

# Of Whales and Dugongs: Examining the Rise of Colonial Conservation as Development in Madagascar's Marine History

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**ABSTRACT:**

This work explores how colonial marine conservation policy in Madagascar had the dual purpose of facilitating the expansion of capital and 'civilizing' the way Malagasy fishers used marine resources. I analyse how the legacy of narratives that emerged to bolster state-led conservation intervention during the colonial period are still present in current conservation and development narratives, perpetuating in some cases the colonizer-colonized relationship between conservation organizations and local resource users. These findings indicate a need to revamp certain aspects of marine resource use legislation in Madagascar and the need for conservation organizations to explicitly acknowledge their history when working with local resource users in order to avoid reproducing historical injustices.

**KEY WORDS:** colonization, fisheries, dispossession, civilizing, capitalism, Madagascar

*Nature, however needs protection, and it is the role of conferences like this one...to try to reconcile its protection given imposing economic transformations...We intervene not only to satisfy our aesthetic interests, but also to denounce and stop the grievous destruction of nature, even from a practical point of view, to ensure that with prudent use, its incalculable wealth can be available for perpetuity...In vain we cross the seas: in Madagascar we find the wanton destruction of hawksbill sea turtles...and dugongs, where the depths of the Indian Ocean do not shelter against the fierce fishermen pursuing this beautiful marine mammal<sup>1</sup>*

Louis Mangin, Paris 1923

## INTRODUCTION

In the concluding remarks of the First International Congress on the Protection of Nature<sup>2</sup> in Paris in 1923, Louis Mangin, president of the Congress, drew together two disparate narratives to bolster the advancement of conservation efforts across Europe, the Americas, and the distant colonies: conservation to satisfy an ‘aesthetic interest’ and conservation to ensure nature’s ‘incalculable wealth can be available for perpetuity.’<sup>3</sup> Mangin then used the example of sea turtle and dugong fishing in Madagascar as Georges Petit, a naturalist working for the colonial branch of the Museum of Natural History, also present at this First Congress in Paris, had recently reported on his findings from the southwestern and northeastern coasts of the island. Petit was shocked to see large mounds of sea turtle shells in villages and to observe fishers hunting dugong. He later argued that the colonial state in Madagascar had a duty to conserve marine species both for rational economic exploitation, or ‘wealth from which European industry could certainly make a successful profit,’ and for the protection of hapless unique species from ‘indigenous vandalism.’<sup>4</sup> This racialized anxiety concerning natural resource use helped legitimize colonial conservation as a form of development, also positing development as a way to conserve nature. Petit linked conservation to development as a way to ensure economic growth and capital accumulation but also as a way to advance a modern and civilized society, one with the philosophical and

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<sup>1</sup> *‘La Nature a cependant besoin de protection, et c’est le rôle des congrès semblables à celui qui va se clore de chercher à concilier sa sauvegarde avec les transformations économiques qui s’imposent...nous s’intervenons pas seulement pour la satisfaction de l’esthétique, nous voulons aussi dénoncer et enrayer la destruction désastreuse, même au simple point de vue pratique, d’incalculables richesses dont l’exploitation prudente devrait assurer la perpétuité... En vain franchirait-on les mers: vous retrouveriez à Madagascar la destruction aveugle des Tortues à écaille...des Dugongs, que les profondeurs de l’Océan Indien n’abritent pas contre les pêcheurs acharnés de ce beau Mammifère marin.’*

<sup>2</sup> Premier Congrès Internationale pour la Protection de la Nature: Faune et Flore, Sites et Monuments Naturels (Paris 30 Mai–2 Juin 1923)

<sup>3</sup> Mangin, Louis. 1923. ‘Séance de Clôture.’ Premier Congrès International pour la Protection de la Nature: Faune et Flore, Sites et Monuments Naturels, Paris (31 Mai- 2 Juin).

<sup>4</sup> Petit, G. 1930. *L’industrie des pêches à Madagascar*. Vol. 2. Paris: Société d’éditions géographiques, maritimes et coloniales. P 318.

theological attribute of preserving exotic species in the lost Edens of the colonies. France's National Society for the Protection of Nature (SNPN), similar to Britain's Society for the Preservation of the Wild fauna of the Empire (SPWFE),<sup>5</sup> was instrumental to the advancement of conservation ethics and legislation in France and French colonies such as Madagascar in the early twentieth century.<sup>6</sup> These framings of conservation as development during the colonial period were important antecedents to the post WWII international conservation movement in Europe and the United States, which similarly extended its reach into biodiverse countries in the Global South. Early 20<sup>th</sup> Century meetings such as the 1923 International Congress in Paris, spurred the spread of nature reserves globally, a conservation model that still reigns internationally. Such meetings established the political foundation upon which subsequent international congresses and summits focused on nature conservation flourished.<sup>7</sup>

In this work I join authors who have focused on the causes and consequences of colonial conservation in sub-Saharan Africa.<sup>8</sup> The research presented focuses on colonial conservation in the marine environment, providing a useful counterpoint to these other works, which explore colonial conservation in the terrestrial realm. While there are some differences in the way in which colonial conservation occurred in the marine realm, notably a focus on the type of gear one could use to extract resources, there are many similarities. Acquisitions of control over large swaths of the landscape was a common practice with land-

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<sup>5</sup> Also see: Prendergast, David K, and William M Adams. 2003. 'Colonial Wildlife Conservation and the Origins of the Society for the Preservation of the Wild Fauna of the Empire (1903-1914).' *Oryx* 37 (2):251-260.

<sup>6</sup> Originally formed in 1854 as the Société Impériale Zoologique d'Acclimation, initially focused on wildlife preservation and then expanded to include the protection of plants and landscapes. See Matagne, Patrick. 1998. 'The Politics of Conservation in France in the 19th Century.' *Environment and History* 4 (3):359-367. doi: 10.2307/20723081, and Kamieniecki, Sheldon. 1993. *Environmental Politics in the International Arena: Movements, Parties, Organizations, and Policy*. NY: State University of New York Press.

<sup>7</sup> See: Dalton, Russell J. 1993. 'The Environmental Movement in Western Europe.' In *Environmental Politics in the International Arena : Movements, Parties, Organizations, and Policy*, edited by Sheldon Kamieniecki. Albany: State University of New York Press, and Cioc, Mark. 2009. *The Game of Conservation : International Treaties to Protect the World's Migratory Animals*, Ohio University Press Series in Ecology and History. Athens: Ohio University Press. Book.

<sup>8</sup> Key authors include David Anderson, Richard Grove, William Beinart, John MacKenzie, William Adams, and Martin Mulligan. See: Anderson, David, and Richard H Grove. 1989. *Conservation in Africa: peoples, policies and practice*. Cambridge, UK: Cambridge University Press; John MacKenzie 1997 *The Empire of Nature Hunting, conservation and British imperialism*, UK: Manchester University Press; Beinart, William. 1989. 'Introduction: the politics of colonial conservation.' *Journal of Southern African Studies* 15 (2):143-162; Adams, William Mark, and Martin Mulligan. 2003. *Decolonizing nature: strategies for conservation in a post-colonial era*. London: Earthscan. Also see more recent work by Musemwa, Muchaparara. 2016. 'Sic utere tuo ut alienam non laedas. From Wanton Destruction of Timber Forests to Environmentalism: The Rise of Colonial Environmental and 'Sustainability' Practices in Colonial Zimbabwe, 1938-1961.' *Environment and History* 22 (4):521-559. doi: 10.3197/096734016X14727286515772.

based colonial conservation. In the marine environment in Madagascar, land-like reefs (relatively fixed in space) were often the focus of protected areas or colonial marine concessions. In the terrestrial realm, many scholars show how theories and narratives of scarcity (exhausted soil, depleted natural resources, dwindling wildlife) played important roles in the rise of protected areas, game laws, and other conservation policies emerging in the early 1900s<sup>9</sup>. Similar narratives of depleted natural resources and dwindling populations of rare species motivated marine conservation during the colonial period in Madagascar.

Marine conservationists currently working in Madagascar generally believe that marine conservation efforts began in earnest in the past 20 years, with a steady increase in the number of marine protected areas (MPA). Although there is some acknowledgement of marine conservation occurring before the late 1980s,<sup>10</sup> most governmental and non-governmental workers with whom I spoke say that all early efforts were ‘minimal,’ and that institutions such as the Ministry of Production, Waters, and Forests (now named the Ministry of Agriculture, Livestock and Fisheries) were ‘powerless’ and ‘underfunded.’<sup>11</sup> Thus, while legislation concerning marine conservation has continued to be renewed and created steadily since colonization, it has only been in the past decade, with the expansion of marine protected areas in Madagascar and a renewed global interest in marine conservation that laws have started to be referenced, mobilized, and enforced. Additionally, recording oral histories with fishers in coastal villages in northeastern, northwestern, and southwestern Madagascar has convinced me that to this day, marine conservation policies and practices during colonization have left an indelible mark on fishers’ perceptions of marine conservation intervention in certain areas of the island. Although many young fishers were not alive during colonization, through the sharing of memories and the re-telling of stories, they too make connections between the current and past practices of state-led marine conservation.

By analysing early colonial conservation in Madagascar, I show how the discursive and legal frameworks of conservation *as* development helped crystalize top-down marine

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<sup>9</sup> In addition to Anderson and Grove 1989, Beinart 1989, and MacKenzie 1997 (see above footnote), see Blaikie, P., and H. Brookfield. 1987. *Land Degradation and Society*. London: Methuen; Kull, C.A. 2000. ‘Deforestation, Erosion, and Fire: Degradation Myths in the Environmental History of Madagascar.’ *Environment and History* 6 (4):423-450. doi: 10.3197/096734000129342361; Jarosz, L. 1993. ‘Defining and Explaining Tropical Deforestation: Shifting Cultivation and Population Growth in Colonial Madagascar (1896-1940).’ *Economic Geography*, 69 (4):366-379; Sodikoff, Genese. 2005. ‘Forced and Forest Labor Regimes in Colonial Madagascar, 1926-1936.’ *Ethnohistory* 53 (2):407-435.

<sup>10</sup> The first marine reserve established after Independence was Nosy Tanikely in 1968 (Nosy Be province); however, legislation protecting it was seen as unclear and ‘obscure’ (SAPM 2009).

