

Chapter One:

Black December, Myths, Fear and Sharks

'The sea along the Natal coast is subject to increasing pressures from man's activities'¹

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'For God's sake, HELP me'²

Black December: December 1957 – April 1958:

On 30th December 1957:

...moments before the attack a shark patrol plane passed overhead. The shark went straight for the victims [sic] buttocks and wheeled for a second attack when Mr. Brokensha grabbed the shark's tail. The animal threw him off and returned to attack...the shark severed the victim's left arm and then swam off.³

Black December was described by the *Natal Mercury* (1958) as an:

unprecedented reign of terror which virtually put an end to sea-bathing along the South Coast and sent thousands of visitors streaming to net-protected beaches, the marauding sharks have cast a shadow of death over Southern Africa's premier holiday playground...⁴

¹ G Cliff and RB Wilson Natal Sharks Board's field guide to Sharks and other marine animals Paper Print, Westmead, Pinetown 1994 p 3

² The last words record from 5th shark attack victim: "Killer Shark was furthest inshore yet" The Natal Mercury Durban, Friday, January 10, 1958 p 1

³ Natal Shark Board Archives (NSBA) South African Shark Attack File (SASA): KwaZulu-Natal (KZN): File N57/4: File: **Julia Painting** 30 December 1957 (Shark Attack File managed by Jeremy Cliff)

⁴ "South Coast Shark Attacks Now Total Five" The Natal Mercury Durban, Friday, January 10, 1958 p 2

In December 1957, the Natal⁵ South coast had seen four shark attacks.⁶ Between January and April 1958 a further three attacks occurred along the South coast of Natal. During that period, five of the attacks were fatal. Thereafter, this period was aptly dubbed Black December. The attack described in the opening paragraph has become central in defining both scientific and popular response to this 'Black December', which would see both new scientific research into sharks and a heightening of human fears of shark attack, a fear which was largely the consequence of powerful myths. Although this attack had occurred in the same location as all three of the prior attacks and the bodies injuries were just as gruesome, this attack became infamous for several reasons, namely, the frequency of attacks during December, but also the age and sex of the victim. Her attack was vividly recorded by the Natal press in 1957 as thus "...the murderous scavenger let go, but not until it had bitten off the young girl's arm at the shoulder, and severely mauled her body."⁷ Apart from the physical characteristics of the injured party and her survival of this traumatic experience, her medical treatment following the attack was recorded as the first to use IV fluids in South Africa.⁸

Although statistics of shark attack were scanty, by 1957, the chance of attack had increased and it now became apparent that the supervision and policies employed by the lifeguards for prevention of attack had been futile. Measures implemented had included: the banning of certain costumes – it had been determined that light coloured objects were closely related bait or to the prey of sharks⁹ - and swimming had been restricted to knee-deep paddling.¹⁰ Prior to 1958, many methods of prevention in Natal were based on what was in fact unfounded information and scientific studies on the causes of attack only became prominent 1959. This new wave of scientific research occurred because shark

⁵ For the historical context of this thesis, KwaZulu-Natal will be referred to as Natal, until chronologically the name changed has occurred.

⁶ From here onwards 'attack' shall refer to shark attack, unless specified.

⁷ "How it happened: Eyewitness Accounts Doctors fight for shark victim's life" The Natal Mercury Tuesday, December 31, 1957, p 1

⁸ NSBA: SASA: KZN: File N57/4 30 December 1957 – The use IV fluids marks the growth of South Africa shark attack medically treatment which was internationally recognised in the 1960s (chapter four)

⁹ NSBA: Council of Scientific and Industrial Research (CSIR) File: "Memorandum on Anti-shark measures" CSIR: National Physical Research Laboratory (NPRL) May 1958, Pretoria, p 9

¹⁰ NSBA: SASA: KZN: N57/4 File: Julia Painting 30 December 1957

attack was coming to be viewed as a national problem and not just a local concern anymore. Increasing local concern about threat of shark attack was noted as early as in mid-December 1957, after the second attack of that month. The *Natal Mercury* recorded the following statement: “Confidence that some means of combating the shark menace on the South Coast would be evolved “through experience and research” was expressed by the Administrator of Natal, Mr. D. G. Shepstone.”¹¹

A month after this statement was published, as reported in the local press, the Natal Angling Board stated that: “[there is a] possible relationship between inshore whaling and the recent shark attacks...”¹² Several measures and ideas to prevent shark attacks, such as the banning of inshore whaling, were posed by various local individuals and groups, this will be discussed in Chapter 3. However, it was only in May 1958 that the Council of Scientific and Industrial Research of South Africa became involved in shark research.¹³ The roles of scientific and governmental foundations - such as the Department of Tourism, Natal Sharks Board, Oceanographic Research Institute, Council of Scientific and Industrial Research – the National Physical Research Laboratory and the local Beach Committee, will be discussed in chapter 4. Interestingly, most introductory shark research was based on myths and speculation, which later developed into structured scientific research.

