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# The Voice of Skogula in 'Beasts Royal' and a Story of the Tagus Estuary (Lisbon, Portugal) as Seen through a Whale's-Eye View

# Cristina Brito

CHAM—Centre for the Humanities, Faculdade de Ciências Sociais e Humanas of Universidade Nova de Lisboa, Avenida de Berna 26-C, 1096-061 Lisboa, Portugal; cbrito@fcsh.unl.pt

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Abstract: Patrick O'Brian inspired this work, with his 1934 book of chronicles "Beasts Royal," where he gives a voice to animals. Therein, among other animals, we find Skogula, a young sperm whale journeying with his family group across the South Seas and his views on the surrounding world, both underwater and on land. This paper tells a story of historical natural events, from the viewpoint of a fin whale that travelled, rested and stranded in the Tagus estuary mouth (Lisbon, Portugal) during the early 16th century. It allows us to move across time and explore the past of this estuarine ecosystem. What kind of changes took place and how can literature and heritage contribute to understand peoples' constructions of past environments, local maritime histories and memories? In the second part of this essay we present a fictional short story, supported on historical documental sources and imagery research where Lily, the whale, is the main character. Thus, we see the Tagus estuary as perceived through this whale's-eye view. Finally, we discuss past earthquakes, whale strandings, the occurrence of seals and dolphins and peoples' perceptions of the Tagus coastal environment across time. We expect to make a contribution to the field of the marine environmental humanities. We will do so both by addressing, by means of this literary approach, the writing of "new thalassographies," oceanic historiographies and "historicities" and by including all intervening actors—people, animals and the physical space—in the understanding of the past of more-than-human aquatic worlds.

**Keywords:** environmental humanities; literature; heritage and memory; early modern oceanic history; animal studies; shores and seascapes; cetaceans

# 1. Introducing Skogula's Viewpoint

"In the warm seas where squids, octopi and the like flourish and grow fat, a large school of sperm whales were feeding. Deep down near the sea-bed Skogula, a young bull whale, was pursuing a squid, which, having exhausted all its sepia, was now shooting backwards by means of is ling arms, which it used like oars. The whale caught it and rising to the surface he swallowed it with every sign of enjoyment". (O'Brian 2017, p. 21)

Patrick O'Brian (2017) in his 1934 'Beasts Royal' tells a story of a sperm whale calf growing into adulthood as he struggles to live in oceanic ecosystems full of both food and perils. The author gets his inspiration from Nature and the Sea—"*his first venture into the deep blue concerned not naval life but nature*" (King 2000)—and writes from the animal's perspective long before writing about people and adventures in the sea.

In 'Beasts Royal,' animals are the main actors and the observers of the surrounding world and even though this approach is not very common it does have precedents. Bullen (1909), in his 'Creatures of



the Sea,' opens with a chapter where a sperm whale (*Physeter macrocephalus*) is not solely the main character but also the narrator of his own life story:

"My earliest recollections are rather hazy but principally centre themselves around pleasant sensations. I was born, as nearly as I can remember, at high noon in the Indian Ocean near the Equator. You must excuse me from being more exact, for while we whales know the oceans down to a depth of five hundred fathoms from North to South within the frigid zones and all the watery world around, we do not pretend to the scrupulous accuracy with regard to exact position that humans do. Why should we?". (Bullen 1909, p. 13)

Contrary to Frank Bullen, who believed that just some animals—mostly the sperm whale—were worthy of having their own voice<sup>1</sup>, Patrick O'Brian gave voice to twelve different animals, ranging from mammals to birds, in twelve tales. Moreover, all of O'Brian's actors get to have their own name. In one of his tales, O'Brian explores bird's-eye view, using a condor of the Andes looking down to the human world and in another he explores the whale's-eye view on the underwater world as well as on land—the human world -, introducing the readers to Skogula, the sperm whale.

Skogula's tale introduces sperm whales' lives as well as sperm whaling in the early 20th century's waters of the South Oceans. Besides family and peers, competitors and prey, habitats and the overall underwater environments—including human spoils—Skogula describes the people interacting directly with him and his pod. The narrated interaction of whalers with their prey resulted in Skogula's distrust concerning boats and similar objects (O'Brian 2017). Similarly, Skogula describes his interactions with members of his pod and with other marine species, such as a fight with three giant swordfish off St. Helena (King 2000).

Patrick O'Brian was able to immerse himself in the details of sperm whales' lives, based on knowledge of their habitats, migrations and behaviours. He narrated this story in the third person very effectively, sometimes as if entering the whales' minds, with an ability to anthropomorphize but keeping the human emotion to a minimum (King 2000). He was able to show the reader the experience of sperm whaling from the viewpoint of the prey and not of the hunter, while presenting the natural environs as subjects and agents of that history.

Equivalent stories or other pieces of literature, could have been told or presented through the 'eyes' or 'voices' of several marine animals as they interacted with humans across different regions of the world but this is not a very common literary<sup>2</sup> or historiographic<sup>3</sup> practice. Current historiography of the environment is focusing mostly on human interactions and relationships with the rest of the animals and the world.

Over the past hundreds and thousands of years, the ocean and its life have naturally evolved and changed, as a result of natural, biological and geological events that shaped marine environment. Moreover, throughout history, people harvested marine resources, transformed coastal habitats, influenced water quality and transplanted marine species (Schwerdtner Máñez et al. 2014). Consequently, coastal communities changed their practices, values and perceptions on the sea, as well as their way of living on and using natural resources. They also accumulated an empirical knowledge on the habitats they inhabited and depended on. This traditional ecological knowledge

<sup>&</sup>lt;sup>1</sup> Bullen (1909) titles his first chapter 'The Autobiography of a Sperm Whale' and then he starts his next chapter 'The Mysticetus or Right Whale' by clearly stating that the right whale will not be the narrator of that story: "*Partly because my acquaintance with him is so much less and partly because I know that his intelligence is of a much lower order than that of the sperm whale, I shall not permit this huge creature to tell his own story*" (Bullen 1909, p. 39).

<sup>&</sup>lt;sup>2</sup> In children's literature, on the other hand, animals are often the main subjects and characters of stories: sea turtles who "wish to see the world" and are afraid of fishermen (e.g., Vérité n.d.); humpback whales playing with marine debris and producing jewellery with it (Quaresma 2014).

<sup>&</sup>lt;sup>3</sup> Some visions of animals' viewpoints can be found in traditional tales and stories, such as the ones recovered by António Almeida regarding African regions (Almeida 1957). As in children tales, in traditional stories animals can be the actors and leading characters, sometimes showing their own world, while others call on their attributes to show the faults and beauty of the human world.

represents experience acquired over thousands of years of direct human contact with the environment (Huntington 2000). This experience is then incorporated into local and traditional cultural productions, such as tales, poems, songs and visual arts and crafts.

