angling clubs websites, it seems that other than the above mentioned societies, the next oldest clubs would be the Rand Piscatorial Association which was started in 1912 and the East London Angling Association which was first founded in 1925.³¹¹ Following these early South African clubs, there seems to have been another upswing for the formation of angling societies in the 1960s, with the founding of the Nomads Game Fish Club, the Pretoria based Primrose Angling club and interestingly the Gauteng SA Police Freshwater Angling Club, which was a club set up for the exclusive use of those in the South African police service. More recently the rather popular D'Anglers Tiger Fishing Club was set up in 1984.³¹² The clubs listed here are all still in action today, which does show how the sport of angling has over the long 20th century remained popular in South Africa, after its introduction. Also, to note is the widespread nature of these clubs, although centred around the major South African hubs of Cape Town, Port Elizabeth and both Pretoria and Johannesburg, which proves that the sport of angling was not a uniquely Cape past time. Furthering an argument that marine culture did exist outside of the Cape region. An argument that will be further emphasised with the following section on the ornamental industry in South Africa.

5.4 All Things Beautiful and Ornate: The Ornamental Fish Industry in South Africa

5.4.1 Historiography:

It would be impossible within this one section to discuss the entire history of private fish keeping. Within the last two hundred years, the concept has so rapidly evolved that our fish tanks and bowls today would be of alien design to the hobbyists of the late 18th and early 19th centuries. So far, the inclusion of authors like Lance van Sittert, Duncan Brown and Malcom Draper have helped develop a historiography of marine culture in South Africa, with specific focus on Cape Town. Yet none of these authors have focused on captive fish. It is here then that we find a deviation from these earlier historical accounts. The focus here is to show briefly how the hobby of keeping fish had evolved between the 18th and 20th in Britain – concepts that would later be brought into the South African fold. The advent of the ornamental aquarium came decidedly later than the sport of angling. In this way an existing recreational fish culture allowed for the heightened popularity of these parlour ornaments by the mid-19th century.

³¹¹ Tight Lines. *Anglers Clubs in South Africa*.

³¹² *Ibid*.

The earliest modern ancestor to the ornamental aquariums kept in homes today, can be traced back to the “Wunderkabben”.³¹³ These large cases containing non-organic or taxidermized organic specimens first made appearances in the homes of the European elite around 1736 when it was first popularized by a Parisian art dealer Edme-Francois Gersaint, who in turn was inspired by the collections of Levinus Vincent.³¹⁴ Duffy argues that the Wundekabben became popular amongst the elites of European society as they became increasingly reinterpreted through the philosophies of Humanism and Enlightenment as:

“...an opportunity to explore what they had never seen and to make a sense of the ways in which their world worked...”³¹⁵

This chapter argues that the zoological displays of the late 19th century had an intrinsic effect on the English and later European public. These forms of entertainment provided new and exciting areas of interest for the young and old alike, creating a wider social discussion. This popularized the natural sciences and brought it to the forefront of the public imagination.

In the next 50 years or so the idea of the aquarium rapidly developed. As mentioned previously in this thesis by 1853 the London Fish House was opened in Regent Park. Technology and social curiosity had culminated in what would be the first real public aquarium. Private aquarium soon followed, fuelled by the necessity to capitalize on the popularity of the Fish House. Edwards’s book entitled *Life Beneath the Waters* was published only five years after the opening of that first public aquarium. The language used in the book shows, how the private aquariums had developed considerably. Edwards writes:

“An Aquarium should be constructed on such principles that it will be, to a certain extent, a world in miniature, being self-supporting, self-renovating and, in fact, nature on a small scale removed into our parlor.”³¹⁶

Here, in 1858 was it already conceivable to own an aquarium in one's parlour that was self-sustaining and self-renovating. Edward attributes these dramatic advances in the personalized aquarium primarily to the work of Robert Warrington. Warrington seems to have spent time working on circumventing the tedious task of replacing water in the fish tanks every day, an

³¹³ Translated from German: The Wonder Cabinet.

³¹⁴ R. Duffy. *The Age of Aquaria: The Aquarium Pursuit and Personal Fish-Keeping, 1850 – 1920*, (Delaware: University of Delaware – M.A. Thesis, 2018). p.4.

³¹⁵ *Ibid.* p.5.

³¹⁶ A. Edwards. *Life Beneath the Waters – or the Aquariums in America*, (New York: H. Baillière, 1858). p.15.

essential problem for smaller tanks but an impossibility for the large tanks used in public aquaria. In a paper read before the Chemical Society of London in 1850 he showed successful circumnavigation of this problem. In Warrington's own words: "...establishing such a collection, in which the animal and vegetable existences would be so balanced that the water shouldn't need changing."³¹⁷ This system utilized marine plants to keep the water oxygenated allowing for the quality of the water to stay viable for longer periods of time. This key advancement of a self-regulating ecosystem created large interest for scientific men like Gosse who until that point had attempted to keep fish alone in tanks to study their habits as he wrote in his book *Aquarium*.³¹⁸

