

# Between the land and the sea: dunes as natural and cultural heritage

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## 1. Intro

I do not know if this happens to you to, but children, students and common people questions about my work are normally quite challenging and make me think deeply about what I am doing and why I do it.

I will give you an example. In May, this year, the members of my team asked me to help them with a question they had. What should they say when people asked us about our position concerning present coastal management and dune conservation?

I coordinate an international project on coastal dunes and the issue was raised because of a post in Facebook. My communication officer, Ana Marcelino, posted something about the relevance of dune rehabilitation / conservation and someone replied, with the support of a newspaper article, questioning why should we be investing in coastal conservation when coasts are condemned to disappear with sea mean level rise. Money, wrote that person, would be best spend in retreat and relocation of people, services and infrastructures.

I couldn't agree more.

Why then losing time in studying the dunes? Should we as a research team take a position?

Since this is the core of my project, these questions should be clarified. I felt that I had to justify my work and the support of the European taxpayers.

So, first, coasts will not disappear, they will move inland. However, will nations and people accept losing ground to the sea without fighting? How much land lost is acceptable? What means / tools do we have to mitigate sea level rise impacts? Well, dune conservation is

one of them. Even if we retreat, we still need a buffer-area between the sea and the urban areas, unless we all move to the mountains.

Second, we study dunes because, like Harari<sup>1</sup> said about lawns, they have a history behind them. An almost ignored history about an environmental problem, sand drifting, common to many places and populations in the world, and the solution found to prevent it: afforestation. A solution that shaped coastal landscapes until today. Afforestation was not about conservation, but about survival and preventing disaster. By attempting to control sand, with trees, vegetation and fences, telling stories, transmitting ecological knowledge, writing reports and passing laws on dunes, humans transformed them into artifacts or cultural environments.

Third, as Joaquim Radkau said, in an interview to Gabriella Corona<sup>2</sup>, environmental history should be a critical science. Even if it is influenced by present environmental concerns it should not be orientated to support political or economic agendas or other major fashionable trends. So when we - the DUNES team - say we want to inform the future European coastal management that does not mean supporting, approving or justifying dune rehabilitation or a specific kind of coastal conservation. What we aim is to broaden horizons, by doing what history does best, to show that things normally thought as immutable – beliefs, ideas, hopes, norms, tools, technologies, institutions, political and economic systems -, are changeable and, more than that, dynamic and fluid. This is important to help us all to understand, as McNeill<sup>3</sup> stressed, that the future is not written yet. Using History to observe «the accidental chain of events that led us here», allow us to have a long-term multi-perspective view on human-nature relations, widening our capacity to see the possible futures, the alternative paths, the possibilities that we have not considered or dreamed of<sup>4</sup>.

Fourth, the most sustainable solution / management for coastal areas may well be: let the sea take it! But, that should not stop us from looking for and exploring other options.

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<sup>1</sup> Yuval Noah Harari, *Homo Deus. A Brief History of Tomorrow* (Vintage Publishing, 2017), p. 69.

<sup>2</sup> Gabriella Corona, "On Nature and Power. Interview with Joachim Radkau," *Global Environments* 3 (2009): 262–77.

<sup>3</sup> John R. McNeill, *Something New under the Sun. An Environmental History of the Twentieth-Century World* (New York: Norton & Company, Inc., 2011), p. 356.

<sup>4</sup> Harari, pp. 68-69.

### 3. Three main topics

The story I have just told is linked with the theme of this workshop - **Sea and Animals: History, Culture and Marine Conservation** – and the questions I would like to raise and address next.

More than doing a lecture I would like to bring here – to discuss with you – some of the issues that have been reflecting on in the last year, as a result of many conversations with colleagues also troubled with similar doubts.

The main purpose of my project is to do an environmental history of dunes. But, we – historians - were taught that History is a narrative based in facts about Mankind over time. So, can we do the history of nonhumans? And why should we do it? Do the dunes have a history? Why should historians care about dunes? What kind of “cultural heritage” could there be in big piles of sand? Finally, what is the place for the Marine Environmental Humanities – a tag that connects us all in this workshop – in the discussions concerning the global changes, that many now call the Anthropocene?