<sup>11</sup> These quotes are taken from eight separate interviews conducted with governmental and non-governmental workers, March 2011 through August 2012.

resource management and legitimize spatial enclosures and privatization in the marine realm. I advance the framing and phrasing of conservation *as* development to highlight two related processes that were central to the colonial project and persist in conservation efforts and discourse today. The first is conservation intervention as a way to facilitate the expansion of and ongoing accumulation of capital. The second relates to conservation intervention as a way to civilize and modernize human-nature relationships within the colonies, relating to a broader morally-driven imperative of preserving unique and threatened species<sup>12</sup>.

I show how early framings and policies of conservation as development established the foundation for post-colonial resource use policies in Madagascar. To this day, numerous rules pertaining to marine resource extraction have colonial laws and ideas embedded within them. Furthermore, many of these early marine resource use laws were established with limited direct observation of the widely varying ecological conditions of Madagascar's coastal systems, and with no documented input from local resource users. As a corollary, I show how the colonial government's failure to recognize local marine resource use rights during colonization set in motion a trajectory of dispossession of marine resources and subordination of marine resource users in marine conservation law and practice. I argue that fishers' experiences of dispossession coupled with practices such as forced fishing labour during the colonial period continue to influence people's perceptions of and interactions with current marine policies.

Ultimately, these findings indicate a need to revamp certain aspects of marine resource use legislation in Madagascar and highlight the need for marine conservation organizations in Madagascar to explicitly acknowledge the colonial past of marine conservation when working with local resource users in order to avoid reproducing historical injustices.

## **RISE OF MARINE CONSERVATION**

Although some fisheries legislation dates back to the fifteenth through sixteenth centuries, notably taxes, trade sanctions, and the establishment of exclusive fishery zones in the Baltic,

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<sup>12</sup> Although there might have been other drivers of colonial conservation, notably protecting nature for its intrinsic value, the two processes outlined here that broadly fall under the rubric of conservation *as* development were the most prominent.

North, and Norwegian Seas,<sup>13</sup> in the mid and late nineteenth century marine resource legislation in the United States and Europe increased significantly.

This rise likely occurred due to some reported declines in European and U.S. fisheries and the subsequent realization, despite some naysayers, that marine resources might not be as limitless as once thought.<sup>14</sup> Numerous institutions focusing on fisheries science and management emerged at this time. For example, the U.S. Fish and Fisheries Commission was formed in 1870 explicitly to address the problem of declining fish populations in New England and to identify ‘what protective, prohibitory, or precautionary measures should be adopted’ to ensure the endurance of an important industry for the region.<sup>15</sup> Similarly, in Europe, due to growing concern about the state of fisheries in the North Sea, ICES (International Council for the Exploration of the Sea) was founded in 1902 to address, through science, management of marine resources (primarily fish) in the North Sea and beyond. These resources were deemed essential to the commerce and trade of numerous countries fishing these waters at the time.<sup>16</sup>

Similar to the scientific approach to forest management that gained momentum globally at the time,<sup>17</sup> marine-focused institutions embraced a primarily mathematically based science of fisheries, and thus advocated for scientific solutions to marine resource management problems. By the late nineteenth century many of Europe’s coastal countries had ratified dozens of similar marine fisheries acts based on the emergent science of fisheries.<sup>18</sup> Legislation reflected scientifically based norms concerning mesh size, minimum and maximum harvest sizes, and seasonal closures. Many of these resource use rules were species-specific and reflected emerging knowledge of particular species at the time. By the time Madagascar became a colony in 1897, the French colonial government was already

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<sup>13</sup> Eggertsson, Thráinn. 1996. ‘No experiments, monumental disasters: Why it took a thousand years to develop a specialized fishing industry in Iceland.’ *Journal of Economic Behavior & Organization* 30 (1):1-23. doi: [http://dx.doi.org/10.1016/S0167-2681\(96\)00839-6](http://dx.doi.org/10.1016/S0167-2681(96)00839-6).

<sup>14</sup> See: Pettersson, O. 1899. ‘International Fishery Legislation.’ *The Nineteenth century and after: a monthly review* 45(264):295-303; Graham, Michael. 1938. ‘The Trawl Fisheries: A Scientific and National Problem.’ *Nature* 142:1143-1146; Russell, ES. 1932. ‘Fishery research: its contribution to ecology.’ *Journal of ecology* 20 (1):128-151.

<sup>15</sup> p 4: Weber, M.L. 2002. *From abundance to scarcity: a history of US marine fisheries policy*. Washington: Island Press.

<sup>16</sup> Schwach, Vera. 2013. ‘The Sea Around Norway: Science, Resource Management, and Environmental Concerns, 1860–1970.’ *Environmental history* 18 (1):101-110. doi: 10.1093/envhis/ems107.

<sup>17</sup> Peluso, Nancy Lee. 1992. *Rich forests, poor people: Resource control and resistance in Java*. Berkeley: Univ of California Press; Fairhead, James, and Melissa Leach. 1996. *Misreading the African landscape: society and ecology in a forest-savanna mosaic*. UK: Cambridge University Press.

<sup>18</sup> Moore, Stuart Archibald, and Hubert Stuart Moore. 1903. *The history and law of fisheries*. London: Stevens and Haynes; Oke, George Colwell, J.W. Bund, and A.C. McBarnet. 1903. *A handy book of the fishery laws*. London: Butterworth.

attuned to the widely accepted need for legislation to protect marine resources and the assumption that the legislation should be based on the burgeoning science of fisheries.<sup>19</sup>

Policy recommendations stemming from this fisheries research tended to be either very general - universal prescriptions such as limiting the amount or season in which all marine organisms should be harvested - or highly species-specific, such as restricting harvest of a particular species to a specified minimum body length.<sup>20</sup> It is clear that colonial conservationists presumed that certain marine organisms (e.g. oysters, fish) could be protected in the same way, transcending the specificities of time and place. However, resource use rules established in Western Europe (particularly France) were not necessarily well matched to the specific ecological and social conditions in a colony such as Madagascar.

Thus, despite vastly different marine environments and fishing practices in France and Madagascar in the late 1800s, French marine policy heavily influenced Madagascar's marine conservation and development legislation. For example, France established legislation in 1882 that limited oyster harvest to a nine-month season in France, required oyster harvesters to have permits, and restricted the size of oysters sold in the markets to a minimum dimension of five cm.<sup>21</sup> In Madagascar the same model was utilized in a 1922 law with only slight adjustments to seasonal restrictions (eight months instead of nine) and size (four cm instead of five)<sup>22</sup>. Similarly, the 1852 French maritime fisheries legislation (modified in 1890) restricted the mesh size of fixed nets and dragnets to 25 mm<sup>2</sup> in Madagascar a 1922 law set the same minimum mesh size for fixed nets (Title 3, Article 8). The 1922 law served as the foundation for numerous post-colonial marine resource use laws in Madagascar.

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<sup>19</sup> Décret du Janvier 1852. Sur l'exercice de la pêche maritime. Edited by Ministère de la Marine et des Colonies. Antananrivo; Also see: Worthington, Edgar Barton. 1938. *Science in Africa. A Review of Scientific Research relating to Tropical and Southern Africa*. London: Oxford University Press.

<sup>20</sup> See above Graham, M. 1938; Russell, ES. 1932; and U.S. Commission of Fish and Fisheries. 1898. 'Proceedings and papers of the National fishery congress.' National Fisheries Congress, Tampa Florida, January 19-24; Beaugé, L, G Belloc, M Boury, J Cochin, P Desbrosses, L Face, J Le Gall, L Lambert, D Rémy, and J Schvinte. 1936. Manuel des pêches maritimes Françaises. In *Mémoires de l'office des pêches maritimes*, edited by E.D. Le Danois. Paris: Office Scientifique et Technique des Pêches Maritimes; Roché, Georges Albert. 1893. *Explorations sous-marines: Des procédés d'études employés par les missions d'explorations sous-océaniques et de la technique des pêcheries marines représentées à l'Exposition universelle de 1889*. Paris: Imprimerie E. Bernard.

<sup>21</sup> See: Locard, Arnould. 1900. *Manuel pratique d'ostréiculture*. Paris: Baillière et Fils; Laurent, Louis, G Darboux, G Treille, Edouard Heckel, P Gaffarel, H Barre, and Paul Masson. 1906. *Collection des ouvrages. Exposition coloniale: Les colonies françaises au début du XXe siècle*. Vol. Tome 1. Marseille: Barlatier.

<sup>22</sup> Title 4, Article 19, Décret du 5 juin 1922 réglementant la pêche maritime côtière dans la colonie de Madagascar et Dépendances.

The science of marine fisheries at the time focused primarily on enhancing production. Key areas of interest in fisheries science and politics at the turn of the twentieth century included the study of maximum sustainable yield and how to ensure marine populations can rebound if overfished.<sup>23</sup> Maximizing production - and thus maximizing profit - was an essential component of the colonial project. The science of marine conservation rationalized policies that aided governmental control over marine resources and the people using them.

## CONSERVATION AND THE CIVILIZING MISSION OF DEVELOPMENT

Natural resource use systems in the colonies were seen by the colonial administration in highly contradictory ways, either as idle—underutilizing the wealth of natural resources available—or overly destructive—ravaging fragile environments and resources. Thus, the application of conservation measures, based on the soil, fisheries, wildlife, and other emerging sciences of the time, was seen as the more rational, calculated, and ultimately progressive way to advance socio-political systems in the colonized world.<sup>24</sup>

In Madagascar the colonial state saw conservation intervention as a means to simultaneously discipline ‘ignorant’ and ‘backwards’ local resource users and their ‘barbarous’ and ‘deplorable’ practices such as swidden agriculture (*tavy* or rotational fire-based agriculture), while advancing technocratic modernism and scientific resource management.<sup>25</sup> Petit saw conservation policy as a way to help modernize Malagasy fishers, and align local fishing techniques with scientific resource management. He argued that conservation policy was the best way to improve Malagasy fishers’ ‘lazy techniques’ and

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<sup>23</sup> See above Russell ES. 1932, Weber M.L. 2002. Also see: Smith, T, and AE Punt. 2001. ‘The gospel of maximum sustainable yield in fisheries management: birth, crucifixion and reincarnation.’ In *Conservation of exploited species*, edited by JD Reynolds, GM Mace, KH Redford and JG Robinson, 41-66. Cambridge, UK: Cambridge University Press.

