

Seascape shadows: Life in the ruins of the edible bird's nests harvest in northern Palawan, the Philippines

Abstract

The intensifying extraction, privatization, and conservation of maritime spaces are transforming seascapes globally. Amidst rapid coastal change and the ambiguous reconfiguration of oceans as frontiers are coastal dwellers who occupy the shadows of these seascapes. In contrast to the capture of high-profile marine species, the harvest of the edible nests of *balinsasayaw* (swiftlet, *Aerodramus fuciphagus*) remains largely concealed at the interstitial spaces between land and sea. In the Philippines, harvesters known as *busyador* negotiate social relations, political networks, and karst systems to extract these lucrative nests. Despite the nest industry growing in value in Southeast Asia, we show how the busyador struggle in precarious labor relations and spaces peripheral to coastal governance in northern Palawan Island. Building on the concept of 'seascape assemblages', we emphasize the importance of the less visible human-nonhuman relations that shape the nest harvest and trade. We trace the marginal social histories of the balinsasayaw by highlighting the precarious nature of the harvest, revealing how the busyador are subject to unfair working conditions and violence. We argue that as state actors and local elites reconfigure oceans as frontiers for development and conservation, struggles over labor and tenure rights, livelihood opportunities, and justice at sea are disregarded.

Key words

Edible bird's nests; seascape assemblages; frontiers; political economy; marine governance; Philippines

Introduction

Globally, maritime transitions are transforming seascapes through the extraction, privatization, and conservation of oceans (Barbesgaard, 2018; Choi, 2017; Mansfield, 2004). Many coastal dwellers occupy the ‘shadows’ of these rapidly changing seascapes. Shadows are a metaphor denoting the increasing marginalization and concealment of human-nonhuman relations by extractive practices and governance interventions (Plumwood, 2008; Bryant et al., 2011). In this paper, we bring light to these shadows by sharing the stories of nest harvesters, locally known as *busyador*¹, involved in the seasonal harvest of the *balinsasayaw*’s (swiftlet, *Aerodramus fuciphagus*) edible nests in northern Palawan Island, the Philippines (Figure 1).² Despite the edible bird’s nest (hereafter ‘nests’) industry booming in Southeast Asia, the busyador experience precarious labor conditions in the context of declining yields and their contested relationships to coastal governance (Thorburn, 2015). As the harvest unfolds across the liminal spaces of sea, karst caves, and forests, the busyador and the balinsasayaw are subject to erratic regulations and enclosures that marginalize the trade into the shadows of Palawan’s seascapes.

The balinsasayaw shape the rhythms and movements of the busyador who access complex networks of karst caves and holes, locally known as *butas*, in search of nests. From the harvest to processing and consumption, the nests enter commodity circuits that generate and transform their value over time and space (Blussé, 1991; Thorburn, 2014; see Appadurai, 1986 and Foster, 2006 for more on commodity flows). Consumption of the nests has long been associated with good health, virility, and social prestige in China and elsewhere in Asia (Jordan, 2004; Thorburn, 2014). The nests’ value and meaning shift as they move from karst caves (and farms in Malaysia, Indonesia, Thailand, and Vietnam) to consumers in urban

¹ Busyador (singular and plural); aka. boceador (singular) boceadores/busyadores (plural).

² We use the local vernacular, *balinsasayaw*, as used by the busyador to discursively connect the swiftlet to place, while separating it from the edible bird’s nest commodity.

metropolises such as Manila, Hong Kong, Guangzhou, and elsewhere in highly uneven political economies (Blussé, 1991; Jordan, 2004; Lau and Melville, 1994). At the extractive end, the seasonal harvest (traditionally from May to June, extended from December to June) entails intensified exploitation and low-value generation with considerable risk and uncertainty. Further along the commodity circuit, a kilogram of high-quality white nests (~120 nests) reach prices of USD2,000–3,000 (Thorburn, 2014). The changing political economies of nest production and exchange bring together the busayador and their families, coastal karst caves, and forests with nest traders and consumers around the world.

We understand seascapes in line with Indigenous thinkers' long histories of engaging with human and nonhuman relations in varied contexts (Ingersoll, 2016; Todd, 2014). Seascapes come to life through the unintentional coordination between human and nonhuman entities that gather and fall apart in complex assemblages within and beyond the ocean (Bear, 2012, 2017; Brown, 2015; McNiven, 2003; Peters and Steinberg, 2019). Assemblages are shaped by complex and changing multispecies interactions, where entities temporarily converge or are forced apart through their interactions with other assemblages (DeLanda, 2016; Tsing, 2015). We examine how uneven political economies work through seascape assemblages to intensify the harvest, driving labor precarity, exploitation, and ecological destruction. Contributing to literature on the political ecology of oceans governance and geographies of the sea (Bennett, 2019; Campbell et al., 2016; Peters and Steinberg, 2019), we pay attention to the complexity of the human-nonhuman relations concealed within the shadows of Palawan's seascapes. This analysis progresses questions of equity and justice at sea (Bavinck et al., 2018; Bennett, 2018; Cohen et al., 2019; Isaacs, 2019).

In this paper, we show how ‘frontier’ imaginaries emerge from historical and contemporary beliefs, ideas, and practices that erase the lived experiences of peoples and places. We engage the notion of the frontier by exploring the less visible, complex human-nonhuman dimensions of seascapes that challenge imaginaries of stable and linear production of capital in ‘resource frontiers’ (Fabinyi et al., 2019; Havice and Zalik, 2018; Steinberg, 2018). We argue that coastal and marine governance involves the production of ‘shadows’ in uneven political economies. Drawing on Plumwood (2008: 146–147), we understand these shadows as “... all those places that produce or are affected by the commodities you consume, places consumers don’t know about, don’t want to know about, and in a commodity regime don’t ever need to know about or take responsibility for”. As Bryant et al. (2011) suggest, engaging shadows involves analyzing the ‘in-between’ places produced by and subject to the multifaceted processes of marginalization, subordination, and overexploitation (p. 460). Making visible the contested material and social relations within shadows contributes to exposing the injustices and intersecting power dynamics that enable the over-exploitation and alienation of commodities from places and people (Dauvergne, 1997; McLean et al., 2018; Plumwood, 2008). However, shadows may also strategically shield and protect certain practices and relations, making them “always partial and situated” (Potter et al., 2020: 15).

We develop this argument by examining how the value and meaning of the nests unfold through the interactions of three interconnected seascape assemblages. First, we define seascape assemblages and explain their use to critically examine the varied power configurations in and of oceans. Second, we introduce the social histories of balinsasayaw and the harvest as emergent *luray* (nest) *assemblages*. Then, we introduce the edible bird’s nest political economy by drawing on two nested assemblages: i) *capital assemblages*

involving private and state actors seeking to harness value from the harvest, turning nests into commodities by dividing them into ‘class types’, while granting coherence to concession and licensing systems; and ii) *governance assemblages* centred around the relationship between the nest trade and coastal governance, development, and biodiversity conservation. We demonstrate how a combination of laws, political acts, and economic relations work together to marginalize the busyador. Our analysis reveals how the harvest continues in the shadows of coastal governance, enmeshed in secrecy and acts of concealment.

Methodology

Fieldwork took place in Manila and Palawan from July-August 2018 and included semi-structured interviews, informal conversations, secondary data, and historical policy analysis. Interviews were conducted in English with the assistance and translation from a Tagbanua Indigenous leader. Seventy-five interviews were conducted with: busyador, coastal dwellers and local traders (40), state (15), and non-state actors (20) involved in the management of the nest trade and coastal governance (donors, civil society organizations, and academics). Most busyador whom we interviewed identified as Cuyonon, and former harvesters as indigenous Tagbanua. Others were of different ethnicities under the broader heading of ‘Christian migrant’. Interviews in Tagalog, Tagbanua, and/or Cuyonon languages were transcribed and translated into English. Participant identities and locations are anonymized. Courtesy calls and prior informed consent certificates were attained at the municipal level and with *barangay* (the smallest administrative division) officials in northern Palawan. We contacted participants through local referrals from barangay captains and other local actors. Interviews ranged from twenty minutes to three hours and a half, depending on the interest and time availability of research participants, with most lasting an hour and a half.

The interviews concerned the history and cultural meaning of the harvest, trade system, regulatory practices, and commodification processes. Participants discussed the harvest's institutional framework, cave tenure, and governance interventions, environmental degradation, and harvest decline. The secondary data and historical policy analysis of the nest harvest and coastal governance help us construct a timeline of key events and understand the complexity of the institutional context and actors. Moreover, informal conversations with barangay captains, field assistants, busyador and their families, and community members were essential in understanding place-based experiences with the nest trade. We coded the data for emerging themes. Our findings are partial and constrained by the strategies of secrecy and concealment surrounding trading relationships and concerns regarding the legality and control over the nest trade and karst caves.

Seascape assemblages

Assemblage thinking denotes processes of formation and relations enabling certain socio-material orderings to emerge, be sustained, or be disrupted (Anderson and McFarlane, 2011). Seascapes are open assemblages shaped by the social and material relations of human-nonhuman entities within and beyond oceans (Bear 2012, 2017). Assemblages work together to create coastal realities (Peters and Steinberg, 2019); namely, the unstable associations between diverse entities that cohere and generate outcomes based on the agency and interactions of constituent parts (Deleuze and Guattari, 1987). We anchor these seascapes as cultural, lived, and embodied — home to coastal people and other beings (McNiven, 2003). Central to our analysis of seascape assemblages is how political economies intersect and shape human-nonhuman relations (Lambert et al., 2006; Satizábal and Dressler, 2019).