The work done by Warrington was quickly expounded upon by other men of science such as Gosse, Messers, Hibberd, and Lankster.³¹⁹ These later works were popularized through their editorial transformation into self-help guides sold to the general public to help manage their own parlour aquariums. Most famous amongst these was *The Aquarium of the Deep: An Unveiling of the Wonders of the Deep* by Phillip Gosse published in 1854.³²⁰ Gosse's work is famous for the countless full-colour illustrations of several marine species indigenous to the British coast, amongst the first illustrative works to do so. Importantly Gosse was showing the British public the large variety of marine species that existed just within their own country, from areas like Belmont Bay to excursions at Wyke or his findings at the promenade on the Nothe.³²¹ This helped to capture the imagination of the public giving them a glimpse into what sort of creatures they could easily start to collect themselves. Edwards summarizes this point as follows:

³¹⁷ Edwards. *Life Beneath the Waters – or the Aquariums in America*, p.14.

³¹⁸ *Ibid.* p.15.

³¹⁹ *Ibid.* pp.13 – 14.

³²⁰ P. Gosse. *The Aquarium: An Unveiling of the Wonders of the Deep*, (London: J. Van Voorst, 1854). pp.xi – xii.

³²¹ *Ibid.*

“These two gentlemen [Gosse and Warrington], together with Messrs, Hibberd, Lankester and also a host of minor workers in this field of knowledge, have opened to the student of natural history an almost boundless and untravelled space, the outskirts of which are the useful and wonderful discoveries that they have given to him during the last four or five years, and which are so fascinating in all their details, that they attract and rivet the attention not only of scientific men, but of those who, until lately, have looked upon the votaries of science as forming a useless class.”³²²



Image 14: From Gosse’s Book - *The Aquarium: An Unveiling of the Wonders of the Deep*.³²³

By the late 19th century aquarists were now careful to differentiate their aquariums from the previous “fish globes” which only contained a few goldfish species. Aquarists felt so strongly about this distinction that when writing prescriptive literature, it became commonplace to make this difference explicit.³²⁴ The ornamental aquarium industry now started to show signs of development that would begin to replicate our own modern conceptualizations of the hobby. Not only had prescriptive literature become readily available, but those partaking in the hobby began to distinguish themselves from merely keeping a pet goldfish to maintaining a marine environment that was not only clean but had several exotic elements to it as well.

³²² Edwards. *Life Beneath the Waters – or the Aquariums in America*, p.14.

³²³ Gosse. *The Aquarium: An Unveiling of the Wonders of the Deep*.

³²⁴ Edwards. *Life Beneath the Waters – or the Aquariums in America*, p.15.

This historiography has shown how a combination of ornamental curiosity cabinets and the work of British naturalists propelled the popularization of marine life into the public sphere. This, in turn, created a new class of hobbyists, those who sought to collect and maintain living marine specimens within their own homes. Within the next section, the investigation will turn to the beginning of the South African industry and whether it drew any inspiration from its popular European counterparts. As noted in the opening paragraph of this historiography ornamental fish keeping was a late development in relation to British private recreational fish culture. Angling had long been established before the breakthroughs of Warrington and Gosse allowed for the modern conceptualisation of the ornate tank. Yet, in South Africa this is not the case, as acclimatisation brought angling to South Africa by the end of the 19th century so too did this policy of natural European hobbies bring the ornamental industry to South Africa around the same time.

5.4.2 The Pretty Fish in South Africa – The Establishment of an Ornamental Industry

The ornamental industry started relatively early in South Africa. In classified advertisements between 1860 and 1874, the *Cape Town Mercantile Advertiser* has several announcements for the sale of household furniture. Within five of these announcements, there is specific mention made of “ornamental aquariums” as part of the goods being sold. In an advertisement from 1860 entitled Modern Furniture, one of the items on sale reads: “an Aquarium for marine of freshwater objects.”³²⁵ In another one this time from 1865, the sale reads; “an Aquarium and Goldfish, Handsome Dog Cart, built by Parker Cambridge, and imported last year.”³²⁶ In 1866 an advert included “Milch Goats, fowls, Parrots and Cage, Aquarium choice plants in pots.”³²⁷

Although the earliest article in our records appear in 1860, all the articles in the publication deal with the reselling of goods and furniture, thus we can deduce that whoever had first purchased the aquarium had done so earlier than 1860. This is important as it may suggest that the earliest ornamental aquariums arrived in South Africa as part of the European settler’s household furniture. Thus, emphasizing the colonial impact on the origins of this hobby. It is also of some significance that the 1866 advert lists the selling of “choice aquarium plants”. As

³²⁵ “Modern Furniture”, *Cape Town Mercantile Advertiser*, 21 March 1860, p.2.

³²⁶ “Public Sale of Household Furniture &c, at Wynberg Hill”, *Cape Town Mercantile Advertiser*, 11 November 1865, p.6.

