Decolonising the Waters: Interspecies Encounters Between Sharks and Humans

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Abstract: *Often portrayed as 'man–eaters', sharks are one of the most maligned apex species on earth. Media representation has fuelled public imagination, perpetuating fear and negative stereotypes of sharks and hysteria around human-shark interactions; whilst government initiatives such as beach netting and drum-lines target sharks for elimination. This interdisciplinary article, written from the points of view of environmental science and cultural studies, proposes humans as simply another species when entering the ocean, presenting a decolonising shift in paradigm that supports an interspecies ethics of engagement in understanding shark-human interactions. The shifting environmental, political, social and cultural realities of shark-human interactions are examined from the point of view of an endangered species that is hunted by humans in the pursuit of making beaches 'safe' for human leisure activities. The human 'right to leisure' enshrined in the Universal Declaration of Human Rights (1948) raises philosophical and ethical implications in respect of human rights taking precedence over a species' right to live in its environment. The article builds upon philosophical debates in environmental ethics, offering a point of cultural recognition of the profound imbalance that is being imposed upon Nature. The article proposes a shift in approaches to human attitudes and uses of the ocean, decentralizing the anthropocentric, reinstating the ecological kinship of species.*

Keywords: *Interspecies Ethics of Engagement; Decolonisation; Conservation; Animal Ethics; Human Rights; Marine Policy.*

Introduction

The ocean is a shared space and essential habitat for over two hundred and thirty thousand recorded species (Appeltans). Close connections have existed for millennia between humans[1] entering the realms of water[2] and interacting with sharks, these are rooted in long-term reciprocal engagements. Within Australian and Pacific island nations, sharks have held high importance culturally, environmentally and spiritually (Taylor; Betts, Blair and Black; Hutching). First Nations peoples acknowledge the important position sharks hold within ocean ecosystems. Complex ceremonial rights and traditions exist around the deified shark, this in turn ensures respect and conservation of the species. Sharks are acknowledged as sentient beings and revered as ancestral or guardian spirits whose journeys define the various clans existing in the marine territories (Sharp). Indigenous epistemologies challenge the accepted anthropocentrism of contemporary western society that has its basis in Eurocentric colonisation, that prioritises human needs whilst subjugating the environment. Colonisation is a term defining a westernized cultural construct in relation to land and communities, that entails the displacement and destruction of indigenous peoples' traditional knowledge and ways of living, along with usurpation of the environment through invasion, coercion and enslavement, with lasting consequences for all species. The impacts of colonisation extend into theoretical and discursive terrains. Colonisation continues to the present time as a mode of domination (Veracini). This article seeks to address the challenges that are faced in deconstructing the colonial paradigm, inviting 'imagining its decolonisation' (Veracini) and in developing and implementing decolonising (Apffel-Marglin and Marglin; Plumwood; Sundberg; Van Dooren, Kirksey and Münster) approaches to the environment and waters. Decolonisation invites a reconceptualization of the relationship between sharks, humans and the ocean, through eliminating patterns of environmental domination. A decolonising approach proposes an alternative view of the interrelationship between species, beyond the dualistic notion of human versus animal.

The central proposition of this article – that it is necessary to decolonise the waters – is 'predicated upon a profound axiology of being human, which extends to a rich diversity of enquiry and principled exposure of how human beings interact with each other as well as with

the non-human world' (Offord 16). Foregrounding that 'there is an ecology at work in the field of human rights, which resists the tendency towards the anthropocentric' (Offord 16), includes awareness of the intrinsic value of species beyond human. This awakens a broader awareness of the responsibility that humans have through interspecies interactions. Extending the scope of rights discourse and ethical engagement beyond human to all species, is an approach that builds upon the seminal environmental ethics work of the Sierra Club and Christopher Stone (1972). Stone presented the view that 'if trees, forest and mountains could be given standing in law then they could be represented in their own right in the courts…(and) like any other *legal person*…could become beneficiaries of compensation if it could be shown that they had suffered compensable injury through human activity.'[3] In 2017 this philosophical and ethical position on nature was extended to bodies of water: 'the world has gained three notable new legal persons: the Whanganui River in New Zealand, and the Ganga and Yamuna Rivers in India' (O'Donnell and Talbot-Jones 1). The key point here is the groundbreaking use of the legal concept of rights being extended beyond humans. In Stone's work, this was to 'trees, forest and mountains'; in the case of the three rivers, this concept was extended to water. The legal concept of rights being granted to bodies of water (rivers) is an area that our article proposes to extend further into the waters – to the ocean and estuaries and to species living within the waters, in this case, to sharks – with the use of legal rights for nature considered in context to contemporary discussions around 'human rights.'

This article uses an interdisciplinary research methodology situated within environmental and social sciences. The methodology combines scientific ethnographic field observations of marine users with humanities and cultural studies frameworks of historical archival research, textual exegesis, policy and media analysis. There is the opportunity to address profound environmental and species issues in a new way through the lens of marine science ecophilosophy, combined with the reflexivity of cultural studies scholarship. Historically, the biological sciences were frequently 'recruited to the task of rationalizing nature to make it more amenable to human exploitation' (Adams, William and Mulligan 4). Science was positioned as a colonial metanarrative inimical to conservation.[4] There is an opportunity for decolonisation within such disciplines, based on acknowledging that agency extends beyond

humans to all species in their environments. Examining interactions between humans and sharks within Australian waters reveals the epistemic colonising approaches in current marine policy, which are disconnected from marine conservation and the necessity for sharks to dwell in the ocean.