<sup>24</sup> See: Anderson, David. 1984. ‘Depression, dust bowl, demography, and drought: The colonial state and soil conservation in East Africa during the 1930s.’ *African Affairs* 83 (332):321-343; Beinart, William. 1984. ‘Soil erosion, conservationism and ideas about development: a southern African exploration, 1900–1960.’ *Journal of Southern African Studies* 11 (1):52-83; Grove, Richard H. 1996. *Green imperialism: colonial expansion, tropical island Edens and the origins of environmentalism 1600–1860*. Cambridge: Cambridge University Press; Plumwood, Val. 2003. ‘Decolonizing relationships with nature.’ In *Decolonizing Nature*, edited by William Adams and Martin Mulligan. London: Earthscan; Amselle, Jean-Loup. 1979. *Le sauvage à la mode*. Paris: Le Sycomore; Giraut, Frédéric. 2005. ‘La nature, les territoires et le politique en Afrique du Sud.’ *Annales. Histoire, Sciences Sociales* 60ème année:695-717; MacKenzie, John M. 1990. *Imperialism and the natural world*. Manchester: Manchester University Press; Drayton, Richard. 2000. *Nature's Government: science, imperial Britain and the 'improvement' of the World*. New Haven: Yale University Press.

<sup>25</sup> See above: Kull, C.A. 2000, p 432; Jarosz, L. 1993, p 372. Also see Kull, C.A. 2004. *Isle of Fire: The Political Ecology of Landscape Burning in Madagascar*. Chicago: University of Chicago Press.

change fishing from a ‘hobby’ to a profession.<sup>26</sup> He encouraged the colonial state to implement a two-pronged plan that would (1) educate fishers to use different gear and new techniques and (2) establish state-trained Malagasy monitors at dozens of areas around the island (ibid, p 345-350). Petit argued that through education and monitoring, Malagasy fishing practices would be less destructive to the marine environment and would have the added bonus of reducing malnourishment across the island (ibid, p 342). Petit’s framing of conservation thus was infused with a scientific-rational idea of progress, guided by a moral imperative.<sup>27</sup>

Back in Paris in 1923, General Secretary of the Congress M. Clermont defined conservation even more directly as an act of refinement or civility, in discursive opposition to savage acts of destruction. He described what he considered the historical antecedent to the First International Congress for the Protection of Nature, pointing in particular to what he considered the earliest most important influence, the Congress of the International Association of Literature and Art, which occurred in Liège in 1905 and then again in Luxembourg in 1910. The Art and Literature Congress he cites ‘voted’ to support the creation of an international federation that aids in the preservation of areas of artistic wealth and regional interest. The particular genealogy he traces relates to the particular importance of conserving nature in terms of its artistic merit, literary inspiration, and general beauty. Clermont wrote ‘For a long time, the need to protect the wealth and beauty of nature against the increasingly damaging effects of humans had revealed itself to prescient minds or those simply moved by the destruction already done.’<sup>28</sup> Clermont then extolled the United States, Theodore Roosevelt in particular, for paving the way in progressive conservation by establishing reserves, and chided nations that ‘remain backwards,’ not partaking in their international duty to protect nature.<sup>29</sup>

This genealogy echoes what Roderick Neumann in his book *Imposing Wilderness* calls the ‘Edenic myth’ of early conservation. The idea of Africa as an ‘unspoiled Eden,’ or ‘a lost Eden in need of protection and preservation’ was a potent element in colonial

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<sup>26</sup> See above: Petit, G. 1930, p 337.

<sup>27</sup> See above: Kull C.A. 2004, Laurent et al. 1906. Also see: Pollini, Jacques. 2010. ‘Environmental degradation narratives in Madagascar: From colonial hegemonies to humanist revisionism.’ *Geoforum* 41 (5):711-722. doi: 10.1016/j.geoforum.2010.04.001.

<sup>28</sup> p IV: « De longue date, la nécessité de protéger contre les atteintes de plus en plus dommageables de l’homme les beautés et richesses naturelles s’était révélée à des esprits prévoyants ou simplement émus des destructions déjà consommées. », in de Clermont, Raoul. 1923. ‘Avant Propos.’ Premier Congrès International pour la Protection de la Nature: Faune et Flore, Sites et Monuments Naturels, Paris (31 Mai- 2 Juin).

<sup>29</sup> Not mentioning of course Roosevelt’s frequent hunting escapades. See above: MacKenzie, J. 1997

thinking.<sup>30</sup> Richard Grove argues the ‘motives of aesthetic or ritual concern...connected with the mental location of ‘Edens’ and ‘Paradises’ within various parts of the tropical landscape’ were key motivations underpinning colonial conservation across Africa, and in turn shaped the goals of conservation back Europe.<sup>31</sup> Unique species and exotic lands existing in colonial Africa incited European fantasies of a place before time. Thus, the Edenic myth in the European imagination, Neumann argues, influenced the rise of conservation measures in colonial Africa, most notably the establishment of National Parks. Assistant herpetologist at the French Museum of Natural History, Jacques Pellegrin, spoke at the 1923 conference, entreating the ‘the few colonists of Madagascar, Reunion, and Mauritius who protect several couples or herds of tortoises’ to bring as many tortoises as possible under their private protection—to preserve ‘the curious and peaceful animals that have survived from an ancient time.’<sup>32</sup> At both the First and Second Congresses, individuals beseeched representatives of colonial governments to do all they could in their capacity to stem the destruction of the beautiful, exotic, and peaceful species found in the colonies<sup>33</sup>.

Since the early 20<sup>th</sup> century, conservation has exhibited a tension between conservation-as-capital-development and conservation-as-the-protection-of-Edenic-places-and-organisms. Conservation in both realms was posited as a mode of fixing or reconfiguring socio-ecological relationships through enlightened resource-based legislation and projects.

Colonial conservation as capital development interventions hinged on the establishment of a robust political economy linking the colonizer and the colonized in order to efficiently extract natural resources in the colony. The notion of efficiency however, was predicated on protecting people from themselves, an impulse underpinned by a Malthusian notion of resource scarcity. In many ways, early conservation as development foreshadowed the neoliberal conservation and neo-Malthusian models of conservation that have reemerged in

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<sup>30</sup> See above: Anderson and Grove 1987. Also see: Neumann, Roderick P. 1998. *Imposing wilderness: Struggles over livelihood and nature preservation in Africa*. Berkeley: University of California Press.

<sup>31</sup> P 18 in Grove, Richard. 1990. ‘Colonial Conservation, ecological hegemony and popular resistance: towards a global synthesis.’ in *Imperialism and the Natural World*, edited by J MacKenzie. Oxford: Manchester University Press. Also see above: Grove, R. 1996

<sup>32</sup> p 162 ‘il y a lieu d’encourager les rares colons qui à Madagascar ou à la Réunion et à Maurice...conservent dans leurs propriétés quelques couples ou même de petits troupeaux de ces animaux curieux et paisibles, survivants des anciens âges.’

<sup>33</sup> Premier Congrès Internationale pour la Protection de la Nature: Faune et Flore, Sites et Monuments Naturels (Paris 30 Mai–2 Juin 1923) ; Deuxième Congrès Internationale pour la Protection de la Nature (Paris 30 June–4 Juillet 1932)

recent decades.<sup>34</sup> Marine conservation policy that emerged during the colonial period that focused on efficiency and rational extraction included strategies such as seasonal restrictions, organism-specific harvest size restrictions, gear restrictions, restricting the numbers of harvesters by implementing a permitting system, and temporary no-take zones.

Colonial conservation as a morally-driven imperative to protect exotic species and Edenic places, hinged on a similar protectionist dynamic, however was predicated on the imaginary of an unspoiled human-nature relationship, one that existed before the ‘fall of man.’ Strategies in this realm focused primarily on organism-specific moratoria and permanent no-take zones.

### **COLONIZING THE SEA: EARLY MARINE CONSERVATION AND DEVELOPMENT IN MADAGASCAR**

Similar to research concerning conservation and development in colonial Africa, much literature covering colonial conservation efforts in Madagascar focuses on the establishment of terrestrial nature reserves. One similarity between marine and terrestrial colonial conservation efforts in Madagascar is that they both focused on conservation for the sake of maximizing profits from natural resource extraction as well as preservation of species deemed ‘unique’ and ‘scientifically interesting’ from overuse and degradation. Private concessions are a good example of this tension. Marine concessions were widely used by the colonial state in both the terrestrial and marine realm to limit the number of resource users in an area (managing scarcity), while simultaneously encouraging natural resource extraction. Concessionaries purchased proprietary access to large areas on land primarily for hardwood extraction, and in the sea primarily for oyster extraction, yet a colonial concessionaire’s claim on an area meant that they were also partially responsible for monitoring illegal use in the

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<sup>34</sup> See: Brockington, Dan, and Rosaleen Duffy. 2010. ‘Capitalism and Conservation: The Production and Reproduction of Biodiversity Conservation.’ *Antipode* 42 (3):469-484. doi: 10.1111/j.1467-8330.2010.00760.x;

Büscher, Bram, Sian Sullivan, Katja Neves, Jim Igoe, and Dan Brockington. 2012. ‘Towards a Synthesized Critique of Neoliberal Biodiversity Conservation.’ *Capitalism Nature Socialism* 23 (2):4-30. doi: 10.1080/10455752.2012.674149; Igoe, Jim, and Dan Brockington. 2007. ‘Neoliberal Conservation: A Brief Introduction.’ *Conservation and Society* 5 (4):432-449; Mehta, Lyla, Amber Huff, and Jeremy Allouche. 2019. ‘The new politics and geographies of scarcity.’ *Geoforum* in press. doi: <https://doi.org/10.1016/j.geoforum.2018.10.027>

area.<sup>35</sup> Another similarity between marine and terrestrial conservation was the way in which certain traditional Malagasy practices were deemed backward and ultimately outlawed in colonial policy. Examples in the terrestrial realm include the banning of swidden agriculture (*tavy*), while in the marine realm, using plant-based poisons (*laro*) or small-mesh nets was outlawed.<sup>36</sup> In both the terrestrial and marine realms colonial conservation efforts focused on preserving unique and exotic<sup>37</sup> species: primarily lemurs on land and dugongs and sea turtles in the sea.