Bear's (2012) analysis of the scallop fishery in the Cardigan Bay argues assemblage analysis goes beyond notions of scale. The concept opens analytical space to understand what happens at sea is not limited to water but to the multiple associations that influence and permeate sea socio-materialities. The impossibility of fully domesticating and/or controlling human-nonhuman relations at sea shapes the depth of meaning and complexity of practice (Lehman, 2013). For instance, marine resource management focuses on controlling boat and tool use as a strategy to enforce boundaries and police resource users but cannot fully control nonhuman entities, like the movement of fish and birds (Bear and Eden, 2008; Connolly, 2017). Analyzing the emergent properties (and limitations) of these territories of control and conflict requires engaging with the complexity of seascapes, not only in the form of water but in "unrecognised and unanticipated ways" (Steinberg and Peters, 2015: 261).

Power intersects and shapes seascapes. Yet it is actively constrained by the fluid and changing materialities of oceans, enabling certain socio-natural orderings within and beyond the coast to endure (Bear, 2012; Lehman, 2013; Satizábal and Dressler, 2019). As Boucquey et al's (2016) analysis of Marine Spatial Planning demonstrates, how dominant discourses and practices assemble human-nonhuman entities provides critical insights into how their agency and power unfold in practice. Assemblages are not flat entities where power is distributed equally (Bear, 2012). Rather, as Kinkaid's (2019a) feminist critique highlights, understanding how colonial and unequal socio-material orderings are sustained has the potential to unsettle broader power relations. They suggest assemblage thinking must further engage broader power relations grounded in historical processes of domination and exclusion: "historical structures do not merely serve as some abstract 'legacy' or 'context' for contemporary socio-spatial orders and symbolic-material economies, but are the very substrate on which inequality and 'social difference' are continually and actively assembled,

transformed, and reproduced” (Kinkaid, 2019b: 484). Building on this critique and calls for critical research on the nonhuman relations of coastal spaces (Bear, 2017), we draw on seascape assemblages to politicize the ocean and examine how power operates within and beyond the coast.

Busyador struggles resemble those of millions of small-scale fishers and coastal dwellers worldwide, whose livelihoods and ways of living are in the shadows of colonial-capitalist interventions. Our use of seascape assemblage therefore enables us to delve into and beyond the ocean’s surface to examine the production of difference — the emergence of socio-material orderings that have historically marginalized coastal dwellers, placing them in the shadows of coastal and marine spaces.

In northern Palawan’s seascapes, the edible bird’s nest political economies gather busyador lives and livelihood struggles, the production and exchange of nests, scaled regulations, and the movement of birds and capital. They also involve material and liquid processes between land and sea forging spectacular karst formations and human-nonhuman relations. Here, karst limestone formations are one of the solid manifestations of oceans emerging from the sedimentation of calcite from marine and freshwater, skeletal debris (e.g., shells, bones, and reef build-up), and the evaporation of droplets of water compacted by the pressure and movement of water through geological time (Hallock, 1996). The indigenous Tagbanua (*Tandulanen* and *Calamian*) and Cuyonon draw nourishment from the caves, coasts, and inland areas used by the balinsasayaw and other species.³

³ Ethnic boundaries are often blurred due to the complex historical influx of peoples, comingling and intermarriage, as well as varied forms of discrimination.

Numerous political and economic projects have imagined oceans as ‘frontiers’ (i.e., opportunities for resource extraction and capital expansion), which require the configuration of new governance and regulatory frameworks that aim to control and reshape human-ocean relations (Havice and Zalik, 2019; Steinberg, 2018). In the twentieth century, Palawan recurrently emerged as an *ecological frontier*, the *fishbowl of the Philippines*, and the *last frontier*, imaginaries that downplay the historical and social dimensions of Palawan (see in particular, Rubis and Theriault, 2019). These projects aimed to connect Palawan’s seascapes to the global political economies of development and conservation (Eder and Fernandez, 1996; Guieb, 2014a). In the 2000s, for example, Palawan emerged as a Coral Triangle ecoregion, the *Amazon of the seas*, a global marine biodiversity ‘hotspot’ in need of large-scale marine conservation (Spalding et al., 2007). Such discourses and imaginaries place the relations between coastal people and oceans in the shadows. In connecting the material and ecological value of these places to global markets, frontiers enforce an idealized and simplified understanding of coastal places rendering less visible the uneven political economies and injustices lived within the shadows of large governance projects (Plumwood, 2008; Bryant et al., 2011). Recently, frontier narratives have also fed into an emerging national and global ‘blue economy’ political agenda aiming to facilitate inclusive and socially just economic and environmental outcomes (Azanza et al., 2017; Brent et al., 2020). Perversely, a *blue frontier* with oceans of financial value is now intensifying and associated with the expansion of conservation enclosures, resource extraction, and coastal development (Satizábal et al., 2020).

Frontier notions work to conceal past and present waves of contestations over meanings, rights, access, and control over marine resources and social spaces (Fabinyi, 2020; Havice and Zalik, 2018; Rubis and Theriault, 2019). These so-called frontiers are shaped,

constrained, and enabled by development and conservation political economies (Tsing, 2005). Although the reconfiguration of Palawan's seascapes into 'frontiers' highlights how oceans are framed as resources for investment, we focus on how the relations constituting seascape assemblages are obscured by frontier imaginaries.⁴ Moving beyond these imaginaries requires attention to the relations between human and nonhuman entities central to understanding the social history of seascapes. Building on the concept of 'seascape assemblages', we examine the political economy of the nest trade, focusing on the shadows produced by state and private interventions that conceal not only emerging forms of violence and resistance, but also the connective social tissue of these seascapes. Palawan's coastal region is thus less a frontier than a complex seascape whose materialities and social interactions defy processes of enclosure.

Northern Palawan's seascapes

Northern Palawan's coast and island groups include spectacular karst cliff formations shaped by water and winds from the Sulu and the South China Seas (Figure 2). These movements give life to the islands and cave systems that shape coastlines, fishing grounds, and tropical lowland forests (Bird et al., 2007). The east coast in the municipality of Taytay accounts for the largest production of nests, particularly the cave complexes in Elephant and Castle Island (Figure 1; Fabello, 2011). In the west of northern Palawan, the municipality of El Nido has historically been central to the production of the nests and was renamed in 1954 from *Bacuit* to *El Nido* ('the nest' in Spanish) (Anda, 2016). Harvested caves also exist across a smattering of small islands and further north in Busuanga and Coron (Fabello, 2011; Saragpunta Foundation and PAFID, 2001). These cave systems are shaped by assemblages of diverse vegetation and animal species, including balinsasayaw, bats, hawks, spiders, snakes,

⁴ Frontiers have been represented as: i) *structured and functional*, places imagined as empty of people, opened for extraction, and subjected to new forms of authority (Watts 2018: 479); ii) *constructivist and relational*, sites where processes of enclosure challenge existing tenure, access, and control authorities (Barney, 2009; Peluso and Lund, 2011; Rasmussen and Lund, 2018), and iii) *projects in the making*, places of friction, assemblages where space is not only imagined but material and a lively actor (Campling, 2012; Tsing, 2003).

guano, sand, and soil. In the caves, busyador encounter deities (*diwata*), sacred lakes with territorial rights, and indigenous burial sites with recorded cremations dating to the Late Paleolithic (Lewis et al., 2008; Saragpunta Foundation and PAFID, 2001).

The indigenous *Tagbanua Tandulanen* and *Calamian* are the peoples of these seascapes (Guieb, 2014b).⁵ As elsewhere on Palawan, the Tagbanua have harvested and traded nests (*luray*) since pre-Hispanic times and held tenure over specific cave systems (Dalabajan, 2001; Warren, 1981: 138). Since the nineteenth and early twentieth centuries, migrants from Cuyo, Agutaya, and Cebu (the Visayas) and elsewhere settled along the coast where they commingled and competed with the Tagbanua over access to and use of marine resources, nest harvest, and land for swidden farming (*uma*). Over time, the main livelihood activities included a complex of fishing, swidden, copra farming (for coconut oil), livestock rearing, tree cropping, and a range of wage labor opportunities (Eder, 2004; 2009). Coastal livelihoods follow the rhythms of lunar cycles, water, and monsoons (Fabinyi, 2012: 21–52). The *Amihan* (northeast monsoon) persists from November to May or later, bringing cool and dry winds from the northeast, low to moderate rainfall, and consistent winds often making offshore fishing difficult (Dalabajan, 2001). It is during this ‘drier’ season busyador harvest the nests (December to May/June), cashew (*kasoy*) (February to May/June), and fish close to the shore. The overall income of the busyador tends to increase during this drier season, with March being the most prosperous month of the year. The *Habagat* (southwest monsoon) emerges in late June to December, bringing a ‘rainy season’ of high humidity and south-westerly winds, increasing the risks of flooding and typhoons. From July to August, stronger winds and heavy rain reduce livelihood opportunities, leading many to experience hardship and reliance on the ‘barter’ of cashew nuts for rice and other products. Most *uma*

⁵ The *Tagbanua Calamian* live along the Calamianes group of islands and on the east coast of Taytay and the *Tandulanen* (Indigenous from the *tangdol* — coastal formations used as geographic markers for sea voyages and fishing practices) live along Taytay’s Malampaya Sound.

rice stores have been consumed by June or July and families await the rice harvest in late August or September. From June to October, fishers catch crab using artisanal traps around mangrove areas. The fishing season starts in August, targeting multiple species using gillnets and hook-and-lines for subsistence and commercial purposes. Other seasonal livelihood opportunities include tourism and hired labor.

***Luray assemblages* — the social lives of balinsasayaw**

The movements and life cycles of balinsasayaw shape the lives of Tagbanua and Cuyonon busyador. These small swiftlets (9–16 cm) have narrowed wings and dark brown and olivaceous feathers and a life expectancy of three to five years. They roost in large groups inside the karst caves across South and Southeast Asia (Caabay and Cadigal, 2014; Canuto, 1937). Individuals use echolocation to navigate dark spaces producing echo-clicks. Groups fly out of their roosting caves after dawn, foraging for insects in forest and riverbank vegetation, returning to their caves before sunset (Vermeulen and Whitten, 1999: 35). Balinsasayaw fly, feed, and roost across caves, air, oceans, and forests.