Such interdisciplinary research builds upon the work of decolonising nature (Plumwood, *Decolonising Relationships with Nature*) and the ontological concerns of post-humanism (Sundberg). This is positioned within the context of recent work in multispecies ethnography (Jøn and Aich), multispecies studies (Van Dooren, Kirksey, Münster) and the theoretical concerns of extinction studies (Van Dooren; Rose, Chrulew and Van Dooren). The broader theoretical concepts of the multispecies interactions we describe here centre upon a critique of anthropocentric approaches to marine habitat policies, and a 'non-colonising ethics of engagement' (Offord 16) in interspecies encounters; in this context, between sharks and humans. Throughout, we participate in the work of multiplying perspectives: these approaches unsettle the hegemony of scientific accounts of nature, highlighting the complex and often contradictory ways of knowing, valuing, and living that are always unavoidably at play and at stake in the shaping of worlds (Van Dooren, Kirksey and Münster 9). Such a decolonising approach to human interactions with nature (Apffel-Marglin and Marglin; Van Dooren, Kirksey and Münster) focuses upon a recognition that human rights are 'contextual' and frequently not 'activated' or brought into view, until there is an absence of rights, violation, or some other form of social discomfort experienced by humans (Offord). This approach extends to the use of environmental realms and ecosystem services provided by the estuaries and oceans that sharks inhabit.

At this time, it is acknowledged that we live in an unparalleled era of environmental and species crisis (Rose, Chrulew and Van Dooren) and consequent socio-cultural urgency to address human interactions with nature. There is the opportunity here for humans to use our agency in the protection and regeneration of natural worlds, acknowledging that there is no singular absolute right of humans as a species to dominate and usurp the rights of the other species with which we share the planet.

In respect of the ocean, a locus of sustenance, inspiration and recreation, the debates around 'rights' can become mono-dimensional, with the result that the human right to use of the environment is given precedence over species' right to inhabit the environment. The Universal Declaration of Human Rights (UDHR), which enshrines the 'right to rest and leisure' (Article 24) can be utilized as foundational to anthropocentric policy framework. The human right to 'leisure' can be interpreted to include a wide range of recreational activities that are water-dependent, such as fishing, surfing and swimming. These examples provide empirical observations that respond to the question 'How do colonialism, capitalism, and their unequal power relations play out within a broader web of life?' (Van Dooren, Kirksey, Münster 3). The simple answer is that these 'unequal power relations' are everywhere apparent as humans access and utilize the environment at will and often with scant regard for the existence of other species. Through applying a decolonising approach, species are each recognized to have an inalienable right to exist within their realms, even when this means that humans must retract what is deemed to be a 'human right' to use an ecological resource.

Three points highlight the existing issues and tensions in interspecies interactions central to this discussion:

1) The assumption that the human 'right to rest and leisure/recreation' takes precedence over a species' right to essential habitat

2) How legislated environmental policy is overridden when a species is threatening tourism revenue, as occurs after a human-shark incident. The term shark incident is used here as a decolonising strategy following Neff and Hueter (2013) as the word 'incident' removes malicious intention from the shark's interaction with humans (i.e. the shark is not 'targeting' humans)

3) The reactive responses with regard to species management that follow shark incidents, despite these having the lowest statistical occurrence when compared to other forms of human mortality (Franklin et al.; Chen et al.).

1. Decolonising the Mind: An Awareness of Primordial Sentience & Shark Agency

When humans enter the ocean, we are entering a wilderness environment that is the critical habitat for thousands of marine species. As terrestrial air-breathing mammals, this is not our natural habitat. Humans are out of their 'element' and require life support systems such as SCUBA (self-contained underwater breathing apparatus) to enter the ocean at depth, or some form of surf craft or boat to remain upon the waters for any extended period of time. Whilst people may spend hours each day in the sea for work or recreation, for many, the ocean is a foreign environment. In particular, within westernized post-colonial societies, humans remain fascinated and terrified by the presence of sharks. Human-shark relations and interactions are often sites of conflict. Complex philosophical and ethical debates arise regarding human control over environments, deepening the philosophical dilemma around hunting and erasing sharks.

Sharks are an ancient species, having existed over four hundred million years. They are the oceans' most diverse clade,[5] and as an apex predator, they have the ability to switch between hunting and opportunistic scavenging (Maisey). Modern sharks came into being over one hundred and fifty million years ago. Approximately four hundred species of shark are found globally, with one hundred and eighty occurring within Australian waters. Of these, approximately seventy species are thought to be endemic, holding an integral place ecologically. Apex predators such as sharks are critical for maintaining biodiversity, regulating or limiting the numbers of prey, thereby altering the structure and function of entire ecosystems (Treves, Woodroffe and Thirgood). Whilst human populations are growing exponentially, the last two hundred years has seen a steady decline in global shark populations (Dulvy et al.). Over the last forty years, the global decline has accelerated and intensified. The main catalysts for this decline are large-scale commercial fishing (including shark fin fisheries), beach netting[6] and loss of habitat due to anthropogenic activities. The decline of these ocean predators is transforming community structure and creating flow-on effects to ocean ecological systems, including mesopredator release.[7]

Globally, Australia, South Africa and the United States of America (USA) record the highest incidence of human-shark encounters.[8] An annual average of six human fatalities occur, with Australia recording the highest fatalities.[9] Whilst not seeking to ignore the distress, injury,

and on occasion death, that these incidents may cause, this is contrasted to the disproportionate responses, in part due to human fear, at times in revenge against sharks and also caused by global shark fishing and finning activities. Humans kill one hundred million sharks annually;[10] a staggering level of systematic extermination that equates to three shark fatalities every second (Worm et al.).

