

ILLEGAL HARVEST OF MARINE RESOURCES ON ANDROS ISLAND AND THE LEGACY OF COLONIAL GOVERNANCE

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We used a qualitative case study on Andros Island, The Bahamas, to explore illegal harvest of marine resources as it relates to colonialism. Data collection included interviews with local informants who participated in harvest of marine resources (n = 62), observations and field notes. Residents considered illegal harvest of marine resources ubiquitous, and viewed using marine resources when and where they choose as an appropriate continuation of traditional livelihoods. Residents also perceived both overharvest and regulations constraining harvest as issues pertaining to outside colonial influences. These findings suggest an increased focus on colonial governance may provide insight and more sustainable solutions for marine resource management where traditional harvesting activities are designated as illegal by outside regulators.

Key words: Bahamas, colonialism, governmentality, fisheries, neo-liberalism, poaching

Introduction

Illegal harvest of marine resources is a phenomenon with major impacts on biodiversity, conservation and sustainability. Illegal wildlife harvest and trade have emerged as the third largest illegal market in the world (Gibbs *et al.* 2010; Ayling 2013; von Essen *et al.* 2014). Dire ecological consequences of illegal harvest, including species population suppression, range collapse and extinction of species, make reducing the activity a priority for both conservation and law enforcement agencies (Woodroffe *et al.* 2005). When illegal harvest alters the diversity and abundance of species, the natural function of ecosystems and the services they provide can be threatened (Wright *et al.* 2007). Also, loss of marine resources can threaten the very communities engaged in illegal harvest by directly reducing access to food (Bowen-Jones *et al.* 2003), as well as reducing legally harvestable yields available for subsistence, commercial, cultural or recreational purposes (Sethi and Hilborn 2008).

Conservation through environmental protection (e.g. protected areas, closed seasons, catch quotas and size restrictions) has proven effective in reducing the effects of overharvesting on marine species, but requires public support (Sluka *et al.* 1997; Bohnsack 2000; Béné and Tewfik 2003). Support for environmental protection can be influenced by residents' beliefs and education (Hamu *et al.* 2004; Abecasis *et al.* 2013). Research suggests the secret and often community-sanctioned nature of illegal harvest means it has regularly gone unreported or undetected (Thompson 1975; Green 1990; Eliason 2008; Crow *et al.* 2013; Gangaas *et al.* 2013). Lack of public support combined with insignificant enforcement in protected areas has often resulted in 'paper parks',

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where natural resources receive little actual protection. This phenomenon is particularly acute when protected areas lack social support from local residents (Hamu *et al.* 2004; Abecasis *et al.* 2013), or when restrictive legislation impacts the residents' livelihood and culture (Meyer and Helfman 1993). Similarly, marine resources are by definition among the most difficult to protect from illegal harvest due to their diffuse nature and distance from law enforcement (Innes *et al.* 2015).

Scholars have responded to the need for research on illegal harvest with a growing body of criminological research (e.g. Gibbs *et al.* 2010; Wellsmith 2011; White 2014). Much of this work focuses on three broad thematic areas: categorizing the crime, profiling the poacher and determining drivers of deviance (von Essen *et al.* 2014). Most studies presume illegal harvest is driven by utility-maximization, and decisions emerge from weighing costs of sanctions against the benefits of illegal harvest (Clarke and Cornish 2001; Sethi and Hilborn 2008; Messer 2010; Kahler and Gore 2012; Ayling 2013). When illegal harvest behaviours appear irrational through the lens of utility-maximization, scholars have turned to norm or trust theories (Boonstra and Bach Dang 2010), unaccounted goods, such as social status (Bird *et al.* 2001), responses to environmental injustices (Lynch and Stretesky 2003) and recently resistance to colonialism (von Essen *et al.* 2015; Peterson *et al.* 2016; Wall and McClanahan 2016). In extreme versions of the latter, scholars suggest colonial governance may criminalize traditional harvesting, with 'deviants' never deviating from traditional practices.