Balinsasayaw are monogamous birds whose breeding season falls during *habagat* just when the abundance of insects increases. Breeding pairs build U-shaped cup nests from the salivary laminae they secrete and thread using their beaks (Babji et al., 2015; Dacuan, n.d.). These nests are translucent white or yellowish, depending on the breeding pair, the age of the nest, and its exposure to sunlight or breeze (Marcone, 2005; Caabay and Cadigal, 2014). Breeding pairs remain faithful to their nesting sites, leaving worn marks on the walls (Caabay and Cadigal, 2014). Nesting cycles take between three to four months when nestlings are ready to fledge (Vermeulen and Whitten, 1999: 35). They use a multi-brooded reproductive strategy, raising as many chicks as they can during each breeding period, often laying two

eggs at a time and breeding up to three times per year (Caabay and Cadigal, 2014). However, producing nests and feathers demands much energy, which in the long run reduces the fecundity levels of balinsasayaw (Lim, 1999: 57).

The art of harvesting nests

Experienced busyador engage in *Patalbod* (or *talbod*) — following balinsasayaw and discovering cave butas. This involves waiting at sea or on top of coastal cliffs or mountains during dusk or night-time and tracking balinsasayaw as they fly back into their butas. Successful and failed discovery attempts are often shared with pride, as finding nests requires experience, patience, and luck. In the words of one busyador: “*Patalbod involves watching at night, especially during the full moon, our ancestors would climb the cliff and observe where the balinsasayaw were going. If they entered a cave, they would follow the birds... they did that every year, but now not anymore.*” (No. 29, August 25, 2018). Discovered and inherited butas are treasured by busyador, who often name them after their distinctive characteristics or memories. Busyador often guard their cave entrance or keep their location secret to prevent unwanted intrusions and nest theft. Elders act as knowledge keepers of a cave’s customary laws, a now dwindling tradition seemingly relegated to the shadows (De Vera and Zingapan, 2017). Nevertheless, fathers and their sons, nephews, and/or sons-in-law share harvesting rights and knowledge regarding each cave (including the number and the quality of nests) through storytelling and shared harvesting practices. The nest harvest is a collective endeavour, generally performed by family groups. However, many busyador primarily harvest their butas on their own. Knowledge is produced and transmitted from experienced busyador to trusted newcomers within their groups. Busyador also spend time recollecting and mapping out the volumetric extent of the harvest, where families and groups delineate and use territorial markers to claim exclusive rights over parts of cave systems.

The art of harvesting nests requires conquering the fear of darkness, tight places, and heights. Busyador are predominantly men with small and lean bodies and are trained by their families at a young age. As children, they first harvest caves with small and narrow butas inaccessible to adults and learn how to become skilled rock climbers and harvesters. A busyador who started harvesting when he was 12 notes: “*When I was new in doing the harvest, it was very hard for me, and I was scared... Those who taught me, told me not to be afraid and I tried my best to overcome my fear and learn... it’s just a matter of practice and being mindful of what we do*” (No. 43, August 20, 2018).

The sole female busyador we interviewed performed the harvest in the 1960s. Starting as a six-year-old, she stopped at the age of ten because she could no longer enter the smaller butas suitable for children and she could not enter the adult butas scantily clad. She recalled: “*The girls can harvest if they want but only in the children butas. We could not enter the adult butas because we would have to climb partly naked*” (No. 22, July 31, 2018). Rather than harvest, women cleaned nests by hand and some also played an active role in the processing and trading of the nests — a labour pattern that partly aligns with pre-existing gendered divisions of labour. However, as we show, the management of the harvest through a concession system has dramatically reduced women’s involvement in the harvest.

In the past, the Tagbanua busyador also burned incense (*parina*) and performed ritual offerings, known as *sagda*, giving chicken or pork to the *diwata* (benevolent deities) in the coastal forests where the birds eat. Tagbanua *Babalyan* (spiritual medium, healers), Cuyonon *albularyo* (traditional healers), and the busyador often performed rituals to ask permission to enter the caves, fulfill the harvests and plead for their safety during the climb. A Tagbanua

woman whose father was a busyador notes: “*My ancestors had a ritual, unlike the busyador now. They had to burn incense first... a ceremony... they said to the Diwata ‘don’t be angry at us, don’t get mad at us, we are just getting the nests for our livelihood’*” (No. 45, August 19, 2018). These offerings highlight the relational connection between human and nonhuman entities from forests and coastal caves.

Busyador climb without aids up cave walls or using an elaborate system of climbing ropes and/or bamboo ladders and poles. There is always the risk of injuries and death when harvesting nests. Accidents happen when a rock falls, someone falls asleep, or loses their hold. As a result, older busyador are frequently excluded from the harvest. This creates anxiety among elderly busyador, who often expressed fear or frustration of not continuing. As an elder busyador notes: “*I want to keep doing the work. But I also worry. My first cousin fell and died inside that cave. We were only two entering in that cave*” (No. 50, August 12, 2018).

Before using battery-powered flashlights, the Tagbanua and Cuyonon busyador burned *saheng* resin (or *saleng*, *Canarium luzonicum*, and *C. asperum*) wrapped in dried *nipa* (*Nypa fruticans*) leaves as torches to illuminate cave walls and butas during the harvest. They craft different tools for the harvest. Using rubber bands, they attach flashlights to the head or shoulders and affix modified and sharpened metal forks as tines to the end of bamboo poles. Known as *sungkit*, the tines are used to carefully pry the nests from the cave walls and hold them to prevent them from falling or touching other surfaces. While several busyador prefer to climb barefoot, most use modified sandals wrapped with rubber to protect their feet from sharp karst rocks (Figure 3). Moreover, busyador conceal their presence from balinsasayaw to prevent the birds from flying away from their roosting caves. This involves restricting artificial fragrance use (e.g., soap, shampoo, perfume, or food) inside the caves. Traditionally,

incense (parina, *kamanyang* (olibanum tree, *Boswellia carteri*), and saheng was burned to remove any human scent trace. The caves should only be visited during the daytime when balinsasayaw are feeding outside of the caves. Several of these practices are rarely practiced today, which exposes the intensifying harvest and the changing relations of this multispecies assemblage.

The harvest season varies spatially and temporally. Busyador move on land and sea from cave to cave, often hiding their butas from thieves to protect their harvest. The season begins with a two-day *limpia* (cleaning) between December and January when the busyador go back to their caves and remove old nests. Jack (2015) suggests the cleaning and removing of debris from the walls helps the balinsasayaw build new nests with fewer obstructions. Following the *limpia*, in Taytay, the harvest season starts in the third week of January, where 15-day break intervals follow seven, three-day harvesting periods. The season closes during the second week of May to ‘let the chicks fledge’ (*paliparan*), a crucial practice to ensure sustainability. Several areas also have a final collection period in August known as *pinaliparan*, during which abandoned nests are harvested. Depending on the cave complex different harvesting periods across northern Palawan have extended from their traditional May-June period to December-May (Cadigal, 2014).

While several busyador are careful not to harvest nests with eggs, nests are often taken with little consideration of the balinsasayaw’s reproductive capacity (as noted in the colonial era by Fray de Jesús (1624), see Blair and Robertson, 1901: 307). Harvested nests are soaked in water to soften and loosen nest strands to manually clean them by carefully removing mixed feathers and other ‘impurities’ with tweezers. The nests (*luray*) are claimed to boost the human body’s energy and strength, attributes perceived by Chinese traders for

centuries, and, more recently, Cuyonon and other migrant traders (De Vera and Zingapan, 2017). At the extractive end, the busyador consume the leftovers, *sinisa*, from the cleaning process. Sinisa are often mixed in water infusions, porridges, and smoked inside coal-burnt coconut shells for *suob* and *binat* (i.e., post-partum care and sickness) to treat stomach aches, feet swelling, and arthritis. Many busyador also feed sinisa to roosters to ensure vitality and strength during cockfighting, a common post-harvest game when busyador have more income.

The relations between balinsasayaw and busyador challenge land and sea binaries. In these seascape assemblages, space is relational, connecting the temporal dynamics of human and nonhuman entities in coastal forests, sea, and limestone caves with the seasonal rhythms of oceans. The social geographies of balinsasayaw within these limestone caves constrain these relationships, opening access to certain individuals whose bodies, knowledge, and climbing skills enable them to participate in the nest harvest. The centuries-old harvest continues and now intersects with the assemblages of contemporary social relations and political economies.

Nest(ed) political economies

Originating from northern Palawan and elsewhere in Southeast Asia, edible bird's nests are one of the most expensive animal products globally — enacted as an iconic, ancient, and 'exotic' commodity (Hobbs, 2004; Thorburn, 2014). The nests (known in Chinese as 燕窝 *yànwō*) are a key ingredient in bird's nest soup, a prestige food item in Chinese cuisine and one with several claimed health benefits (Babji et al., 2015; Valli and Summers, 1990). The nest industry's form and character connect with historical forms of government control, migration, and patron-client trade relations. The two nested assemblages of *capital* and

governance demonstrate how the historical art of harvesting nests has been shaped, constrained, and transformed concerning competing state, private, and customary control amidst coastal development.

Capital assemblages

The trade and bartering of edible bird's nests go back to the Tang Dynasty (618–907) when they were exchanged for porcelain wares, ceramics, and silks, among other handcrafts (Harrison, 1959; Valli and Summers, 1990). In the Philippines, there is evidence of bartering nests from the Song Dynasty (960–1279) (Lau and Meville, 1994). Across Palawan, Indigenous peoples provided Chinese merchants and Tausug from the Sulu Archipelago with *luray*, beeswax, rattan, and other products in exchange for goods they could not access or manufacture (e.g., salt, metal implements, plates, and bowls), becoming further entangled in global resource and capital flows (Warren, 1981, p 8–9; Fray de Jesús (1624) in Blair and Robertson, 1901: 305–307). In the 18th and 19th centuries, the nest trade rapidly expanded and intensified with several attempts to reorganize and control it (see Fray de Jesús (1624), in Blair and Robertson, 1901: 307). The state eventually subjected the nests to taxes, concessions, and other regulatory controls (e.g., 1935 and 1987 Constitutions (Article XII, Section 1 and Article XII, Section 2, respectively)).