This unsustainable level of exploitation has led to rapid large–scale declines in multiple species of sharks and rays (*elasmobranchs*), and resulted in many being listed internationally as threatened, endangered or at very high risk of extinction (ICUN). With such high levels of anthropogenic pressure, global populations cannot recover to sustainable levels. Without adequate protection this will result in extinction for multiple species and wide-ranging ocean ecosystem impacts. Such destruction of species is directly connected to practices and attitudes that perpetuate colonisation of the environment.

Decolonizing approaches that restrict or prevent human use/exploitation of a habitat have been foregrounded in recent decades, with considerable efforts directed toward establishing marine protected areas (MPAs). These areas provide protection for ecosystems, individual species, genetic diversity and critical habitats. Whilst specific areas have been declared protected to preserve marine biodiversity, individual species protection can and has been revoked, in favor of the rights of humans to use the marine environment. The inadequacies of a policy-based approach are revealed, suggesting that species protection can only take place if there are sweeping changes in attitudes towards Nature, through applying an ontologically-based, decolonising ethics that recognizes interspecies rights.

In the case of sharks, a species that instills fear for many of the human population, the stakes are heightened. If a human-shark interaction occurs and results in a human casualty, species protection laws may be temporally (or permanently) overridden, in favor of human 'rights to leisure.' Such legislative destruction focuses upon the anthropocentric point of view, ignoring 'the shark's active agency in shaping the semantic and material culture' (Jøn and Aich 170) of the environment, including the agency of sharks to act as sentient, living beings in their world. Methods employed to reduce human-shark interactions often ignore the important ecological role sharks play in the ocean.

The complex life history of sharks means it is difficult for these elasmobranchs to rebound from over-exploitation. Due to the position of sharks as apex predators, population numbers are inherently low compared with other smaller marine species (Ritchie and Johnson). Sharks have a slow sexual maturation process, year-long pregnancies and long lifespans, compounding the obstacles to rebuilding populations (Garcia, Lucifora and Myers). Importantly, the loss of these important keystone predators creates a trophic downgrading of process, function and resilience within marine ecosystems (Heupel et al.). This has direct consequences upon the range of species within an ecosystem, including the loss of fisheries that humans depend upon for food. Further damage to marine species is inflicted annually to maintain human uses of the ocean against sharks, through the practices of 'beach netting' (Dudley *Comparison of the shark control programs;* Neff), a practice used internationally and extensively throughout Australia, the USA and South Africa.

2. The Beach and Surf Zone as Colonised Space

The majority of the Australian population resides within fifty kilometers of the beach or coastline. Within the Australian psyche the beaches and ocean evoke and embody an iconic Australian identity that was forged in a post-war heroic masculinity. So close is the interconnection between war and the emergence of beach culture in Australia that the surf lifesaving movement provided 'much-needed social cohesion' (Baker 63) and work for returned soldiers[11] with a 'district court judge and knight of the British realm, Sir Adrian Curlewis, President of the Surf Life Saving Association of Australia for an unmatched forty years, from 1935-1975' (Baker xv). Newsreels of the time perpetuated the use of military connotations and allusions with the beach: 'Australia's pulse is beating faster as her young men ride out to do battle with the ocean. In them the glorious ANZAC spirit of adventure still lives' (Baker 64).

The interconnection between the beach and episodes of identity-making in the colonial history of Australia has been underpinned by screen images, such as the famous beach landing of soldiers during World War I at Gallipoli. The newsreel footage broadcast was not filmed at Gallipoli, but restaged several weeks after the historic landing, at Tamarama Beach in Sydney (Rolfe). Despite being reenacted, this was replayed as the actual 'historical newsreel' of the

landing for one hundred years, presented to the Australian public as the actual record of what took place at Gallipoli during World War I.

Through such unchallengeable images of masculine heroism and sacrifice, the beach has become a hallowed place in Australian identity that subsequent generations have inherited and perpetuated, increasing over the decades with the rising popularity of surfing. The beach, a liminal space where land meets water, is unexpectedly recognized as a territory where humans continue to perpetuate colonisation (Ashcroft, Griffiths and Tiffin) and as a site of cultural conflict in Australian history (Evers).

Surfers ride boards across or down the face of a wave. To non-surfers, the surfing lifestyle may be difficult to understand, but to surfers this can become the cultural basis of identity. Historically surfing was a male-dominated space and identified with masculinity, although it must be noted that females now increasingly access the waters as surfers, including at international competitive levels. For some, surfing is a compulsive recreational activity, the rush and exhilaration from riding a wave is a stimulant and adrenaline-fuelled activity. The need to satisfy this can lead to competitiveness, localism and territorialism. As the sport has grown from the 1960s, the issue of space and control has become centered on notions of territoriality and identity (Evers). In particular, surfers frequently 'colonise' a specific beach, extending 'their rights' into the ocean to specific waves and ocean 'breaks', visibly marking their territories with signs and slogans such as 'locals only' in car parks and violently expelling non-locals from surfing waves at 'their' location. In its most extreme, this form of localism erupted in Australia during the Cronulla Riots of 2005 and reflects the deeply ingrained attitudes of colonialism within Australian society (Evers) that extend towards nature.

This cultural background is essential to understanding what is at stake in current environmental debates and why sharks – despite being a vulnerable or endangered species protected by legislation – are targeted, especially by surfers and boarding riding associations.[12] Historically in Australia there is a conflict of interest between surfers and the Surf Life Saving Association of Australia and sharks. Surfers and the Surf Life Association are separate stakeholders with specific connections to the beach and ocean use. Whilst surfing is an individual sporting and recreational activity, Surf Life Saving is a regulatory body, patrolling beach and

ocean spaces. The conflicts between these two groups of ocean users and sharks becomes apparent when considering that Adrian Curlewis, in his role as President of Surf Life Saving Association of Australia, was also the 'head of the Shark Advisory Board that introduced nets to Sydney beaches in the 1930s' (Baker vx). With colonial interests at the helm, sharks were displaced into the category of 'the savage' that required conquering and preferably, elimination.