³²⁷ “No. 59: Mr. Moor will Sell as Above on Thursday 15th Inst at 10 o'clock”, *Cape Town Mercantile Advertiser*, 12 March 1866, p.6.

discussed above scientists like Warrington had only begun to understand the need for marine flora in these tanks to keep the water oxygenated around 1850. Here then it seems these lessons for keeping more effective aquariums had also quickly been introduced into South Africa.

The records above would point to a developmental pattern in South Africa that was almost in reverse to the British. Where the ornamental aquarium was established as a hobby in the country before even angling. However, this is not completely accurate, the history of angling in South Africa was evaluated through an organisational lens, as it traced the history of angling clubs rather than singular anglers. These early records of parlour aquariums being sold – should then be regarded as ornamental trinkets of the European settler. Such a perspective gives the reader no real understanding for the hobby's popularity but rather that the hobby did exist in some latent form from early on in South Africa's settler history. Real strides in the South African popularisation of the ornamental industry only came about in the mid-20th century, as will be detailed from here on.

The route of tropical fish development in South Africa is divergent. There are two distinct pathways, firstly that of aquaculture development and the work done in centralised hatcheries such as the Jonkershoek hatchery in Stellenbosch and the Pirie hatchery situated in King Williams Town. This development was done on a large scale predominantly from the 1950s onwards. The hatcheries served as centres of acclimatisation study, as fish were generally raised from ova in specific conditions to test for their ability to adapt to South African conditions before being distributed. This contrasts with the second pathway of ornamental development, which is centred around specific hobbyist shops, who would import exotic fish directly from overseas. At the level of the retailer, these operations were on a much smaller scale to those of the hatcheries, but were able to provide greater specialisation, allowing for an ever-increasing number of exotic species to be brought into South Africa for the discerning private collector.

In the introduction to this chapter, it was mentioned that although angling and ornamental fish culture seem opposed to one another ideologically, in South Africa the two hobbies have a shared history. This is not only due to acclimatisation policy but also through the shared history both hobbies have with the Jonkershoek Hatchery. Not only was it of essential importance as one of the earliest successful breeding grounds for angling species but served as the earliest aquaculture farm for tropical species in the country – most predominantly for a range of tilapia

species from 1958 onwards.³²⁸ Here, though it must be mentioned that unlike angling species which were acclimatised in the natural environment of South African waters, the same could not be done for tropical fish species. These species could not be naturally acclimatised due to a variety of bio-factors present in South African waters, most prominently water temperature being a limiting factor. Rather the fish had to be artificially acclimatised in water conditions that matched their own indigenous environments.³²⁹ Such a task necessitated the need for greater technical knowledge on the species housed at Jonkershoek.

Thus, the real impetus for development of the ornamental industry can be attributed to the work of the German immigrant Mr. George Reinhart, who first became attached to the staff of the Jonkershoek hatchery on 1 April 1958.³³⁰ According to oral testimony provided by Prof. Dirk Bellsedt, the importance of Reinhart's contributions to the ornamental industry cannot be underestimated. Bellsedt refers to Reinhart's commitment to the industry explaining how in his own free time, Reinhart would drive down to the Jonkershoek hatchery on weekends and open it to the public allowing them to come view and buy fish directly.³³¹ He would also take time to educate the public attending these weekend functions on the correct way to take care of these tropical species.³³² In a report by the Department of Nature Conservation in 1958 reference is made to Reinhart's employment, noting: "The Department [Nature Conservation] is now well prepared to meet the increasing demand for high quality ornamental fish and water plants."³³³ After his first year of joining the hatchery, Jonkershoek in its first year of ornamental sales sold: 1044 tropical fish, 2294 gold fish and 1825 water plants.³³⁴ These numbers show that larger quantities of tropical fish were being farmed at Jonkershoek successfully.

Reinhart was not alone in his endeavours to improve the acclimatisation and development of ornamental species in South Africa. Of some importance in this regard is also the work of Douglas Hey. Hey is a large figure in terms of South African fish culture, not only was he the first serving director of the Department of Nature Conservation of the Cape Province from 1952 to 1979, but his list of publications on private fish keeping in South Africa was of

³²⁸ "Report no 15: 1958", *Department of Nature Conservation*, 1958, p.101.

³²⁹ *Ibid.*

³³⁰ *Ibid.*, p.102.

³³¹ P. Bellsedt. Professor Emeritus at Stellenbosch University – Department of Biochemistry, Digital interview, 24 August 2020 interviewed by L. Lennox.

³³² *Ibid.*

³³³ "Report no 15: 1958", *Department of Nature Conservation*, 1958, p.102.