The regulatory legacies of the Spanish (1565-1898) and American (1898-1946) colonial-era overlap with Indigenous customary rights to nests and cave systems inherited across generations (Canuto, 1937; Dalabajan, 2001). In Bacuit, El Nido, caves were also sold, and the busyador were required to pay an annual license to the municipal government (Canuto, 1937). However, in 1919, considering a booming industry, an ordinance from the Palawan Provincial Board gave exclusive rights to harvest the nests to the highest bidder,

known as the '*cessionaire*' (local Chinese traders and middle-class families), giving them control over the trade and labor of the busyador. In 1927, municipal districts were given the authority to enforce license taxes for the harvest (Act No. 3379). In the late 1920s and early 1930s, the Secretary of Agriculture and Natural Resources held the jurisdiction to protect and regulate the harvest and established a closed season from May 1 to June 30 (Administrative Order (AO) No.1, 1929). For instance, in 1932, AO No. 29-1 expanded the closed season from April to June, determining it was illegal to harvest and trade more than 10 g of the nest without a license (Canuto, 1937: 387). Busyador had to sell their harvest to concessionaires who managed the harvest, covering the busyador food and guard expenses. These patron-client relationships enmeshed the busyador into economic dependencies and debt with concessionaires.

All of this sparked an influx of 'thieves' (locally known as *sindikato*) — disenfranchised busyador who were expelled from the harvest accused of looting or whose relationship with the concessionaire turned sour for entering the butas to harvest and sell nests before the busyador. In Taytay, the concession bidding process was concealed from the public until 1986; one concessionaire was given the exclusive privilege to harvest and trade the nests. Conversely, in Bacuit, the bidding process was competitive, and recognized cave owners' hired wage laborers — the traditional busyador. The concessionaire would clean, weigh, and prepare nests for trading, excluding women from the cleaning process and paying busyador for their harvest depending on the quality of the nests — whiter, cleaner nests had higher value (from 2–31 centavos/g) (Canuto, 1937: 386). In 1932, nest traders joined efforts to build a corporation and a store in Manila. In monopolizing the industry, traders blocked the concession, monopolising the bidding competition, and putting an end to the bidding system in 1937 (Canuto, 1937).

The nest's capital assemblages in northern Palawan have historically intersected with other actors' political networks seeking to expand opportunities for capital accumulation. In the late 1940s, Cuyonon migrants came to these seascapes working in commercial logging and fisheries. They also began harvesting and buying caves from Tagbanua busyador. From a mix of middle and lower-income families, Cuyonon and several migrant busyador began dominating the harvest. In certain areas, several busyador worked as wage laborers for relatively wealthier busyador who were paying license fees. For instance, the busyador we interviewed (32) were Cuyonon and argued their ancestors discovered their butas. Intensifying capital flows and political claims facilitated the partial erasure of Tagbanua histories of the harvest through processes of exclusion.

From 1940 to 1990, migration to Palawan exceeded four percent per annum, with most seeking safety and new livelihood opportunities (Eder, 2009). In 1949, Taytay's municipal waters, including river mouths and tributaries, were leased by the local government to the San Diego Fisheries Enterprises for five years (Taytay Municipal Resolution No. 29 1949 and No. 25, 1950), which granted them exclusive rights to operate fish corrals and fishponds (Guieb, 2014a: 318). As small-scale fishers were dispossessed from their fishing grounds and coastal livelihoods, they turned to join the growing tide of *sindikato* in the area (Rivera-Guieb and Jarabejo, 2001). To counter the growing 'theft', in 1963, the Municipal Council of El Nido prohibited the harvest outside the main harvesting periods (Municipal Ordinance 11). The term 'busyador' could only be used to denote 'legal' harvesters who had registered their caves at the Treasurer Office. These busyador were classified concerning the number of caves and forced to pay a Real Property Tax fee via two 50 percent instalments.⁶

⁶ The classification system was: class A (26–30), PhP90/year; B (21–25), PhP80/year; C (16–20), PhP60/year; D (11–15), PhP50/year; E (6–10), PhP40/year; F (3–5), PhP30/year; G (1–3) PhP15/year.

New caves assigned a tax declaration certificate were listed in the Treasury Office — a practice that seldom happened given the extent of the earlier dispossession of caves. It became illegal to bring unregistered companions within 100 m from the beach and cliffs surrounding registered caves, threatening the collective nature of the harvest. All buyers were required to keep a record of the nests provided by the busyador. Individuals violating these rules were fined (between PhP100–200) or punished with three to six-months of imprisonment. These management rules further constrained the nest harvest, facilitating the dispossession of the caves from Tagbanua busyador in remote areas.

In the 1970s, the caves in northern Palawan were (again) reorganized in a bidding system developed to increase municipal level profits, as the value of the nests fell after a ban by a now stridently Maoist China on the consumption of luxury goods, including edible bird's nests (Jordan, 2004). The busyador who could not afford the cave tax payments continued to work as indentured laborers for registered cave owners, ultimately losing control over their caves. Caves were auctioned to the highest bidders, as middle-class busyador were displaced by prominent capitalists, generally financed by Chinese traders; just as new coastal developments began encroaching upon karst formations bringing new actors into these complex seascape entanglements (Capistrano, 2010). The grabbing of caves was contested and led to local uprisings that stopped the bidding process in Cabugao (Coron Island) (Saragpunta Foundation and PAFID, 2001). However, the bidding system persisted in the cave systems where the harvest was lucrative, particularly in El Nido and Taytay, and often involved high-profile politicians bidding from as far as Manila. Capital loomed larger than custom. In other areas, individual permit holders performed the harvest and traded the nests locally. In 1987, a fixed closed season was established in Taytay from May 1 to June 30 (Municipal Ordinance No. 69, 1986 Ordinance 12, 1987).

In the mid-1980s, as wealth and consumption increased in China, the nest trading price rose, and production/trade volumes expanded approximately ten percent per annum (Jordan, 2004; Thorburn, 2014). The nests soon travelled from northern Palawan to the north outside of the country (illegally) and from Puerto Princesa and Manila to Malaysia, Indonesia, and Thailand (legally and illegally). From there, the Palawan nest trade reached markets in Singapore, Hong Kong, elsewhere in China, Taiwan, and even India. Reprocessed Palawan nests are now found at Duty Free, medicine shops, and dried seafood stores across Southeast Asia, Asia, and China Towns globally (Figure 4). In 2015, a bowl of bird's nest soup in Hong Kong cost between USD30–100 (Babji et al., 2015). The nests from Palawan are valued due to the quality of their color and texture.

Nest classification systems are enforced by concessionaires and traders. In 2018, nests were classified into four categories with prices ranging from PhP30 to 180/g (Table 1) and varying in time and space. Several busyador claimed the concessionaire or caretaker often unjustifiably classify nests in lower classes and weight. Considering busyador have complex mental maps of the quality and number of nests inside their butas, many found this devaluation denigrated their practice. This cultivated knowledge comes from the busyador and balinsasayaw being faithful to their butas and nesting sites and the consistency displayed by the quality of the nests built by balinsasayaw breeding pairs. Occasionally, the busyador are drawn by capital, preferring to sell their harvest 'illegally' to local traders paying higher prices, having to hide their nests from guards and concessionaires, while also facing the risks of getting caught and denied rights over their caves. As one busyador explains: "*Busyador... engage in illegal harvests because of the very small income they had... the price was very*

cheap... that's why busyador will go home with debts... many were syndicating the nests"

(No. 41, August 12, 2018).

Considering rising prices, declining harvests positioned hired guards as central to their protection (also restricting fishing in surrounding waters). However, several of these guards ended up joining the *sindikato* or helping the busyador hide nests or butas for more lucrative sales later, a common practice in these intricate cave systems. Concerning relative decline, the quest for nests has increased the violence and risks experienced by the busyador during the harvest, considering concessionaires and their caretakers know how many nests are available in each of the butas. Although *sindikato* is not new, the presence of high-powered guns has increased the dangers the busyador experience during the harvest. To hide, the *sindikato* bring food and stay inside the caves for days. As a busyador recalls: "*We see them inside the caves armed and hiding... sometimes ten... they bring water and food... Suddenly a gun is pointed at you... I begged them not to shoot me because I have a family... I told them we are just the same, what you get is your own and what I get is mine.... I told them further that I do not mind if they steal and that they are not stealing from me but from [the concessionaire]*" (No. 38, August 12, 2018).

These encounters highlight the precarious nature of the harvest and the violence of the capital assemblage, where contemporary dynamics of patron-client relations, concession and licensing systems, and the growing 'theft' threatens the coherence of customary harvest relationships. Thus, control and trade interactions within the *capital assemblages* of edible bird's nests reinforce the separation between the busyador and their caves, adding pressure to intensify the harvest and transform customary relationships and practices while also relying on the skills and knowledge of the busyador. Here, the social labor behind cave registration,

concession, and licensing systems has mobilized capital and been used as a political tool by local governments to discipline and subordinate the labor of busyador to profit from the harvest and privilege the interest of nest traders (i.e., powerful trading families). Capital and regulatory forms are thus brought together and cohere in practice, territorializing (i.e., creating borders to manage and control, see Peters, 2020: 2) the harvest, enabling historical processes of domination to endure through *governance assemblages*.