A recent increase in human-shark interactions in Australia (particularly in Northern New South Wales (NSW), has brought these issues to the forefront and created extended public debate, dividing local communities. Newspaper articles publish assertions like the following: 'The ocean is our domain and sharks have no place destroying lives and livelihoods; these predators are lurking out there ready to cull humans and we as a community must find a permanent solution' (Banks). Regional surfers from Northern NSW have called for shark culls and the introduction of baited drumlines, similar to the drumlines used in Queensland's shark-control program. These consisted of a floating drum (a barrel) with two lines attached. One line is attached to an anchor on the sea floor, while the other features a large baited shark hook. Any marine species within the vicinity may be attracted to the baited hook, including numerous non-target species. Lennox Head-Ballina Boardriders Club president Don Munro said about '95 per cent' of the 200-odd people that attending a meeting in 2015 supported 'controlled management or partial cull' of the sharks 'that are hanging around' (Banks). Despite the significantly higher number of drowning deaths that occur each year compared to shark-related fatalities, shark attacks capture greater interest among the public because of a primal fear humans have of sharks. For example, Shane Daw from Surf Lifesaving Australia explained, 'With sharks there is that primal fear. People are very scared of sharks. They are not afraid of drowning, they are not afraid of getting caught in a rip current and they are not afraid of getting stung by a bee. *Jaws* has a lot to answer for' (Committee Hansard 12).

Beach netting in Australia was first introduced in 1935. Drumlines (Neff) were first deployed in the 1960s as an additional strategy to beach netting. Whilst drumlines and netting may make humans 'feel safer' when swimming at the beach, Dudley (1997) reported that 35% of species are caught on the shoreward side of the nets and that sharks captured in the nets were

scavenging on other captured species. This suggests that nets may be actually attracting sharks to beaches and embayments.

Netting beaches and deploying drumlines also has a profound effect on non-target species and completely contradicts established conservation policy and the ecological reality that sharks move around the ocean. Shark nets installed along Australia's iconic beaches have facilitated multiple deaths of non-target species (including migratory, endangered, or threatened species) who are inadvertently entangled in the nets, including dolphins, humpback whales, rays, turtles and non-target sharks. In comparison, low yields of the 'target species' (White, Bull, Tiger) are caught each year (Department of Primary Industries).

The demand for shark culls is in direct opposition to the views expressed by conservation organizations and scientists. Often missing from these debates are philosophical and ethical considerations, which would foreground any species' right to its own environment and the ethical implications of depriving a species of life in order to facilitate a human's right to pursue leisure activities. The prioritizing of human rights to recreation and the related ongoing culling of species has global ramifications for marine ecosystems.

As noted above, the Universal Declaration of Human Rights (Article 24) includes 'the right to leisure', frequently interpreted as a 'right to recreation'. In the context of recreation, ocean users include surfers, body boarders, swimmers, divers, or humans entering the ocean for leisure activities such as recreational fishing.

Differing responses to sharks amongst coastal recreational communities may be clearly seen in the differing attitudes between surfers and SCUBA divers. Dive tourism research shows that divers will actively seek out shark sightings, ranking opportunities to sight or swim with sharks as a number one motivation (Hammerton et al.). Divers who swim under the water along the reef go to considerable expense, time and energy to travel to locations where shark sighting can almost be guaranteed. In contrast, for surfers (or swimmers) who swim or paddle on the surface of the ocean, sharks may produce fear and trepidation. Surfers may also travel long distances and expend time and money to travel to specific beaches and surfing breaks, increasing

the likelihood of seeing sharks. For surfers, sharks may predominantly be seen as an interference with their 'right' to ride the waves. Such entrenched attitudes perpetuate human colonisation and domination over the ocean.

3. The Colonising Effect of the Media

Cinema has played an ongoing role in creating and perpetuating human fear of sharks, and in fuelling the cultural image of the 'shark as villain'. The Hollywood stereotype of the shark as stalking man-eater was made (in)famous in Steven Spielberg's film *Jaws* (USA, 1975),[13] which grossed $470,653,000 (International Movie Database) and provided the most widespread fear-inducing image of the shark, though sadly neither the first, nor the last.[14] The image of sharks has been continually formulated and reaffirmed in the popular imagination through the mediation of such negative media imagery. The first *Jaws* film received a theatrical release timed with the onset of summer, and depicted the beach as a place where a man-eating shark might be lurking, creating a generation of frightened beachgoers. Whilst three sequels ensued, the public rarely dissected these texts for the implausibility and unrealistic behavior of how the sharks were presented.

Significantly, there was an absence of live sharks throughout the filming of *Jaws'* ocean scenes. In the early rough cuts of the film, interviews with director Spielberg and editor Verna Fields revealed that the prop shark looked ridiculous, unbelievable and not at all frightening. To achieve the desired effect of a menacing shark on screen, Fields removed several seconds of key action sequences during editing. Through compression of the time that the prop shark is seen, a frightening effect was achieved.[15] What emerges from this exegesis is awareness that it was entirely human agency that created the image of the 'man-eater'. This disturbing, fictionalized and aggressive image of the shark as a stalking 'man-eater' then widely influenced the views of audiences.

Indeed, *Jaws* draws less upon scientific reality than upon cinematic tropes of the horror genre utilized to terrify audiences: for example, that of the lone individual in an isolated place where a 'monster' lurks. Despite this lack of scientific or empirical basis, the image of the

malicious 'man-eater' has continued in culture. Through such films, the stereotypical tropes of the horror genre are displaced onto animals and human-animal interactions, making encounters with animals and nature the source of fear.