### 4. History of the nonhumans? Is that possible?

I’m not particularly fond of Bruno Latour’s writings, but one of his ideas has popped up in front of my eyes in a recent rereading of his well-known book *Nous n’avons jamais été modernes*. The French philosopher says that history isn’t anymore just about humans, it started to address also the natural things. He adds that we have hundreds of stories on how the subject made the object. None of them mentions the other perspective: how the object made the subject<sup>5</sup>.

I’m been talking to colleagues and gathering different perspectives of history making. I’m interested in understanding how historians work on their own subjects, how they approach their big questions. During my stay at the Rachel Carson Center, in Munich, in 2015, I found out that for many of my fellows – environmental historians – it has difficult

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<sup>5</sup> Bruno Latour, *Nous N’avons Jamais Été Modernes. Essai D’anthropologie Symétrique* (Paris: La Découverte/Poche, 1997), p. 112.

to provide examples of nature's agency, since most their work focused in the human ways of changing the world. Being most of them contemporary historians, working on toxic waste, nature rights, energy transition, bottled water, knowledge transfer and global commodities, they felt the human footprint so strongly that they tended to forget nature itself and its capability to react. This was surprising to me. For someone studying maritime and coastal issues, Latour's point of view is quite clear, objects (or nature) can impose their strength on subjects as well. There are so many stories of how the moving dunes forced local populations to leave their homes, transferring their belongings – even their churches - to start new lives in others places, as they could not stop the drifting sands.

I would say that for historians the legacy of the traditional view of our discipline as the “history of man” is still quite embedded in us, the “anthropo-” still blocks attention to the fact that we are not the only specie / force able to make (or destroy) worlds. Beavers built their own environments, whales know the oceans better than we do and natural disasters can raze cities in a couple of minutes.

One of my favorite authors nowadays – Anna Tsing - believes that we are contaminated by our encounters – please, feel free to not listen to what I'm saying in the next minute to think how some people, events or even books may have shape your work and lives. Whales just pop up everywhere I go since I meet Cristina Brito and Nina Vieira<sup>6</sup>, for instance. Mushrooms, cetaceans and dunes have been in a turmoil in my mind since July, after the III World Congress of Environmental History (Florianópolis, 2019), making me question over and over what kind of history can we write about the nonhumans. How can we reach them if we only see through our human lens?

If history could be written from an ocean perspective – from a whale, a bird or a dune point of view – how would it be? Which major driving forces would they focus? Humans write the history of the oceans from a different angle than the whales, the birds, and the dunes would<sup>7</sup>. Nevertheless, Anna Tsing maintains why we cannot keep being blind to the existing histories of other species and environments. Surviving requires collaboration,

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<sup>6</sup> Cristina Brito; Nina Vieira; Joana Gaspar de Freitas, “The Wonder Whale: A Commodity, a Monster, a Show and an Icon,” *Anthropozoologica* 54, no. 3 (2019): 11–27.

<sup>7</sup> Verena Winiwarter, “Soils and Society. An Environmental History of Challenge and Response,” *Die Bodenkultur* 57, no. 4 (2006): 231–42.

cross-species entanglements in contingency and conjuncture are part of our common landscapes and components of historical times. If you are not sure of this, just think how we are dependent of so many ecosystem services: the trees and phytoplankton for oxygen, the atmosphere for sun rays' protection, the soil microorganisms for food production, the bees for pollination. These organisms and natural forces may not "tell stories", but they contribute to the overlapping paths that we gasp as history. Which is, as Tsing puts it, «the record of many trajectories of world making, human and not human». She provides the example of pines that, across many times and places, change the scene with their presence and transform the trajectories of others, like the matsutake and the forest dwellers<sup>8</sup>. If pines are historical actors, why can't whales and dunes be too?