At the same time, these long-lived marine mammals' species as animals with highly developed social and cognitive abilities, also adapted to local environments (Perrin et al. 2009). Their use of the habitats, behavioural responses to environmental changes, daily patterns or seasonal routes of migration may have changed over time, as well. Whales and dolphins, among other marine fauna, use the same coastal or oceanic environments as humans, being part of humans' histories of ecological, cultural and economic development (Richter 2015). Yet, they are most of the times absent as subjects of history. Although marine animals are part of past and current daily experiences on the littoral (e.g., Richter 2015) and in the seas and oceans, their presence and significance is totally omitted in the construction of most westernised histories of peoples and the sea (e.g., Canizares-Esguerra and Breen 2013).

## 2. The Whale's-Eye View as a Theoretical and Literary Approach

Peoples' relationship with the sea and its living creatures has undergone a long history of change, which is sometimes not visible; even less so if these interactions are observed from the perspective of the Other, in this case, a radically different other—the other animals<sup>4</sup>.

The opposition to others in a dialectic discourse between 'I' and 'the Other' traditionally constructs part of the human identity. It is the same with the other animals; typically, we find the binomial 'Us' versus 'Them' and 'Man' versus 'Beast.' Non-human animals are usually placed in a constant state of alterity from where they are unable to speak for themselves; they are placed in an entirely different category from our human other (Borkfelt 2011). As for the ocean, this environment is usually seen as an object and as 'the Other' in the land/sea binary (Steinberg 2014). This opposition is stronger regarding marine mammals and the sea, as humans are terrestrial mammals and feel awkward and fragile in the multi-dimensional sphere of the oceanic realm. Therefore, the history of such interactions remains hidden or inexistent, all the more if they take place underwater. The challenge here is either to dive underwater searching for information or to make it (re)surface.

The main goal is to contribute to new 'thalassographies' (Steinberg 2014) and combine historiographies (Bolster 2008) and 'historicities' (Ballard 2014) of the ocean. In the latter, as set by Ballard (2014), the use of vernacular and oral stories, memories and traditions and even sensed perceptions of a certain theme—here, the underwater realm of an estuary—may be merged. As for new directions in oceanic historiographies<sup>5</sup>, the inclusion of the underwater world and its elements as actors in the construction of an entangled history of oceans needs to be considered (Bolster 2006, 2008; Jones 2013). Similarly, the interconnection of different disciplinary approaches will help in developing knowledge on this highly transversal matter—in terms of its ecology, geography, ontologies, chronologies, contexts and cultures. This type of integrative approach may help us to reorient traditional historical knowledge on the oceans, by actively considering marine life forms, climate and the physical environment and submersion (DeLoughrey 2017). Oceanic history or the history of aquatic bodies, is much more than a simple metaphor to human endeavours (Land 2007). To reconstitute new oceanic historical realities, we need to include the salt water, we need to include all overlooked living and physical multidimensional oceanic worlds—including animals, environments and humans (Bolster 2006; Land 2007; Bolster 2008; Canizares-Esguerra and Breen 2013; Jones 2013; DeLoughrey 2017).

<sup>&</sup>lt;sup>4</sup> The other animals or the non-human animals, are all the known animal species excluding humans. We follow Borkfelt's (2011, pp. 137–38) use of the expression in order to "*clarify that the exclusion of humans from the generic term 'animals' is misleading in a post-Darwinian world.*"

<sup>&</sup>lt;sup>5</sup> Authors are arguing in favour of an oceanic turn in the new field of the ecological or environmental humanities—a turn into the ontologies of the sea and its multispecies entanglements; it reflects an important shift from a long-term concern with mobility across transoceanic surfaces to theorizing oceanic submersion, thus rendering vast oceanic space into ontological place (e.g., DeLoughrey 2017).

To achieve that, we adopt a new approach on the topics of changing seascapes, human activities on shores and the lives of marine animals. We intended to address the more-than-human world of the Tagus estuary (Lisbon, Portugal) in the early modern period by using a combination of a theoretical and literary approach. Encompassing more than people, geomorphology, resources and practices, more than remains and artefacts and addressing marine animals also as key elements. The latter are the main characters of the story to be told, a fictional story of change in the use of the Tagus River mouth as potentially might have been seen by cetaceans. Our aim is to go beyond the Tagus estuary, as a permanent element of the landscape—usually overlooked and the on-going environmental history. Thus, we wish to explore an approach which is different from the typical historical, archaeological and heritage methodologies—we used creative writing for that purpose. We took the work of Patrick O'Brian (2017) and his animals' tales where whales, condors, snakes and gorillas are the leading actors and humans have merely a supporting role. As a result, Lily, the whale, was shaped and her viewpoint is given. Therefore, we created a possible narrative for the Tagus estuary, written in the form of a literary short story and told through the eyes of a whale, in order to give the reader an estranged account of a strange and uncommon event. This short story may offer insights into the whale, the estuary and a catastrophic event and their interconnected history and may allow for the imagination of a past underwater world—one that is unseen and that humans cannot easily apprehend. It may also contribute to re-educate our collective imaginary of this region and to relocate alterity in the use of a coastal environment, by bringing the whale to the spotlight and peoples' perceptions entering the stage simply as the "Other."

In this manner, we aim at contributing to a wider vision of what 'sea-writing' and a history of a place, environment and seascape can be. Following the words of Steinberg (2014), we intend to depict and understand the sea and the littoral as an arena co-constructed by different maritime subjects—people, boats, debris, sea floor, estuary margins, whales and dolphins alike—and to analyse how this may contribute to the (marine) environmental humanities<sup>6</sup>.

"in many ways the ocean seems to be a space more suitable for the literary essay or poem that reproduces difference even as it interrogates its foundations  $(\dots)$ ". (Steinberg 2014, p. xv)

"If there is poetry in my book about the sea, it is not because I deliberately put it there but because no one could write truthfully about the sea and leave out the poetry". (Carson [1951] 2014)

# 3. A Tale of a Whale and an Earthquake in Lisbon

Lily entered the large estuary mouth on the 18th January 1531. At the exact place where the river meets the sea, she came face to face with the *Cachopo* sands and the wrecks of a ship. The vessel lay broken between the surface and the bottom, with part of its woods stuck in the fine grains of the *Bugio* sand bank<sup>7</sup>. Particles of sand and silt, pieces of wood and many other grains—pepper grains for sure—floated in the water column and small white shells<sup>8</sup> were scattered on the bottom.

The visibility was bad, the water was shallow in the *Golada* channel located between the large sand bank and the nearby beach to the south and the underwater sounds were very loud. The place

<sup>&</sup>lt;sup>6</sup> According to Little (2017), the environmental humanities is a generic term encompassing research in a diverse range of disciplines, including visual arts, literature and theatre, history, philosophy, politics, law and media studies. Several authors drawn on to new interdisciplinary collaborations as a way of developing the field (Holm et al. 2015; Little 2017; Holm and Brennan 2018).

<sup>&</sup>lt;sup>7</sup> A 17th-century shipwreck, probably a boat belonging to the Portuguese India Route, was found in September 2018 in the Bugio Bank at the mouth of River Tagus in Lisbon (Portugal). "Researchers found the wreck during a decade-long archaeological project supported by the navy, the Portuguese government, the municipal council of Cascais and Nova University of Lisbon; archaeologists found spices, cannons, Chinese ceramics and cowry shells in and around the sunken vessel" (Hignett 2018). This is just one of the many shipwrecks reported to have happened in that location since the early 16th century (Bettencourt et al. 2017).