Relatively few studies have focused on how colonial governance shapes illegal harvest of wildlife resources despite the profound ways it has influenced establishment of protected areas, conservation regulations, militarized policing and definition of legitimate resource users. Colonialism has undeniably shaped illegal harvest of wildlife resources in many regions including Asia, Africa and Central America (Mkumbukwa 2008; Davis and Ruddle 2012; Liles *et al.* 2014; Peterson *et al.* 2016; Wall and McClanahan 2016). Further, colonialism can refer to contexts where people have not personally been subjected to colonial rule, but are required to accept western 'concepts of nature' (Ramutsindela 2004) and associated governance structures. This interpretation of colonialism frames protected areas as reliant on neo-liberal economic hegemony¹ (Brockington and Igoe 2006; West *et al.* 2006; Igoe and Brockington 2007; Brockington *et al.* 2008) and highlights how colonialism can operate as a ubiquitous and current form of marine resource governance, rather than assuming it must be historical. Similarly, colonial governance often converts marine resources into alienable property (i.e. commodification, even if it is property of the state), and establishes stronger state control to secure property and entitlements to it (i.e. commercialization). Refusing to take into account how and why indigenous peoples became poachers or criminals eliminates opportunities to address wildlife crime (McClanahan and Wall 2016). Given the potentially profound impacts of colonial governance on the context of illegal harvest of wildlife resources (Peterson *et al.* 2016), scholars have called for research exploring the phenomenon through theoretical lenses critical of colonialism including governmentality, treadmill of production and ecological Marxism (MacDonald 2005; Lynch *et al.* 2013).

We respond to this need with a case study evaluating how local people perceived illegal harvesting of marine resources on Andros Island, The Bahamas. Specifically, we

¹Neo-liberalism reflects neoclassical economic ideals where people are rational, self-interested, benefit maximizers interacting through markets (Harvey 2005) and differs from classic liberalism demanding state interference and control to protect the free market from social, cultural and political infringement.

assess and evaluate how local informants categorized the crime, profiled the poacher and described drivers of deviance (von Essen *et al.* 2014) through the lens of governmentality. Foucault's concept of governmentality refers to how we rationalize the use of power to create subjects from the level of the state down through smaller institutions and eventually to how we discipline ourselves (Cruikshank 1999; Lemke 2001; Herbert and Brown 2006). In the context of conservation, Büscher *et al.* (2012) argued that neo-liberalism used specific governmentalities, or 'techniques and technologies for managing people and nature', that may create specific experiences among local people engaging in illegal harvest of marine resources which we attempted to uncover in this case study. Although we adopted a grounded approach (Strauss 1997), allowing informants to illuminate key aspects of illegal harvest, we specifically endeavoured to understand how local perceptions of illegal marine resource harvesting were framed by conceptions of personal and external governance. Andros represents an ideal case study because the island experienced a long legacy of colonial history, though modern colonial control had arguably shifted from external governments towards external market forces by the time of this study, and Andros was home to residents with current and historical reliance on marine resources for their livelihoods (Hayes *et al.* 2015).

Study Area

Andros Island has a long history of colonialism, and an even longer history of dependence on marine resources for survival and trade (Craton 1986). Andros was originally occupied around 500 AD by the Lucayan people, who relied heavily on marine resources for survival (Keegan 1985). Colonialism first impacted Andros, and all of The Bahamas, when Columbus 'discovered' the islands in 1492. By 1525, every single Lucayan had been killed (Craton 1986). The islands remained mostly uninhabited until English Puritans settled on the island of Eleuthera in 1648 (Craton 1986). In 1670, King Charles II granted the islands to the Lord Proprietors of the Carolinas who rented them from the king. The Bahamas became a British Crown colony in 1718 and gradually became populated, in part, by the resettlement of American loyalists in the late 1700s following the American War of Independence (Craton and Saunders 2000). Africans, both free and slaves, became the majority of the population by 1810 (Craton and Saunders 2000). Although slavery was abolished in 1807, its legacy shaped the distribution of wealth, power and resources throughout the archipelago. The British ruled until 1964, when the British Parliament authorized the islands as internally self-governing. In 1973, the British House of Lords voted to give The Bahamas its independence.