Important differences between marine and terrestrial colonial conservation in Madagascar also existed. In the terrestrial realm, protected areas were one important way in which the state carried out conservation. In the marine realm species-specific restrictions, such as limits to the total number of organisms extracted (e.g. whales), the size of species at harvest (e.g. oysters), and the season in which harvest is allowed to take place (e.g. lobsters), were more common<sup>38</sup>. Whereas spatial enclosures in the terrestrial realm dispossessed many Malagasy of their land,<sup>39</sup> fishers were not often dispossessed of their fishing spots. Instead, enclosing the marine commons occurred across space by restricting the types of gear Malagasy fishers could use. Restrictions could differ between French and Malagasy harvesters. For example, French oyster harvesters were legally permitted to use dredging technology to harvest oysters while Malagasy fishers were restricted to hand harvesting or using spears to extract oysters (Décret 21 Janvier 1921: Article 4).<sup>40</sup> Other colonial policies, such as the institutionalization of fishing permits, privatized the conditions of production in the marine realm. Fishing permits, notably for whale hunting and sea cucumber harvesting, limited fishing rights to those who worked closely with the colonial government and who had

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<sup>35</sup> See above: Petit, G. 1930; Jarosz, L. 1993; Sodikoff, G. 2005; Kull, C. 2004. Also see: Sodikoff, G. 2012. *Forest and labor in Madagascar: from colonial concession to global biosphere*. Bloomington: Indiana University Press.

<sup>36</sup> Article 4, Arrêté du 15 Mars 1922 portant fixation des droits d'usage des indigènes en matière de pêche aux huîtres perlières, coquillages à nacre et éponges, dans la colonie de Madagascar et Dépendances (*J. O. Mad. et Dép.*, 18 mars 1922). Article 18, Décret du 5 juin 1922, réglementant la pêche maritime côtière dans la colonie de Madagascar et Dépendances (*J.O République française du 9 Juin 1922; J.O. de Madagascar et Dépendances du 29 Juillet 1922*)

<sup>37</sup> *Exotic* here refers to species either endemic to Madagascar, or other species colonists found to be strange and fantastic.

<sup>38</sup> Petit, G. 1930. *L'industrie des pêches à Madagascar*. Vol. 2. Paris: Société d'éditions géographiques, maritimes et coloniales. P 294-317

<sup>39</sup> See above: Sodikoff, G. 2012. Also see: Corson, Catherine. 2011. 'Territorialization, enclosure and neoliberalism: non-state influence in struggles over Madagascar's forests.' *Journal of Peasant Studies* 38 (4):703-726. doi: 10.1080/03066150.2011.607696.

<sup>40</sup> « L'usage des dragues, chaluts et autres engins traînants pour la pêche des huîtres perlières, coquillages à nacre et éponges est interdit toute l'année aux pêcheurs indigènes. » The use of dredges and other towed trawling gear for harvesting pearl oysters, mother of pearl, and sponges is prohibited for indigenous fishers year-round.

the wealth to purchase the permits. These types of management policies are described in the marine property literature as ‘creeping enclosure’ of the fisheries commons.<sup>41</sup> These creeping enclosures, although not clearly delineated in space, still enclosed the marine commons. As a whole, the marine policies put in place during the colonial period worked to simplify complex socio-ecological relationships of Malagasy marine resource users, thus rendering the marine environment and the Malagasy people within these environments more legible and thus ‘manageable’ to the colonial state.<sup>42</sup> Through this process of simplification and formalization, numerous resource use practices were rendered ‘deviant’ or ‘criminal.’

Returning again to the distinction between conservation to ensure capital accumulation and conservation to civilize marine resource users, below I draw on colonial policy pertaining to whales, pearls, and dugongs to illustrate the co-evolution of conservation and development in Madagascar. These organisms were selected primarily based on the amount of archival material I was able to find, however other organisms extracted and coveted during the colonial period such as shark, sea cucumber, lobster, crabs and numerous types of fish follow patterns similar to the ones described here.

## **WHALES AND PEARLS: PRIVATE CAPITAL AND THE NEEDS OF THE STATE**

### ***Whales***

Whales have been and continue to be an important cultural and economic resource for coastal communities as well as nation-states around the globe.<sup>43</sup> Historically, whale hunting<sup>44</sup> in

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<sup>41</sup> See: Apostle, Richard A, Bonnie J McCay, and Knut H Mikalsen. 2002. *Enclosing the commons: Individual transferable quotas in the Nova Scotia fishery*. Newfoundland: Institute of Social and Economic Research; McCay, Bonnie J. 1999. ‘That’s Not Right’: Resistance to Enclosure in a Newfoundland Crab Fishery.’ In *Fishing People, Fishing Places: Issues in Canadian Small-Scale Fisheries*, edited by D. Newell and R. Ommer, 301-320. Toronto: University of Toronto Press.

<sup>42</sup> Scott, James C. 1998. *Seeing like a state: How certain schemes to improve the human condition have failed*. New Haven, CT: Yale University Press.

<sup>43</sup> See: Heflin, Wilson Lumpkin, Mary K Bercaw Edwards, and Thomas Farel Heffernan. 2004. *Herman Melville's whaling years*. Nashville: Vanderbilt University Press; Davis, Lance E, Robert E Gallman, and Karin Gleiter. 2007. In Pursuit of Leviathan: Technology, Institutions, Productivity, and Profits in American Whaling, 1816-1906. Chicago: University of Chicago Press; Jones, Ryan Tucker. 2019. ‘A Whale of a Difference: Southern Right Whale Culture and the Tasman World's Living Terrain of Encounter.’ *Environment and History* 25 (2):185-218. doi: 10.3197/096734018X15217309861540.

<sup>44</sup> Primarily four types of whales were historically harvested in and around Madagascar prior to and during the colonial period: sperm whales, humpback whales, right whales, and blue whales. See: Clark, A.H., 1887. ‘The American whale-fishery 1877-1886.’ *Science*, 9(234), pp.321-324; Petit, G. 1930. *L'industrie des pêches à Madagascar*. Vol. 2. Paris: Société d'éditions géographiques, maritimes et coloniales. pp 96 ; Lebrun, A 1914 *Rapport au Président de la République Française, suivi d'un décret portant réglementation de la pêche et de l'exploitation industrielle de la baleine dans les colonies françaises*. 12 Avril 1914

Madagascar provided an occasional local food source (whale meat and fat are highly regarded by many coastal communities in Madagascar), and for at least the past three hundred years has also been a key product for trade.<sup>45</sup> One of the most common whale products collected by Malagasy fishers and traded in the sixteenth through nineteenth centuries was ambergris—used as a fixative in perfumes. Ambergris (or grey amber) is a solid, waxy, greyish substance produced in the digestive systems of sperm whales. The majority of ambergris traded in the sixteenth and seventeenth century however, came not from whale hunting but from the collection of excrement (and on occasion whale vomit) floating on the surface of the ocean.<sup>46</sup>

Numerous European explorers in Madagascar in the 1500s described in vivid detail collective Malagasy whale hunts in which dozens of fishers arrived in dugout canoes alongside a whale, harpooned it, attached long cords to the harpoon, and as it eventually weakened from the fight, pulled it slowly ashore.<sup>47</sup> However, beyond these accounts, it is unclear how widespread and frequent whale hunting was in Madagascar prior to and during colonization. Of 19 villages surveyed in my field-based research, from approximately 2001-2011 only one village had ‘hunted’ a whale: its residents had killed a whale momentarily trapped in the back-reef area of a lagoon during low tide, which would otherwise have been able to swim into deeper waters once the tide came back. Two other villages in the past ten years took advantage of beached whales primarily for their meat and fat. Most fishers I spoke with about whale hunting emphasized that whaling was not and is not a primary activity of Malagasy fishers; however, many added the caveat that if a whale swims close enough to shore, they would seize the opportunity and hunt it.

Non-Malagasy whaling around Madagascar also has a long history. U.S. whalers started hunting in Malagasy waters following the American War of Independence, and South African whaling operations in the late 1800s and early 1900s frequented Madagascar during

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<sup>45</sup> Primarily ambergris, oil, and meat.

<sup>46</sup> Corsali, A. 1514. ‘De l’Ile de Saint-Laurent: Des moeurs de ses habitants et de l’ile d’Oetabacam.’ and Bordone. 1547. ‘Description de l’ile de Madagascar.’ In *Collection des Ouvrages Anciens Concernant Madagascar: 1500-1613. Tome I. 1903*, edited by A. Grandidier, C. Delhorbe, H. Froideaux and G. Grandidier. Paris: Imprimerie Paul Brodard; Hunt, Robert. 1650. ‘Ile d’Assade - Ile de Nosy Bé - Près de Madagascar. Par Gouverneur d’Assada.’ In *Collection des Ouvrages Anciens Concernant Madagascar: 1640-1716. Tome III. 1905*, edited by A. Grandidier, C. Delhorbe, H. Froideaux and G. Grandidier. Paris: Imprimerie Paul Brodard.

<sup>47</sup> Silesius, Bilibaldus Stronboeus. 1598. ‘A Sainte-Marie et à Antongil, Lors du deuxième voyage des Hollandais aux Indes sous le commandement de C. Van Neck et de Warwyk Corneille Heemskerk etant commis du Vaisseau-Amiral.’ In *Collection des Ouvrages Anciens Concernant Madagascar: 1500-1613. Tome I. 1903*, edited by A. Grandidier, C. Delhorbe, H. Froideaux and G. Grandidier. Paris: Imprimerie Paul Brodard.

the winter months.<sup>48</sup> According to the Bureau of International Whaling Statistics, a South African whaling operation in 1938–1939 and Norwegian-American whaling operation in 1949–1950 collectively took over of 6,000 whales from the coastal waters of Madagascar.<sup>49</sup> As industrialization expanded globally, whaling became an increasingly important oil source for machinery lubrication, and thus whales were a key export from Madagascar from the mid 1800s through the early 1900s. Whale oil was used in a variety of industries. It lubricated machinery, contributed to softening and cleansing agents, and formed a key component in cosmetics and medicines.<sup>50</sup> Colonial whale conservation in Madagascar closely fits the understanding of conservation as economic development. One of the first marine resource use laws established by the colonial government pertained to whales. In 1914 the colonial government banned non-French whaling vessels in Malagasy waters (Arrête 28 Février 1913). By 1920, the colonial government put into law a whale-hunting permit system and limited the number of permits to four per year. Although no explicit reference was made to Malagasy collective whale hunting in this early legislation, the general statement that all whale-hunting activity was illegal unless without a permit implied that Malagasy whale hunting was rendered illegal by this law.

The French colonial government also added a tax on any whale products processed for export, and in 1920 instituted a whaling season (May 1 through November 1) to ensure that hunting would not interfere with whale reproduction. In 1923, the number of whale permits allotted per year changed from four to two. Three years later, the number of allotted permits increased to six. Clearly, marine resource legislation was in a state of flux at this time, as policy-makers felt their way through creating a new body of laws and decrees in previously uncharted territory. It is likely that the vast legal space and burgeoning state led the colonial state to model its marine policies on pre-existing French marine legislation at the time.