Post-*Jaws* media hype continued to exploit human fear. In turn, this gave rise to deliberate targeting and human predation upon sharks, with an explosion of shark game fishing, tournaments, artifact sales, aquarium display and commercial fishing targeting sharks (Philpott). Yet this was not the first shark fear film: a much earlier film, *White Death* (1936), was filmed on the Great Barrier Reef (Australia). Ironically, during filming of *White Death* the crew found it so hard to find white sharks that they had to employ the properties department to manufacture a prop shark for the scenes, just as the makers of *Jaws* had to, decades later. To date, there have been one hundred and eight films about sharks: of these, seventy seven[16] have been based around fear-inducing narratives: the shark as a 'man-eater'. Human fear of sharks is big box office business, grossing billions of dollars. In the twentieth century, narratives such as *Jaws* were told from the point of view of swimmers, instilling fear in this group. In the twenty-first century, film narratives have widened to include surfers and SCUBA divers. The latest addition to the catalogue of shark fear films is *47 Meters Down* (USA 2017), centered upon a narrative of cage diving with sharks in Mexico.[17]

Fear is an affective aspect that the media may easily focus upon, a manipulative cultural use of affect that governments also know and utilize for political reasons to support what has been called the 'criminalization' of shark incidents (Neff and Heuter). Despite the damaging stereotype humans still actively pursue encounters with this apex species, including through free-diving and scuba diving. Through diving with sharks, divers have attested to not feeling threatened when observing sharks at a distance, even species identified as potentially 'dangerous'. Through such encounters divers have described this apex species as being ancient, primordial and deserving of human respect and protection.

Despite human-shark interactions being relatively infrequent, interactions that involve an injury or fatality to humans evoke highly dramatic responses. In particular, the media responds with the use of prescriptive and emotive language within the headlines such as 'shark attack', 'man-eater shark', 'monster' or 'shark infested waters' (Muter et al.). Through the

(mis)use of affect, such 'language unreasonably amplifies social perceptions of risk' (Neff and Heuter), continuing to exploit the public's fear. Media reporting on such incidents using sensational labels for human - shark interactions promotes a fictitious deliberate malicious intent from sharks towards humans:

> The words 'shark attack' can create a perception of a premeditated crime, lowering the public's threshold for accepting shark bite incidents as random acts of nature. The narrative establishes villains and victims, cause and effect, perceptions of public risk, and a problem to be solved. (Neff and Heuter 68)

Neff and Heuter have established that 'a pattern exists in which the designation of a shark "attack" raises media attention that provokes a government response, even when the event may not be serious or governable' (Neff and Heuter 68).

This is opposed to the reality that human-shark interactions are accidental, as humans are not naturally 'on the menu' for sharks. In addition, sharks do not 'infest' waters, they live there. Tabloid statements and negative cinematic representations have created a sensational media frenzy, which stereotypes all sharks in the popular imagination as diabolical 'man-eaters'[18], lying in wait for the unsuspecting surfer or swimmer. Media headlines build upon the innate fear responses of the majority of humans to apex species (whether venomous snake, bear, or lion). A perception or threat of harm from an animal species – whose measure we here identify here by coining the term 'fear index' – leads to an aggressive assertion of the human right to space/life, resulting in the animal being culled or killed. The higher the animal is on the 'fear index', the more likely it is to be subjected to elimination practices (Ordiz). In each case human safety is accepted as outweighing the animal's right to live in the environment.[19]

The human-shark relationship has been continually presented as 'us and them', the hegemonic dualism between nature and culture (Plumwood, *Decolonising Relationship with Nature* 61) created through colonisation, with the 'them' (fill in apex species, in this case sharks) always subjugated and expendable. It is useful, though undoubtedly unsettling, to imagine the implementation of similar species destruction in similar scenarios where a sentient being is involved. Philosophical issues arise as to why, when humans enter the realm of another species,

which inadvertently places us within the food chain, we feel justified in taking an attitude of supreme vengeful domination over predator species. When humans enter the ocean, we are simply another species that may incidentally be caught as sharks hunt their target food sources.

Val Plumwood, who posed the challenges of repositioning humans ecologically and considering the 'non-human in ethical terms' (Plumwood, *Environmental Culture* 8), identified 'hyperseparation' as the cause of the current anthropogenic-induced environmental crises. Hyperseparation – one of Plumwood's 'key concepts' addressed:

> the structure of dominance that drives western binaries, including nature/culture, female/male, matter/mind, savage/civilised. The hyperseparation structure accords value to one side of the binary, and relegates the other side to a position of oppositional subordination. As is well known, for example, her work showed how nature was backgrounded vis-a-vis the human, and relegated to a role that allowed usefulness without requiring moral considerability. (Rose 94)

Such a hyperseparation may also be recognized within the role media and film play in perpetuating human fear of sharks. This is the antithesis of the decolonising positionality advocated by this article, which drawing upon Edward Said advocates, 'to live in a certain sense *with* the land, not *on* it' (Said 44).

Changing a perception once it is established within people's minds, and is constantly propagated and nourished by the media, is a challenge. With the number of humans entering the ocean for recreation, if sharks specifically targeted humans as food, far more casualties would occur. Whilst sharks are not actively targeting humans as prey, humans are actively targeting this marine species and therein lies the ethical dilemma at the heart of this discussion.

Despite the historically low incidence of shark incidents contra to the high number of coastal and beach users annually (Maguire et al.), Australia has held a 'shark attack file' (ASAF) since 1984. Between the years 1990-2000, shark incidents averaged 6.5 per year. In the past decade this has increased to over ten per year (West). Whilst these incidents are increasing, human populations globally are also increasing,[20] with more people visiting and entering the ocean for recreation, including swimming, surfing, SCUBA diving and kayaking.