We cannot write as whales or as dunes. However, according to Verena Winiwarter, we may do the effort to write environmental histories of the oceans in a way that makes possible a «sound understanding of processes and phenomena from a non-anthropocentric but therefore nevertheless humane perspective»<sup>9</sup>.

How to do this is something that still puzzles me. But knowing what we know now about our planet interconnected systems, I ask, can we keep doing the same kind of history we did before, leaving beyond all that is not us? Even if this means challenging «some of the conventions of history» – «the anthropocentric, nationalistic and documentary bases of the discipline»<sup>10</sup>, can we keep writing / working as if the world is a mere stage for the human players?

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<sup>8</sup> Anna Lowenhaupt Tsing, *The Mushroom at the End of the World. On the Possibility of Life in Capitalist Ruins* (New Jersey: Princeton University Press, 2015), p. 168.

<sup>9</sup> Winiwarter, "Soils and Society. An Environmental History of Challenge and Response."

<sup>10</sup> Tom Griffiths, "How many trees make a forest? Cultural debates about vegetation change in Australia", *Australian Journal of Botany* 50 (2002): 377 apud Jane Carruthers, "Environmental History with an African Edge", in *The Edges of Environmental History. Honouring Jane Carruthers*, ed. Christof Mauch and Libby Robin (Munich: RCC Perspectives, 2004): 16.

## 5. Do dunes have a history?

This takes me to what should have been the main subject of my lecture, if I hadn't decided to some zigzag looking around instead of going straight forward: the dunes. What is the interest of these large amounts of sand?

I can say about dunes, taking what Helmreich wrote about waves, that they «are *scientific things*, entities at once material and measured, concrete and conceptual»<sup>11</sup>. Geologists, geographers and sedimentologists have been counting and analyzing sand grains in microscopes, dating and cataloguing dunes for decades, developing formulas and models to explain how they are formed, how they keep together and why they move. The big piles of sand even get names – transverse, linear, barchan, reversing, star –based in their patterns, shaped by the direction and frequency of the winds<sup>12</sup>.

That is not all, botanists, biologists, ecologists have recognized dunes as unique ecosystems with several environmental functions. They constitute an ecological niche to plants and animals adapted to extreme conditions, offering refuge areas and nest or incubation sites. They also have an important role regarding coastal erosion and maritime flooding. Together, beaches and dunes dissipate storm wave energy minimizing its effects to landwards areas<sup>13</sup>. Dunes provide services such as sequestering carbon, reducing concentrations of greenhouse gasses, filtering pollutants and purifying water. They also support a variety of socio-economical activities such as providing subsistence for local human populations (food, fuel, medicinal material), raw materials (sand mining), recreational uses (residences, resorts, leisure and sports) and aesthetic, psychological and therapeutic opportunities<sup>14</sup>.

Dunes, these sandy nonhumans entities, are materialized environments, territories, offering goods and services, but they are also labeled abstractions shaped by how they

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<sup>11</sup> Stefan Helmreich, "Waves. An Anthropology of Scientific Things," *HAU: Journal of Ethnographic Theory* 4, no. 3 (2014): 267.

<sup>12</sup> Andrew Warren, *Dunes. Dynamics, Morphology, History* (Chichester: Wiley-Blackwell, 2013).

<sup>13</sup> GIP Littoral Aquitain, "Stratégie Régionale de Gestion de La Bande Côtière" (Mérignac, 2012); Jim O'Connell, *Coastal dune Protection & Restoration, using Cape American Beach Grass and Fencing* (Woods Hole, MA: Woods Hole Oceanographic Institution, 2008), p. 1; M Martínez, Norbert Psuty, and R A Lubke, "A Perspective on Coastal Dunes," in *Coastal Dunes, Ecology and Conservation* 171 (2008): 3–10.

<sup>14</sup> K.F. Nordstrom, *Beach and Dune Restoration* (New York, Cambridge Press, 2008), p. 7.

are perceived, studied, used, explored and managed. And for that, they are complex social objects<sup>15</sup>.