This shift from traditional colonial rule did not necessarily provide residents of Andros influence over governance of marine resources. As one of the sparsely populated and relatively poor 'out islands', Andros gained little influence on Bahamian politics or resource allocation in association with national independence (Craton and Saunders 2000). Out islands were eventually relabelled 'family islands' but largely retained their defining attributes of receiving few government resources for infrastructure and social services (Craton and Saunders 2000). In addition to receiving limited support for infrastructure, much, if not most, of the land- and ocean-based resources around Andros Island were eventually regulated through establishment of harvest rules and National Parks. The Bahamas National Trust (BNT), a non-governmental

organization established by a British Act of Parliament in 1959, developed and manages The Bahamas National Park System. Since the BNT's inception by international conservationists, interests from the United States have constituted approximately half of the governing body.² Although voting membership is available to anyone who can purchase it, none of our informants indicated awareness of this option or engagement as BNT members. The BNT council drafts legislation that addresses degradation of coral reefs, declining fisheries and wetland destruction in The Bahamas ([The Bahamas National Trust 2014](#)). The council has established extensive marine (27,442 ha) and terrestrial (580,009 ha) protected areas on Andros with major implications for the legality of traditional marine resource harvesting practices on the island. Although establishment of all protected areas has included some form of stakeholder involvement, documentation is extremely limited, and available reports suggest it follows the 'decide, announce, defend' model where local questions and comments are documented but not clearly used to change either the process or outcomes. For example, The Andros Joulter Cays National Park Proposal provides notes from several community stakeholder meetings in five communities with 100 residents and 70 anglers. These stakeholders expressed questions about who decided to make the park, and concerns about risk of future restrictions on fishing in the park, overharvest of sea cucumbers by commercial Chinese harvesters, increasing bonefish guiding competition in the park and inaccessibility of stakeholder meetings to average Androsians ([Bahamas National Trust 2014](#)). The report concluded 'based on the results of scientific investigations and community outreach initiatives, the Joulter Cays are highly prioritized for legal protection' (p. 3).

Settlers on the Bahamian islands experienced colonialism differently ([Craton and Saunders 1992](#)), but persecution, oppression, neglect and turning to marine resources for survival were common threads across diverse groups including landowners, slaves and even the descendants of Black Seminoles who fled US government persecution in Florida (United States) and settled on Andros around 1823 ([Howard 2002](#)). The latter group persisted on sponging and fishing on the west coast of Andros for nearly a decade before they were discovered by the government. Most other residents of Andros descended in some way from a colonial system where slaves were not provided meaningful amounts of land when they were freed. This lack of property drove dependence on marine resources beyond the already high levels that might be expected on an island with extremely little land suitable for cultivation. Despite heroic efforts to convert the island's limestone bedrock into 'soil' ([Young 2013](#)), none of these attempts succeeded in spurring a sustainable land-based agricultural system on the island.

We conducted our study on the ~167-km long by 64-km wide island of North Andros, The Bahamas. The island provides a good case study due to rich biodiversity ([Cincotta et al. 2000](#); [Myers et al. 2000](#)) and small human population of just 3,898 ([Department of Statistics of the Bahamas 2010](#)). In 2010, and during all recorded history of the island, fishing represented the island's main industry, with craft making and government jobs as the second and third most important industries ([Department of Statistics of the Bahamas 2015](#); [Hayes et al. 2015](#)). The island has benefited from marine resources during depressions between temporary economic booms associated with piracy, wrecking,

²During our study BNT membership was openly available for purchase. Members elected 11 members of 'the Council' which administers all BNT affairs, and there were 14 appointed members, half of which were from international conservation NGOs or US-based Universities or the US National Park Service.

blockade running (during the US civil war and prohibition era), drug running and sponging (Craton 1986)—a phenomenon typical in many areas dominated by colonial rule which lack a staple commodity (Ochonu 2013). Due to heavy dependence on marine resources from Bahamian and foreign fisherman and the expansion of tourism, North Andros has experienced a collapse of key fisheries including queen conch (*Strombus gigas*), Nassau grouper (*Epinephelus striatus*) and Caribbean spiny lobster (*Panularis argus*) (Ehrhardt and Deleveaux 2007; Hayes *et al.* 2015).