<sup>&</sup>lt;sup>8</sup> Cowry shells (Class Gastropoda; Family Cypraeidae) were used as currency in the early contacts and trading systems established between Europeans and African peoples and are one of the remains of shipwrecks from this period. They are found in Portugal and in the Atlantic Islands' identified shipwrecks (Garcia 2016).

was crowded with peoples' vessels and noisy. Lily, the fin whale, could see the bellies of the boats as they moved from one shore to the other, in and out of the large estuary, some taking the South Channel to reach nearby beaches others taking the larger North Channel into the open sea. She also saw the cables that attached the anchors to the boats and the floor. And she saw the river floor full of debris, ropes, wood, pieces of cloth, nets and rusted metal parts; all spoils of boats and men. She looked aside when she passed by some huge bones; they belonged to other whales.

Lily was now tired due to an already long migration; usually she took the deep underwater corridors up north but this time she turned to the shore in the middle of her migratory route<sup>9</sup>. She was exhausted, hungry and alone. Several of her kind kept on swimming, others were still further south. The large group of hundreds of dolphins, formed by mixed species, that had accompanied her along the shores had now split into several smaller groups. One group went back into the open ocean and two smaller ones headed into the inner part of the river mouth efficiently avoiding litter, debris, vessels and nets, speeding ahead of her and following schools of large fish, while echolocating and searching for cuttlefish and octopus. Some squids were dying and thrown ashore by the high tide; if not captured by the dolphins while in the water, they would be collected by the people to a meal. The whale watched the surface from below, observing how dolphins and humans fought for the same prey<sup>10</sup>.

The fin whale was just looking for a short break hoping to lie still right below the water surface, close enough to the air to emerge to breath effortlessly. But while she was approaching a large vessel, anchored in the middle of *Golada*, men from inside the boat started screaming at her and then turning to other men on other boats, also screaming. Something was thrown in her direction; she fluked away. Nearby, two fishermen in the stern of a small rowing wooden boat, painted with bright colours, started pulling hard and quickly a large net full of fish, revolving the sand and leaving behind them a trail of suspended particles and loud human words. They were really close to the shore and people there looked in their direction and then to her. All men on the boats were pointing at her and now some women and fishmongers opening traps full of large octopus and cuttlefish in the sandy beach stopped what they were doing, held their heads up high trying to spot her. She submerged just in time to see the colour expelled by the dying sepia darkening the yellow sand and the women's feet. She emerged again just a couple of minutes later, not far from the same position. At her close sight, fishermen kept screaming at her, that she was scaring the fish. She was scarring them, she thought. So, she went under once more and swam further up and closer to a small but deep enough enclosed bay. It seemed like a good place to simply be quiet.

Just before going into resting mode, Lily spy-hopped. She stood vertically in the water column, her tail gently rubbing the sand floor and the tip of her head and the eyes right above the line of the surface. At a close distance she spotted the sails of several boats wide open roaming away from the shore into their oceanic journeys. She liked these vessels; they moved slowly and steady enough, so she could keep pace with them if she wanted to. A bit more distant, the shadow of the landscape of the estuary shores; the river bathing the feet of buildings and shipyards, estuarine beaches full of people, animals' parts, different kinds of spoils and wreckages and a vast quantity and variety of merchandising. Birds were diving into human and marine animals' remains, screaming right in front of large stone buildings.

<sup>&</sup>lt;sup>9</sup> As most baleen whales (Order Cetacea; Sub-order Mysticeti), fin whales (*Balaenoptera physalus*) typically conduct yearly north-south migrations from polar feeding grounds to tropical breeding grounds and back (Perrin et al. 2009).

<sup>&</sup>lt;sup>10</sup> In the D. João I reign, it was said that dolphins as well as several species of cephalopods would come to the sands of Lisbon shores and that local population would make use of them as food items: "*porpoises, dolphins and other big fish and cuttlefish, already dead came to the sands of the waterfront of Lisbon and the population taking advantage of that goes and catch them so they could serve as a meal but even on these, the King asks to collect the new tithe"* HFAC (1420).

The dolphins passed by again, yellow on their flanks, mixed up with other dolphins<sup>11</sup> with long strips in the head and sides, chasing schools of fish and a couple of them dug the estuary floor after soles and alike; they kept to themselves and their close friends and family. Only occasionally would one of their calves come closer to her and take a look to her massive body. Larger dark-grey dolphins were also around, moving in tighter groups. They were slower than the more common dolphins but highly effective in their predation attempts, taking octopuses with full mouth from their rocky holes and making them still by breaching out of the water and slapping their heads strongly in the water surface; these large octopuses were not an easy prey<sup>12</sup>.

On the opposite shore, Lily spotted amphibious animals humans called sea monster, a kind she was familiar with because she was used to seeing of the coast of Africa while migrating near the shore. The large furry animals <sup>13</sup> appeared briefly and then spy-hopped before crawling into land to rest and sunbathe. They were sea wolves; they got scared easily and retired quickly into the safety of the underwater realm and other companions at the sight of a human. Sometimes, Lily was not sure if they were there or not; while sleeping, the colour of their fur merged with the sand and they swam fast and elusively. She felt happy in those surroundings and rolled around before submerging. It was time to rest.

The day was the 26th January 1531<sup>14</sup> and the fin whale had been wandering around in the Tagus estuary mouth and nearby shores for the last couple of days. Yet, she had not been there earlier that month when both people, land and sea animals had felt some strange shockwaves coming from the Earth surface. The floor of the river Tagus was also restless now but Lily was familiar with the natural rhythms of this place, as she had travelled through it for several years. This time, as she was particularly tired, she scouted the area carefully. She was by now familiar with every peoples' movements and the small and large vessels sailing around. Thus, she lay confidently, as she found no notice of anything strange.

In the early morning, after swimming a bit into the open sea and back again into the estuary, she was calm and once more, ready to rest. But at some point, as the day was barely starting and the sun still asleep, she heard a long and deep reverberation. That harsh noise did not sound familiar to Lily's senses; it was as if a gigantic sperm whale echolocated from beneath the sea floor. Soon after, she sensed an unusual movement in the water. She felt as if she was being pulled by her tail into the ocean and swam strongly to the opposite direction, into the estuary, avoiding being dragged into the open ocean. Lily kept feeling the floor of the river moving and rumbling and her belly touching it as the water retreated. A profound echo from the depths emerged and the estuary mouth was completely emptied. Boats touched the river floor, wrecks emerged from the sand; the sand floor was totally visible now and the whale found herself stuck in it. As she tried harder and harder to break free, she became more and more stuck deep into the sand; her weight compressed her body in this strange environment where all floatability disappeared. She could spot very far away in the ocean another whale rolling between the water and the air and some ropes—maybe nets—attached to her tail and finally landing

<sup>&</sup>lt;sup>11</sup> Different species of dolphins could be sighted inside the Tagus estuary as well as in adjacent coastal waters. Bottlenose dolphins (*Tursiops truncatus*), common dolphins (*Delphinus delphis*), stripped dolphins (*Stenella coeruleoalba*) are historically documented to occasionally occur or strand in this area; they also occur on occasion in current days. They are coastal species that enter in rich coastal bays and estuaries, most probably to feed. Early 20th century naturalists referred to dolphins occurring in this region, in the Portuguese words, *Golfinho, Toninha* and *Boto* which is also an indication of the diversity of species occurring in the estuary (Brito and Vieira 2010).