So dunes have a history? Of course, they do.

And there are wonderful stories about them too, I must add. Like the legend on the Culbin Estate, in Scotland, covered by the sands in one stormy night, in 1694: a wealthy rural property transformed into a great sea of sand. A story fitted to stir imagination - that a curse has fallen upon the place - fed by local superstitions that connected human misfortunes and physical calamities with moral turpitude and wickedness. «A scene of greater desolation and dreariness it would be impossible to conceive»<sup>16</sup>, described Bain, visiting the area, in 1900.

As Helmreich on waves, I'm curious about how to employ these hybrid forms to think across domains, going after dune phenomena as described by geologists, geographers, oceanographers, foresters, historians, writers, painters, artists and coastal populations. I am interested in the analogies and disanalogies conjured across such areas, as they allow to extend and query contemporary conversations between the human and the nonhuman<sup>17</sup>

In the last decades several authors have tried to characterize relations between nature and society and the consequences of this entanglement for both. In the process, different concepts have been developed as analytical tools. For instance, White defined the Columbia River as an "organic machine", an energy system which although modified by humans retains a life of its own<sup>18</sup>. Others authors prefer to use the terms "socio-natural hybrids", "ecotechnological environments", "socio-natural sites" or "envirotechnological environments"<sup>19</sup>. The main point all these scholars want to stress is that humans use

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<sup>15</sup> Helmreich, "Waves. An Anthropology of Scientific Things."

<sup>16</sup> George Bain, *The Culbin Sands or the Story of a Buried Estate* (Nairn: The Nairnshire Telegraph Office, 1900), pp. 15 and 13.

<sup>17</sup> Helmreich, "Waves. An Anthropology of Scientific Things."

<sup>18</sup> Richard White, *The Organic Machine* (New York: Hill and Wang, 1996).

<sup>19</sup> M. Fischer-Kowalsky, H. Weisz, "Society as hybrid between material and symbolic realms: toward a theoretical framework of society-nature interaction", in: L. Freese (ed.), *Advances in human ecology 8* (JAI Press: Greenwich): pp. 215–251; T. Hughes, *Human-built world. How to think about Technology and Culture* (Chicago and London, The University of Chicago Press, 2005); V. Winiwarter, M. Schmid and G. Dressel, *Looking at the half a millennium of coexistence: the Danube in Vienna as a socio-natural site* (Springer, 2013); S. Pritchard, *Confluence. The Nature of Technology and the Remaking of the Rhône* (Cambridge, Harvard University Press, 2011).

whatever means they have – knowledge, skills, tools – to change the world accordingly to their ends, creating new attended and unattended environments, hybrids environments, to each they are intrinsically attached, as they too are part of that nature. Thinking about dunes as envirotechnical landscapes is something new, because most people regard them as “natural environments” and hardly ever see them as «physical hybrids of ecological and technological systems»<sup>20</sup>. Looking them this way allow us to question how perceptions, fears, property rights, local economies, traditional and technical knowledge, land reclamation, forest exploitation, state power, climate change, coastal management policies and nature restoration, have been shaping these environments. And simultaneously, understand how actors and institutions, knowledge and technology, identities and state building could have been molded by the need to address the challenge of stopping the drifting sands.

I’m also interested in understanding the environmental consequences of dune management and how long-term legacies of these prior interventions can determine (or influence) practices and future strategies<sup>21</sup>, because this is a story that hasn’t ended yet. In the last decades, sand has become a much-sought commodity, since it is an important raw material to many industries and building activities. Meanwhile, as human interventions are reducing the amount of sediments arriving to the seashore, many beaches are being kept through artificial nourishments and sand is needed for that. At the same time, coastal protection has become a top priority because of the expected sea mean level rise, and dunes were discovered to be the best natural defence against storm impacts. Therefore, all around the world, coastal managers and scientists are working in dune systems rehabilitation and testing (new) techniques, ignoring (almost always) the trial and error attempts, feedbacks and serendipity of the former interventions. This means, that I also have the bold – maybe naive – aspiration of believing that recovering these past experiences can be useful to support the knowledge and the expertise needed to face today’s challenges.