Myths about sharks

Many studies have shown that humans have shifting perceptions and constructions of their surrounding environment. In turn, these interpretations or representations have contributed to the development of what maybe termed as myths about the environment.¹⁴ Myths are influenced by cultural, social and political influences within societies. I hope to show how these aspects form an

¹¹ “Shepstone Confident in Shark War” *The Natal Mercury* Friday, January 18, 1958

¹² “Inshore whaling ban to beat sharks urged” *The Natal Mercury* Friday, 24 January, 1958

¹³ NSBA: Council of Scientific and Industrial Research File (CSIR): “Memorandum on Anti-shark measures” in CSIR: National Physical Research Laboratory (NPRL), May 1958, Pretoria,

¹⁴ This argument is based on W Cronon’s “Wilderness dualism” from W Cronon “The trouble with Wilderness; or, Getting back to the Wrong Nature” *Uncommon Ground: Rethinking the Human Place in Nature* 1996 Harcourt Brace and Company, United States of America pp 69 - 90

intricate spider's web in the development of particular myths. In his work on nationhood myths American historian WH McNeill writes, "Myth lies at the basis of human [culture]". Many myths have their basis in fear.¹⁵ For the purpose of this thesis, the diverse social aspects of culture will ultimately differentiate and set apart individual social constructions of ideas and perceptions of environments, societies, species and nature from one social unit to another, in this case sharks. Historian J. Tosh in, *The Pursuit of History*, defines one aspect of culture as such "the belief... that seemingly bizarre and irrational features in fact reflect a coherence of thought and behaviour" that unites a group of people.¹⁶ What Tosh describes as "irrational features" can occasionally be interpreted in the form of a myth. He continues to say that "myths can be dangerous [-] they induce misguided attitudes and responses."¹⁷ Although Tosh is referring to learning about the past and mythical versions of history, his notion, similar to that of McNeill can be applied to my thesis to explain the human construction and representation of sharks, myths about sharks, human attitudes towards sharks and the human relationship with sharks.

JR McNeill, and American environmental historian, wrote in his paper on the "*Nature and Culture of Environmental History*" that environmental history is "the history of the mutual relations between humankind and the rest of nature."¹⁸ The core concern of environmental history is the interactions between nature (animals and environments) and humans. D Worster, author of the seminal *Dust Bowl*, states that both nature and culture share an inter-dependent relationship¹⁹, which is continually undergoing change. Similarly, W Cronon, both an environmental historian and historical geographer, argues that neither nature nor culture is static.²⁰ In agreement with both authors, is author, N Rothfels, who claims that societies themselves continuously change, thus leading to changing human

¹⁵ WH McNeill *Mythistory and Other Essays* 1986 University of Chicago Press, Chicago p 23 []
my insert

¹⁶ J Tosh *The Pursuit of History* Longman, London 1991 p 104

¹⁷ J Tosh *The Pursuit of History* 1991 p 20 [] my insert

¹⁸ JR McNeill "Observations on the nature and culture of environmental history" *History and Theory* Issue 42 December 2003 p 6

¹⁹ D Worster "Transformation of the Earth:" *The Journal of American History* Vol. 76 no. 4 March 1990 p 1091

²⁰ W Cronon. "The uses of environmental history" *Environmental History Review* Fall No. 17 1993 p 3 and 13

“perceptions” about animals within both terrestrial and aquatic environments. He continues: “the problem with this way of thinking²¹ is that we end up having to accept that our current, scientific, heavily research ideas about animals are in a state of constant transformation and that we do not really know what we think we know about them.”²²

Most environmental historians believe that not all changes in the environment are a direct result of human action, but also from ecological, biological and geographical changes. However, by acknowledging the presences of human culture within nature and the influence human actions have on the natural environment, it allows historians not to forget the inter-dependent relationship these two elements have.²³ For instance the relationship between sharks and humans is correlated with beach recreational activities and anti-shark measures. Historically these interactions have chronologically run parallel to the development of human perceptions and construction of shark myths. However, both aspects have influenced and intersected each other historically as well, forming a symbiotic relationship. This is the hypothesis of my study.

In her paper on the “Kruger National Park myth” J Carruthers, South African environmental historian, also discusses the relation between humans and their environments and how this affects their perceptions and ideas. She states, “South Africans generally assume that the Kruger National Park was called after Paul Kruger, the president of the Transvaal Republic, in order to commemorate his personal interest in nature conservation.”²⁴ She continues to argue strongly, however, that Paul Kruger was neither a preservationist nor conservationist and that the Park was created to build and aid white Afrikaner nationalist political support during that period.²⁵ Interestingly and controversially, Transvaal political leaders had not been proclaimed for their preservationist and conservational

²¹ “This way of thinking” refers to the fluidity of human perceptions mentioned earlier by Worster and Cronon and re-emphasized by Rothfel.

²² N Rothfels “Introduction” Representing animals Indiana University Press 2002 p xi

²³ D Worster “Transformation of the Earth” The Journal of American History Vol. 76, no.4 (March 1990) p 1091

²⁴ J Carruthers “Dissecting the myth: Paul Kruger and the Kruger National Park” Journal of Southern African Studies Vol. 20 No. 2 June 1994 p 263

²⁵ J Carruthers “Dissecting the myth: Paul Kruger and the Kruger National Park” Journal of Southern African Studies Vol. 20 No. 2 June 1994 p 263

opinions and the driving force for the Park was, rather, influenced by public officials, elected Volksraad members and the publics' political agendas and ideologies.²⁶ The myth of the Kruger National Park being created under these conservationist ideologies was adopted in agreement with nationalist motives and hence the development of the Kruger National Park myth, in order to unit the Afrikaner Nationalist's in order to create a Republic, the promotion of Afrikaner scientists and to exclude Britain.