³³⁴ *Ibid.*

importance to academics, and hobbyists alike.³³⁵ In terms of publications he is best remembered for his book: *A Nature Conservationist's Look Back*, published by the Department of Nature Conservation in 1995, However, for the purpose of this chapter his book's *Fish Keeping in Ponds and Aquaria* (1965), *Practical Freshwater Fish Culture* (1971) and *Water is Lewe* [translated from the Afrikaans as *Water is life*] (1975), help set up an early body of literature on the keeping of tropical fish in South Africa.³³⁶ After his retirement from the Department of Nature Conservation in 1972, Hey remained a conservationist and advocate of environmentalism in South Africa. He served on the Royal Society of South Africa, the council of the Zoological Society and worked on several boards for both South Africa's botanical gardens and the South African Museum.³³⁷

Although Jonkershoek hatchery would serve to influence the development of ornamental fish in South Africa from an economic and public perspective, Bellsedt mentions several South African hobbyists' retailers who specialised in importing fish for the purpose of selling to private collectors. Here acclimatisation on a mass scale is not seen, rather the onus of acclimatisation practises turns inwards to the private residences of the collectors. Whereas for most of this chapter acclimatisation processes were accomplished by colonial acclimatisation societies, zoological gardens or professional specialists on a wide and generally public scale, the private collector would now have to acclimatise his own environment. But rather than be a task, this chapter argues that the ability to successfully acclimatise tropical and exotic species of fish by the private collector formed the very crux of the hobby in ornamental fish keeping.

It is than to these hobbyists that the specialist stores were marketed. Bellsedt begins by pointing to what he believes to be the oldest hobbyist store in South Africa – Jack Lemkus, was situated in Greenpoint. According to their website the store was established in 1935.³³⁸ Yet specialist stores were not only trading in Cape Town. In Gauteng, for instance, there were a pair of Dutch brothers who each owned a hobbyist shop. They traded in both Pretoria and Johannesburg.³³⁹ In fact, Gauteng's largest and most prominent trader was DuVal exotics (Ptd) Ltd, originally established by Mr. Len DuVal the store has been trading since 1960. DuVal exotics supplied

³³⁵ R. Bruer. "Douglas Hey", *Stellenbosch Writers*, [Available online]: <http://www.stellenboschwriters.com/heyd.html>, (Accessed 1 October 2020).

³³⁶ Bruer. "Douglas Hey."

³³⁷ *Ibid.*

³³⁸ "About Us", *Lemkus*, [Available online]: <https://lemkus.com/pages/about>, (Accessed 05 October 2021).

³³⁹ *Ibid.*

Reinhart with both tilapia and goldfish, while Reinhart was working for the Inland Fisheries Department.³⁴⁰ A point of interest regarding a network of tropical fish traders within South African provinces, and an early sign of the Industry ornamental fish would become. Finally, Bellsedt found it important to mention another Cape Town store front by the name of Tropicarium, started in the late 1950s this store was originally established by Mr. Dougie van Zyl. Tropicarium was famous for its international connections, and its ability to import fish from South America.³⁴¹

5.5 Conclusion

This chapter's primary purpose was to evaluate South Africa's marine culture in a wider scope. This chapter asserts that South Africa did indeed have a diffused fish culture, not informed by centralized natural displays. In Britain it could be argued that these natural public displays had a profound impact on the increased interest of the natural world by the wider British public, which in turn would help fuel environmentally based recreational hobbies like ornamental fish keeping. The late establishment of a public viewing aquaria in South Africa, to the end of the 1930s onwards would lead to the conclusion, that public aquaria did not in fact encourage the popularisation of both hobbies in the country but rather formed part of an ever-increasing interest in South Africa's aquatic biomes, which developed independently from the natural displays.

This chapter also argued that the pre-existing recreational fish culture evident in South Africa was founded through colonial acclimatisation policy. Essentially though when considering the impact of colonisation on developing countries, it is easy to focus on the impact that Europeans had on the human societies that existed in these regions, but this chapter goes to show that there is also a level of environmental impact. Recreational angling and ornamental fish keeping has irreversibly changed South Africa's waters.

This chapter more than any other is important within a narrative of the relation between settler identities and how it has informed South African marine culture. Within both hobbies clear influences have been delineated, whether it be the importation of European fish in order to naturalize angling towards a colonial knowledge basis, or the implementation of British

³⁴⁰ Bellsedt. Digital interview, 24 August 2020.

³⁴¹ *Ibid.*

scientific techniques like the use of marine vegetation to create a self-sustaining environment found within South African tanks. Even the employment of figures like Harris for angling and Reinhart for ornamental fish keeping, British and German immigrants respectively, would have profoundly affected recreational fish culture in the country, in much the same way Gilchrist impact early marine sciences. These examples point to a conclusion in which both public aquaria and the wider South African marine culture, was augmented by the colonial knowledge basis.

6. Chapter 6: General Conclusion

Aquaria are socio-environmental spaces with histories of their own, reflective of local context and broader global trends. When the marine world was brought onto land, spaces were created that act as a lens into South African history and the history of the discipline of marine biology in a way largely unconsidered in the historiography. These aquaria arranged around the Cape's shoreline have paralleled the rise of the country's marine sciences. Operating in different eras of the Cape's history, their institutional stories differ from one another in key ways: from their intended purposes to their management, to their intended audience, to their institutional demise. It is these differences that this dissertation has sought to explore.