<sup>&</sup>lt;sup>12</sup> There is evidence of the feeding activities for bottlenose dolphins (*Tursiops truncatus*) for the Sado estuary, south of the Tagus estuary; cuttlefish and octopuses are among their preferred prey (Dos Santos and Lacerda 1987; Dos Santos et al. 2007).

<sup>&</sup>lt;sup>13</sup> Rei (2016), referring to Arabian sources, indicates that seals were spotted in the Lisbon region. Currently, there are no populations of seals in mainland Portugal, nor in recent history; only exceptionally distraught specimens strand in Portuguese shores.

<sup>&</sup>lt;sup>14</sup> The 26th January 1531 earthquake is thought to be the one of the strongest in Portuguese history and it impacted Lisbon heavily according to coeval sources and archaeological remnants. It was preceded by two strong foreshocks, on the 2nd and the 7th of January, respectively. Observations indicate that the water disturbance was preceded by the shock and flooding of the river banks. However, the tsunami that allegedly followed it did not affect the city of Lisbon (Miranda et al. 2012).

on the sea floor. Crowds of dolphins were splitting up, swimming fast up north and south down the coastline while moving away from their usual coastal habitats, not so safe right now. Some humans fell overboard from their boats, which capsized, their bellies facing the dark sky. Onshore, people were also falling into the water, turning the seabed into their last bed. In that landscape, abundant signs of destruction were to be seen; dilapidated buildings and people hurt and screaming all over the place. Many were also falling and perishing on the beaches and in the city, under the debris of the wrecked buildings. There were wrecks everywhere; and the whale was feeling her lungs slowly collapsing.

All of a sudden, Lily experienced more shocks, just before feeling the water moving into the estuary again, pushing her along. She was caught off guard and was thrown against the nearest shore. She was stuck again, this time deeply in the sand, very tired and breathless, unable to try to move. Lily just stayed there. The large fin whale stranded in the shore of the Tagus estuary. And, together with her, piles of debris, large quantities of fish and different vessels were also pushed towards the shore. The movement of the earth floor and of the waters transformed completely the surrounding landscape. Lily took her last look at the city of Lisbon. Poor stranded whale<sup>15</sup>; the Tagus floor would also be her last resting place, while the waters returned to their original position and her enormous body lay there still and lifeless, half submerged, half out of the water.

## 4. The Tagus and Its Marine Mammals over Time

The Tagus estuary river mouth has been the last bed to many dead whales and other small and large marine fauna for has long as it has existed. And also to countless vessels' wrecks, to shipwrecked sailors, to marine debris and to the remains of all kinds of human activities over time. The Tagus estuary has existed in its current geomorphological form since around 7000 BP, as this was the moment that the sea levels' rise stabilized. From this period onwards, until around 1000 BP, the valley was progressively filled by a fluvial wedge and influenced by a tidal regime. Since c. 1000 BP the valley-fill history was dominated by an increased sediment input due to human-induced degradation of catchment slopes (Vis et al. 2008).

In the past 500 years, the Tagus estuary mouth has not changed significantly, with its fundamental sedimentological and morphological elements keeping the same (Santos et al. 2017, pp. 279–80): a main channel on the north side of the river entrance (currently used for navigation purposes); a sand bank parallel to this channel; another sand bank southeast of the channel (including the persistent *Bugio* bank); a secondary channel, closer to the south margin of the estuary; and a sand beach in the south margin (Figure 1).

In this region, several seismic events are documented over the centuries; around 175 earthquakes are documented for Portugal mainland for a period ranging from 1300 to 2014 (Ferrão et al. 2016). Some of them—namely the 1344, 1356, 1531 and the 1755 earthquakes—are acknowledged as some of the largest earthquakes known and with dramatic consequences in different localities in Portugal. The 1531 earthquake is considered to have been very devastating—one out of three major earthquakes felt in Portugal during the 16th century: destruction of churches and about 1500 buildings in Lisbon<sup>16</sup>; the agitation of the Tagus river, overtaking the margins, presenting a high seismic activity and being followed by aftershocks (Ferrão et al. 2016). These happenings were so extraordinary and had such a huge impact on peoples' life that they were very well documented particularly the 1755 earthquake (Lima 2007; Lisboa 2007; Ferrão et al. 2016). And the earthquakes, as other natural manifestations, are to be seen through coeval narratives and accounts, yet also through multiple later publications and

<sup>&</sup>lt;sup>15</sup> It is said that in the days prior to the 1531 Lisbon earthquake, a whale was seen in the Tagus estuary; this sighting was considered by locals as a bad omen and sign that a catastrophe was about to happen. The event was documented at the time (Borchert and Waterman 2017). Several strandings of whales are historically reported in the Tagus estuary (Brito 2016).

<sup>&</sup>lt;sup>16</sup> The damage was particularly large in buildings located on recent landfills most likely unconsolidated grounds (Miranda et al. 2012).

visual representations; they echo across time, feeding peoples' imagination and provoking different reactions (Lisboa 2007).



**Figure 1.** Current cartographic representation of the Tagus estuary (Lisbon, Portugal), showing the 'Cachopo' sand banks, the Bugio permanent sand bank as well as the 'Golada' channel. Source: www.navionics.com.

Just prior to the 1531 earthquake, a large whale might have been sighted and eventually stranded. This event was published in a 1531 leaflet printed by Heinrich Stainer in Augsburg (Figure 2) as a curious story that happened in sunny Lisbon and widespread via traditional routes of commercial contacts, its original source being a *"written communication from Portugal."* The report appeared in the 1550 *"Wunderzeichenbuch,"* the Augsburg 'Book of Miracles' (fol. 119r)<sup>17</sup>, either based directly on the pamphlet or on a later chronicle (Borchert and Waterman 2017, p. 18).

"In the year 1531, on the twenty-sixth and the twenty-eight of January, bloody and fiery signs were seen at night in the sky of Lisbon in Portugal on the twenty-sixth day and then on the twenty-eight a great whale was seen in the sky. This was followed by great earthquakes, so that about two hundred houses collapsed and more than a thousand people were killed". (Borchert and Waterman 2017, p. 208)

In the advent of certain catastrophes—earthquakes, large storms and bad weather conditions and sometimes as a result of those events, large whales or large 'fish' are reported to have been seen or have stranded in that area (Brito 2016). This has, in fact, happened in the Tagus estuary in different moments in time. Sometimes they have functioned as predictors of a catastrophe, the end of the world or as sign of a divine punishment (Lima 2007; Borchert and Waterman 2017); there are many authors *"associating earthquakes with whales as twinned adumbrations of either divine or scientific impact"* (Brickhouse 2018, p. 87). This follows the European tradition, at least as old as the Renaissance, where—as conjoined sources of shock—the whale and the earthquake converge for the understanding of a catastrophe and of events that can destroy human and natural world alike (Brickhouse 2018).