Similar to Carruthers's paradigm on the national park myth, shark myths were also easily absorbed by and created by the public. Congruent to the creation of the Park being driven by local and smaller Afrikaner political forces and ultimately the state succumbing to these forces, in the late 1950s, municipal and local pressures pushed the South African state into responding to the apparent increase in shark attack on the Natal coast. However and in contrast to the National Park, which was largely influenced by political reasoning, anti-shark measures were largely spurred by economic and financial factors.

DW Mienig's argues that "Every mature nation has its symbolic landscapes. They are part of the iconography of the nationhood, part of the shared set of ideas and memories and feelings and that bind a people together."²⁷ Both, the beach recreationalists and the Afrikaners, the first a developing social cultural group and the second as a developing nation, ideologies and idealism had been under threat. This had led to the development of a myth, or what J Tosh refers to as "irrational features"²⁸, that allowed both, the beach recreationalists and Afrikaners to become "part of the shared set of ideas and memories and feelings"²⁹ that bound them together, one as a nation and the other as social group. This sense of security links back to one of Tosh's notions of culture. Culture, as Tosh explains, leads to many misguided attitudes in many different contexts.³⁰ Culture induced, in both cases, the creation and furthered

²⁶ J Carruthers "Dissecting the myth: Paul Kruger and the Kruger National Park" Journal of Southern African Studies Vol. 20 No. 2 June 1994 p 270

²⁷ DW Mienig in J Lemkin. "Archetypal landscapes and *Jaws*" Planks of Reason 2004. Scarecrow Press p 322

²⁸ J Tosh The Pursuit of History 1991 p 104

²⁹ DW Mienig in J Lemkin. "Archetypal landscapes and *Jaws*" Planks of Reason 2004. p 322

³⁰ J Tosh The Pursuit of History 1991 p 20

development of a myth to sustain the sanctuary of the Afrikaners' and recreationalists' environment or 'symbolic landscape'.

The redefining or representation of an environment or an animal is influenced by "hegemonic and marginalized ideas about animals in the light of the material interactions, relations of power and historical contexts that shape them."³¹ For example, J McGregor's work is on crocodiles, and she shows that the shifting perceptions of crocodiles is influenced by culture, for example crocodiles were once only hunted, but now crocodile parks are being established in order to protect them. The same notion can be applied directly to my thesis on sharks and Natal. Undoubtedly, Black December further fuelled the myths about sharks and caused a shift in perceptions about sharks in Natal. Myths about potentially dangerous animals are often stronger if the animals are found in areas the overlap between human dominated lands and the wilderness. Cronon explains that "wilderness" in the English language refers to a "deserted" and "savage" landscape, an environment of "bewilderment" and "terror", an environment separate of human interference.³² However, the wilderness like borderland environments is inhabited by humans; the environment just has not been urbanized. Sharks, like McGregor's crocodiles, often, if not always, frequent such borderland environments.³³ The ideas about borderland animals contribute to the subjugation and marginalization of these animals and their habitats in borderland environments. These ideas are frequently influenced by myths, as I will indicate with the human relationship with sharks. J Tosh argues: "Myths which one society entertains about another can also be particularly enduring and harmful."³⁴ Tosh is referring to the 20th century British myth of colonized "lazy" Africa. I, in addition, would argue that what "one society entertains about" another species, for example sharks, can "be enduring and harmful".

³¹ J McGregor "Crocodiles Crimes: People versus wildlife and the politics of postcolonial conservation on Lake Kariba, Zimbabwe." Geoforum Vol. 36 No. 3 May 2005

³² W Cronon "The trouble with Wilderness; or, Getting back to the Wrong Nature" Uncommon Ground: Rethinking the Human Place in Nature 1996 Harcourt Brace and Company, United States of America pp 70 - 71

³³ J McGregor "Crocodiles Crimes: People versus wildlife and the politics of postcolonial conservation on Lake Kariba, Zimbabwe." Geoforum Vol. 36 No. 3 May 2005

³⁴ J Tosh The Pursuit of History 1991 p 20

The primary myth about sharks is that all sharks are inherently man-eating rogues. This myth has dominated both popular and scientific discourses for many years. The role that socialization, such as the press, and recreational activities, such as surfing, have played in the dissemination of this image cannot be disregarded. In fact labeling all sharks as instinctively man-eating is misguided. For instance, currently only three species of shark have been identified of being involved in attacks on humans: *Galeocerdo curvier* (the Tiger shark), *Carcharhinus leucas* (the Zambezi shark) and *Carcharodon Carcharias* (the Great White shark). Despite this, however, D Quammen, in *Monsters of God*, which was published as recently as 2004, argues that the term man-eater “deserves preservation because it labels and commemorates an elemental experience in which, on rare occasions, members of our species are relegated to the status of edible meat.”³⁵ D Quammen’s book studies the relationship between what maneaters and humans. The belief that sharks are both man-eating and are often inclined to become rogues has influenced the human fear of sharks and has directly contributed to the development of myths about sharks.

The primary myth about sharks became prominent in 1958, after the author V. Coppleson, who was both a shark researcher and medical surgeon, published his book on shark attacks. Coppleson hypothesized that the pattern of attacks could be linked to the behaviour of “a single shark – a rogue shark.”³⁶ Coppleson based his hypothesis on cases - such as the attacks that occurred during the Black December - where several sporadic attacks took place in a short space of time within a certain location, although after these attacks, that area remained free of attack. Coppleson’s ‘rogue shark’ was quickly adopted by popular culture. This was quickly adapted into films, such as, *Jaws* (1975) and *Deep Blue* (19?). Spielberg’s infamous *Jaws* will be discussed in Chapter 5.