Methods

We used a qualitative approach (Lincoln and Guba 1985; Lee Jenni *et al.* 2012) to explore illegal harvest of marine resources on Andros. More specifically, we wanted to understand how governmentality has shaped informants' characterization of illegal harvest, and if informants considered illegal harvest a form of deviance. This approach also allowed us to explore the phenomenon without inadvertently leading informants with pre-specified questions in a quantitative instrument. Fishers, legal or otherwise, and government officials in law enforcement-related positions were interviewed. Because illegal harvest represents a sensitive subject, we used snowball sampling after gaining access to a key informant in each community where interviews were conducted (Lee Jenni *et al.* 2012). To meet requirements for protecting research subjects, neither community nor neighbourhood location were linked to specific interview transcripts or field notes. We interviewed 62 informants during July 2013 and June 2014 (31 each year). Of the informants interviewed, 49 were male; two were involved in law enforcement and two had other forms of government employment. Of the 12 female informants, one was a government employee. To reduce bias, we supplemented interview data with field notes, and notes taken after participating in harvesting activities with informants.

Interviews began with open-ended prompts that allowed the participants to determine the direction of the interview (Table 1). This method allowed the informants' view of the situation to emerge (McCracken 1988). Interviews lasted from 10 minutes to an hour, and were recorded with a handheld recording device with the permission of the informant. Informal interactions and conversations that were not recorded were used to classify data and develop themes (Lee Jenni *et al.* 2012).

Each transcribed interview was uploaded into RQDA software, and then coded by researchers (Huang 2012). Coding involved rereading interview transcripts and selecting quotations or observations that pertained to either how informants described drivers of illegal harvest, or the character of illegal harvest itself. Subthemes were developed

TABLE 1 Questions used for interviews with informants whose families participated in harvest of marine resources and law enforcement officials ($n = 31$ in July 2013 and $n = 31$ in June 2014) on Andros Island, The Bahamas

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1. Where do the fishing laws on Andros come from? (who made them, when, probe about their history)
 2. Were people generally supportive of those rules when they were made?
 3. When people break the fishing rules here, why do you think they do it?
 4. What types of people typically break fishing rules on Andros?
 5. How do you feel about people who do not obey fishing rules?
 6. Are there any cases of illegal fishing that are more justified/less severely judged than others? What are they? Is fishing-related crime different from other types of crime?
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interactively based on occurrence of the subjects that arose during interviews, observations, field notes and literature reviews (Lee Jenni *et al.* 2012). Thematic development was shaped by verbal repetition of themes, recorded physical evidence supporting themes noted in field notes and repetition among all of the sources (both literature review and informants' responses). We denoted quotations from interviews with the initials used for the informant and the date interviewed. For example, if we interviewed John Smith on 2 March 2014, it would be denoted (J.S. 3/2/14). Quotations from field notes attributed to a certain source were referenced as the name of the source and field notes (i.e. J.S., Field Notes) or (Field Notes). All other findings were referenced as field notes. Pseudonyms were used in this paper, and community names were omitted to protect identity of informants and conform to Institutional Review Board requirements for research including human subjects (IRB Number: 4000).

Results

No informants understood the process of marine resource regulation establishment or where the regulations came from, but some assumed they were developed and imposed by powerful, uncaring outsiders in the capital or even other nations. When informants were aware of marine harvest regulations, they described illegal harvest of marine resources as ubiquitous (41 informants stated illegal harvest was common among locals), and justifiable when the end result was sustenance or monetary gains by local residents. The former belief was grounded in part in the belief that locals had harvested the same resources for generations without negatively affecting them. Conversely, informants perceived illegal harvest of marine resources by outsiders (e.g. Dominicans, Cubans) as a serious threat and labelled it 'poaching'. The latter assertion was ground in the belief that recent poaching by extra nationals, and to some extent Bahamians from other islands with larger boats, was coincident with declines in marine resources they had personally observed. The dynamics of power were clearly evident in residents' beliefs that only outsiders were breaking the law or poaching when illegally harvesting marine resources (40 informants stated that poachers were non-residents, often foreigners but occasionally residents of other islands), and that ill effects from harvesting were due to practices of outside forces. Informants believed the primary drivers of illegal marine harvest were (1) lack of alternatives to traditional livelihoods reliant on marine resources, (2) food or monetary gain and (3) lack of enforcement.