One school of historiography has reconstructed South Africa's natural sciences as a series of biographies. This 'Big Man' story of science becomes the scientists' stories, which is one way of telling the history of marine biology in South Africa. Here one thinks of Dr Gilchrist's vision or the rivalry between Lancelot Hogben and Cecil Van Bonde, or J.L.B. Smith and his coelacanth. Science is, of course, the work of people and thus is impossible to separate one from the other. Thus, a major theme throughout this dissertation, and unlike some of the other themes that were chapter specific is the story of the scientist, their relationship to the aquaria and their ability to affect the 'lifecycle' of these institutions.

Gilchrist, whose story flows through the first two chapters of this dissertation, and where the greatest emphasis on personal history was placed. The existing historiography is positively biased in many respects. This favoured view of Gilchrist is drawn out of the many works that either refer to Gilchrist's work or focus entirely on his life.³⁴² Authors are generally unanimous in their assertions to Gilchrist's originating importance to the field of marine biology not only in the Cape but in the extended country. In the face of this historiographical hagiography, it remains important to contextualise Gilchrist and note that he did have his critics, who focused on his insularity when it came to topics other than the sea.³⁴³ The story of Gilchrist, especially as it is portrayed in chapter two, emphasizes the "Big Man" narrative so common in the history of South African natural science. His importance to our understanding of the Cape's marine life is unavoidable, but it was important for this chapter to temper such a fetishization of one man, by contextualizing the individual within the larger socio-political milieu. Gilchrist was

³⁴² Most prominently are the collections of work by A. Brown who spent much time writing about John Gilchrist.

³⁴³ A. Brown. *John D. Gilchrist, The St. James Aquarium and False Bay – Bulletin II*, (Kalk Bay, Kalk Bay Historical Association, 1999), p.26.

undoubtedly a product of the scientific ideas of the day. His successor – Lancelot Hogben was a critic of Gilchrist once describing him derisively as a “dedicated necrophilist.”³⁴⁴ Criticizing Gilchrist for his taxonomic approach zoology, a method that by the time of Hogben was outdated. As concluded in chapter two even the way the St. James Aquarium came to be modelled was a teleological revision of European marine stations – station that Gilchrist would have spent time in conducting his research.

The relationship Gilchrist had with the St. James Aquarium is unique. Chapter two analyses the relationship between South Africa’s oldest aquarium and the scientist who brought it into existence. It highlighted the exceptionalism of this case in which the young state sanctioned an institute built specifically to support the scientific efforts of only one man. The St. James Aquarium served as a marine station as a dedicated laboratory for Dr Gilchrist, and even as a home to his family. Its demise was also determined indirectly by Gilchrist. Gilchrist’s death saw the almost immediate disuse of the building, although Cecil van Bonde – a student of his – was given charge over the aquarium, Van Bonde never made any use of the building as either an aquarium or marine station.

Chapter three looked at Gilchrist’s successors. In his governmental position at the Sea Fisheries Department – Van Bonde and university successor Lancelot Hogben. Their mutual dislike of each other is the stuff of marine science legend. Authors like Brown and Day both point out how the relationship between the Sea Fisheries Research Institute and the Zoology Department at the University of Cape Town became strained from the mid-1920s onwards due to their professional rivalry, as neither was able to take up both the university and government positions as Gilchrist had once done.³⁴⁵ To what extent this rivalry did impact the larger institutional relationship is subjective, rather it was maintained in chapter three that the division was larger than just a simple fight between two men, and was caused by several factors. Lance Van Sittert’s work was key to this chapter, as he sets out an argument listing a combination of factors that would eventually cause the public and private spheres to come to a head with each other. From the 1920s onward, they were expected to meet both private and public expectations. The state demanded that marine biologist research be focused on improving a

³⁴⁴ A. Brown. “Centennial History of the Zoology Department, University of Cape Town, 1903-2013: A Personal Memoir”, *Transactions of the Royal Society of South Africa*, (58), (1), 2003, p. 14.

³⁴⁵ A humorous story in which Van Bonde locked Hogben and his guests out of the St. James, and then taunted him from the second-floor window, after Hogben had come to Kalk Bay by train, serve as a reminder of the personal histories these buildings encapsulate.

slow growing fisheries industry. Yet, at the same time, there was a private need to study a variety of topics outside of marine industrial efficiency. This eroded the relationship between private (research focused) institutions and public (production driven) institutions. This fragile relationship was only worsened by what Van Sittert refers to as government distrust in the marine sciences. The fishing industry's inability to compete at the same level as the agriculture or mining industry would cause the government to reconsider their funding of the science, and a notable lack of funding.

If a fish is released into an unhealthy environment, it risks a short lifespan. So too did the construction of the Sea Point Aquarium into a Cape marine scene suffering from infighting and stagnated growth impact the trajectory of the aquarium. Not only did the aquarium suffer from external human factors, but there was also noticeable internal human conflict that served to worsen the aquarium's outlook. The chapter relied on oral sources to create a picture of the internal professional environment of the aquarium, and although the staff running the aquarium seemed to go about their duties in a normal manner, the same could not be said about the staff designated with the maintenance of the aquarium. Poorly-defined responsibilities for the city council and public works department, would allow the respective parties to either go through bureaucratic channels, with a conscious knowledge that the permissions to handle the issues would be delayed – or they could simply claim that the task was not designated to them and that the aquarium should make a request to the other department to get issues fixed. Here again we note how the social milieu impacted on the aquarium, as lack of maintenance became so bad that the aquarium had to shut its doors to the public in the 1970s. The aquarium was revived by efforts that were refocused into converting the once public aquarium into a marine research station, strictly meant to support the work of scientists. The Sea Point research aquarium would even receive major upgrades in 1997 as detailed in chapter three. Both the Sea Point and St. James Aquariums are case studies in the impact science and the scientist can have on physical environmental spaces.