Governance assemblages — conflicting seascapes

In 1986, the end of the Marcos regime ushered in decentralized governance in the Philippines, and witnessed the emergence of new coastal and marine *governance assemblages* in northern Palawan. Working with the national government, provincial agencies, local government units (LGUs), and non-governmental organizations secured international donor aid to implement a range of community-based resource management interventions (Dressler et al., 2018). Northern Palawan saw the proliferation of interventions focused on marine protected areas (MPAs) in the 1980s and 1990s (Pomeroy and Carlos, 1997; White et al., 2002). Declared a UNESCO Biosphere Reserve in 1990, from 1992 onward, the island province was subject to the Strategic Environmental Plan (SEP or Republic Act 7611) under the Palawan Council for Sustainable Development (PCSD). The SEP gave the PCSD greater authority and oversight of conservation interventions, leading to considerable jurisdictional friction with the national Department of Environment and Natural Resources (DENR). Partly due to these designations, Palawan emerged as a biodiversity hotspot from the end of the 1990s, first regarding land but then extending to oceans from the 2000s onwards (Spalding et al., 2007). Concurrently, the *capital assemblages* of marine resource extraction and development continued to accelerate alongside the regulations brought together through the governance assemblage. The expansion of capture fisheries

(including sea cucumber, trochus, and live reef fish), aquaculture, and significant tourism development has intensified and intersected with the nest harvest (Fabinyi et al., 2019; Saragpunta Foundation and PAFID, 2001).

Amidst these changes, the LGU-administered bidding system only applied to productive cave systems in Taytay and El Nido and was governed through taxes and lease agreements. For instance, in Taytay, the bid lease increased from Php30,000 in 1986 to Php2,600,000 in 1999 (Cadigal, 2014: 64). In 2001, the National Cave Resources and Protection Act (Cave Act, Republic Act 9072) and the Wildlife Resources Conservation and Protection Act (Republic Act 9147) gave the DENR national jurisdiction over the management of caves and wildlife (including balinsasayaw) in coordination with LGUs and the PCSD. These interventions sought to reorganize the harvest considering cave and wildlife conservation and challenged the management and control of local LGUs. In 2003, the PCSD became the implementing agency of the Cave Act and associated rules, regulations, and annual permitting.⁷ However, the Taytay LGU ignored the new management and granted permission to start the nest harvest season in 2004. The PCSD saw this as a breach of its legislation (PCSD Resolution No.04-230, 2004), highlighting the lack of cooperation from the Municipal Police in Taytay to fully implement the Caves Act.

In 2004, the PCSD, the Philippine National Police-Criminal Investigation and Detection Group (CIDG), and the Philippine Navy raided Elephant Island in Taytay Bay to arrest between 71–78 busyador, cave guards, and three police officers for the violation of the Cave Act. As a political strategy, the PCSD used the Act to claim authority over the caves and profit from the harvest (see Cadigal, 2014: 65). As experienced by one busyador: “*We*

⁷ Resolution 03-217 and AO 08, 08A. A Technical Working Group comprised of the PCSD, LGUs, business representatives and NGOs emerged but effectively excluded the busyador.

did not know what was happening... that morning while we were having coffee a rubber boat loaded with two squads from the PCSD and CIDG... reached [the cave complex]. The soldiers jumped to the land and with a megaphone told us to drop down to the floor. I was watching them... some people were crying... others were afraid... We were there perhaps for more than one hour... It was harassment. It was the first day of the harvest... They took us directly to Roxas and from there we were fetched by the Navy and transferred to Puerto Princesa City. There was no explanation.... When we arrived, we were held in the barracks... The Mayor processed our release... we were many, almost 78” (No. 46, August 13, 2018). The PCSD secretary praised the raid as a “splendid job... for and on behalf of the Council” (PCSD Resolution No. 04-229).

The raid represents a moment of rupture aimed to reorient governance and capital flows — a violent encounter between the busyador, the municipal government, and provincial actors. Busyador were caught between the ongoing power struggles of the Taytay LGU and PCSD that was likely further entangled in inter-family-clan politics grasping for capital. In response, a Memorandum of Agreement for the joint management of the caves was negotiated between PCSD and the LGUs in 2005. The agreement established the revenue from the harvest should be directed to the protection, development, and management of cave resources. The LGU held 80 percent of the share, and the PCSD held 20 percent. This transition increased the number of permits, including the registration of caves, concession/individual permits, transport, and wildlife collection permits. The PCSD demanded creating a busyador cooperative in Taytay, which managed the concession from 2006 to 2010 and was financed by a powerful trading family. The cooperative did not last long once taken over by a concessionaire (2011–2015) who was also financed by a local

political family. In El Nido, the bidding increased ten percent per year and was also financed by powerful trading families.

The roles of the LGUs and the PCSD have done little to protect the balinsasayaw and ensure the sustainability of the harvest. As Cadigal (2014: 66) highlighted, the role of state agencies “*starts with the bidding process and ends upon the collection of the bid amount*”. One official noted with current levels of overexploitation, the harvest will be gone in five years. By extension, the Cave and Wildlife Act has also enforced the management of caves as separated from oceans, coasts, and people. The limited understanding of the population dynamics of balinsasayaw exposes how management has remained focused on profit, neglecting the participation of the busyador in supporting the sustainability of the harvest. *Capital* and *governance* assemblages actively constrain the harvest and the lives of the busyador via government regulations and trading relationships that territorialize the caves to secure means of production. These assemblages have enabled new actors (including migrant busyador, concessionaire, caretaker, sindikato, guards, LGUs, and PCSD) to compete for access and control over the nests.

Past and present attempts to reorganize the harvest violate the rights of Tagbanua and Cuyonon busyador in the shadows of these seascapes. However, their presence is vividly imprinted in the walls by past burning torches and saheng inside the caves. As one busyador recalls: “*Sometimes I’ve been to the caves that are not familiar with me, but I know that the elders went there because of the rising smoke that marks the rock that could not be removed... it is burnt and sticks to the rocks.*” (No. 38, August 12, 2018). Many cave systems have the names of past and present busyador inscribed into the walls, both as personal signature and a territorial marker. One Tagbanua woman demonstrated with pride the names

of her ancestors who harvested *luray* dating back to 1938 (Figure 5). The walls of the karst caves and the stories of busyador hold a hidden history of the harvest.

Seascape ruins in shadows

The intensifying nature of the nest harvest, the expansion of commercial agriculture, and coastal tourism development are reorganizing coastlines, social relations, and livelihoods for capitalist means of production. Here, assemblages of *luray*, capital, and governance collide in ruinous shadows and deepen the marginalization of coastal dwellers. As marginal, liminal spaces, shadows obscure the connection between places, human and nonhuman entities with powerful social and material consequences (Bryant et al., 2011; Potter et al., 2020). In these shadows, the political economy of the nests circulates and deepens capital and governance interventions accelerating exploitation and concentration of wealth in fewer hands.

In the ruins

The dramatic decline in the abundance of *balinsasayaw* is inseparable from the history of environmental degradation and gradual dispossession of the Tagbanua busyador from the seascapes of northern Palawan. In Taytay, the volume of harvested nests has decreased from 80.5 kg in 2011 to 62.03 kg in 2014 (Cadigal, 2015: 29). Partly due to increased regulations, the reduction in the volume of nests traded has negatively impacted the livelihoods of concessionaires and the busyador. Concessionaires are under pressure to recover their financiers' investments and manage the harvest (covering food, license fees, guarding, transport expenses, and labor), which has reduced the services they offer to the busyador. Under pressure, the busyador often harvest more to recover the cost of transport and guarding the concession caves. One concessionaire appealed to the municipal LGU, requesting a reduction in the lease fee: "*I cannot afford it anymore. Actually, it is a violation of the*

contract, I cannot afford to pay the yearly amortization because of the declining production... Every year I request to see a study of the system. Why is it declining?... until now there is no action” (No. 39, August 9, 2018).

Due to the sustained bidding system, the practice of *paliparan* (letting the birds fly) has reduced considerably. Concessionaires add pressure on the busyador to harvest as much as possible, including nests with chicks or eggs and smaller nests. As one busyador expressed: *“Because there is a very low production... if we do not get the nest, they [the concessionaire] will be angry with us... sometimes I pity the chicks, so I placed them in the rocks where they can be safe”* (No. 46, August 13, 2018). A new trading class, known as *yangkak* or ‘ball-pen’ (denoting the small size), has emerged from these intensifying practices. Yangkak includes small nests around seven days old and are bought between PhP8–40/g. Sinisa, nest leftovers, are now also traded in several areas (Table 1). In the urge to increase profits, concessionaires have also started hiring ‘extras’: individuals who, initially ‘banned’ from the concession for stealing, sweep areas already harvested to ensure no nest is left behind. They sell their harvest at higher prices than the busyador. This shift has contributed to the dramatic decline of the harvest, and like *sindikato*, ‘extras’ are not associated with particular butas, yet their precarious labor contributes to the dispossession and economic marginalization of the busyador. In contrast, the busyador are acutely aware of the damaging impacts of the intensifying harvest, noting: *“We are the owners of a cave, we do the utmost care and diligence in picking nests and in harvesting to the rocks, we are very careful in the breeding area, nest must not be touched or pressed by the hands, hands must not have sweat because birds are very sensitive”* (No. 49, August 13, 2018). The intensifying harvesting dynamics and uneven relationships now shaping the harvest have increased the conflicts among the busyador, extras, *sindikato*, and concessionaires.

Many busyador have stopped paying registration fees on caves no longer ‘productive’, subsequently losing their harvesting rights. Simultaneously, coastal developers have been granted permits (by the PCSDs and DENR) to build sizable high-end tourism resorts along El Nido’s coast and islands. While several busyador have managed to negotiate with resort managers and guards to access balinsasayaw nesting sites, most busyador must use less accessible and dangerous routes to access their caves to hide from guards or tourist guests. A busyador notes: *“before the islands were bought, we were the ones guarding the place. But now that the islands have been sold [the harvest] is prohibited there... we have another way in from the other side... but it is very difficult... there are many guards”* (No. 30, August 27, 2018). The busyador complaints regarding this at the Municipal Office have fallen on deaf ears.