It seems clear from historical sources that cetaceans—large whales and different species of dolphins—and possibly different species of seals (we do not know if they were distraught animals or small populations) have over time entered the Tagus estuary and river. Rei (2016) cites an old Arabian source (Al-Istakhri, Al-Masalik wa-I-Mamalik) according to which, in the Tagus Estuary, "*at a certain moment, an [aquatic] mammal gets out of the sea and rubs itself in the beaches rocks* (...)." However, and opposite to current local perceptions about this environment and seascape, there are no resident

<sup>&</sup>lt;sup>17</sup> In the Book of Miracles many wonders and strange phenomena were depicted and described, not just the Lisbon whale but also monstrous animals sighted across Europe including a wondrous fish (Borchert and Waterman 2017, p. 230).

populations of seals, whales or dolphins in the Tagus estuary. There never were. At least to the extent the documental sources allow us to extrapolate<sup>18</sup>. Further investigation may, however, show different results and it would be very interesting to understand the true past of marine mammals' natural populations in this region.



**Figure 2.** First page of a German leaflet showing the so-called Whale of Augsburg or the stranded whale in Lisbon in January of 1531: http://daten.digitale-sammlungen.de/~{}db/bsb00008463/images.

Just recently, an 18-year-old interviewed during a study on the attitudes of young people living along the Tagus River towards nature (Mackinnon 2015) mentioned that: "(...) [he] heard that some time ago, when there was none of that pollution, the river was, according to what I heard, was pretty, there were dolphins and all swimming in it. I think it should have been pretty to see. Anyone would like to see it." From the 1960s onwards, oral stories indicate that dolphins disappeared from the Tagus due to overfishing and pollution. Since then, hear-sayings refer, for instance, "in the 1940s it was very common to sight the elegant dolphins that, happily showing their dorsal fin, chased squids and cuttlefish that by then were very abundant in the Tagus" (Coutinho 2002). The idea of an existing former population spread out and was accepted by local communities, general public and even the scientific community. In the past

<sup>&</sup>lt;sup>18</sup> As an example, there are some indications, from Roman and Medieval periods that seals might have used Portuguese continental shores to rest and breed (e.g., Rei 2016). However, the words found in the historical texts—like the ones by Pliny the Elder (Pliny 1999)—refer to 'nereids' and 'tritons' singing or crying nearby Lisbon) which is rather uncertain in terms of a correct biological identification. Nereids and mermaids are also referred by the 16th century-humanist Damião de Góis: "there are a kind of people, that the locals call marine men (...) and according to our ancestors, tritons use to jump to the shore and, once in a while, would reach the beach" (De Góis [1554] 2002).

decade, local users of the estuary started collecting new and more frequent observations of dolphins in the estuary, which was followed by media coverage of this topic. This raised the question of an ecological recovery of the system allowing for the returning of the resident population of dolphins to a former occupancy area; this debate is still going on.

We keep finding numerous references to the past presence of whales and dolphins in the Tagus estuary. In the late 19th century, Baldaque da Silva, an important Portuguese naturalist, described the existence of dolphins in the Tagus and Sado rivers (Da Silva 1891). However, Nascimento (1945) belies Baldaque da Silva, in his work 'O Delfim,' saying the latter had mistaken 'delfins' with 'toninhas'<sup>19</sup>. The misunderstanding with the names can be evidence of either a difficulty in the species identification—probably a result of naturalists using eyewitness reports rather than their own observations—or the fact that several species were entering the estuarine ecosystem simultaneously. Besides, large whales and groups of dolphins (of different species) are known to enter or strand in the Tagus estuary in recent and past times.

The most commonly stranded species of large whales were the sperm whale (*Physeter macrocephalus*) and the fin whale (*Balaenoptera physalus*) and even though historical stranding records are sparse<sup>20</sup> for mainland Portugal, the gathered historical information indicates a high diversity of cetaceans (Sousa and Brito 2011). In fact, by the late 18th century printed news started to spread and disseminate information on strange, rare and exotic occurrences from the natural world, whales included (Brito and Costa 2016). This is the case of a fin whale stranded in the Tagus estuary reported in the '*Gazeta de Lisboa*'<sup>21</sup> with a detailed description of the specimen, accompanied by an illustration of the whale with its measures, which was afterwards translated (Brito and Costa 2016). This might have been a very important and rare event, as the newspaper did not typically include articles about natural history of the marine environment. Again, this same account is described in a manuscript document where different sermons were included, in the form of a popular poem (Santa Maria 1723): "In the age of 1723. This year appeared in the river of Lisbon a whale, for which view all people in the City competed (...). Running today all Portugal is going to the see the royal animal Lady Whale of the Coast (...)."

Many other cases exemplify the gathering of empirical knowledge about whales and the interest of different audiences in these large marine animals. And this interest goes back in time and persists across centuries. Father António Vieira, a Portuguese missionary, described in his "Sermão de Santo António aos Peixes" large fish or dolphins occurring in the Tagus Estuary as an example of the parody of the bigger eating the smaller (Vieira [1654] 2008): "(...) Some of those [people] following the wake of the ships, could go back to Portugal and (...) would hear these [dolphins] in the Tagus, some larger than others who eat the small fish there (...)."

Our knowledge of past marine populations or of changes in the oceanic and coastal ecosystems, may be influenced by current perceptions, oral traditions or even by memories and, sometimes, it may be incorrect. On the other hand, present day scientific knowledge does not match with past ecological realities. For instance, some regions where there is no data on the occurrence of seals in the present or recent past, such as the Azores Archipelago (Silva et al. 2009), have historically held natural populations. Region after region, historical evidence paints a picture of past ecological abundance and diversity that astonishes the modern mind (Mackinnon 2015). Also, environmental issues—in the case

<sup>&</sup>lt;sup>19</sup> Today, in several parts of the Portuguese speaking world, these two old vernacular terms can still be used to describe either harbour porpoises (*Phocoena phocoena*), common dolphins (*Delphinus delphis*) or bottlenose dolphins (*Tursiops truncatus*) and this confusion persists in some regions to the present day (Brito and Vieira 2010). Many authors of that period (between late 19th and middle 20th century) described coastal and resident dolphins in the Portuguese shores; several authors apparently confused the observed species in their descriptions (e.g., Da Silva 1891; Nobre 1935; Nascimento 1945).

<sup>&</sup>lt;sup>20</sup> In a historical account for the 16th century, the author (Soledade 1705) describes in Areia Branca (Peniche, Portugal) the stranding of a large whale with "30 cubits length and a corpulence similar to an 80 ton ship. The tailwas 20 palms wide and in its mouth fit two men standing." A mass stranding of sperm whales is also documented (in words and images) for the 18th century Algarve shore (Sande 1784). For a review of strandings see Sousa and Brito (2011) and Brito and Costa (2016).