The last two chapters also explore the intersection of the individual and the institutional, the scientific and the social. The Two Oceans Aquarium is unique to the Cape region because, unlike its predecessors, the aquarium was entirely commercial in nature. The aquarium did not

benefit from public funding but rather was entirely the product of private investors.³⁴⁶ Here then it is important to note that in stark contrast to the previous aquariums, research was not a primary focus of the aquarium, rather the entertainment of a viewing public was of more importance. Thus, we move away from the very specific impact scientists had on the aquaria and rather now focus on how a wider public or community could also influence aquaria.

Today the Two Oceans Aquarium is known for its green message and its commitment to environmentally sustainable practices. Yet, as chapter four points out, that this was shaped by public demand. As the public became more conscious of environmentalism, green marketing and green businesses practices were implemented. The Two Oceans Aquarium has attracted the paying customer through marketing itself as an environmentally responsible institution. From its start in 1995, it was important for the aquarium to construct its image in such a way as to portray itself as a place of education rather than just entertainment. It was shown in chapter three that educational programmes were implemented in some way at the Sea Point Aquarium, however there was never a major impetus to seek out the youth and educate them. Rather the program at the Sea Point Aquarium revolved around school groups being hosted by the aquarium. In contrast the Two Oceans Aquarium has developed a more involved program including community outreach in underdeveloped areas around the Cape metropole in order to bring marine life to the youth who cannot afford to travel to the aquarium. In 2020 the aquarium also launched their digital program in order to reach a larger South African audience as well as an international one. On a global scale the Two Oceans Aquarium is not exceptional in this regard, the implementation of educational and youth programmes is commonplace, and can generally be found on the webpage of any prominent aquarium internationally.³⁴⁷ This then adds to the argument that in modern times the implementation of environmentally conscious programs is important in construction of the aquariums public image.

The final chapter in this dissertation moves away from the physical aquariums to focus its attention on the wider marine culture in South Africa. This chapter seeks to emphasize the major impact the human can have not only on physical spaces such as aquariums but also on a

³⁴⁶ The interview with Tony McEwan was of utmost importance in understanding the private structuring and funding of the aquarium. He had been involved with the aquarium from the very beginning and thus was able to give an account onto how the funding for the aquarium was obtained.

³⁴⁷ The U-Shaka marine world aquarium in Durban, Natal, (South Africa's other prominent aquarium) also has a well-developed educational programme. And more information can be found on their website: <https://www.saambr.org.za/education/>

wider socio-environmental scale. This chapter focused on providing a brief description of other aquatic based recreational activities to show how marine culture was not focused on public cultural hubs like the three aquaria discussed before, but rather that the country had a pre-existing and diffused ‘aquatic culture’. The thesis made use of angling and ornamental fish keeping in order to sustain this argument. It explained the doctrine of ‘acclimatization’, which provided zoologically enthused European collectors with a universalist argument in their removal of indigenous flora and fauna and their insertion of alien animals into local environments. Acclimatization had one of the most resounding and long-lasting impact on several different habitats globally. This is especially true for South African waterways: the introduction of the common carp and later trout as angling species had a massive impact on other indigenous species of fish that shared those rivers and dams.³⁴⁸ The importation of tropical species of fish for private collectors in the early 1950s was a modern application of that old acclimatization policy.

This chapter most closely relates to the work of Malcolm Draper and Duncan Brown. In Draper’s work, the trout is used as an extensive metaphor in developing ideas on how environmental traditions linked colonial settlers to their ancestral homes further arguing that the introduction of these species into colonial landscapes introduced political discourse into the environmental landscape. In Brown’s sociologically focused work the historical question of separation is investigated, utilizing the trout as an environmental case study, Brown asks when such an animal is no longer a by-product of colonization, but rather an intrinsic part of South Africa’s cultural heritage. Thus, raising questions on South African cultural identity, and how we separate that image from the sources that influenced it. Chapter five adds to this discourse arguing that at least in terms of South Africa’s marine culture the relative popularity of recreational marine hobbies, were also informed by a colonial knowledge basis, and introduced into the country at an earlier stage, than aquariums. Thus, extending the scope of Brown and Draper’s arguments into several aspects of South Africa’s marine culture. In doing so the questions raised by both authors become even more pertinent in a discussion on how natural environments may influence the socio-cultural and socio-political identities of South African citizens.

³⁴⁸ Both Malcolm Draper and Duncan Brown write about the introduction of these species, and to some extent the history of angling in the country. Draper’s article *Going Native* (2003) was especially useful in this regard.