The expansion of commercial agriculture and coastal tourism development (Fabinyi, 2010) has also contributed to degrading the habitat and survival of balinsasayaw while reducing local access to caves. For example, the use of chemicals in paddy rice has limited the balinsasayaw food sources (Caabay and Cadigal, 2014; Manchi and Sancharan, 2010). Several busyador point to pesticides killing a greater number of swiftlets inside the caves. As one noted: *“The birds are really less... I think it is because of the sprays of insecticide in irrigated rice farms... Sometimes when we get in the cave the birds are already dead... That is why they gradually diminish little by little”* (No. 43, August 20, 2018). In the past decades, northern Palawan has also experienced more rainfall during *Amihan* (northeast monsoon) (Matsumoto et al., 2020). Busyador argued butas’ walls are more humid, which lowers the quality of the nests, as they become yellowish or end up falling. Their observations also highlight an increased number of cockroaches and snakes predated on the nests, which is

likely linked to poor waste management in coastal areas associated with the (pre-COVID 19) growing influx of tourists (Llanto, 2018). Other busyador have noticed balinsasayaw flying away from intensively harvested butas to new caves for roosting. Similarly, the presence or absence of birds in roosting locations is not entirely controlled by harvesters or state agencies but shaped by the swiftlet's agency as they shape the trade's regulatory frameworks (see Connolly (2016a) for farmed swiftlets in Malaysia).

Concerning an emerging blue economy agenda, the region is expected to continue to increase the number of MPAs, exposing the busyador seascapes into new coastal management regimes aiming to transform coastal management plans into business initiatives and ascertain the financial value of ecosystem services (e.g., coral reefs, mangroves, fish stocks, see Satizábal et al., 2020; Song et al., 2021). So far, this process has had limited participation from coastal dwellers, including the busyador, while opening space for private sector tourism to directly shape coastal and marine governance interventions (Whisnant and Reyes, 2015). The islands' limestone caves have long been harvested by the busyador, whose existence is omitted from current discourses and imaginaries of the region focusing on marine conservation and private sector tourism (Satizábal et al., 2020).

Considering a declining harvest, several busyador are drawn into the tourism sector. On land, the busyador now transport tourists using tricycles and at sea by converting fishing boats into tour boats for 'island hopping'. There have been attempts to promote visits to the caves (often with the busyador) as a tourism activity (e.g., El Nido Tour B: Caves and Coves). Many also work in the construction and maintenance of hotels, further increasing their reliance on tourism. These households now rely on externally harvested vegetables, rice, and fish from other municipalities as their primary food source. Powerful elite families once

involved in the trading of the nests have also diversified their investments, owning hotels and restaurants, in several cases sustaining patron-client relationships with the busyador. As the Tagbanua leader and wife of a former busyador notes: “*Upon the arrival of resorts, it became harder to catch fish close by; the fishing areas are far now, before [the relocation] the seashore was just in front... it is expensive, because there are booming tourists, in the market the price of products is higher... we are forced to buy... it is very hard really*” (No. 35, August 25, 2018). All these dynamics have squeezed the busyador out from their caves, land, and coasts. However, even within these ruins, the nest harvest continues, largely concealed and precariously sustained.

As the ‘wild’ nest harvest declines in the ruins of the seascape, the production, and trade of domesticated ‘farmed’ balinsasayaw have expanded across the region (see Connolly, 2016a, 2016b; Lim, 1999; Thorburn, 2014). Despite the trade’s expansion, farming is curiously absent in northern Palawan or much of the Philippines (apart from Mindanao). In 2011, China banned the edible bird’s nests from Indonesia, Malaysia, and other unknown origins, due to the high concentrations of toxic nitrite found in adulterated farmed nests. The ban was lifted in 2015 after new quality control, and traceability mechanisms were established (Babji et al., 2015; Thorburn, 2015). Inadvertently, the ban elevated the branding of Palawan’s nests as high-quality ‘exotic’ ones — a scarcity value from ruins. However, farmed nests are now ‘illegally’ entering Palawan from Mindanao, Malaysia, and Indonesia and rebranded as high-quality nests from El Nido (Cadigal, 2014). The reduction of government income from ‘wild’ and legally ‘harvested’ nests finally prompted the PCSD Scientific Advisory Panel to discuss how to improve management practices in 2017. The Panel provided a list of recommendations, which included exploring nest farming opportunities, strengthening the link between tourism to the harvest and volume of the

harvest, and conducting a value-chain analysis and reassessment of the concessions (PCSD, 2017: 22–23). The potential economic benefits of nest farming to the busyador remains unclear. However, in promoting farming without addressing existing power asymmetries, farming practices will likely privilege elite capture through their landed influence over regulatory frameworks (Connolly, 2016b). Such political and economic asymmetries would only further exclude the busyador from commodity circuits as their harvesting knowledge and experiences would no longer be needed to secure the capital of the harvest, trade, and for wealth more generally.

Even within the ruins of the harvest, the abstract and discursive value of the nests is enabling new *capital assemblages* adding value to farmed nests, rebranding them as *wild* and abstracted out from lived realities (see Fletcher et al., 2021). These assemblages emerge as an extension of the imaginaries of northern Palawan’s seascapes from which *governance assemblages* shift and intensify by seeking to capture value from these new transactions. Amidst these assemblages, the busyador are dispossessed and further concealed within the shadows of Palawan’s seascapes.

Discussion and conclusion

Intensifying maritime, political economies are reorganizing northern Palawan’s seascape assemblages through resource extraction, development, and conservation with powerful consequences for human and nonhuman entities. Over time, Palawan’s seascapes have coproduced human-nonhuman relations across marine, coastal, and inland spaces. How the balinsasayaw and the busyador are nested within the *luray assemblages* have nourished knowledge, harvesting practices and rituals, tenure, and social relations that, until recently, have been carried through generations of Tagbanua and Cuyonon harvesters. As the Cuyonon

harvest displaced Tagbanua access to ancestral caves, the trade's political economies, conservation, and development threaten to dismantle the nourishing elements of the harvest. In this sense, the relational precarity experienced by the busyador is inseparable from how spaces, resources, and peoples are imagined and represented within *capital* and *governance* assemblages.

However, the nest harvest survives in its ruins, hidden and concealed, reproducing itself through the work of the elusive busyador, limestone cave butas, oceans, coastal forests, and balinsasayaw. Together, the nest, harvest, and busyador are nourished by how these elements work together and are difficult to control and extinguish. The lives of busyador and balinsasayaw challenge the divide between coastal and marine spaces and categorizations of oceans as isolated management entities. The memories of harvest are partly materialized in the walls of cave butas, balinsasayaw, and busyador, which reflect Tagbanua and Cuyonon lifeways along northern Palawan's seascapes. However, the growing absence of Tagbanua busyador and the profound precarity of the busyador (including *sindikato* and *extras*) in these seascapes, exposes their dispossession from land and sea in mounting 'blue economies'. Together with environmental change, these processes are shaped by the political economies of development and conservation, pushing coastal dwellers to rely more on tourism and foreign investments to sustain local livelihoods. This is problematic given the uncertainties of the COVID-19 pandemic and climate change and the exclusion of the busyador from governance decision-making arenas.

In the context of a hidden and neglected indigenous history, the nest industry is fraying because of patron-client relations with deeply unequal distributions of wealth between consumers, traders, and producers. However, we also highlight the 'practices of

care' sustained by busyador who manage their caves in ways that nurture the presence of the balinsasayaw. Different practices and temporalities draw together the *luray assemblages* of limestone caves and lifeways, where *paliparan* (letting the birds fly), concealing the busyador bodies and smells, and not harvesting nests with eggs, have emerged to support the sustainability of the harvest. Through these practices, the busyador learn from their kin and rely on knowledge of forests, oceans, and limestone caves to inform their harvesting practices. Harvesting dynamics and balinsasayaw populations are sensitive to environmental changes within caves, oceans, and inland forest vegetation. Despite this, *capital* and *governance assemblages* bypass the social and ecological history of the *luray* to repeatedly impose registration fees and concession systems that erase customary rights to caves, giving management control to concessionaires financed by powerful trading families. These top-down management strategies intersect with intensifying coastal political economies, which have fuelled the stealing of nests while dispossessing the busyador from their caves. How best to capitalize from the harvest is central to these assemblages as they disregard the livelihoods of the busyador and sustainability of the harvest. Rampant sindikato enter the caves to sell the nests outside of the concession system and actively subvert management strategies while threatening the livelihoods of the busyador. Chaos and violence are the result.

All these impacts contribute to destroying the livelihoods and lifeways of the busyador. At least figuratively, this enables balinsasayaw (framed as wildlife) and limestone caves to be reconfigured as needing protection, allowing new state actors to enter and compete for control over the harvest. The raid exposes how legislation connects the harvest to Provincial environmental governance actors and 'local' agreements doing little to ensure the protection and sustainability of the harvest. The extras hired by concessionaires intensify exploitation, opening family caves to strangers that harvest all the nests they can find,

regardless of their size, having chicks, or eggs, making it difficult for balinsasayaw to reproduce. This transition drives the decline of the harvest, emerging from an imposed and perverse cave management regime that has fixed lease costs based on the previous year's bidding process and not on the status of balinsasayaw populations. Sustaining these assemblages requires the concealment of different actors and the support of seemingly untraceable circuits of value that have nothing to do with protecting the harvest.

Our use of 'seascape assemblages' sheds light on the social marginalization of the busyador and their precarious livelihoods concerning coastal development and conservation in Palawan. The changing relationships of the busyador and balinsasayaw highlight why scrutinizing the relationality between human and nonhuman entities matters to the production of knowledge of seascapes, rural political economies, and coastal governance (Pauwelussen, 2020). We have demonstrated the seascape assemblages of northern Palawan are further forged through the struggles and resistance of the busyador as corrosive political economies intersect and shape human-nonhuman relations at the liminal spaces between land, coast, and sea. By moving beyond frontier imaginaries, we have highlighted the social dimensions of these seascapes, exposing several ways in which access and control over people and places have been contested and concealed by capitalist interests. While several have benefited from participating in the tourism economies of northern Palawan, the maritime transitions in this region reveal the inequalities faced by the busyador, reinforcing the dispossession of caves and coastal livelihoods. Although the nest harvest continues due to the intricacies of cave systems and the persistence of balinsasayaw and the busyador, the existence of both is in decline. Critically engaging with the history of violence in these seascapes is crucial to unsettle the meanings and practices reinforcing certain socio-natural orderings and feed into

the production of shadows, thus, opening space for alternatives to transform these seascape assemblages for the busyador and the balinsasayaw.