Early whale conservation legislation in Madagascar adhered to liberal economic ideology and resource scarcity theories of the time. Concerns about maximizing gains from this particularly lucrative marine resource was tempered by apprehension over the potential

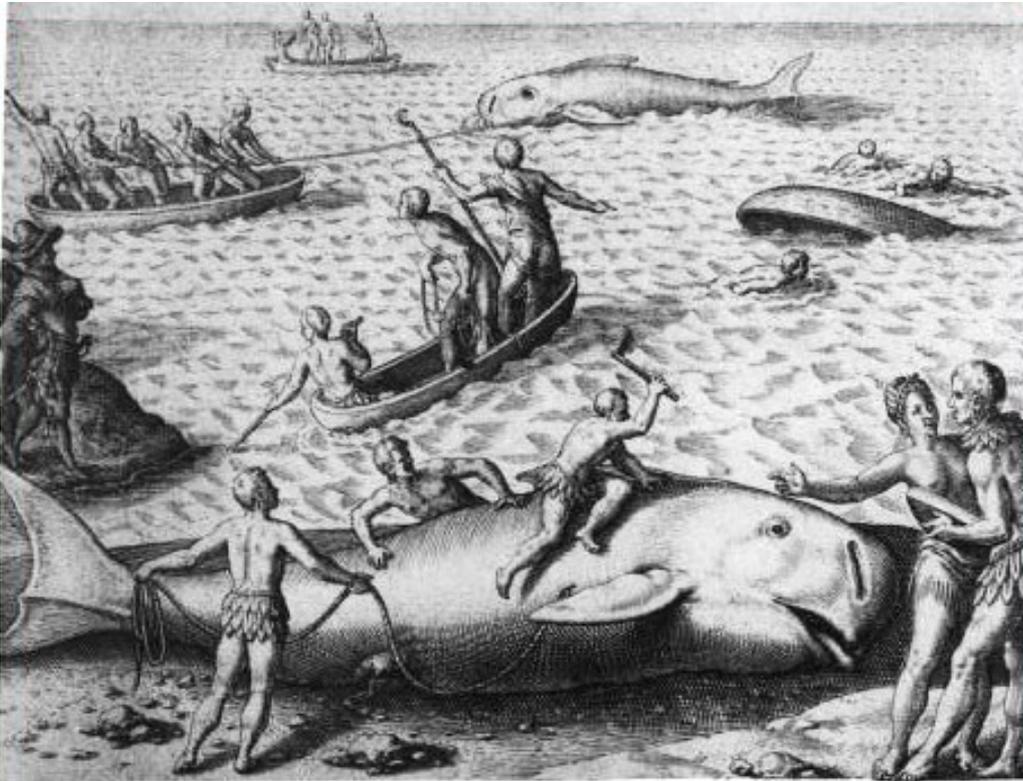
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<sup>48</sup> See: Campbell, Gwyn. 2005. *An economic history of Imperial Madagascar, 1750-1895: The rise and fall of an island empire*. New York: Cambridge University Press; Jackson, Allan. 2011. 'Whaling in Durban.' eThekweni Municipality, accessed March 16, 2013. <http://www.durban.gov.za>.

<sup>49</sup> Best, Peter, and Anabela Brandão. 2009. *Humpback Whaling at Madagascar 1910-1950*. Cambridge: International Whaling Commission.

<sup>50</sup> See above: Davis et al. 2007

scarcity of these large mammals. Limiting the number of vessels and the legal whaling season seemed an optimal solution to these seemingly opposing interests.



De Bry, *Icones quatuor partis Indiae orientalis*, 1601, pl. IV.

Pêche à la baleine à l'île Sainte-Marie de Madagascar.

**Figure 2.** Whale fishing in Saint Marie Madagascar, 1601 drawing by De Bry. Copyright: Collection des Ouvrages Anciens Concernant Madagascar, Tome I: 247

### *Pearls & Oysters*

Malagasy fishers had also long collected pearls and edible oysters. The earliest explorer referencing Malagasy pearls is Al-Idrisi, a Muslim geographer who compiled information from Islamic merchants trading with fishers of Qumr (a former name of Madagascar) in the early twelfth century. Madagascar is mentioned in his writing as a likely important source of pearls at the time.<sup>51</sup> Malagasy oyster fishing practices are, however, first explicitly mentioned in journal entries of André Thevet, a French geographer and writer who in 1575 observed small Malagasy fishers from boats pulling up 'big and beautiful' edible

<sup>51</sup> Donkin, Robin A. 1998. *Beyond Price: Pearls and Pearl-Fishing: Origins to the Age of Discoveries*. Vol. 224. Philadelphia: American Philosophical Society.

oysters that were up to a foot long and a foot wide. These large oysters, he explains, were not favoured by the Malagasy, who instead favoured fishing on foot in the intertidal zone<sup>52</sup> for smaller and ‘more tasty’ oysters. Thevet also describes a third type of oyster, from which Malagasy fishers extract ‘beautiful and large pearls,’ but not as ‘refined’ as found those found near India.<sup>53</sup> Based on interviews and oral histories conducted from 2009 to 2013, Malagasy fishers still extract oysters both for consumption (locally, regionally, and nationally), and pearls, although rare, are still harvested in most areas of the island. Edible oysters are particularly important for household consumption. In some coastal villages in the northwest and northeast, oysters and other edible shellfish accounted for nearly one-third of all non-starch food eaten by surveyed households (author forthcoming). According to oral histories I conducted in three areas of the island, oysters have been a historically important food source in coastal communities, most notably along the northeastern and northwestern shore.

Colonial oyster conservation regulation was highly specific and complex, which is likely due to the dual significance of oysters as a food source and pearls as a lucrative product of economic exchange. The first oyster conservation legislation regulated edible oyster harvests. In 1920 the colonial government established several projects to conserve edible oyster beds along the eastern shore of Madagascar. These projects were Madagascar’s first marine reserves, temporary no-take zones that embodied the scientific approach to conserving a particular species. Under the command of General Governor Garbit, these reserves were put in place to examine whether limiting extraction for a period of time could improve the size and flavour of Malagasy oysters. Improving oyster production in these first reserves was primarily an economic venture, aimed to appease the gastronomic desires of a growing French colony.

Shortly after Garbit created the experimental marine reserve, the colonial government granted approximately 20 large oyster bed concessions, spanning a large portion of the western coast of Madagascar, to French colonizers. These concessions were oriented specifically to control the extraction of pearl oysters, mother-of-pearl shells, and sponges. Concessions ranged in size from several km to several hundred km of coastline. In association with these large marine concessions were separate rules for French oyster fishers and Malagasy (*indigène*) ones. The first six articles of the decree focused on indigenous

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<sup>52</sup> ‘*terre ferme...le long de leur côtes*’

<sup>53</sup> Thevet, André. 1575. ‘Des habitants de Madagascar et des îles et promontoires qui son le long des côtes d’icelle.’ In *Collection des Ouvrages Anciens Concernant Madagascar: 1500-1613. Tome I. 1903*, edited by A. Grandidier, C. Delhorbe, H. Froideaux and G. Grandidier. Paris: Imprimerie Paul Brodard.

oyster fishing, stipulating that Malagasy could not purchase a concession but were allowed to fish for all types of oysters outside the concession as long as they did so bare handed, by diving, or by using a trident. Malagasy fishers, as well as European fishers, were in fact allowed to extract edible oysters by hand inside concessions if and only if the oysters were exposed at low tide; this stipulation granted the concessionaire access to deeper ocean oysters. By law, both European and Malagasy fishers who were not owners of the oyster bed concession had to sell any pearls they ‘accidentally’ found inside the concession to the concessionaire.<sup>54</sup>

Thus, it was against the law for Malagasy fishers to use dragnets and other boat-pulled oyster extraction technologies; they were restricted to manual harvest only. However, French oyster fishers were allowed to use dragnet and other boat-pulled fishing techniques in water deeper than 20 meters.<sup>55</sup> Outside concessions, Malagasy fishers had to follow a large number of rules concerning oyster extraction that French concessionaires had to follow inside their concessions. For example, to be extracted, pearl oysters (*Meleagrina occa* and *Meleagrina irradians*) had to have a minimum diameter of six cm, and mother of pearl oysters (*Meleagrina margaritifera*) had to have a minimum diameter of 10 cm. If coral were attached to the oyster, the coral had to be thrown back into the ocean. No dynamite or poison could be used. Similar to whale conservation legislation at the time, the commercial extraction of oysters was seasonally restricted from November 1 through March 31, inside and outside of concessions. However, in 1926, this blanket seasonal restriction was amended to include rotational seasonal restrictions for reserved areas under concession. All the even numbered sectors would be closed for four years while the even numbered concessions would be open. After four years the odd numbered sections would be open and the even ones closed to oyster extraction (Arrêté 9 Decembre 1926; Décret 14 Avril 1929).

These early colonial policies pertaining to oyster extraction in Madagascar were likely based on oyster research at the time, which in places like France was focused on solving the problem of deteriorating natural oyster banks. For example, a French oyster scientist in 1875 suggested in his book *L'Ostréiculture: son avenir et ses progrès* that adequate oyster conservation required (1) protecting and restoring natural oyster banks, (2) limiting dragnet

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<sup>54</sup> Law of March 15, 1922, fixing the rights of usage of the indigenous in the realm of pearl oysters, pearl shells, and sponges, in Madagascar and its dependencies. (*J. O. Mad. et Dép.*, 18 mars 1922).

<sup>55</sup> It is unclear why Malagasy were prevented from oyster fishing in deeper water. One possible explanation is simple favoritism toward colonists. Another possible explanation is that colonial policy makers might not have been able to fathom Malagasy fishers obtaining enough wealth to import a dragnet or possess the ingenuity to make one.

use, and (3) establishing oyster farms with juvenile oysters.<sup>56</sup> In a similar book written the same year, another French oyster scientist concurred with the above guidelines and also argued for the implementation of a minimum size rule and the privatization of oyster production.<sup>57</sup> By the early 1900s, a study conducted by the French Marine Fishing Science and Technique Office (*Office Scientifique et Techniques des Pêches Maritimes*) found the production of oyster larvae to be highest from June to August, the warmer summer months. The researchers thus suggested that oyster season be restricted to cooler months.<sup>58</sup>

Madagascar's colonial legislation echoed these general guidelines. Natural oyster banks were privatized with concessions; these concessions had periodic closures to allow for oyster banks regeneration; drag-netting was outlawed in shallow waters; and the oyster season was restricted, as in France, to cooler months (April–December in Madagascar).