Also important to the construction of this thesis was the story of state involvement by the South African government highlighted specifically in chapter two and three. Of course, the field of marine science is not special in this respect, from as early as the 18th century the South African state in some capacity has always sought to involve itself with scientific research and its prospective by-products.³⁴⁹ As noted in Chapter two, from the relevant archival documentation it is clear that early attempts to institutionalize professional marine biology in the country was primarily done in order to understand what practical use they could get out of the countries marine biomes, Gilchrist's earliest findings would seem to prove an industry could be founded in the country, and the state spared no expense in fitting Gilchrist out with both a research vessel and a marine station.³⁵⁰ Chapter three further investigates the impact of the South African government on South African marine culture. Through its practices from 1918 onwards evidence is given on how the South African government allowed for the monopolization of the industries inshore resources by already established fishing companies, by 1970 the industry would be defined by six large industrial fishery holdings. At the same time, the State is criticized for providing very little protection for the indigenous knowledge basis of local communities. In so doing the State was directly responsible for extinguishing local folk biology on the Cape coast. In terms of marine research, the State also hampered the progress of essential research. The State focused its attention on implementing studies that would provide the fishing industry with the practical knowledge it needed to bolster its commercial margins. Studies which wished to operate out of this scope, saw little government subsidisation, leading to scientists waiting for funding from more research focused institutions. In this way the state was directly responsible for the slow pace of South African research. In both these cases, the States inability to manage marine resources, would have a negative impact on the countries marine culture.

Also noticeable in this dissertation is the shift in focus from marine biology to conservation. In fact, this shift in the dissertation mirrors a global shift in concern. In chapters two and three, we noted how important the field of marine biology was in the story of both aquaria. From roughly the 1970s onwards though the rise of conservationism and environmental consciousness was evident. Major works like the iconic *Silent Spring* by Rachel Carson,

³⁴⁹ For an intuitive breakdown of South Africa's involvement in science today, D. Kaplans 2011 paper *The State of Science and Technology in South Africa*, proved to provide useful insights in modern state activities in regard to scientific involvement.

³⁵⁰ First the 'Pieter Faure' and later the larger 'Pickle'.

together with science that pointed to a warming earth and the rate at which natural resources were diminishing, created a new large focus on environment and conservation principles. Thus, environmental sustainability had become a new trend in several fields including marine biology. Unlike the more arcane scientific minutiae of marine biology, the message of conservation is more accessible to the public imagination and thus became integral to aquaria intended for and sustained by public use. Therefore, chapter four shows this shift in focus in which the implementation of green principles, which had become a popular trend in the marketing of modern zoological gardens and aquariums. Chapter five in which the acclimatization doctrine was discussed plays into the message of environmental sustainability, pointing to the fact that although conservation is popular today, conservationist literature has been around since at least the late 18th century.

Finally, in this concluding chapter it is important to suggest future studies that would help to expand on what has been discussed in this dissertation. Firstly, further investigation into more of the country's aquaria is necessary. This dissertation has tried to demonstrate how useful these are at providing new contexts to our understanding of marine culture as well as the history of natural sciences. Yet, this work's greatest limitation was the focus on only one region – although the importance of Cape Town to marine sciences had been emphasized throughout this thesis, there are several other regions in which marine culture was also prominent, especially Kwa-Zulu-Natal and the Eastern Cape. Both shared colonial ties like the Cape, thus European scientific ideologies flowed into these regions, which would offer an interesting comparison with the Cape. Both regions also have major aquaria today. Durban boasts the largest physical aquarium in Africa, the U-Shaka marine world centre, unlike the Two Oceans Aquarium U-Shaka also houses big mammals like dolphins and seals. In the Eastern Cape, the story of the Bay World Oceanarium is a fascinating one. From humble beginnings in the back room of a museum to its eventual move to a mansion in the middle of town in the 1930s and its eventual sea-side location in the 1950s – furthermore, this institution provides a new delineation from aquaria, as an oceanarium, the Bay World organization provides an interesting interplay between museum and aquarium.

This dissertation only made limited reference to the industry of aquaculture, which has seen significant support from the state. The government points to it as a significant new farming method that also helps to improve rural communities. Several of the interlocutors who provided oral sources in this dissertation, noted that they generally had all had first-hand experience with

the aquaculture industry. On many of these aquaculture farms it is commonplace for the implementation of some sort of community outreach program for people from rural surrounding areas.³⁵¹ The government has looked to encourage and grow the aquaculture industry – citing the growth of the export market for fish related products as a primary driving factor. Although there is a wide body of literature on the South African aquaculture industry, specifically in scientific journals, its history in the country is unstudied. Moreover, its connections to the wider recreational fish culture in its early days warrant examination in greater depth, especially with the importance of aquaculture as an alternative to traditional fishing methods.