There are many secondary myths that stem from the original rogue shark myth, for example:

- The majority of sharks are harmful to people.
- Sharks must roll over on their side to bite.

³⁵ D Quammen. *Monsters of God* 2004 W W Norton and Company p 5

³⁶ V Coppleson *Shark Attack* 1958 1988 (Revised) Angus and Robertson p 45

PLEASE NOTE THIS IS A DRAFT IN PROGRESS DO NOT CITE

- Sharks eat continuously.
- Sharks are sensitive to human blood, and are attracted/and prefer human blood.
- Sharks are not discriminating eaters and scavenge the sea.
- Sharks have to swim continuously.
- Sharks have poor vision.
- Sharks are hard to kill.
- Shark attack only occurs in warmer water.
- Sharks are not found in fresh water.
- Sharks literally have no brains

However, in fact, we now know that:³⁷

- There are over 350 species of sharks, of which approximately 80% are harmless to man and rarely encounter humans.
- Sharks are able to attack in several different positions, for example, the Great Whites of the Western Cape temporarily become airborne to catch their Cape seal prey.
- Sharks eat periodically, depending on their metabolism and the availability of food or prey.
- Sharks are usually attracted to fish blood; some sharks are attracted to mammal blood, such as the Great White.
- Sharks prefer to eat certain types of invertebrates, fish or other mammals.
- Some sharks can respire by pumping water over their gills through opening and closing their mouths while they rest.
- Sharks can distinguish colours, their lenses are 7 times more powerful to the human, and they can detect light 10 times dimmer than the human eye.
- The capture of sharks causes them stress and often weakens them temporarily.

³⁷ New-brunswick.net “Shark Myths” <http://new-brunswick.net/new-brunwicks/sharks/myths.html>
(accessed 15/11/1005)

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- Cold water attacks do occur, but this is because the introduction of neoprene wetsuits has allowed human further access to cooler waters.
- Zambezi sharks have the ability to move between salt water and fresh water.
- Sharks have the ability to evolve.

As mentioned, the first studies of sharks were based predominantly on speculations and myths. WH McNeill, in a discussion about public myths and the free market, touches on the involvement of natural science and its support of myths, he argues that:

This is conspicuously the case of natural science, where myth, tested by action and revised in accordance with results, continues to achieve spectacular success. It may seem whimsical to equate scientific theories with myth, but ... scientific theories *are* statements about the world, believed to be true, and many also provide a basis for action, as out extraordinary technology attests.³⁸

Myths about sharks have had an extremely long-lived existence within science. Scientists, such as Copleson, have conformed or contributed to the unsubstantiated human perceptions about sharks. For instance, Copleson states: “apart from the evidence of eye-witnesses and victims, irrefutable scientific evidence of the guilt of a shark is often provided.”³⁹ Copleson’s theory about the ‘guilty shark’ has portrays sharks as inherently man-eating and that these attacks are not accidental. Copleson and Rothfel, both reflect the importance of the relationship between culture and science. Furthermore, McGregor, in line with McNeill’s concept of the relationship between myths and science, proposes: “Scientists ... [have] helped to create imaginative and physical space for the crocodile.”⁴⁰ Extending McNeill and McGregor’s ideas about the power of myths and their influence in shaping human responses to particular animal species, I will show that myths about sharks have proved to be especially long-lived and, significantly, directly influential in the thinking behind,

³⁸ WH McNeill Mythistory and Other Essays 1986 University of Chicago Press p 26

³⁹ V Copleson Shark Attack (revised edition) 1988 p 1

⁴⁰ J McGregor “Crocodile Crimes:” 2005

research into, design, and implementation of speculative scientific anti-shark measures over the last century.

Fear of sharks: shark attacks cause hysteria

E Fudge, in her essay, in *Representing Animals* states that her work is not only about the ways in which culture shapes and forms perspectives about certain aspects or features of animals, but also how culture has the ability to shift human perceptions over time.⁴¹ Wilson states that nature is constructed by culture; therefore, nature is classified through human ideas of the environment or a particular species. Wilson's opinion tends to be partial to culture, as he states that culture plays a singular role in defining the environment and therefore believe that the environment changes do not play a role in defining history or the present. Wilson's view is separated from many environmental historians' perspectives of nature and humans, as it does not illustrate the value of interdependent network between culture and the environment and how this can illustrate a social history of humans and their interactions and impact on the environments in which they exist.⁴² This idea will become critical in all aspects of my thesis.

Human awareness of our environment pre-existed *Homo sapiens* and D Quammen argues that one of "the earliest form of human self-awareness was the awareness of being meat."⁴³ My thesis emphasizes that shark myths are by no means based on the frequency of attack, and that they have become exaggerated because of the unquestionable brutality of actual shark attacks, more importantly they stem from a common, instinctive, primordial, and universal fear of being eaten alive. In other words, while it can be rationally pointed out that shark attack is one of the rarest forms of animal attacks on humans, we are still fearful of this species.