In addition to these scientifically based regulations, oyster conservation legislation included taxes and fees associated with purchasing concessions, exporting pearls, and transgressing conservation laws. The General Governor of the colony was legally allowed to set and modify at whim the exportation tax on pearls, mother of pearl, and sponges. If someone transgressed an oyster conservation law, he or she could be fined 100,000–500,000 Francs and imprisoned for 5–30 days (Décret 14 Avril, 1929). The taxes and fees associated with conservation laws clearly linked the notion of conservation to a development project of the state; however, more fundamentally, oyster conservation was a means to an end of private accumulation of capital and control over people and natural resources.

Using a scientific approach, the colonial government aimed to ensure the perpetuity of oyster production—an endless source of revenue for the colonial government and an endless source of food for the colonists and Malagasy. Colonial oyster conservation in Madagascar was thus a clear blend of conservation as development, tethered to an interest in expanding capital gain and 'civilizing' the human-nature relationship.

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<sup>56</sup> de La Morvonnais, A. 1875. *L'ostréiculture, son avenir et ses progrès*. Vannes: Imprimerie Gustave de Lamarzelle.

<sup>57</sup> p 9 & 19 in de Bon, Ferdinand François. 1875. *Notice sur la situation de l'ostréiculture en 1875, Exposition Universelle de 1878 à Paris*. Paris: Imprimerie Nationale.

<sup>58</sup> See: Leenhardt, Henry. 1924. *Compte rendu d'expériences faites dans le Morbihan sur les huîtres et leur reproduction*. In *Notes et Mémoires*, edited by Blondel La Rougery. Paris: Office Scientifique et Technique des Pêches Maritime; Boury, M. 1930. 'Biologie Ostréicole : Recherches sur la reproduction des huîtres indigènes dans le Morbihan.' *Revue des Travaux de l'Institut des Pêches Maritimes* 3 (1):104-112; Welsch, Jules. 1917. 'Les ressources de la zone de balancement des marées dans le centre-ouest de la France.' *Annales de Géographie* 26 (143):344-352.

## CHARISMATIC MARINE MEGA FAUNA: PARADISE IN A TROPICAL SEASCAPE

### *Dugong*

Dugong was and still is a marine animal hunted by Malagasy fishers. Although the slow-moving mammal has become rarer, it is occasionally intentionally captured by fishers. More often, it is unintentionally caught (bycatch) by Malagasy fishers targeting other species such as fish and shark.<sup>59</sup> Drawing again from research conducted from 2009 to 2012, at least one fisher in each of 16 (out of 19) villages surveyed in the southwest, northwest, and northeast coasts of Madagascar reported seeing—if not catching and eating—dugong in the past five years. Although according to these fishers, dugongs are now rarer to find, they are still present in many coastal areas of Madagascar. Dugong meat is highly regarded for its taste and fat content. Because the animal is uncommon, fishers tend not to specifically seek dugongs, but if they come across one, they often will take it. Dugongs are reportedly easy to catch and occasionally approach fishers instead of the other way around. Dugongs are a common theme in folklore (*tapashiry*),<sup>60</sup> and stories told by grandparents to their children explain that dugongs are relatives of the Malagasy—relegated to live in the ocean because they did not respect local taboos. Dugongs are believed to have the same intellect as humans and therefore deserve respect if hunted. Some of the older fishers interviewed in northwestern Madagascar spoke of detailed taboos pertaining to how dugongs should be hunted, such as the need to say a blessing before capturing an individual, drag it ashore before killing it, remove the head first in the butchering process, throw the genitals back into the sea, prepare the meat in salt water instead of fresh water, and bury the non-consumed remains in a fashion similar to burying a deceased human. However, according to these older fishers, many of the rituals associated with dugong hunting are no longer respected by most younger fishers. Along with a disrespect of taboos has allegedly come a growing disbelief in dugong lore as well.

Dugongs also occupy a particularly fanciful place in the tales and lore of early European explorers in Madagascar. As in other areas of the world, they were occasionally mistaken for mermaids. Even when correctly identified, they were generally thought to be quite human-like. For example, one English traveller and historian, Thomas Herbert,

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<sup>59</sup> See: Marsh, Helene. 2002. Dugong: Status Reports and Action Plans Countries and Territories. In *Early Warning and Assessment Report Series*. Nairobi: The World Conservation Union/ UNEP; Robinson, L, and W Sauer. 2011. A Preliminary Assessment of the Artisanal Shark Fishery in Northern Madagascar. In *CORDIO Status Report*, edited by DO Obura and MA Samoily. East Africa: Coastal Oceans Research and Development in the Indian Ocean.

<sup>60</sup> These tales are also called *tapashiry*, *takashiry*, and *angano*, depending on location.

exclaimed that dugongs ‘have the reputation of loving men, and like to look directly in the face of someone to alleviate their weaknesses.’<sup>61</sup> He goes on to explain that dugongs have a ‘stone’ in their head that has medicinal properties. Another explorer wrote for pages about the Malagasy dugong, describing everything from their teeth to the thickness of their blubber. His fervent description includes a particularly inspired passage in which he quotes the Old Testament and describes dugongs as having human-like breasts (see Figure 2):<sup>62</sup>

*The female dugong has breasts like women. I never saw this extraordinary animal nurse without remembering a passage in the Lamentations of Jeremiah, Chapter III, where the prophet complains thus: ‘Even the sea-monsters offer their breast to nurse their young; but the daughter of my people is dealing with cruel people.’*<sup>63</sup>

- Francois L  gu  t 1708

It is likely these roots, particularly the anthropomorphising of dugongs that inspired colonists to focus on their preservation. Although carried out by early explorers (many of whom revelled in the rich veal-like taste of dugong meat), hunting dugongs was deemed a ‘savage’ and ‘desperate’ practice by colonists and therefore this was the first marine organism whose extraction was banned outright in Madagascar, in 1923.<sup>64</sup>

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<sup>61</sup> « la r  putation d’aimer les hommes, qu’il se pla  t    regarder en plein visage et    soulager dans leurs faiblesses » Herbert, Thomas. 1926. ‘Madagascar et les iles Comores.’ In *Collection des ouvrages anciens concernant Madagascar (1613-1640)*. 1904, edited by A. Grandidier, C. Delhorbe, H. Froideaux and G. Grandidier. Paris: Imprimerie Paul Brodard.

<sup>62</sup> Female dugongs do have mammary glands located under their pectoral fins from which they feed their young; however, the drawing exaggerates the size to which these mammary glands grow.

<sup>63</sup> *La femelle a des mamelles comme celles des femmes. Je ne voyais jamais cette extraordinaire nourrice, sans me souvenir du passage des Lamentations de J  remie, chapitre III, o   le proph  te se plaint ainsi : « Les monstres marins m  mes tendent leurs mamelles    leurs petits et les allaitent; mais la fille de mon peuple a affaire    des gens cruels. »*

<sup>64</sup> See above: Petit G. 1930; Mangin, L. 1923

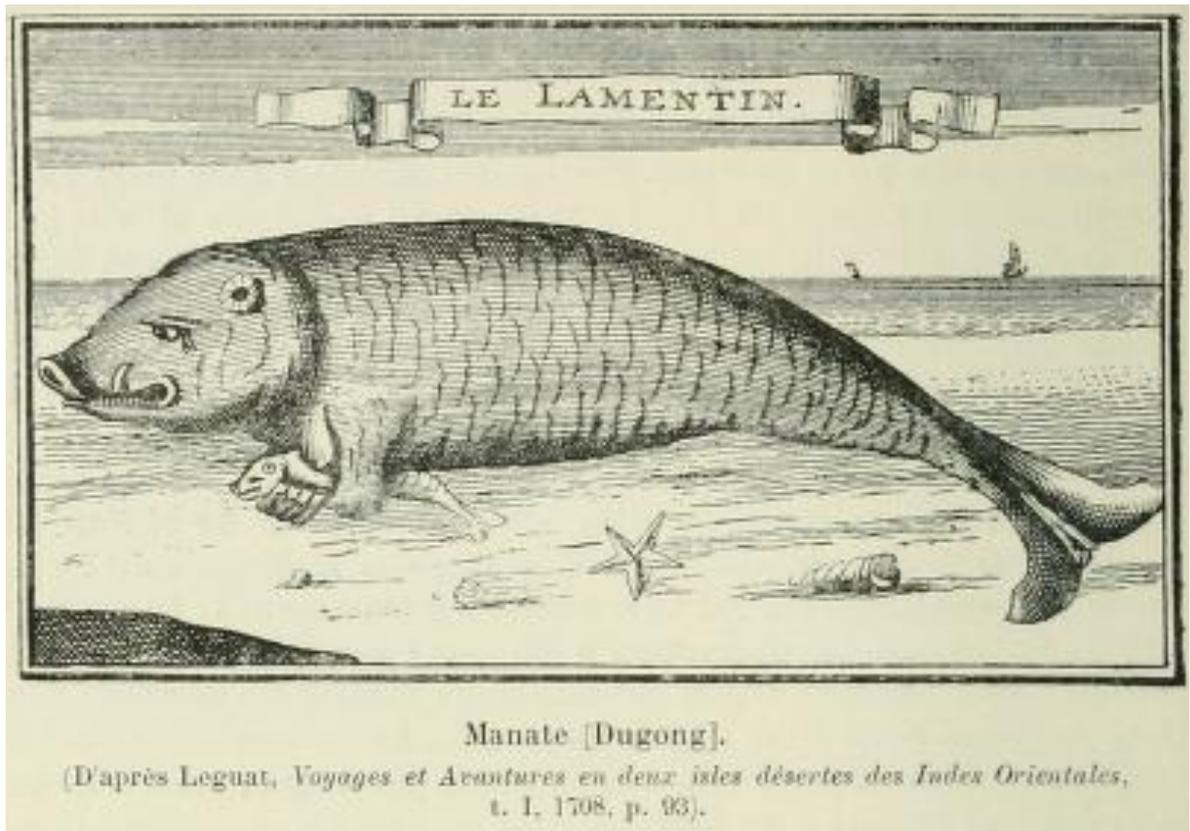


Figure 3. Dugong drawing by Francois Légûat, 1708. Copyright: Collection des Ouvrages anciens concernant Madagascar, Tome I: 247

In 1921 Georges Petit and Perrier de la Bathie, both colonial naturalists, convinced the Director of the French Museum of National History to advocate for establishing a suite of marine reserves around inshore and nearshore islands (e.g. Nosy Trozona -Morombe southwestern Madagascar, Nosy Iranja- Nosy Be northeastern Madagascar), that already had colonial stations or were slated for construction of a station. Petit and de la Bathie thought islands were ideal because they could be more easily surveyed than long stretches of Madagascar's coast, and they tended to have an abundance of the dugong's preferred habitat (seagrass) around them.<sup>65</sup> Several of these islands already had lighthouses on them, which Petit and de la Bathie thought could serve as look-out points for potential illegal dugong hunting without adding substantial costs to the colonial budget.