When these incidents are compared to other causes of human fatality in Australia, death by shark is rare. On average, eighty-seven people drown at Australia beaches annually, whilst up to three thousand are killed in road accidents (Brighton et al.; Langford and Newstead). In contrast, until 2010, fatalities from shark accidents equated to 1.1 annually. In the last few years this number has increased to three fatalities. Shark fatalities are not consistent across all recreational activities, with surfers and to a lesser extent, swimmers, being overrepresented in fatal human-shark interactions.[21] Both surfing and swimming produce the action of kicking and splashing at the surface of the water, and the resulting low–frequency sounds (Schultz) have been hypothesized to resemble an animal in distress – exactly the type of activity sharks listen for. Shark success with hunting depends on their ability to ambush potential prey; the downside of this feeding trait is that humans can be mistaken for prey. Moreover, the feeding behavior of many large sharks is crepuscular or nocturnal, which may explain why the majority of shark incidents are attributed to the sharks' confusing of humans with their normal prey. Alternatively some curious sharks will investigate before an interaction attempt. Therefore the perception that every shark encounter will be fatal is flawed.

4. Decolonising Approaches to Species Protection: Legislation and Policy

Since 2013, the Australian Liberal government has deprioritized conservation initiatives, resumed logging of wilderness areas in Tasmania, reduced and removed funding for the arts and the environment, increased funding for expansion of a coal mine port adjacent the Great Barrier Reef, and reintroduced fishing to areas previously designated 'no take zones'. The socio-economic aspects of environmental policy signal changes in how the environment, both aquatic and terrestrial is viewed.

Despite the significant decline in shark populations, Australian Federal legislation only holds protection legislation for nine species of shark.[22] In 2011, Australia became the fourteenth country to sign The Memorandum of Understanding (MOU) on the Conservation of Migratory Sharks;[23] this was developed under the auspices of the Convention on the Conservation of Migratory Species of Wild Animals. Six out of the seven species covered by The Memorandum

of Understanding occur in Australian waters. An important aim of this Memorandum is to apply current and future actions to conserve migratory species. The White Shark, Whale Shark, Basking Shark (which is extremely rare), Porbeagle, Shortfin Mako and Longfin Mako have been identified as species with a high ecological function, influencing lower trophic levels (Bomatowski et al.). Despite being a signatory to this Memorandum, the Australian Government has overridden its obligations to migratory species conservation, by prioritizing tourism and human recreation.

After recent fatal human-shark interactions, the Australian Government has responded with what many people involved in the marine conservation sector view as an anthropocentric - focused form of management, termed as a 'knee-jerk reaction', propagated by perceived imminent threat of ongoing fatality. For example, in 2013, the Western Australian Government activated a shark cull (Gibbs and Warren). This involved the targeted hunting, capture and killing of three species of sharks - the White Shark (*Carcharadon carcharias*), Tiger Shark (*Galocerdo curvier*) and Bull Shark (*Carcharhinus leucas*) - over three metres in length. The method for capture involved using drumlines in authorized 'kill zones'.

Under Australian Commonwealth legislation, White Sharks are listed as a vulnerable migratory species, protected under the Environment Protection and Biodiversity Conservation Act 1999 (Department of Primary Industries). Internationally, White Sharks were the first species of shark to be listed and protected under the Convention on International Trade in Endangered Species (CITIES) agreement. Due to this, the Western Australian State Government had to apply for an exemption from the Federal Government to override the established environmental laws protecting white sharks. The White Shark is currently listed as protected in the Australian exclusive economic zone.[24] The response of the Western Australian Government is embedded in the outdated approaches of colonisation: politically and economically motivated, and perpetuating and fueling fear in the general population of human-shark interactions by promoting the need to hunt and cull sharks. Donna Haraway (*The Promises of Monsters*) refers to the present time as an active time of exterminations for many species. Sharks fall within this category.

Sensational media representations of human-shark interactions fuel public hysteria over the threat of sharks to human life. Such representation undermines governmental species protection policies (McCagh, Sneddon and Blache). In particular, recent fatal incidents, inflated by the media, created responses from state and federal government ministers, with beach tourism taking precedence over vulnerable or threatened species. Clearly there is contradiction in establishing marine protected areas within Australia to preserve habitat and species, whilst installing walls of nets or drumlines to trap marine life. Scientific evidence regarding lethal methods of shark control (Dudley, *Shark Control*), such as installing nets or drumlines to improve safety for swimmers or surfers is contestable. Most species trapped within beach nets or hooked on drumlines are non-target species (many of which may be seasonal, or rarely sighted on scientific surveys); these species have not been involved in unprovoked human fatalities.[25] The ocean is an open space: even beach netting does not enclose the swimming zone or successfully prevent any sharks from entering.

In order to move from a system of ineffective and environmentally damaging policies targeting sharks, towards decolonising approaches, it is useful to consider how similar issues are addressed internationally for apex species such as crocodiles[26] or bears[27] with public signage erected at popular recreational locations (Figures 1, 2 and 3).

Figure 1: Crocodile safety signage, Kakadu National Park ©Anbinik 2017.

Figure 2: Bear safety signage Haida Gwaii, Canada ©Akkadia Ford 2015.

The signs in Figures 1, 2 and 3 identify two different decolonising strategies, both of which foreground respect for nature and species habitats. In Figure 1, human activity is actively discouraged from areas inhabited by the apex species in question, the crocodile. In Figures 2 and 3, there is an alternative approach of integrating human recreational and leisure activities, such as trail hiking and dog walking, clearly shown in tandem with a warning sign identifying the habitat area of an apex species, in this case, bear.