⁴¹ E Fudge "A Left-handed Blow" *Representing Animals* 2002 p 4

⁴² A Wilson *The Culture of Nature: North American landscape from Disney to the Exxon Valdez* 1992 Blackwell Cambridge

⁴³ D Quammen *Monsters of God* 2004 p 1

The majority of studies on predators that threaten human life are based on terrestrial predators. An example would be H Kruuk's the *Hunter and Hunted*, which looks at predominantly at mammal predators.⁴⁴ Interestingly, South African scientist, G Cliff and Doctor TR Mokoena, argue that humans have by and large diminished the threat posed by land predators, such as tigers and lions.⁴⁵ For instance, in 1954 LSB Leakey wrote that prior to the twentieth century humans had feared lions, but "Man-eating lions are not common nor can they be regarded as normal. They are, in the lion world, what the homicidal maniac is in ours, individuals with warped minds and abnormal behaviour."⁴⁶ Leakey, however, challenged this myth by comparing the lion to a domestic cat.⁴⁷ While "wild animals" on the land may now appear to pose less of a threat to humans, as Cliff and Mokoena argue, humans have yet to minimize and control the threat posed from the sea predator, especially the shark, as the fear of aquatic predators has long out-lived the fear of terrestrial predators. The consequence of the supposedly uncontrollable threat sharks pose to humans has led to "an almost irrational fear of sharks."⁴⁸ The belief that sharks have posed a more prominent threat to humans than terrestrial predators has been widely held in South Africa, especially since the Black December. DH Davies, a famous South African shark scientist in the 1950s and 60s, similar to Cliff and Mokoena in the 1990s, argued:

Man has long since mastered the largest and fiercest of land animals, but the general reaction to shark attack shows that sharks are among the few remaining creatures capable of instilling terror, and that man has not yet devised any satisfactory means of protecting himself from sharks.⁴⁹

One consequence of Black December was the influence the press had in the whipping of the Natal public's fear of sharks into paranoia. Of course, this fear was based in some reality as these attacks did occur, but this escalated beyond the true threat to humans that sharks actually posed. DH Davies states "the

⁴⁴ H Kruuk *Hunter and Hunted: Relationships between Carnivores and People* 2002 Cambridge University Press

⁴⁵ G Cliff and TR Mokoena "Injury from Bites" *Scientific Foundations of Trauma* 1997 p 356

⁴⁶ LSB Leakey *Animals in Africa* 1954 p 21

⁴⁷ LSB Leakey *Animals in Africa* 1954 p 24

⁴⁸ G Cliff and TR Mokoena "Injury from Bites" 1997 p 356

⁴⁹ DH Davies "The shark problem" *South African Journal of Science (SAS)* Vol. 58 No.9 September 1962 p 253

injuries sustained in shark attack are nearly always serious and fatal...”⁵⁰ The fear of attack fuelled by the press and a variety of other agents, such as the local public and municipal organizations, would far outweigh the occurrence of attack in Natal waters. Moreover, rather than diminishing this over reaction – which might be termed “hysterical” - some scientific research was influenced by this ‘shark frenzy’.⁵¹ This was not true of all scientific opinions, however. For instance, in 1958 South African scientist, J Smith wrote a letter to the *South African Journal of Science*: “Because of the horror they inspire, shark attacks on surf bathers are given disproportionate prominence in the Press...that not all such sharks attack at every opportunity, [sic] that is probably not correct to regard as true “maneaters”.[sic]”⁵²

Although scientists such as JLB Smith and DH Davies believed that attacks were gaining unwarranted attention in the press, such myths were becoming popular in literature. During the 1960s, several books were published on the aquatic man-eating predators, which added to both human fear of sharks, as well as to the dissemination of myths about sharks.⁵³ Black December was the pinnacle of the development of myths about sharks, which contributed strongly to an ever-increasing fear of sharks in Natal. Black December was also the beginning of further human contact with shark in their aquatic environment.

Worster’s *Dust Bowl* argument, as reflected by Cronon states that after the drought in the 1930s humans failed to accommodate themselves to nature and therefore the failure was not nature’s but in fact human beings.⁵⁴ If Worster’s theory of adapting to the environment is extended to the ocean environment, we can identify that the sea is an environment which humans have only barely begun to adapt to and control. Although there is academic material on aquatic environments, in regard to the sea, it is still limited. Books such as *The Exploited Seas* (internationally) and *Waves Of Change* (South Africa) explore the human

⁵⁰ DH Davies “The shark problem” *SAS* Vol. 58 No.9 September 1962 p 253

⁵¹ The importance of the press will be discussed in chapter 2.

⁵² JLB Smith “Shark Attack in South Africa” (letter) *South African Journal of Science* Vol.54, No.6, June 1958 p 150

⁵³ List of books published.

⁵⁴ Reference to Worster in W Cronon “A Place for stories” *The Journal of American History* Vol.78 no.4 March 1992 p 1348

use of the sea, and their exploitation of the sea as a source, but both books focus particularly on fisheries.⁵⁵ In contrast, in my thesis, I will study human use of the sea as recreational source. The notion of “domestication” plays a powerful role in determining use of the sea off the Natal coast and public reactions to sharks. Both factors have been heavily influenced by the human fear of sharks.