Finally, if one is to consider public aquariums as ‘urban environmental spaces’, then one may want to consider the ornamental fish keeping industry as environmental spaces within one’s own home. Ornamental aquaria have experienced major global commercial success. The industry is also divisive in the fact that many have questioned the ‘animal rights’ aspect’ of such an industry – as they have with the larger public aquariums. Yet even more so as many critiques have been lodged against the breeding practices especially in the large exporting nations of Southeast Asia. In many ways, the history of private fish keeping connects the history of public aquaria as well as the aquaculture industry. Especially when one considers the development of the early ornamental industry in Europe, serving almost as a precursor to later public aquariums. Chapter five went into some detail explaining how the industry seems to have only been popularized in South Africa in the 1950s, with the establishment of a few tropical fish shops begun around the country. Yet such a brief description does not do the industry a service. Much like this dissertation, ornamental fish keeping lies as the intersection of social and environmental history. Further study into its roots in this country, the major players and the growth the industry may have had in the country should be explored, adding to our understanding of marine culture in the country.

South Africa is a country whose very origins have been shaped by its seas and waterways. Marine culture – as explored here through the lens of aquaria – is an essential part of understanding the countries wider socio- environmental history.

³⁵¹ A notable example of this sort of program is the South African Youth Project – Aquaculture Fish Farming training, which has received government support.

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7.3 Appendix A: Template of Informed Consent for Interviews



UNIVERSITEIT•STELLENBOSCH•UNIVERSITY
jou kennisvennoot • your knowledge partner

STELLENBOSCH UNIVERSITY CONSENT TO PARTICIPATE IN RESEARCH

Interviewee's Name: _____

Position (Employment): _____

My name is **Lyle Edward Lennox** and I am a Masters Student in the field of Environmental History at Stellenbosch University. I would like to invite you to participate in a research project entitled:

Viva Voce Vivarium – A Brief History of the South African Public Aquarium.

Please take some time to read the information presented here, which will explain the details of this project and contact me if you require further explanation or clarification of any aspect of the study. Also, your participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

Brief Overview of the Study

The dissertation covers a historically neglected environmental space, namely the South African Public Aquarium. The paper examines the establishment of these institutions, furthermore aiming to evaluate these environmental spaces on a number of areas. Firstly how do these South African Aquariums fit into the larger international marine conservation efforts (with reference to both Aquariums outside of the country and other programs which fund the wellbeing of marine life)? Secondly to what extent do the presence of aquariums impact upon the surrounding local communities both socially and economically? Finally how have Public Aquariums affected local (South African) conservation efforts, with particular focus on Mari-coastal spaces? The hope is that such an investigation into Aquariums not only brings to the fore an accurate portrayal, but also provides a modern and relevant evaluation of these institutions.

You have been approached to participate in this study on the basis of your experience and/or your direct participation in the aforementioned field. It should be stated explicitly that this study provides no materialistic or financial benefit. Furthermore by signing this letter, you agree to allow the principle investigator (Lyle Lennox) to take a voice recording of the interview, this is strictly for transcribing purposes and will not be distributed in any way.

REC: Humanities (Stellenbosch University) 2019

Use of Personal Details:

The following clause stands independently from the rest of the document and thus requires independent confirmation:

By marking "Yes" in the proceeding box, you hereby confirm and provide your consent to allow the author use of your personal details (i.e. Name, Surname and Position – strictly only these fields) in the writing of the thesis and subsequent academic presentations of the paper: **Viva Voce Vivarium – A Brief History of the South African Public Aquarium.**

Please note that by marking "No" will in no way effect the rest of the agreement and will not impact your participation in the study.

- Yes
- No

Interviewee's Signature: _____

Contact Information:

If you have any questions or concerns about the research, please feel free to contact:

Principle Investigator – Lyle Lennox:

- Cell Phone: +27 82 990 6199
- Email: 18213073@sun.ac.za or lyle.edward.lennox@gmail.com

Project Supervisor – Prof. Sandra Swart:

- SSS@sun.ac.za

RIGHTS OF RESEARCH PARTICIPANTS: You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. If you have questions regarding your rights as a research participant, contact Ms Maléne Fouché [mfouche@sun.ac.za; 021 808 4622] at the Division for Research Development. You have right to receive a copy of the Information and Consent form.

If you are willing to participate in this study please sign the attached Declaration of Consent and hand the document back to the interviewer at the time of the interview. Please note that you may keep a copy of the document.

REC: Humanities (Stellenbosch University) 2019

DECLARATION BY PARTICIPANT

By signing below, I agree to take part in a research study entitled.....
..... and conducted by (Name of Researcher)

I declare that:

- I have read the attached information leaflet and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.
- All issues related to privacy and the confidentiality and use of the information I provide have been explained to my satisfaction.

Signed on

.....

Signature of participant

SIGNATURE OF INVESTIGATOR

I declare that I explained the information given in this document to **Timothy Graham** [~~He~~/she] was encouraged and given ample time to ask me any questions. This conversation was conducted in [Afrikaans/*English/*Xhosa/*Other] and [~~no translator~~ was used/this conversation was translated into N/A by N/A].

LC Lennox
Signature of Investigator

18/08/2020
Date

REC: Humanities (Stellenbosch University) 2019