<sup>&</sup>lt;sup>21</sup> Gazeta de Lisboa Occidental (1723–1735). Hemeroteca Digital, Lisbon: http://hemerotecadigital.cmlisboa.pt/Periodicos/ GazetadeLisboa/GazetadeLisboa.htm.

of the Tagus, species abundance and diversity, water quality, shorelines changes and anthropic impacts, as well as cultural and heritage issues—e.g., preservation of underwater heritage and memories' construction, are inseparable from the tangled hank of human perceptions (Little 2017).

A past social memory of presence and abundance of cetaceans in the Tagus estuary has prevailed until the middle and late 20th century and well into the 21st century, based on rare historical accounts and occasional past and recent observations. The repetition of old accounts, the process of mythification created around mermaids, nereids, water nymphs and tritons in the Tagus and the number of sightings registered in the late 19th century and early 20th century, may have created and exaggerated perception of the abundance of cetaceans in the region. Moreover, rare and iconic events—the whales' strandings—were repeated and amplified in a large and diversified number of formats over time. The iconography and cartography of the Tagus estuary shows strange and large 'sea monsters' (see Figure 3) and even seals are part of a well-known painting of the Lisbon shore facing the Tagus in the early modern period (MNAA 2009). Whales served as agents and subjects of history and became a place of cultural meaning (e.g., Colby 2015; Richter 2015; Brickhouse 2018; Brito 2018).



**Figure 3.** A map of the seaports of Lisbon and Setúbal, by António de Mariz Carneiro (15–/1642); from BND—Portuguese National Library Digital Collections (http://purl.pt/1549). In the upper part of the map we can read the sand bank called *'caxopos'* at the entrance of the Tagus River and a sea monster (large fish and a mermaid) is depicted in the middle of the Tagus estuary mouth.

### 5. Conclusions: Skogula and Lily's Agency in Their Historical Narratives

The 1531 earthquake left a trail of devastation in the city of Lisbon and the sighting of a whale prior to the earthquake would later be seen as an omen of bad luck<sup>22</sup>. This whale echoed on all other whales that would strand there in the centuries to come and be recorded and remembered by the people in that region.

The whale in general—and our whale in particular—is an entity that was easily connected to destruction and fear (Richter 2015). The whale and the earthquake are elements of the story and of a path into the past of the Tagus estuary. Both physical events and large fauna occurrences—especially if very impressive or rare—claim their space into peoples' minds, fantasies, myths, stories, traditions and, consequently, feed into their cultural productions, namely a wide range of narrative modes. They allow for establishing a relationship between the sea and cultural narratives and to explore the ways the sea and its events and animals have been portrayed, as well as the diverse ways the sea has shaped those narrative modes too (Mathieson 2016). Hence, by exploring the potential of using the whale's-eye view, we can trace back the history and origin of different memories and oral stories constructed locally around the presence of whales and other marine mammals in the Tagus estuary. Our methodological approach helps understanding the history of a coastal ecosystem and its changes, including past events and the presence of wildlife. It also opens space in the discussion of animal agency in historical narratives of the sea (e.g., Martin 2011). This is a space not restricted to human agents but where animal and the sea itself 'do' things and, in that sense, have agency (Richter 2015).

The agencies of the whale, of the estuary and of earthquakes are, in fact, the central question of this work trying to offer the perspective of how the non-human world do influence humans and may shape their choices and decisions. Whales, dolphins and seals did play their part in the history and in the construction of several stories of this environment and coastal landscape. No doubt, different marine mammals did enter occasionally in this estuarine system and are very common in coastal adjacent waters in Portugal mainland. And they still do, currently. No doubt, they on occasion utilised this region, probably for feeding and resting purposes and equally often stranded (dead or alive) in this region. In fact, their presence must have been so significant that numerous myths, ideas and accounts emerged from rare sightings. And their presence, even if particularly silent in the historical sources or in the archaeological and material records, may trace, shape or change human actions and choices (Colby 2015). These changes are even more important to trace when animals and peoples occupy and explore the same marine environments and if they interchange their roles as predators and preys and as competitors and cooperative elements of the ecosystem.

An animal's silent presence does not always mean vulnerability or passivity within human history. On the contrary, many times it is the 'human' vulnerability that allows the possibility of animal agency (e.g., Martin 2011; Brickhouse 2018). The unpredictability of a shark attack, the powerful attack of a rhinoceros, the possibility of being struck by a whales' tail, the fury of the oceanographic, climatic or geological phenomenon—all these situations are possible and humans are (re)active to natures' agency. Current narratives in animal studies are placing individuals, populations, species, ecosystems and all their inter-relations as central agents in the construction of their own but also, of human histories. Wild animals are not portrayed simply as passive entities but rather as agents-in-the-world (e.g., Martin 2011). The organism should be analysed and understood in its environment rather than as a self-contained individual confronting an external world; this perspective allows us to overcome the dichotomy between evolution and history, biology and culture (Ingold 2000) and to replace it by a "*multispecies continuum*" (Richter 2015, p. 159). Scholars in the environmental humanities are uniquely positioned to contribute to this rethinking and rewriting of agency because they focus in the interactions of humans and the non-human world (e.g., Nash 2005; Nance 2015).

<sup>&</sup>lt;sup>22</sup> And besides the various papers and publications already mentioned, it also provided the raw material for coeval writers as current day novelists (see Vidal 2012).

Making use of Lily, the whale, as a main character in our story—as much as Skogula was in 'Beasts Royal'—allows developing and sharing understanding of ecological and physical historical events as cultural phenomena (Little 2017). In the case of whales or other mammals—either land or marine mammals, more than for fishes (Wadewitz 2011), humans can easily anthropomorphize them. Over time—since (Pliny 1999) to current days—the 'smiling and friendly dolphin' has helped to raise a consciousness about the intrinsic values of these animals and ethic aspects regarding cetaceans' hunt and use are being debated for decades now<sup>23</sup>. And "whales, as marine mammals and mythical ancestors of the human communities, are to a high degree representative of this erasure of the divide between the humans and the natural world" (Richter 2015, p. 159). Lily and Skogula also help to close the gap between non-human (marine) animals and humans, as the latter play the role of 'the Others.'

It is possible to address the history of a place, of an event or of an environment using a literary tone supported on a critical analysis of scientific and historical facts. It is possible to uncover not merely the way that nature influences and constrains human actions but also the way that some environments and animals may shape human intentions (Nash 2005; Nance 2015). This allows addressing those events where the agents—humans and the non-human world—are so closely interconnected that they cannot be separate. And the other way around is equally true; in some cases, to tell the natural story of a marine animal or population we need to relate it to the multidimensional world they are part of, humans included.

"For a long time, they swam steadily, rising to spout every few minutes, until the leader heard, very far off the cry: 'There she blows!' He could not see the ship, being unable to see far in air but he know the cry, having been harpooned once. He was very much alarmed, as Skogula could see and began to take in vast quantities of air, spouting noisily. The whaler was lowering boats; Skogula could just hear the sound of men rowing them and a moment later his father dived, showing his great tail for a second before he disappeared; the rest of the school followed him and they all sank to a great depth". (O'Brian 2017, p. 23)

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#### References

Almeida, António. 1957. Cinco fábulas da Ilha do Príncipe. *Revista do Instituto Superior de Estudos Ultramarinos* 6: 1–13.