T Wallett, in his book on attack and medical treatment in South Africa, accurately described the response to Black December as “hysteria”.⁵⁶ Chapter Three looks at the drastic behaviour that the local municipal and national groups took after these attacks, frequently this behaviour was irrational, such as the depth charging (bombing) of sharks off the coast by the South Navy.⁵⁷ Further enhancing this “hysteria” around sharks, is the deep-seated human fear of the sea. In his analysis of the 1975 movie *Jaws*, Lemkin, states that there are “two crucial points to be recognised in the collective perception of the sea as an unfriendly environment [:]”⁵⁸ firstly, “the sea is a place of the unknown.”⁵⁹ and secondly: “The sea is a place beyond the rule of man, whose influence stops at the shoreline. There are no demarcated borders to fight over, only arbitrary claims; it is beyond the subjugation of humanity.”⁶⁰ The director, S Spielberg, of *Jaws*, which is based on Peter Benchley’s novel (1974), draws on this fear of the open sea: “When you’re out swimming and you turn to tread water, half of your body is under the surface and you can’t keep tabs on what’s happening down there around your feet.”⁶¹

Perhaps another interesting influential factor that creates these fears of attack is emphasized by D Quamenn’s in his idea of the “alpha predators”: a predator that has the ability to kill and eat a human alone. Hence, the predator does not hunt in a pack nor does the predator just fatally injury a human, it continues to physically

⁵⁵ P Holm, TD Smith and D Starkey (ed) The exploited seas: 2001 and M Hauck and M Sowman (ed) Waves of Change 2003

⁵⁶ T Wallett “The impact of shark attack” Shark Attack and Treatment of Victims in Southern African Waters 1978 p 3

⁵⁷ “Depth Charges today at Margate” in The Natal Mercury, Monday, January 6, 1958 pp 1 and “8 Sharks Blasted at Margate” in The Natal Mercury, Tuesday, January 7, 1958 pp 1 and 2

⁵⁸ J Lemkin “Archetypal landscapes and *Jaws*” Planks of Reason 2004. p 323

⁵⁹ J Lemkin “Archetypal landscapes and *Jaws*” 2004. p 323

⁶⁰ J Lemkin “Archetypal landscapes and *Jaws*” 2004. p 323

⁶¹ Quote from: AC Bobrow “An interview with Steven Spielberg” Filmmakers Newsletter Summer 1974 in J Lemkin “Archetypal landscapes and *Jaws*” 2004. p 323

eat the fatally injured body.⁶² Although his theory is only applied to the *Great White* I would like to apply this theory also to studies about *Zambezi's* and *Tigers* sharks as it adds to Copleson's 'rogue' shark, which my thesis will embody. I however do not believe that sharks intentionally eat humans. This is for several reasons, namely that after an attack, human remains are often found and because fatally injured bodies have been found relatively intact; furthermore most victims survive their attacks.

Sharks,⁶³ Geography and Attack:

The International Shark Attack File (ISAF) is a collection of all recorded shark attacks and is controlled by the American Elasmobranch Society, at the Florida Museum of Natural History. The ISAF indicates that 63 out of 746 shark attacks world-wide in the past decade occurred in South Africa, ranking South Africa as having the fourth highest attacks incidence of attacks in the world.⁶⁴ Between 1940 and 1960, there were 58 attacks in Natal, of which 24 were fatal.⁶⁵ In the five years from 1957 to 1962, 18 attacks occurred along the Natal coastline. This sudden increase of attacks in Natal in the 1940s and 1950s, particularly during what became known as "Black December" directly influenced the development of myths about sharks. Increased attacks were in part due to the increase in contact between sharks and humans due to the increase of the beach as a recreational source in the 1940s.⁶⁶ This connection was first observed by DH Davies who in 1963 advanced a theory about the parallel between 'beach patronage' and the statistical increase in attack.⁶⁷

⁶² D Quamenn *Monsters of God* 2004 pp 5 - 6

⁶³ This section uses the Natal Sharks Board's field guide to Sharks and other marine animals to define and describe sharks.

⁶⁴ International Shark Attack File (ISAF) Statistics for the Worldwide Locations with Highest Shark Activity since 1990. 26 January 2004.
<http://www.flmnh.ufl.edu/fish/sharks/statistics/statsw.htm> (accessed 18/08/2004)

⁶⁵ DH Davies "The shark problem" South African Journal of Science Vol.58 No.9 September 1962 p 254

⁶⁶ This will be discussed further in chapter 2.

⁶⁷ DH Davies "Shark attack and its relationship to temperature, beach patronage and the seasonal abundance of dangerous sharks" SAAMBR: ORI Investigational Report 6. 1963 pp 12 – 17 **Attach Table 2 – used in chapter 2**

Sharks are form part of the Elasmobranches fish species. Like other elasmobranches, sharks have a heightened sense of smell and are extremely sensitive to vibrations and electrical pulses. These three physical traits have influenced scientific research into anti-shark measures in Natal: this will be indicated in the later chapters of thesis.⁶⁸ As mentioned earlier, I will focus on *Galeocerdo curvier* (the Tiger shark), *Carcharhinus leucas* (the Zambezi shark) and *Carcharodon Carcharias* (the Great White shark). All three inhabit the South African coastline, however the Tiger and Zambezi frequent the Natal coast statistically far more the than Great White, which occupies the cooler Cape waters. Tiger sharks are known to occasionally enter estuaries, but mostly inhabit the turbulent coastal waters. Zambezi sharks regularly frequent rivers, estuaries and lakes as often as they visit the open coastal waters. In comparison, Great Whites are partial to offshore open waters; however, recent research indicates that they do enter the coastal surf on occasion. The geographical location of these sharks is relevant to this thesis, and because of the areas these sharks inhabit my thesis will focus on Tiger and Zambezi sharks.