World ecological restoration programs are focused in rearranging natural environments. Future strategies concerning the dunes - and this also applies to animals and marine

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<sup>20</sup> Pritchard, *The Nature of Technology and the Remaking of the Rhône*, p. 13.

<sup>21</sup> Winiwarter et al., *Looking at the half a millennium of coexistence: the Danube*.

conservation – must account for human, pines, sand, wind, sea level, as they all make these environments together. They are, as Tsing puts it, the product of the unintentional design of the overlapping world-making activities of many agents, human and not human<sup>22</sup>.

Humans joint other living things and forces in shaping environments, these are not just backdrops for historical action, they are active part themselves in that history. To show this, nothing better than the example of the endless (useless) fight of societies to control the sea and live safely on the shore, which is also a good lesson of how some environments «are radical tools for decentering human hubris»<sup>23</sup>.

## 6. The Anthropocene. The Age of Humans or the Age of Reason?

The human hubris takes us to what Peter Brannen calls the arrogance of the Anthropocene, considering that the concept inflates our own relevance, based in the belief of our species' peculiarity<sup>24</sup>. It is a way of seeing it, of course, but it is not difficult to think this way if the focus is put strictly on human action.

A more broad definition of the concept – one that I consider better to fit the ideas here presented – is that the Anthropocene is a scientific hypothesis based in the premise that humankind has become a global forcing mechanism as important as water circulation, climate, biological productivity, biodiversity, geochemical cycles and sedimentation patterns<sup>25</sup>. This does not mean that humans are more relevant than the natural systems, only that they have become a driving force among others, affecting an established *equilibrium* that threatens their own existence. This also implies, as Latour puts it, recognizing the world as full of entities – independent of humans - that have the power of acting according to their intention, force, will, need and function<sup>26</sup>. And because the

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<sup>22</sup> Tsing, *The Mushroom at the End of the World. On the Possibility of Life in Capitalist Ruins*, p. 152.

<sup>23</sup> Tsing, p. 152.

<sup>24</sup> Peter Brannen, "The Anthropocene Is a Joke. On Geological Timescales, Human Civilization Is an Event, Not an Epoch," *The Atlantic*, 13-08-2019.

<sup>25</sup> Reinhold Leinfelder, "Assuming responsibility for the Anthropocene: challenges and opportunities in Education", *Anthropocene. Envisioning the future of the Age of Humans*, ed. Helmuth Trischler (Munich: RCC Perspectives, 2003): 9.

<sup>26</sup> Kathrin Bartha, "Down to Earth. Ancient Goddesses for Dark Times. Review on Facing Gaia: Eight Lectures on the New Climate Regime by Bruno Latour," *Australian Book Review* (2017): 15–16.

world is full of entities independent of humans and these are frequently unable to control the unintended consequences of their own actions, Tsing says that «precarity is the condition of our time». The 20<sup>th</sup> century illusion of stability and progress, supported by the modern engineering and technological developments, is falling apart in confrontation with the troubles ahead, as «we can't fix anything, even what we have broken, by ourselves»<sup>27</sup>.

Mushrooms, pines, whales and dunes «remind us of our dependence on more-than-human natural processes» and that we shall have to make a common cause with other living beings. The precarity of our lives, the acquaintance that we do not live in a stable world, should help us to rethink our own place and responsibility in order to survive.

The Anthropocene was born among scientists, but while these were discussing geological data and layers, the idea spread to other areas. Humanities scholars caught this catchy term and use it to debate environmental global changes from a philosophical, legal, aesthetic, pedagogical and cultural point of view. Helmuth Thrischler points that «most scholars see the Anthropocene as an innovative and broadly conceptualized framework to rethink the relation between nature and culture, environment and society. For them, the Anthropocene thesis goes beyond the core premise that humanity shapes nature to offer new kinds of knowledge production and politics, culture, and lifestyles»<sup>28</sup>.