Ballard, Chris. 2014. Oceanic Historicities. The Contemporary Pacific 26: 96–124. [CrossRef]

- Bettencourt, José, Cristóvão Fonseca, I. D. Pinto Coelho, and G. Correia Lopes. 2017. Navios de época Moderna em Lisboa: Balanço e perspectivas de investigação. In *I Encontro de Arqueologia de Lisboa: Uma Cidade em Escavação*. Lisboa: CAL/DPC/DMC/CML, pp. 479–95.
- Bolster, W. Jeffrey. 2006. Opportunities in Marine Environmental History. *Environmental History* 11: 567–97. [CrossRef]

<sup>&</sup>lt;sup>23</sup> Even if people do not completely understand cetaceans' behaviours or even their intentions, they recognized in them a certain self-will which has regulated the ways people have thought about nature and animal-human relationships. In his essay about orcas, Colby (2015) refers that from the first encounters with this species humans have been both compelled as confused by it.

Bolster, W. Jeffrey. 2008. Putting the Ocean in Atlantic History: Maritime Communities and Marine Ecology in the Northwest Atlantic, 1500–1800. *American Historical Review* 113: 19–47. [CrossRef]

Borchert, Till-Holger, and Joshua P. Waterman. 2017. The Book of Miracles. Cologne: Taschen.

Borkfelt, Sune. 2011. Non-human otherness: Animals as others and devices for othering. In *Otherness: A Multilateral Perspective*. Edited by Susan Yi Sencindiver, Maria Beville and Marie Lauritzen. Bern: Peter Lang.

Brickhouse, Anna. 2018. Earthquake and Whale. Leviathan 20: 85–102. [CrossRef]

- Brito, Cristina. 2016. New Science from Old News: Sea Monsters in the Early Modern Portuguese Production and Transfer of Knowledge about the Natural World. Scientia et Historia nº 1. Lisboa: Escola de Mar. ISBN 978-989-9931-11-4.
- Brito, Cristina. 2018. Beauties and Beasts: Whales in Portugal, from Early-Modern Monsters to Today's Flagship Species. In *Environment & Society Portal*. No. 21. Arcadia: Rachel Carson Center for Environment and Society. ISSN 2199-3408.
- Brito, Cristina, and Lese Costa. 2016. Baleias em circulação: Uso de imagens na produção e transferência de conhecimentos de história natural marinha em Portugal do Século XVIII. Arquivos de Zoologia 47: 33–42. [CrossRef]
- Brito, Cristina, and Nina Vieira. 2010. Using historical accounts to assess the occurrence and distribution of small cetaceans in a poorly known area. *Journal of the Marine Biological Association of the United Kingdom* 90: 1583–88. [CrossRef]
- Bullen, Frank T. 1909. Creatures of the Sea: Being the Life Stories of Some Sea Birds, Beasts and Fishes. Toronto: McClelland & Goodchild.
- Canizares-Esguerra, Jorge, and Benjamin Breen. 2013. Hybrid Atlantics: Future directions for the history of the Atlantic World. *History Compass* 11: 597–609. [CrossRef]
- Carson, Rachel. 2014. The Sea Around Us. London: Unicorn. First published 1951.
- Colby, Jason. 2015. Change in black and white: Killer whale bodies and the new Pacific Northwest. In *The Historical Animal*. Edited by Susan Nance. New York: Syracuse University Press.
- Coutinho, J. 2002. Pescas na Costa Norte do Tejo. Paço de Arcos: A Voz de Paço de Arcos.

Da Silva, Antonio Arthur Baldaque. 1891. Estado Actual das Pescas em Portugal Comprehendendo a Pesca Marítima, Fluvial e Lacustre em todo o Continente do reino, Referido ao anno de 1886. Lisboa: Ministério da Marinha e Ultramar.

De Góis, Damião. 2002. Elogio da Cidade de Lisboa. Lisboa: Guimarães Editores. First published 1554.

- DeLoughrey, Elizabeth. 2017. The submarine futures of the Anthropocene. *Comparative Literature* 69: 32–44. [CrossRef]
- Dos Santos, Manuel Eduardo, and Miguel Lacerda. 1987. Preliminary observations of the bottlenose dolphin (*Tursiops truncatus*) in the Sado estuary (Portugal). *Aquatic Mammals* 13: 65–80.
- Dos Santos, Manuel Eduardo, Chiara Coniglione, and Sónia Louro. 2007. Feeding behaviour of the bottlenose dolphin, Tursiops truncatus (Montagu, 1821) in the Sado estuary, Portugal and a review of its prey species. *Zoociências* 9: 31–39.
- Ferrão, Carmo, Mourad Bezzeghoud, Bento Caldeira, and J. F. Borges. 2016. The Seismicity of Portugal and Its Adjacent Atlantic Region from 1300 to 2014: Maximum Observed Intensity (MOI) Map. Seismological Research Letter 87: 743–50. [CrossRef]
- Garcia, Ana C. A. 2016. Contribution des ports et naufrages à la compréhension de la navigation dans l'Archipel des Açores et de la pratique du commerce dans l'Atlantique (XVIe-XIX siècle): Résultats des études archéologiques. In *La Maritimisation du Monde de la Préhistoire à nos Jours. Enjeux, objets et Methods*. Edited by GIS d' Historie Maritime. Paris: Presses de l'université Paris-Sorbonne, pp. 363–86.

HFAC. 1420. Volume I (1208–1483), doc. 327de 8 de Fevereiro de 1420. Lisboa: Lisbon Regional Archive, pp. 214–16.

- Hignett, Katherine. 2018. Incredible Images Reveal Renaissance Shipwreck in 'Discovery of the Decade.' Newsweek. September 25. Available online: https://www.newsweek.com/incredible-images-revealrenaissance-shipwreck-discovery-decade-1137100?fbclid=IwAR24kKhZXDJfaZyH5dSNeW0zQgVF-6gTsuue2p8ADtdSRGdya9CHab9FEE (accessed on 3 March 2019).
- Holm, Poul, and Ruth Brennan. 2018. Humanities for the environment 2018 report—Ways to here, ways forward. *Humanities* 7: 10.
- Holm, Poul, Joni Adamson, Hsinya Huang, Lars Kirdan, Sally Kitch, Ian McCalman, James Ogude, Marisa Ronan, Dominic Scott, Kirill Ole Thompson, and et al. 2015. Humanities for the Environment—A manifesto for research and action. *Humanities* 4: 977–92. [CrossRef]

Huntington, Henry P. 2000. Using traditional ecological knowledge in science: Methods and applications. *Ecological Applications* 10: 1270–74. [CrossRef]

Ingold, Tim. 2000. The Perception of the Environment: Essays in Livelihood, Dwelling and Skill. New York: Routledge.

Jones, Ryan Tucker. 2013. Running into Whales: The History of the North Pacific from below the Waves. *American Historical Review* 118: 349–77. [CrossRef]

King, Dean. 2000. Patrick O'Brian: A Life Revealed. New York: H. Holt.