B Leibardt refers to the work of author A Crosby to argue that biological and ecological processes of change in the environment are perhaps as valuable, if not more, than shifting cultural, religious and technological processes.⁶⁹ I however, would like to postulate that the environmental factors are as valuable as the cultural factors in environmental history. Even more invaluable is the interactions that occur between these two factors. My thesis uses both components to study the interaction between sharks and humans. As shown earlier in this section there is an array of cultural factors that determine human interactions with sharks. I would also like to argue there are a variety of material (geographical and ecological) reasons why Natal experiences a statistically greater number of shark attacks.

Historically, scientists hypothesized there are several material factors that influence attacks in a certain location, such as, time, seasons, location, and physical features of the coast, temperature and climate. International Earlier

⁶⁸ Insert sharks board field guide to Great white, Zambezi's and Tigers

⁶⁹ B Leibardt "Interpretation and Casual Analysis:" Environmental Review (ER) Vol. No.12 p 28

scientists in the late 1940s and 1950s hypothesized that attacks were not as random and as sporadic as they appeared to be. Original studies on sharks in South Africa, in the late 1950s and 1960s, was also based on general knowledge, many studies were misguided by general speculation and myths about sharks. Originally this hindered scientific research, but later it assisted shark research as many basic studies had been done which provided a ground basis for further research, but it took almost two decades in South Africa before more technical studies began.

The speculative hypothesis of shark research is best reflected in Coppleson. Who in 1958 hypothesis that warmer water caused attack⁷⁰, this may appear as very simple but in fact as I will later show is very complex and this hypothesis served for the grounding of much of the earlier shark research. Detailed research however progressed slowly, and it was only in the 1980s that this hypothesis was studied further and questioned by T Wallett in his work shark attacks and the medical treatment of attack in South Africa. Wallett introduces the notion of human physiology and attack.

...if the water is warmer than 20°C body metabolism is able to replace the heat which is being lost. When water temperature falls below 20°C the rate of heat loss from the body becomes greater than the rate of production. This means that bathers can swim for longer periods in water warmer than 20°C but in cooler water, it becomes physiologically uncomfortable to remain immersed for long periods.⁷¹

The question of the relationship between body temperature and sea temperature was only assessed almost twenty years after Coppleson's hypothesis. The 7°C warmer waters of the Natal coast, which runs parallel to the warm Agulhas current, encouraged beach recreational activities, such as swimming, angling, surfing and diving, off coast in the 1940s after the Second World War, but these activities only became popular in the Cape later after the introduction of neoprene wetsuits in the mid 1950s. Neoprene allowed Cape recreationalists to be active in the sea for longer periods. In the 1950s, Coppleson's theory that

⁷⁰ This hypothesis was accepted by most scientists, and was not challenged till the 1990s.

⁷¹ T Wallett Shark Attack in Southern African Waters 1983 p 69

attacks mainly occurred in warmer waters; this theory was supported by many shark scientists, until recently.⁷²

Today Coppleson's theory has proven to be yet another myth about sharks, as current research and statistics show that many attacks have occurred in cooler waters, and this pattern is becoming more prominent, especially in Cape waters. According to the South African Shark attack file (SASA) in the last decade there has been an increase in attacks in the cooler Cape waters.⁷³ As mentioned, the increased interaction between sharks and humans, particularly in the Cape, is due to the introduction of technological advances such as the neoprene wetsuits.⁷⁴ Wetsuits allow beach recreationalists to spend lengthier periods in the water, hence increasing the chance of attack, particularly in cooler waters.⁷⁵ Thus, I deduce that the introduction of neoprene has directly increased human and shark contact, and inevitably has therefore increased beach recreational activities and the chances of attack.

Beach recreation - such as the activities of swimmers, surfers, anglers and divers - is also seasonal. Clearly, in the summer, beaches are vastly utilized by a variety of beach recreationalists whilst in winter beaches are barely frequented or utilized by recreationalists. As mentioned earlier, scientists speculated and monitored even the obvious factors related to attacks and sharks. In the 1960s Schultz, Gilbert and Springer argued that attacks were confined to certain seasons/months of the year, depending on the geographic location of an area; for example, both Africa and Australia are susceptible to attacks from November

⁷² V Coppleson Shark Attacks 1958: LP Schultz; PW Gilbert and S Springer, S. "Shark Attacks" in Science, New Series, Vol. 134, No. 3472 (July, 14, 1961) p 88; DH Davies "Shark Attack and its relationship to temperature, beach patronage and the seasonal abundance of dangerous sharks" in Oceanographic Research Institute, 1963 Investigational Report No. 6 pp 8 – 11

⁷³ JD Woolgar, G Cliff, R Nair, H Hafez and JV Robbs "Shark Attack: Review of 86 Consecutive cases" Journal of Trauma: Injury, Infection, and Critical Care Vol. 50 2001 p 889 taken from G Cliff Statistics from the South African Shark Attack File, Durban, South Africa: Natal Sharks Board: 1999

⁷⁴ Woolgar, J.D; Cliff, G; Nair, R; Hafez, H and Robbs, J.V.. "Shark Attack: Review of 86 Consecutive Cases" in The Journal of Trauma: Injury, Infection, and Critical Care, Vol. 50 2001pp 887 and 889h

⁷⁵ Woolgar, J.D; Cliff, G; Nair, R; Hafez, H and Robbs, J.V.. "Shark Attack: Review of 86 Consecutive Cases" in The Journal of Trauma: Injury, Infection, and Critical Care Vol. 50 2001pp 887 and 889

to April, whilst tropical islands are prone to attack throughout the year.⁷⁶ The factor component is that water temperature. The average water temperature of 26.67°C can be linked back to T Wallett's notion of human physiology. Therefore, when the water temperature is at 26.67°C it is more likely to be utilized by beach recreationalists. Hence, Scientists originally thought that the difference in temperature influenced the movement of sharks and therefore dictated where attacks would occur. Therefore they continued to look for the origins of attack in 'nature' and seas environment. However, recent evidence indicates the increase of human activity also plays an important factor.