Now that we are aware of the mess humans did to the planet, we must assume our collective responsibility for the future. We can no longer think about environment only on the basis of natural ecosystems or resource exploitation, we have to perceive it also as a heritage, the product of a long coexistence between systems and species, human and nonhuman. Ethically, the Anthropocene should make us humble, introducing the Age of Responsibility, a time of reason of that should enforce action to fight present inertia.

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<sup>27</sup> Tsing, *The Mushroom at the End of the World. On the Possibility of Life in Capitalist Ruins*, pp. 20 and 257.

<sup>28</sup> Helmuth Thrischler, "Introduction", *Anthropocene. Envisioning the future of the Age of Humans* (Munich: RCC Perspectives, 2003): p. 5.

## 7. What do you do when your world starts to fall apart?

I will end my presentation with a reference to the Marine Environmental Humanities. Adapting the words of Thomas Dunlap<sup>29</sup>, I would like to say that we think of dreams as insubstantial, calling a dream to something outside the “real” world. The land because it is solid is given the special status of “real estate”, connected to property rights. The ocean, the watery realm, since it’s not solid, since it is not fenced, was for a long time an empty territory, a mixture of dread and appreciation. In the Portuguese popular tradition it is said that some spells and bewitchment should be channelled into a particular object, sometimes a fish, and thrown into the sea, where they would disappear<sup>30</sup>. There, where there was no one, where there was nothing, evil could do no harm, it would just sink, like the toxic waste and the plastic we keep throwing into the ocean.

«Our dreams shape the land and the land our dreams, and the creation and destruction of landscapes on the ground and in our minds is central to our history»<sup>31</sup>. This is becoming also true to the ocean, as we have developed the technologies to use it and explore its resources deeper, further and more intensively. We have to avoid reproducing on the water what we have done in the land. Marine Environmental Humanities can have an important role in safeguarding the last less-explored territory and resources on Earth, the Ocean, its animals, histories and cultures. Showing in a long-term view the interplay of the different species, the ambiguity and unintended consequences of human activities, the political, ideological, legal, economic, social pressures and the threats of environmental global changes upon the oceans. But, pointing also that the future is not a singular direction ahead, that finding alternative ways of making worlds based in collaboration rather than on friction will provide other possible futures. Maritime Environmental Humanities can help us to best influence and enact a shift beyond “doom and gloom”<sup>32</sup>.

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<sup>29</sup> Thomas Dunlap, “Creation and Destruction in Landscapes of Empire,” in *City, Country and Empire. Landscapes in Environmental History*, ed. Jeffry Diefendorf and Kurk Dorsey (Pittsburgh: University of Pittsburgh Press, 2005).

<sup>30</sup> M.C. Marta & A. Pinto. *Folclore da Figueira da Foz*, vol. II (Esposende, Typographia Esposendense, 1913), pp. 33, 35; Joana Gaspar de Freitas, “Landscapes of Fear: The Portuguese Coast,” *The Nautilus. A Maritime Journal of Literature, History and Culture* (2016): 27–59.

<sup>31</sup> Dunlap, “Creation and Destruction in Landscapes of Empire”, p. 207.

<sup>32</sup> Elin Kensey, “‘Dear\_\_\_’: Writing Our Way beyond Doom and Gloom,” in *Beyond Doom and Gloom. An Exploration through Letters* (Munich: RCC Perspectives, 2014), p. 8.

What do you do when your world starts to fall apart? - asks Anna Tsing<sup>33</sup>.

I go for a walk, by the ocean, if possible. That helps me to think, to find new paths, to react. Shutting down is not an option to me. What about you?

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<sup>33</sup> Tsing, *The Mushroom at the End of the World. On the Possibility of Life in Capitalist Ruins*, p. 1.