These signs are examples currently successfully used in Australia and Canada, raising valid questions of whether similar two - stage signage could be erected at the entrances to beaches and surf zones: 1. Identifying ocean areas where human use of the waters is not considered to be compatible with shark habitat (such as Figure 1); 2. The use of a picture of a shark clearly stating: 'this is the ocean, sharks may be present' at locations where recreational fishing, swimming and surfing take place in shark habitats. This would be similar to the signage regularly seen in bear or crocodile habitats, which gives humans the option of either avoiding an area, or if choosing to enter, taking responsibility for their interaction with the place and therefore reducing the extent to which blame can be attributed to the non - human species in question. It is significant that the Kakadu, Australia (Figure 1) and Haida Gwaii, Canada (Figures 2 and 3) are both areas with co-management of land and water resources by indigenous first nation peoples, who bring intergenerational cultural and ecological knowledge to the management practice.

Figure 3: Bear safety signage Haida Gwaii, Canada ©Akkadia Ford 2015.

5. Shifting the Paradigm, Decolonising the Waters

Far from being 'man-eaters', sharks are elusive species that deserve protection from anthropogenic impacts and are essential for maintaining ecological equilibrium within ocean environments. When recreation is prioritized over the necessity for marine species to exist in their own realm, humans project a deep disconnection and misunderstanding upon nature about the interconnection of life. Successful conservation of predator species is dependent upon tolerant societies who are willing to function in ecologically sustainable and socio-politically aware paradigms. Yet effective apex predator conservation can be confounded through powerful media misinformation and outmoded legislation: accordingly, what is required is a heightened engagement and alertness in advocating on behalf of nature. At the outset of this article, we made a call to decolonise the waters, with the aim of bringing into focus the recognition of humans as simply one species that utilizes shared resources with many other species, including sharks. With this awareness comes the opportunity for action: personally, by communities, and

through policy changes at state and national government levels, including wider use of alternatives approaches to mitigating human-shark incidents.

Successful alternatives to beach netting and culling already exist and are currently utilized by divers, surfers and swimmers. These include the use of spotter drones and personal acoustic shark repellent devices, which emit pulses that short-circuit the gel in a shark's nose, deterring sharks from approaching (Shark Shield http://sharkshield.com, accessed July 4, 2017). Wetsuits have also been designed to prevent sharks from incidentally interacting with humans (Radiator Wetsuits, http: //radiator.net, accessed June 28, 2017). Changes in attitudes are already happening at grassroots levels, including among surfers, such as the 'Fin for a Fin' movement (no revenge killing of sharks),[28] surfers who accept that sharks live in the ocean and actively advocate for non-retaliation in the event of an incident. These approaches, whilst focused upon human safety when entering the ocean, may be understood as integral to an awareness of decolonising strategies, as they are also aimed at averting the incidental shark interactions which lead to targeting and decimation of the species.

Beyond this, a decolonising approach to the waters may usefully engage recognition of the seasonality of nature and cycles of activities. For unlike sharks, humans can choose to stay out of the water at times when human-shark interactions have frequently been associated with fatalities. This may include key times of species migration, breeding, at dusk and dawn, overcast and rainy days or when ocean turbidity is greatest. Management approaches such as this may receive initial opposition or reactive responses from ocean users. However, this unwillingness to adapt to an ecologically sustainable paradigm is simply colonialism in action. Numerous tourism and recreational activities are managed with permanent and/or seasonal restrictions. These restrictions may be in place to ensure human safety or to avoid degradation of natural areas. Examples include marine park zoning to maintain biodiversity and exclude harvesting of resources, restrictions on vehicles accessing sand dunes to protect endangered bird or turtle nesting sites, or the closure of beaches to swimmers during high level storm or sewage outfall events.

Within First Nations customs,[29] certain bodies of water and ocean locations are central to traditional ways of life and are restricted: they are not intended for, nor allowed to be swum

in by anyone outside of the clan without permission.[30] Respect for and recognition of the intrinsic cultural values of nature includes recognition of the limitations of human intrusions into the waters as part of a decolonising ethics of engagement. These approaches all require that humans consider the environment and the species within the environment and make ethical choices in their pursuits, requiring a higher level of forethought and planning than simply getting in the car and driving to the beach for a weekend of free leisure activities.

In addition to these approaches, a decolonising ethics suggests a nuanced re–evaluation of relationships and the role of humans in regard to all life-forms with which we share this planet (Plumwood, *Shadow Places*). A rediscovery of kinship with other species forms an essential focal point for reconnection and re-establishing balance. In this, recognition of the interconnection of all peoples to the planet is reaffirmed as a concluding point to this discussion. This provides an ontological antidote to the ongoing 'hyper separation' (Plumwood, *Environmental Culture*) that is recognized as the basis of species' destruction. Being a part of nature each person may be understood to have natural affiliations, whether to land, sky or sea, which however for most humans, often remain unrecognized. Such interconnections are beyond race or epidermal color, being an epigenetics[31] of the heart that may have been rendered invisible beneath the temporal chaos of colonisation, but that must be remembered and re-inscribed as central to a decolonisation of the waters. The ontological position is that as we are all part of nature; there is no 'we' and 'they'; we are all them.

Notes

[1] The term 'human' is used to position us as simply another sentient being dwelling on Earth, using terrestrial and marine resources. In this, we are not seeking to homogenize use of the term as being synonymous with a colonising attitude for all humans, nor to ignore important cultural, economic, gender and other differences between groups of humans that use the waters and interact with species. To enable intervention into this area, there will be a focus upon specific groups of humans who utilise the waters for a range of economic and leisure activities; specifically, surfers, the Surf Life Saving movement in Australia two stakeholder groups that have a documented history of antagonism towards sharks as dangerous predators; contrasted with SCUBA divers, who often spend vast amounts of time and resources to actively pursue encounters with sharks as endangered species. The very different attitudes between these groups will form the basis for our argument to decolonize the ocean space.