Figures

Figure 1. Map of northern Palawan, Philippines.

[Insert Figure 1.]

Figure 2. Limestone cliffs in seascapes of northern Palawan: a) limestone cliffs, b) harvest collection point, and c) entrance to cave *butas*.

[Insert Figure 2.]

Figure 3. Busyador harvesting tools: a) modified fork, b) *saheng* (resin), c) *sungkit* (bamboo pole), rope, and flashlight; d) modified sandals.

[Insert Figure 3.]

Figure 4. Edible bird's nests in Duty free (Chiang Mai, 2018).

[Insert Figure 4.]

Figure 5. Busyador names in walls.

[Insert Figure 5.]

Tables

Table 1. Nest classification system in northern Palawan

[Insert Table 1.]

References

Anda RD (2016) El Nido losing its bird nests, collectors. *Inquirer News*, 18 July. Available at: <https://newsinfo.inquirer.net/796680/el-nido-losing-its-bird-nests-collectors> (accessed 1 September 2020).

Anderson B and McFarlane C (2011) Assemblage and geography. *Area* 43: 124–127.

Appadurai A (1986) *The social life of things: Commodities in cultural perspective*. New York: Cambridge University Press.

Azanza RV, Aliño M, Cabral RB, Juinio-Meñez MA, Pernia EM., Mendoza RU and Siriban CS (2017) Valuing and managing the Philippines' marine resources toward a prosperous ocean-based blue economy. *Public Policy* 18.

Babji AS, Nurfatim MH, Ety Syarmila IK and Masitah M (2015) Secrets of edible bird nest. *Utar Agriculture Science Journal* 1(1): 32–37.

Barbesgaard M (2018) Blue growth: Saviour or ocean grabbing? *Journal of Peasant Studies* 45(1): 130–149.

Barney K (2009) Laos and the making of a 'relational' frontier. *The Geographical Journal* 175(2): 146–159.

Bavinck M, Jentoft S and Scholtens J (2018) Fisheries as social struggle: A reinvigorated social science research agenda. *Marine Policy* 94: 46–52.

Bear C (2017) Assembling ocean life: More-than-human entanglements in the blue economy. *Dialogues in Human Geography* 7(1): 27–31.

Bear C (2012) Assembling the sea: Materiality, movement and regulatory practices in the Cardigan Bay scallop fishery. *Cultural Geographies* 20(1): 21–41.

Bear C and Eden S (2008) Making space for fish: The regional, network and fluid spaces of fisheries certification. *Social & Cultural Geography* 9(5): 487–504.

Bennett NJ (2019) In political seas: Engaging with political ecology in the ocean and coastal environment. *Coastal Management* 47(1): 67–87.

Bennett NJ (2018) Navigating a just and inclusive path towards sustainable oceans. *Marine Policy* 97: 139–146.

Bird M, Boobyer E, Bryant C, Lewis H, Paz V and Stephens W (2007) A long record of environmental change from bat guano deposits in Makangit Cave, Palawan, Philippines. *Earth and Environmental Science Transactions of the Royal Society of Edinburgh* 98: 1–11.

Blussé L (1991) In praise of commodities: An essay on cross-cultural trade in Edible Bird's nests. In: Ptak R and Rothermund D (eds). *Emporia, commodities and entrepreneurs in Asian maritime trade c. 1400-1750*, pp. 317–335. Stuttgart: Franz Steiner Verlag.

Boucquey N, Fairbanks L, St. Martin K, Campbell LM and McCay B (2016). The ontological politics of marine spatial planning: Assembling the ocean and shaping the capacities of ‘Community’ and ‘Environment’. *Geoforum* 75:1–11.

Brent ZW, Barbesgaard M and Pedersen C (2020). The blue fix: What’s driving blue growth? *Sustainability Science* 15(1): 31–43.

Brown M (2015) Seascapes. In: Brown M and Humberstone B (eds.) *Seascapes: Shaped by the sea*. Farnham: Ashgate. Pp. 13–26.

Bryant R, Paniagua A and Kizos T (2011) Conceptualising ‘shadow landscape’ in political ecology and rural studies. *Land Use Policy* 28(3): 460–471.

Caabay EL and Cadigal GM (2014) *Population estimate of edible bird’s nest swiftlet (Aerodramus fuciphagus Thunberg, 1812) in Taytay, Palawan, Philippines*. Puerto Princesa: PCSD.

Cadigal GM (2014) *Harvesting and Trade Dynamics of Edible – Birds Nest (Aerodramus fuciphagus, Thunberg 1912) in Taytay and El Nido, Palawan, the Philippines*. Master Thesis. Palawan State University, Puerto Princesa.

Cadigal GM (2015) Collection and trade dynamics of edible nest swiftlet (*Aerodramus fuciphagus* Thunberg, 1812) nest in northern Palawan, Philippines. *Our Palawan* 1(1): 23–34.

Campbell LM, Gray NJ, Fairbanks L, Silver JJ, Gruby RL, Dubik BA and Basurto X (2016) Global oceans governance: New and emerging issues. *The Annual Review of Environment and Resources* 41: 517–543.

Campling L (2012) The tuna ‘commodity frontier’: Business strategies and environment in the industrial tuna fisheries of the Western Indian Ocean. *Journal of Agrarian Change* 12(2–3): 252–278.

Canuto G M (1937) Beneficial swiftlet and edible bird’s nest industry in Bacuit, Palawan. *Philippines Journal of Science* 62(3): 379–391.

Capistrano RCG (2010) Reclaiming the ancestral waters of indigenous peoples in the Philippines: The Tagbanua experience with fishing rights and indigenous rights. *Marine Policy* 34: 453–460.

Choi YR (2017) The blue economy as governmentality and the making of new spatial rationalities. *Dialogues in Human Geography* 7(1): 37–41.

Cohen J, Allison EH, Andrew NL, Cinner J, Evan LS, Fabinyi M, Garces LR, Hall SJ, Hicks CC, Hughes TP and Jentoft S (2019) Securing a just space for small-scale fisheries in the blue economy. *Frontiers in Marine Science* 6: 171.

Connolly C (2017) Landscape political ecologies of urban ‘swiftlet farming’ in George Town, Malaysia. *Cultural Geographies* 24(3): 421–439.

Connolly C (2016a) 'A place for everything': Moral landscapes of 'swiftlet farming' in George Town, Malaysia. *Geoforum* 77: 182–191.

Connolly C (2016b) *A landscape political ecology of 'swiftlet farming' in Malaysian cities*. Doctoral thesis. UK: University of Manchester.

Dacuan EJ (n.d.) *Boceadores*. Taytay: Municipal Information Officer Taytay.

Dalabajan D (2001) The healing of a Tagbanua ancestral homeland. In: Ferrer EM, Polotan-de la Cruz L and Newkirk GF (eds) *Hope takes root: Community-based coastal resources management stories from Southeast Asia*. Quezon: CBCRM Resource Center and Coastal Resources Research Network. Pp. 169–193.

Dauvergne P (1997) *Shadows in the forest: Japan and the politics of timber in Southeast Asia*. Cambridge, MA: MIT press.

DeLanda M (2016). *Assemblage theory*. Edinburgh: Edinburgh University Press.

De Vera D and Zingapan K (2017) *The ancestral lands and waters of the indigenous Tagbanwa communities of Northern Palawan*. Diliman: Asian NGO Coalition for Agrarian Reform and Rural Development.

Deleuze G and Guattari F (1987) *A thousand plateaus: Capitalism and schizophrenia*. London: Continuum.

Dressler WH, Fletcher R and Fabinyi M (2018) Value from ruin? Governing speculative conservation in ruptured landscapes. *TraNS: Trans-Regional and -National Studies of Southeast Asia* 6(1): 73–99.

Eder JF (2004) Who are the Cuyonon? Ethnic identity in the modern Philippines. *The Journal of Asian Studies* 63(3): 625–647.

Eder JF (2009) *Migrants to the coasts: Livelihood, resource management, and global change in the Philippines*. Boston: Cengage Learning.

Eder JF and Fernandez JO (1996) *Palawan at the crossroads*. Manila: Ateneo de Manila University Press.

Fabello M (2011) *Requesting for the Council's approval/affirmation of the classification of karst formations (cave system) identified by the PCSD staff in the Municipalities of El Nido and Taytay as Class I (Archaeological Site) and Class III (Economically Important limited to Edible Bird's Nest's Collection Only)*. Puerto Princesa: PCSD.

Fabinyi M (2010) The intensification of fishing and the rise of tourism: Competing coastal livelihoods in the Calamianes Islands, Philippines. *Human Ecology* 38: 415–427.

Fabinyi M (2012) *Fishing for fairness: Poverty, morality and marine resource regulation in the Philippines*. Canberra: ANU Press.

Fabinyi M (2020) Maritime disputes and seafood regimes: A broader perspective on fishing and the Philippines–China relationship. *Globalizations* 17(1): 146–160.

Fabinyi M, Dressler WH and Pido M (2019) Access to fisheries in the maritime frontier of Palawan Province, Philippines. *Singapore Journal of Tropical Geography* 40: 92–110.

Fletcher M, Hamilton R, Dressler W and Palmer L (*forthcoming*) Indigenous knowledge and the shackles of wilderness. *Proceedings of the National Academy of Sciences*.

Foster RJ (2006) Tracking globalisation: Commodities and value in motion. In: Tilley C, Keane W, Küchler S, Rowlands M and Spyer P (eds) *Handbook of material culture*. Thousand Oaks: Sage. Pp. 285–302.