The tension between calculated exploitation of certain marine species (such as oysters or whales) and fully preserving other marine species (dugongs) made for an interesting mixture of narratives in international meetings such as the first and second International

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<sup>65</sup> See: Petit, G. 1923. 'Protection de certains animaux marins et terrestres de Madagascar: dugong, tortues, lémuriens.' Premier Congrès International pour la Protection de la Nature: Faune et Flore, Sites et Monuments Naturels, Paris (31 Mai- 2 Juin), pp 103.

Congress for the Protection of Nature as well as in naturalists' writings on conservation and preservation of marine species. One common argument underpinning the call for unique and rare species protection was the 'duty' (*devoir*) naturalists had as civilized and learned people to prevent the destruction of helpless species. The term *devoir*<sup>66</sup> is mentioned in numerous presentations in the first and second Congresses and several times in Petit's reports on marine conservation in Madagascar.<sup>67</sup>

Protecting marine species by creating no-take marine reserves, which has more recently become the norm in Madagascar (and globally), grew directly from the challenge of dugong protection in the 1920s. At a national level, colonizers struggled to figure out easy and efficient ways to protect unique and rare species. In 1923, much to the dismay of Petit, a law was passed that implemented a moratorium on dugong hunting over the entire island. At the Congress later that year, Petit argued that a moratorium was less enforceable than his plan, a guarded reserve. He then entreated the Congress to support his quest for the establishment of dugong reserves in Madagascar for the protection of not only dugongs but also sea turtles. As a corollary, he proposed that other nations follow suit to adequately protect the dwindling population of dugongs globally.<sup>68</sup> To convince his colleagues, he argued that if they did not take measures to protect the dugong, it might disappear just like the Stellers sea cow, hunted to extinction in 1768. The fear of losing unique and exotic species in the colony helped motivate dugong protection and is echoed in current conservation movements to better protect the animal and make its plight more visible.<sup>69</sup> Currently dugongs are categorized as 'vulnerable to extinction' on the IUCN Red list of threatened species.<sup>70</sup> Currently, many policy makers see marine protected areas as one of the more efficient ways to enforce rules regulating marine resource use.

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<sup>66</sup> *Devoir* means 'must' or 'duty.' Many speakers at the first and second International Congress for the Protection of Nature used the phrase « *nous avons le devoir de...* » meaning 'it is our duty to...'

<sup>67</sup> See above: Petit, G. 1930, Mangin, L. 1923. Also see: Pellegrin, Jacques. 1923. 'Protection des Espèces Intéressantes ou Utiles de Reptiles, Batraciens et Poissons en France et aux Colonies,' Desnues, Lucien. 1923. 'Réserves et Zones de Protection pour Mammifère et Oiseaux,' Hornaday, William. 1923. 'La Disparition de la Faune Dans les Diverses Parties du Monde,' Ternier, Louis. 1923. 'La Convention Internationale de 1902 et la Protection des Oiseaux,' Delacour, Jean. 1923. 'L'Ours et le Lynx,' and Sarasin, Paul. 1923. 'La Protection Mondiale de la Fauna Sauvage,' In Premier Congrès International pour la Protection de la Nature: Faune et Flore, Sites et Monuments Naturels, Paris (31 Mai- 2 Juin)

<sup>68</sup> See above: Petit, G. 1923

<sup>69</sup> Memorandum of Understanding on the Conservation and Management of Dugongs and their Habitats throughout their Range (UNEP/CMS Dugong MoU), signed October 31, 2007 by Madagascar.

<sup>70</sup> Marsh, H. 2008. 'Dugong dugon.' IUCN, accessed April 18, 2019. [www.iucnredlist.org](http://www.iucnredlist.org).

## A BASE FOR FUTURE LEGISLATION

*A regulation becomes good only when it is amended by use and experience. In Madagascar we have created all key pieces of regulation. Any praise that we can make of our work is that it has a solid base, indispensable to future legislation.*

- George Petit, 1930

Petit's wish for the marine conservation laws he helped establish to serve as a 'solid base' for future legislation in Madagascar was ultimately fulfilled. To this day, rules pertaining to marine resource extraction have colonial laws and ideas embedded within them. The law passed on June 5, 1922, is far reaching, with 21 articles in eight sections of regulations ranging from the definition of what marine activities constitute fishing, to where, when, and how marine products can be harvested across Madagascar (Décret du 5 Juin, 1922). This particular law focuses not only on harvest rules pertaining to fish, but also oysters, mussels, sponges, sea cucumber, crabs, and shrimp. The 1922 law is referenced in a 1986 law (Arrêté du 5 Mars 1986) pertaining to the extraction of lobster, crab, sea cucumber, and algae, which is then again referenced in a 1992 law (Décret du 3 Mai, 1992) pertaining to fishing and aquaculture rules. Each layer adds greater specificity to the rules established in 1922 pertaining to the extraction of these organisms. The 1986 and 1992 laws are then referenced in several other more recently established laws pertaining to net fishing, lobster harvest, sea cucumber harvest, and other extractions.<sup>71</sup> Another 1955 colonial maritime law (Décret 192 du 14 Mars, 1953) is similarly cited in a 2007 law (Décret 1254 du 21 Août, 2007) delineating the EEZ zone between Madagascar and Réunion Island. A report written by the FAO in 1992 attests to the perpetuation of colonial law in Madagascar marine resource use legislation and states that 'no special provision was made in Malagasy law to abolish the legislation prior to 1960, and as a result legal text that has not been explicitly repealed is still in effect.'<sup>72</sup>

Given the steady rise of fisheries science in Europe and North America and a growing understanding of marine organism life cycles in the late nineteenth century, it is understandable that the French colonial government in Madagascar established legislation based on this burgeoning science. However, it is surprising that such similar rules were

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<sup>71</sup> Currently, it is difficult to identify comprehensive marine resource legislation in Madagascar. These examples are taken from the documents I found in the Ministry of Fish and Aquaculture in Antananarivo in 2011 and 2015 and from online sources such as [www.faolex.fao.org](http://www.faolex.fao.org) and [www.droit-afrique.com](http://www.droit-afrique.com). In future research I would like to explore the exact proportion of Malagasy marine resource use legislation that builds on laws established in the colonial period.

<sup>72</sup> Andrianaivojaona, Charles, Zbigniew Kasprzyk, and Germain Dasyuva. 1992. *Pêches et Aquaculture à Madagascar: Bilan Diagnostic*. Antananarivo: FAO.

applied to such vastly different marine ecosystems and climatic contexts. Despite limited observations of fishers and Madagascar's marine environment during colonial expeditions (notably by Petit in 1920), by the late 1920s Madagascar had one of the most 'complete legislation[s] concerning fishing' of all the French colonies.<sup>73</sup> Marine resource legislation was extensive, integrating rules concerning marine protected areas, gear restriction, seasonal closures, species moratoria, maximum and minimum size limits for fished species, and fishing permits. However, these regulations were based on surprisingly brief observations of the dynamics of local fishing practices and a restricted set of the great diversity of marine ecosystems in Madagascar. The rules were instead based on fisheries policy and research conducted primarily in Europe and Northern America<sup>74</sup>.

While perhaps some ecological dynamics and fishing practices were similar in the temperate zones in Europe and North America and the tropical zones in Madagascar, these rules were not carefully calibrated to the particular ecological context of Madagascar. These rules were established upon a particular belief about what underpins scarcity in the marine realm, according to an apolitical, rational-scientific ethic. Through their privileging of a technical approach towards development that was based in Western science, the colonial government positioned themselves as the most knowledgeable and competent resource managers<sup>75</sup>. As a corollary, and perhaps most importantly, these regulations did not integrate local experiences or knowledge of marine and coastal systems. The importance of local conservation knowledge and practices relates to the second reason why history matters to marine conservation in Madagascar. As many anthropologists, political ecologists, and sociologists studying socio-natural systems have shown, to be successful conservation efforts must integrate—if not base themselves fully on—local understandings of and beliefs about the natural environment.<sup>76</sup>

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<sup>73</sup> See above: Petit, G. 1930

<sup>74</sup> See above Graham, M. 1938; Russell, ES. 1932; and U.S. Commission of Fish and Fisheries. 1898. 'Proceedings and papers of the National fishery congress.' National Fisheries Congress, Tampa Florida, January 19-24; Beaugé, L, G Belloc, M Boury, J Cochin, P Desbrosses, L Face, J Le Gall, L Lambert, D Rémy, and J Schvinte. 1936. Manuel des pêches maritimes Françaises. In *Mémoires de l'office des pêches maritimes*, edited by E.D. Le Danois. Paris: Office Scientifique et Technique des Pêches Maritimes; Roché, Georges Albert. 1893. *Explorations sous-marines: Des procédés d'études employés par les missions d'explorations sous-océaniques et de la technique des pêcheries marines représentées à l'Exposition universelle de 1889*. Paris: Imprimerie E. Bernard; Décret du Janvier 1852. Sur l'exercice de la pêche maritime. Edited by Ministère de la Marine et des Colonies. Antananrivo

<sup>75</sup> Also see: Ferguson, J., 1994. *The anti-politics machine: "development," depoliticization, and bureaucratic power in Lesotho*. U of Minnesota Press; Li, T.M., 2007. *The will to improve: Governmentality, development, and the practice of politics*. Duke University Press.

<sup>76</sup> See West, P., 2006. *Conservation is our government now: the politics of ecology in Papua New Guinea*. Duke University Press; Redmore, L, A Stronza, A Songhurst, and G McCulloch. 2018.