Land, Isaac. 2007. Tidal Waves: The New Coastal History. Journal of Social History 40: 731-43. [CrossRef]

- Lima, Maria Luísa. 2007. Natureza e gestão do risco: Interpretações do terramoto nos textos da época. In *História e Ciência da Catástrofe: 250º Aniversário do Terramoto de 1755*. Edited by Maria Fernanda Rollo, Ana Isabel Buescu and Pedro Cardim. Lisboa: Edições Colibri, pp. 83–102.
- Lisboa, João Luís. 2007. Réplicas em papel. Informação e comentário. In *História e Ciência da Catástrofe:* 250° Aniversário do Terramoto de 1755. Edited by Maria Fernanda Rollo, Ana Isabel Buescu and Pedro Cardim. Lisboa: Edições Colibri, pp. 67–82.
- Little, Gavin. 2017. Connecting environmental humanities: Developing interdisciplinary collaborative method. *Humanities* 6: 22. [CrossRef]
- Mackinnon, J. B. 2015. Choice without memory: Uncovering the narrative potential of historical ecology. In Marine Historical Ecology in Conservation: Applying the Past to Manage for the Future. Edited by John N. Kittinger, Loren McClenachan, Keryn B. Gedan and Louise K. Blight. Berkeley: University of California Press, pp. 265–75.
- Martin, Jennifer Adams. 2011. When sharks (don't) attack: Wild animal agency in historical narratives. *Environmental History* 16: 451–55. [CrossRef]
- Mathieson, Charlotte. 2016. Introduction: The literature, history and culture of the sea, 1600-present. In *Sea Narratives: Cultural Responses to the Sea, 1600-Present.* Edited by Charlotte Mathieson. Basingstoke: Palgrave Macmillan, pp. 1–21.
- Miranda, J., J. Batlló, H. Ferreira, L. M. Matias, and M. A. Baptista. 2012. The 1531 Lisbon earthquake and tsunami. Paper presented at 15 World Conference on Earthquake Engineering WCEE, Lisbon, Portugal, September 24–28.
- MNAA. 2009. Museu Nacional de Arte Antiga. In *"Encompassing the Globe": Portugal e o Mundo nos Séculos XVI e XVII*. Lisboa: Museu Nacional de Arte Antiga, p. 70.
- Nance, Susan, ed. 2015. Introduction. In The Historical Animal. Syracuse: Syracuse University Press, pp. 1–48.

Nascimento, Luís G. 1945. O delfim: Um inimigo irreconciliável da sardinha. Boletim da Pesca 8: 18-25.

Nash, Linda. 2005. The Agency of Nature or the Nature of Agency? Environmental History 10: 67-69.

Nobre, Augusto. 1935. Vertebrados (Mamíferos, Repteis e Peixes). Porto.

O'Brian, Patrick. 2017. Beasts Royal: Twelve Tales of Adventure. New York: Harper Collins Publishers.

- Perrin, William F., Bernd Würsig, and J. G. M. Thewissen, eds. 2009. *Encyclopedia of Marine Mammals*. Cambridge: Elsevier, Academic Press.
- Pliny. 1999. Historia Natural de Cayo Plinio Segundo. Trasladada y Anotada por el doctor Francisco Hernández (Libros Primero a Vigesimoquinto) y por Jerónimo de Huerta (Libros Vigesimosexto a Trigesimoséptimo) y Apéndice (Libro Séptimo Capítulo LV). Biblioteca Filológica Hispana, 38. Visor Libros. Madrid: Universidad Nacional de México, Original published 1977–1979.
- Quaresma, Sofia. 2014. Graciosa, A Baleia Vaidosa. Lisboa: Escola de Mar, Paleta Azul.
- Rei, António. 2016. Lisboa e o seu alfoz, em relatos árabes do 'maravilhoso'. In Lisboa Medieval: Gentes, Espaços e Poderes. Edited by João Luís Inglês Fontes, Luís Filipe Oliveira, Catarina Tente, Mário Farelo and Miguel Gomes Martins. Lisboa: IEM—Instituto de Estudos Medievais, vol. 15, pp. 103–12.
- Richter, Virginia. 2015. 'Where things meet in the world between sea and land': Human-whale encounters in littoral space. In *The Beach in Anglophone Literatures and Cultures: Reading Littoral Space*. Edited by Ursula Kluwick and Virginia Richter. Farnham: Ashgate Publishing.
- Sande. 1784. Original Watercolours at the Vasco da Gama Aquarium. Lisboa.
- Santa Maria, Manuel. 1723. Sermões Vários. Neste anno Appareceo na Ribeira de Lxa huã Balea ... . [Manuscript from the Library of Academia das Ciências de Lisboa; Library Reference 'Vermelho 569']. Lisboa.

- Santos, Filipe Duarte, António Mota Lopes, Gabriela Moniz, Laudemira Ramos, and Rui Taborda. 2017. *Grupo de Trabalho do Litoral: Gestão da Zona Costeira: O Desafio da Mudança*. Edited by Filipe Duarte Santos, Gil Penha and Lopes e António Mota Lopes. Lisboa. ISBN 978-989-99962-1-2.
- Schwerdtner Máñez, Kathleen, Poul Holm, Louise Blight, Martha Coll, Alison Mac-Diarmid, Henn Ojaveer, Bo Poulsen, and Malcolm Tull. 2014. The future of the oceans past: towards a global marine historical research initiative. *PLoS ONE* 9: e101466. [CrossRef] [PubMed]
- Silva, Mónica A., Cristina Brito, S. V. Santos, and João P. Barreiros. 2009. Occurrence of pinnipeds in the Archipelago of the Azores: A checklist since Discovery until Present. *Mammalia* 73: 60–62. [CrossRef]

Soledade, Fernando F. 1705. História Seráfica Cronológica da ordem de São Francisco da Província de Portugal, tomo III. Lisboa.

- Sousa, Andreia, and Cristina Brito. 2011. Historical strandings of cetaceans on the Portuguese coast: anecdotes, people and naturalists. *Marine Biodiversity Records* 4: e102. [CrossRef]
- Steinberg, Philip E. 2014. Foreword: On Thalassography. In *Water Worlds: Human Geographies of the Ocean*. Edited by Jon Anderson and Kimberley Peters. Farnham: Ashgate.

Vérité, Marcelle. n.d. Contos do Mar. Verbo: Biblioteca Infantil.

Vidal, Alexandra. 2012. No Coração do Império. Lisboa: Matéria-Prima.

- Vieira, António. 2008. Sermão de Santo António aos Peixes. Biblioteca Digital Colecção Clássicos da Literatura Portuguesa. Porto: Porto Editora. First published 1654.
- Vis, Geert-Jan, Cornelis Kasse, and Jef Vandenberghe. 2008. Late Pleistocene and Holocene palaeogeography of the Lower Tagus Valley (Portugal): Effects of relative sea level, valley morphology and sediment supply. *Quaternary Science Reviews* 27: 1682–709. [CrossRef]

Wadewitz, Lissa. 2011. Are fish wildlife? Environmental History 16: 423-27. [CrossRef]



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