Annually, approximately during July, the Natal coastline experiences the Sardine Run. This promotes Natal both economically and recreationally. However, with the sardine run is a direct increase in a variety of sea predators' activities, in particular an array of sharks that follow the sardines up the coast. This movement draws the sharks inland, towards the coast of Natal, thus increasing the chance of human and shark interactions. The geographic patterns of sharks also determine human and shark contact. The Sardine Run indicates two things, firstly that human activity is relevant to human and shark contact and secondly it denies Coppleson's theory that attacks occur primarily because of water temperature. However, it does indicate that the movement of sharks is also determined by material factors.

DH Davies, as early as the 1960s, argued that the geomorphology of beaches and seafloors determines the movements of various sharks along the coast. The presence of deep channels ("passages" in the seabed) which are created by currents are found in areas of gently shelving sandy beaches. It usual for larger sharks to penetrate shallower waters, but the presence of "passages" provided an opening for larger sharks to infiltrate shallower coastal waters. Ironically, majority of attack in Natal occur between 0.6m and 3.6m from seabed to the waters surface level.⁷⁷ Later research, in the 1980s, Wallett indicated that where

⁷⁶ LP Schultz, PW Gilbert and S Springer "Shark Attacks" p 88

⁷⁷ DH Davies [About Sharks and Shark Attack](#)

deep channels are present along the east coast of South Africa statistically far more attacks occurred.⁷⁸

In the 1960s, DH Davies stated tense incorrect that the weather determines the conditions of the sea, in particular sea currents. Other than creating deep channels, currents also create turbulent waters. As mentioned before, Tigers are particularly fond of turbulent waters, DH Davies argues “Turbid and dirty water off the coast of Natal is usually present as a result of flooding of rivers and the discharged of silt-laden water into the sea. This occurs [in Natal] mainly in the summer time as a result of the rains during the period of November to March.”⁷⁹

Why?

- The reasons behind this project...

JR McNeill categorises environmental history into three types of studies, namely material, cultural and political environmental history.⁸⁰ My thesis incorporates all three; however, it tends to be influenced by cultural environmental history. Although South African environmental historian, J Carruthers, described environmental history as an almost indefinite field she continues to argue that “at the core of environmental history is a deliberation of how people, use, manage or interrelate with natural resources and the natural environment...”⁸¹ The American environmental historian, J McCann, identifies this approach as the anthropogenic character of environmental history.⁸² This theoretical approach will become critical to my thesis as it mainly focuses on the human impact on sharks, looking at aspects such as myths, fear, science and the media. Although this chapter has covered the beginning of myths and fear it will continue to incorporate these features. The media will be discussed in chapter 2, whilst chapters 4 to 7 will look at science. Aspects such as the development of myths and the employment of anti-shark measures are strong features within my thesis.

⁷⁸ T Walleit Shark Attack in Southern African Waters and Treatment of Victims 1983 pp 62 - 3

⁷⁹ DH Davies About Sharks and shark attack p 128

⁸⁰ W Cronon. “Modes of Prophecy and Production: Placing Nature in History” The Journal of American History Vol. 76, No. 4 March 1990 p 1122, in this section W Cronon makes reference to D Worster

⁸¹ J Carruthers “Part One: Introduction” South Africa’s Environmental History: (ed) S Dovers, R Edgecombe and B Guest 2002 David Philip Cape Town p 4

⁸² J McCann Green Land, Brown Land and Black Land 1999 Currey London p 1

J Tosh argues, “the historian has a significant ...function in undermining myths which simplify or distort popular interpretations of the past.”⁸³ I hope to use his argument throughout my thesis and ultimately accomplish this and correct the “distort[ed] popular interpretations of” sharks. Many of the myths associated to sharks are directly related to the human trepidation of the sea. Lemkin argues, “Beyond human control, the sea takes on all the aspects of wilderness that the virgin forest or desert might possess. And it is as archetypal and immediately recognizable as any other wilderness.”⁸⁴ He also argues, “The sea is still a region entirely beyond the control of man, we may label it and classify it, but that is all.”⁸⁵ Other than the fear of the open uncontrollable ocean, people also fear shark attack, because of the brutal horror of attack; Quammen argues being reduced to “edible meat.”⁸⁶

This chapter has covered the theoretical background, and conceptualized the increased contact between humans and sharks. The following chapters will use a chronological pattern that focuses on a hypothesis that identifies that the use of the sea as recreational resources intercepts to the development of the human/shark relationship and anti-sharks measures in Natal, which was primarily instigated by the occurrence of Black December.

⁸³ J Tosh In the pursuit of history p 21

⁸⁴ J Lemkin “Archetypal landscapes and *Jaws*” 2004. p 323

⁸⁵ J Lemkin “Archetypal landscapes and *Jaws*” 2004. p 324

⁸⁶ D Quammen Monsters of God 2004 p 1