## MEMORY OF DISPOSSESSION AND SUBORDINATION

*There used to be rules here in the ocean. When? During colonization. We weren't allowed to harvest oysters over there [pointing south], and there was a time we weren't allowed to fish for lobster. Now? They are making this whole island into a marine park. I don't know why, but foreigners [of European descent] have always wanted this island.*<sup>77</sup>

- Elder fisher in northwestern Madagascar, August 10, 2011

When trying to understand local interest and investment in conservation projects occurring in numerous coastal regions of Madagascar, it is important to look not only to the current social and ecological context in which people live but also to ways that individual and cultural memory influences current perceptions and practices. Cultural memory is based on a shared past; however, as Ann Rigney argues, it is 'collectively constructed and reconstructed in the present rather than resurrected from the past.'<sup>78</sup> Thus, the interpretation and extraction of meaning from past events are unavoidably filtered through the lens of the present. Cultural memory, although collectively constructed, does not hold the same meaning for everyone across classed, gendered, racialized, and other lines.<sup>79</sup> During interviews and while conducting oral histories with fishers and non-fishers at my research sites in Madagascar, I found that although there was a general sense of injustice in terms of resource use during colonization, people's feelings about how grave the injustice had been varied greatly. Older men who had relied entirely on fishing tended to have the strongest sense of injustice concerning colonial marine policies. I also found that it varied greatly by region, coastal villages in the northwest, followed by those in the northeast, having generally more stories and memories of oppressive marine resource use policies during colonization than those in the southwest.

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'Which Way Forward? Past and New Perspectives on Community-Based Conservation in the Anthropocene. *Encyclopedia of the Anthropocene*:453-460. doi: <https://doi.org/10.1016/B978-0-12-809665-9.09838-4>; Alcorn, Janis B. 1993. 'Indigenous Peoples and Conservation.' *Conservation Biology* 7 (2):424-426. doi: 10.2307/2386442; Berkes, Fikret. 2008. *Sacred ecology*. New York: Routledge; Nazarea, Virginia D. 2006. 'Local knowledge and memory in biodiversity conservation.' *Annu. Rev. Anthropol.* 35:317-335

<sup>77</sup> *Nisy lalana teto an'dranomasina...ombia? Tamin'ny fanjanahantany. Tsy mahazo maka lezoitira aria, de misy fotoa tsy mahazo maka langosty koa. Izio ity? Lasa parka marin ity nosy jiaby ity. Tsy aiko ny antony, fa ilain'vazaha fo ity nosy ity.'*

<sup>78</sup> p 14 in Rigney, A. (2005). Plenitude, scarcity and the circulation of cultural memory. *Journal of European studies*, 35:011-028.

<sup>79</sup> See: Moore, Donald S. 1993. 'Contesting Terrain in Zimbabwe's Eastern Highlands: Political Ecology, Ethnography, and Peasant Resource Struggles.' *Economic Geography* 69 (4):380-401. doi: 10.2307/143596.

Memories of marine conservation and development efforts during the colonial period varied widely from experiences of forced labour in the marine realm to threats of punishment for going to a certain region of the ocean. Accounts of ‘forced fishing’ during colonization emerged in several villages in the northeastern coast of Madagascar. One village where I conducted research was known as a place colonizers frequently vacationed or visited. One man said that he and his father, along with other men in the village, were frequently forced to harvest lobster for picnicking *vazaha* (a term historically used in reference to French people, now used to reference white foreigners in general).<sup>80</sup> He said that they would be ordered to collect lobsters and then when the *vazaha* did not pay for the lobsters they were told that it was “part of the service they owed the colonial government” (personal communication September 13, 2010). When I asked what would happen if they didn’t collect lobsters, he said that they would be summoned to the district headquarters where they would be taxed or punished. The practice of forced fishing by colonizers is verified in a short passage written by Petit in *L’Industrie des Pêche à Madagascar*, in which Malagasy fishers are described as generally lazy except when they ‘do corvee labour when the head of the colonial post wants lobster and fish.’<sup>81</sup>

In several coastal villages I visited in northeastern and northwestern Madagascar, older men remembered being forced to go on multi-day fishing expeditions with French boat captains. They would camp out on islands or sleep in the boat. They were given just enough rice to eat by the boat captain but were not paid for their labour. The boatful of fish that they caught, cleaned, dried or salted went entirely to the boat captain. Numerous elder fishermen interviewed referred to this too as forced labour (*terivozona*) (personal communication October 21, 2010; April 18, 2011).

Although I could not find indications of such practices in documents concerning official marine resource law during the colonial period, they were common practices enforced by the colonial government at the local level. In certain villages, memory and stories told about forced labour and restrictions on areas one could fish, which were seen as unjust and cruel, influence interpretations of current marine resource use policies and practices. These individuals’ memories are woven into conversations about current marine resource use policies and practices. For example, one evening after a community meeting with an international conservation organization (a meeting led by a white French man) on the placement of a new marine protected area in the region, a young fisherman told me about

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<sup>80</sup> *Natao terivozona ny olo malka ny horandrity.*

<sup>81</sup> p 337 (see above Petit, G. 1930) « *la pêche en corvée quand le chef de poste veut des langoustes et du poisson* »

being unhappy with the proposed placement of the MPA. An elderly man sitting in the group of approximately twelve others remarked that the ocean there is productive and that foreigners have always tried taking it. The nodding heads and ‘mmmm’s’ expressed common recognition of the phenomenon. The following day, I approached the older man and asked him how people have tried to ‘take’ the ocean in the past. As referenced in the quote opening this section, he told me that there were rules they had to follow during colonization. He talked about how the colonizers loved shells and pearls and so fishers were told not to harvest these in certain areas both close to and far from the village. He said there were also rules about when they could fish lobster. He said he was disappointed but not surprised when the NGO came to create a marine protected area because many kinds of marine animals are disappearing, and he knows that the NGO wants to make sure those animals will be there in the future for *vazaha* (foreigners), and not Malagasy, to look at or take (personal communication, Aug 10, 2011).

The colonial government’s failure to recognize local marine knowledge and property rights during colonization set in motion a trajectory of dispossession of marine resources and subordination of marine resource users in marine conservation law and practice. Cases may exist in which memories of colonial marine resource rules undermine attempts at new marine resource conservation intervention. In all the situations I observed in which people were talking about their memories and feelings about past rules and practices, these memories were an important strand woven with many others. Together, these strands informed how a person or a group felt about current conservation and development objectives and thus influenced their willingness to go along with a new conservation project. Ranging from dismay that an island where fishing was restricted during colonization will be declared a marine protected area, to disappointment about new fishing restrictions reminiscent of colonial-era restrictions, the experiences of dispossession and subordination during the colonial period continue to influence people’s perceptions of and interactions with current marine policies.

## CONCLUSION

*From the late 19<sup>th</sup> century onwards, the decolonization process had involved the creation of ‘modern’ nation states that were built, essentially, on European models and traditions, and the deep ideological legacy of colonialism endured.<sup>82</sup>*

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<sup>82</sup> p 5 in (see above) Adams, W., Mulligan, M. 2003.

In this paper, using the historical lens of state-led marine conservation projects, I drew on three marine product case-studies—whales, oysters, and dugongs—to show the co-evolution of conservation and development in Madagascar. Focusing on the historical co-evolution of conservation and development enables a better understanding of the current state of conservation in Madagascar. The legal foundation provided by colonial marine conservation and development legislation to current marine legislation is undeniable. Embedded in the legal text is a discursive framework for the relationships among environmental protection, civilization, and economic development. The narratives that emerged to bolster state-led conservation intervention during the colonial period remain with us today: modernization, economic gain, and an ethical obligation to protect endangered species. While these narratives are seemingly benign, highlighting their use in the colonial period helps show how they are deeply Euro-centric and ultimately denigrate traditional Malagasy fishing practices and values associated with the marine environment. Furthermore, through the privileging of Western fisheries science in Malagasy marine policy, the colonial administration advanced marine management as a technical problem, responsive to colonial conservation as development intervention.<sup>83</sup> This dynamic remains in more recent marine conservation discourses and practices. Most international conservation organizations work as well-funded “scientific advisors” or “technical advisors” for marine conservation at every level of governance (local to international). As scientific and technical advisors, these organizations are instrumental in both framing conservation problems, as well as devising strategies the Malagasy government and coastal communities will help carry out to address marine resource use problems.<sup>84</sup>

Another important legacy of the colonial period in Madagascar’s marine conservation history is how and where particular marine-use policies were carried out. A cultural memory forms around the injustices of enactments of marine protection during colonization. In some areas, notably in the northwestern and northeastern parts of the island, where a strong colonial presence existed along the coast, new marine conservation efforts are associated with a history of oppression by elder as well as by some younger fishers. Subordination in terms

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<sup>83</sup> For deeper engagement with the process of rendering technical the process of development see: Ferguson, J., 1994. *The anti-politics machine: "development," depoliticization, and bureaucratic power in Lesotho*. U of Minnesota Press; Li, T.M., 2007. *The will to improve: Governmentality, development, and the practice of politics*. Duke University Press.

<sup>84</sup> See: Lowe, C., 2013. *Wild profusion: Biodiversity conservation in an Indonesian archipelago*. Princeton University Press; Fairhead, J. and Leach, M., 2003. *Science, society and power: environmental knowledge and policy in West Africa and the Caribbean*. Cambridge University Press; Baker-Médard, M., 2017. Gendering marine conservation: the politics of marine protected areas and fisheries access. *Society & Natural Resources*, 30(6), pp.723-737.

of forced labour and restricted access during the colonial period continues to influence people's perceptions of and interactions with current marine policies. Although the research presented here provides a small window into the problems engendered by colonial marine conservation as development, more research is needed to better understand the scope and impact of these interventions across Madagascar.

Given the increase of marine conservation efforts globally, notably the exponential growth of marine protected areas,<sup>85</sup> it is important to understand both the motivations for and legacies of previous marine conservation efforts, looking specifically at the ways in which the present deviates from the past, and the ways in which history repeats. Although the community-based management paradigm is pervasive in conservation discourse these days, some of the motivations and methods for the conservation of marine resources have changed little from their colonial roots. Understanding the colonial history of marine conservation in Madagascar then begs the question, what would a truly decolonizing approach to marine conservation look like now? Additionally, whose knowledge, values and visions for the future should orient the approach?

I join other scholars focused on critiquing the largely a-historical lenses through which scholars and conservation practitioners view the marine environment.<sup>86</sup> Decolonizing marine conservation in Madagascar requires closely analysing the logic underpinning current marine legislation and re-imagining a legal structure that serves the changing needs and values of a diverse coastal population.

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<sup>85</sup> IUCN and UNEP-WCMC. 2019. *The World Database on Protected Areas*. edited by United Nations Environmental Programme. World Conservation Monitoring Centre. Cambridge UK.

<sup>86</sup> Chiarappa, Michael, and Matthew McKenzie. 2013. 'New Directions in Marine Environmental History: An Introduction.' *Environmental history* 18 (1):3-11.