[2] Since sharks also exist in rivers, the word ocean has deliberately not been used here.

[3] Stanford Encyclopedia of Philosophy, *Environmental Ethics*, online unnumbered.

[4] Acknowledging that now there are new fields such as Conservation Biology and Ecology.

[5] Clade, a group of organisms (usually species) that are more closely related to each other than to any other group, implying a shared common ancestor.

[6] Beach netting involves a submerged net generally 150 meters in length and 6 meters wide being placed up to 500 meters off the beach on the seabed in depths of 10 meters. Beach netting operates as a catch and kill strategy. These nets are different to shark barriers that fully enclose the swimming area from the surface to seabed and work on the principle of excluding sharks from a designated swimming area.

[7] The phenomenon of 'mesopredator release' is where smaller, secondary carnivores become very abundant as a consequence of the removal of larger, top-order predators from an ecosystem.

[8] Shark attack data http://www.sharkattackdata.com (accessed April 16, 2017).

[9] Shark attack file http://www.sharkattackfile.net (accessed April 16, 2017).

[10] Shark meat is considered a low profit fish, however fins attract a high price and are shipped to offshore markets, whilst shark meat is commonly sold in fish and chip shops as low-cost battered fish called 'flake'.

[11] 'the surf lifesaving movement took on a quasi-militaristic character as it developed and spread in the years following World War 1 -The noble surf lifesaver provided a national Australian icon, second only to - the brave Anzac' (Baker 203).

[12] Recent examples of surfing interests taking precedence over the rights of nature include public calls for shark culling by the Lennox-Ballina Boardriders Club president Don Munro, 2016; by 11-time American world champion surfer Kelly Slater, 2017; by the Ballina Shire Mayor David White, 2015; and individual Byron Bay surfers such as Neil Cameron, who have all expressed hostility towards shark populations.

[13] International spearfishing champions Ron and Valerie Taylor worked as shark consultants on the film, recording footage of white sharks of the Australian coast and have subsequently expressed their regret for the shark targeting and widespread fear that followed. The Taylors have devoted much of the work since to shark and marine conservation.

[14] John Singleton Copeley's 1778 painting *Watson and the Shark* inscribes sharks in Christian iconography, connoting it as diabolic. This is discussed in the exhibition catalogue *American Adversaries: West and Copley in a Transatlantic World*, edited Emily Ballew Neff, New Haven, 2013.

[15] Verne's editing techniques have been emulated by many editors, but arguably no other filmic image has achieved the terrifying effect of her work on *Jaws*.

[16] http://www.imdb.com/list/ls074338477/ (accessed May 17, 2017).

[17] IMDB http://www.imdb.com/title/tt2932536/ (accessed July 2, 2017).

[18] The gendered term 'man-eater' has been widely used in media and is referenced with ' ' to highlight that it is a contentious and misleading term.

[19] The list is lengthy, a selection of media includes 'dog attacks' – where the 'victim' (often a child 'victim'), leads to the dog usually being 'put down'; 'dingo attack' (for example on Fraser

Island in Australia), that led to culling (killing) of the dingo population; 'snake attacks' are also reported using sensationalized media (Australian and BBC) with headlines: ''Nightmare' as python attacks sleeping Australian boy'. The article also noted: 'It doesn't mean the snake was attacking him, the kid could have rolled on him in his sleep'…'Human beings do not fit into the prey selection of any Australian snakes'. (http://www.bbc.com/news/world-australia-35646872).

[20] As an example, the population in Australia has increased from 3.7 million in 1900 to 24.5 million.

[21] Whilst statistically SCUBA diving is the lowest risk activity for shark-human interactions, there have been *exceptionally rare* instances of divers being injured or killed in a human-shark interaction. One such encounter, off Julian Rocks (Byron Bay, Australia) in 1993 occurred when one diver failed to follow precautionary safety instructions by the boat skipper for all divers to immediately leave the water after a large shark had been sighted. Ignoring the warning, one male diver made a decision to dive alone for second time to get a closer view of the shark and a fatality resulted (author personal communication).

[22] Under the Environment Protection and Biodiversity Conservation Act 1999.

[23] Conservation of Migratory Sharks http://wwwcms.int.

[24] EEZ area is made up of 8.2 million square kilometres off Australia and its remote offshore territories, and 2 million square kilometres off the Australian Antarctic Territory. It extends to a distance of not more than 200 nautical miles from the territorial sea baseline.

[25] What is referred to here are instances where sharks are provoked into interacting with humans through techniques such as 'cornering, pursuing, grabbing, spearing, hooking, shooting, or otherwise molesting' sharks (viewed 22 July 2017, elasmo-research.org).

[26] Used extensively in far North Queensland in Australia to alert to crocodile habitat (Figure 1).

[27] Regular signage seen on Haida Gwaii in Canada as one example (Figures 2 and 3).

[28] Fin for a fin, http://finforafin.com/ (accessed June 28, 2017).

[29] First Nations is respectfully used here to refer to indigenous peoples globally. Whilst this article focuses upon the Australian and Pacific Islands customs, cross–reference is also specifically drawn to the Haida in Figures 2 and 3.

[30] This specifically refers to Australian First Nations' customs. *Around The Campfire*, NITV, 2017.

[31] Genetic memory is suggested here. Andrews, Kylie. ABC News, "Epigenetics: how your life could change the cells of your grandkids" http://abc.net.au/news/science/2017-04-21/what-does-epigenetics-mean-for-you-and-your-kids/8439548 (accessed 23 July 2017).

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