Fray Luis de Jesús (1624) Historia General de los Religiosos Descalzos del Orden de los Ermitaños del Gran Padre, y doctor de la Iglesia San Agustín, de la Congregación de España, y de los Indias. In: Blair EH and Robertson AJ (eds). *The Philippine Islands 1493–1898*. Vol 21, pp. 1903–1909. Oklahoma: The Arthur H. Clark Company.

Guieb ER (2014a) Competing narratives of place in Malampaya Sound. In: Eder JF and Evangelista OL (eds) *Palawan and its global networks*. Manila: Ateneo de Manila University Press. Pp. 306–344.

Guieb ER (2014b) Ang Dumaracol ng mga Kalamianen Tagbanua ng hilagang Palawan: Isang panimulang paglalahad. *Humanities Diliman* 11(2): 31–60.

Hallock P (1996) Reefs and reef limestones in Earth history. In: Birkeland C (eds) *Life and death of coral reefs*. New York: Chapman and Hall. Pp. 13–42.

Harrison T (1959) New archaeological and ethnological results from Niah Caves, Sarawak. *Man* 1: 1–8.

Havice E. and Zalik A (2018) Ocean frontiers: Epistemologies, jurisdictions, commodifications. *International Social Science Journal* 68: 219–235.

Hobbs JJ (2004) Problems in the harvest of edible bird's nests in Sarawak and Sabah, Malaysian Borneo. *Biodiversity and Conservation* 13: 2209–2226.

Ingersoll K (2016) *Waves of knowing: a seascape epistemology*. Durham: Duke University Press.

Isaacs M (2019) Is the blue justice concept a human rights agenda? *Policy Brief – PLAAS* 54: 5.

Jack K (2015) The nest gatherers. *Roads and Kingdoms*, 5 March. Available at: <https://roadsandkingdoms.com/2015/nest-gatherers/> (accessed 21 September 2020).

Jordan D (2004) Globalisation and Bird's Nest Soup. *International Development Planning Review* 26(1): 97–110.

Kinkaid E (2019a) Can assemblage think difference?: A feminist critique of assemblage geographies. *Progress in Human Geography* 44(3): 457–472.

Kinkaid E (2019b). Assemblage as ethos: Conceptual genealogies and political problems. *Area* 52(3): 480–487.

Lambert D, Martins L and Ogborn M (2006) Currents, visions and voyages: Historical geographies of the sea. *Journal of Historical Geography* 32: 479–493.

Lau SM and Meville DS (1994) *International trade in swiftlet nests (with special reference to Hong Kong)*. Cambridge: Traffic International.

Lehman J (2013) Relating to the sea: Enlivening the ocean as an actor in Eastern Sri Lanka. *Environment and Planning D: Society and Space* 31: 485–501.

Lewis H, Paz V, Lara M, Barton H, Piper P, Ochoa J, Vitales T, Carlos J, Higham T, Neri L, Hernandez V, Stevenson J, Robles E, Ragraio A, Padilla R, Solheim II W and Ronquillo W (2008) Terminal Pleistocene to mid Holocene occupation and an early cremation burial at Ille Cave, Palawan, Philippines. *Antiquity* 82: 318–335.

Lim CK (1999) *Sustainable Harvesting and Conservation of The Edible Nest Swiftlets of Sarawak*. Doctoral thesis. Canterbury: University of Kent at Canterbury.

Llanto, JF (2018) El Nido: garbage woes threaten the future. Rappler. Available at:
<https://www.rappler.com/newsbreak/in-depth/el-nido-palawan-garbage-woes-threaten-the-future>

Manchi S and Sankaran R (2010) Foraging habits and habitat requirements of the edible-nest swiftlet and the glossy swiftlet in the Andaman Islands. *Wilson Journal of Ornithology* 122(2): 259–272.

Mansfield B (2004) Neoliberalism in the oceans: ‘Rationalization’, property rights and the commons question. *Geoforum* 35: 313–326.

Marcone MF (2005) Characterization of the edible bird nest the ‘Caviar of the East’. *Food Research International* 38(10): 1125–1134.

Matsumoto J, Olaguera LMP, Nguyen-Le D, Kubota H and Villafuerte II MQ (2020) Climatological seasonal changes of wind and rainfall in the Philippines. *International Journal of Climatology*.
<https://doi.org/10.1002/joc.6492>

McLean J, Lonsdale A, Hammersley L, O’Gorman E and Miller F (2018) Shadow waters: Making Australian water cultures visible. *Transactions of the Institute of British Geographers* 43(4): 615–629.

McNiven IJ (2003) Saltwater people: Spiritscapes, maritime rituals and the archaeology of Australian indigenous seascapes. *World Archaeology* 35(3): 329–349.

Pauwelussen AP (2000) Commentary 11 to the Manifesto for the marine social sciences: Culture and religion. *Maritime Studies* 19: 147–149.

PCSD (2017) Expert advice from the Scientific Advisory Panel of PCSDS: Output of the 3rd Meeting on 20 June 2017. *Our Palawan*3(1): 22–23.

Peluso NL and Lund C (2011) New frontiers of land control: Introduction. *The Journal of Peasant Studies* 38(4): 667–681.

Peters K (2020) The territories of governance: Unpacking the ontologies and geophilosophies of fixed to flexible ocean management, and beyond. *Phil. Trans. R. Soc. B* 375: 20190458.

Peters K and Steinberg P (2019) The ocean in excess: Towards a more-than-wet ontology. *Dialogues in Human Geography* 9(3): 293–307.

Plumwood V (2008) Shadow places and the politics of dwelling. *Australian Humanities Review* 44: 139–150.

Pomeroy RS and Carlos MB (1997) Community-based coastal resource management in the Philippines: A review and evaluation of programs and projects, 1984–1994. *Marine Policy* 21(5): 445–464.

Potter E, Miller F, Lovbrand E, Houston D, McLean J, O’Gorman E, Evers C and Ziervogel G (2020) A manifesto for shadow places: Re-imagining and co-producing connections for

justice in an era of climate change. *Environment and Planning E: Nature and Space* 0(0): 1–21.

<https://doi.org/10.1177/2514848620977022>

Rasmussen MB and Lund C (2018) Reconfiguring frontier spaces: The territorialisation of resource control. *World Development* 101: 388–399.

Rivera-Guieb R and Jarabejo EH (2001) People and resources: CBCRM initiatives in Taytay, northern Palawan. In: Ferrer EM, Poloton-de la Cruz L, and Newkirk GF (eds) *Hope Takes Root. Community-based Coastal Resources Management Stories from Southeast Asia*. Quezon: CBCRM Resource Centre and Coastal Resources Research Network. pp. 195–220.

Rubis JM and Theriault N (2019) Concealing protocols: Conservation, indigenous survivance and the dilemmas of visibility. *Social and Cultural Geography*.

<https://doi.org/10.1080/14649365.2019.1574882>

Saragpunta Foundation and PAFID (2001) Mapping Ancestral Lands and Waters. *Indigenous Perspectives* 4(2): 1–63.

Satizábal P and Dressler WH (2019) Geographies of the sea: Negotiating human-fish interactions in the waterscapes of Colombia's Pacific Coast. *Annals of the American Association of Geographers* 109(6): 1865–1884.

Satizábal P, Dressler WH, Fabinyi M and Pido MD (2020) Blue economy discourses and practices: reconfiguring ocean spaces in the Philippines. *Maritime Studies* 19: 207–221.

Song AM, Dressler WH, Satizábal P and Fabinyi M (2021) From conversion to conservation to carbon: The changing policy discourse on mangrove governance and use in the Philippines. *Journal of Rural Studies* 82: 184–195.

Spalding MD, Fox HE, Allen GR, Davidson N, Ferdana ZA, Finlayson M, Halpern BS, Jorge MA, Lombana A, Lourie SA, Martin KD, McManus E, Molnar J, Recchia CA and Robertson J (2007) Marine ecoregions of the world: A bioregionalisation of coastal and shelf areas. *BioScience*, 57: 573–583.

Steinberg P (2018) Editorial: The ocean as frontier. *International Social Science Journal* 68: 237–240.

Steinberg PE and Peters K (2015) Wet ontologies, fluid spaces: Giving depth to volume through oceanic thinking. *Environment and Planning D: Society and Space* 33(2): 247–264.

Thorburn C (2014) The edible birds' nest boom in Indonesia and South-east Asia. A nested political ecology. *Food, Culture and Society* 17(4): 535–553.

Thorburn C (2015) The edible nest swiftlet industry in Southeast Asia: Capitalism meets commensalism. *Human Ecology* 43: 179–184.

Todd Z (2014) Fish pluralities: Human-animal relations and sites of engagement in Paulatuq, Arctic Canada. *Inuit/Studies* 381(2): 217–38.

Tsing AL (2003) Natural resource and capitalist frontiers. *Economic and Political Weekly*, 38(48): 5100–5106.

Tsing AL (2005) *Friction: An ethnography of global connection*. Princeton: Princeton University Press.

Tsing AL (2015) *The mushroom at the end of the world: On the possibility of life in capitalist ruins*. Princeton: Princeton University Press.

Valli E and Summers D (1990) *The nest gatherers of Tiger Cave*. London: Thames and Hudson.

Vermeulen J and Whitten T (1999) *Biodiversity and cultural property in the management of limestone resources. Lessons from East Asia*. World bank.

Warren JF (1981) *The Sulu zone, 1768–1898: The dynamics of external trade, slavery, and ethnicity in the transformation of a Southeast Asian maritime state*. Singapore: Singapore University Press.

Watts MJ (2018) Frontiers: Authority, precarity, and insurgency at the edge of the State. *World Development* 101: 477–488.

Whisnant R and Reyes A (2015) *Blue economy for business in East Asia: Towards an integrated understanding of blue economy*. PEMSEA.

White AT, Courtney CA and Salamanca A (2002) Experience with marine protected area planning and management in the Philippines. *Coastal Management* 30: 1–26.