Characterizing illegal harvest of marine resources

In many cases, the character of illegal harvest was simply not recognized because informants did not know where marine harvest regulations originated, or even if regulations existed for many charismatic marine species. For example, five citizens and one police officer that discussed sea turtle harvest regulations erroneously believed there was a short sea turtle season (Field Notes). Informants were unsure of who created marine resource regulations. Twelve simply stated they had no idea where the regulations came from. Six informants suggested, 'I think they come from Nassau' (S., Field Notes). Steven, a recreational fisherman, told us that, 'Nassau government, they're the ones that are makings the law, but I think they are getting most of their advice from environmentalists...and

I think they blindly saying this is what you have to do' (S. 6/12/14). Zena, a commercial fisherman's wife and mother of four, told us that the laws came from the government, but she expressed, 'I don't think the government think nothing of Andros' economy when they doing anything' (Z. 6/14/14). Another local business owner, Harry, expressed his disgust with the lack of citizen involvement in the government of The Bahamas, 'The government is full of shit. I'm telling you, all the politicians...You vote they give you a position. You don't see them no more' (H. 6/13/14). Harry also highlighted perceptions of global influence on local policy, saying, 'The Bahamian government try and adopt all the rule and regulations that the United States have and that's wrong. Not the same people' (H. 6/13/14). Zena echoed this sentiment saying, 'you can't just sit down there in a desk and just pass the laws. The law that fits your category, because you don't even know what going on out there' (Z. 6/12/14). One informant, Samson, a fisherman, came close to naming the regulatory agency saying, 'I think they come from the Ministry of Fisheries' (S. 6/13/14). A government worker said, 'we could break that cultural thing where is handed down from generation to generation' (S.R. 6/10/14), implying that education represents the only way to make locals understand the importance of natural resources and the ramifications of over harvest and illegal harvest.

When illegal harvest of marine resources was recognized, it was perceived as common, non-deviant behaviour representing the continuation of traditional practices among local residents of North Andros. Carlos, a native of North Andros, stated that, 'we gotta do what we gotta do [to survive]' and, 'we catch whatever we get' (C.S. 7/11/13), implying that throughout Andros, people illegally harvested what they need to survive. When questioned more generally about illegal harvest, 35 informants stated that neither themselves nor their neighbours followed fishing regulations. Carlos stated, 'I break the rules all the time' (C.S. 7/13/13), and another informant posed us the question, 'suppose you're out in the boat, you catch a fish, and sometimes by the time it reach the boat, it already dead. What should you do? Throw it overboard?' (Z.M. 6/8/14). Two informants invited the researchers to eat illegally harvested sea turtle (Field Notes), and others described sea turtle cooking skills. Turtle crawls, or pens to store sea turtles alive prior to harvest, were pointed out by informants (Field Notes). Fifteen informants described taking undersized lobster out of season, or harvesting them with illegal methods, such as poison. Curtis asserted, 'straight true, they been diving crawfish (lobster) before season' (C.L. 6/5/14), and Carlos claimed, '[although] the government closes the season, [he] can still get 100 pounds' (C.S. 7/13/13). Researchers were invited onto one resident's boat to go fishing and witnessed illegal harvesting activities reflecting those described in interviews (Field Notes). Those activities, however, were not overt efforts to break regulations. Rather, harvesters would swim across reef and shallow rocky bottoms and harvest all potentially valuable species (e.g. scale fish, lobsters, conch, sponges), irrespective of seasons and regulations. Law enforcement officials were aware of illegal harvest of scale fish, saying, 'if you can't find the fish [that are in season], then you take them of any size you can find them' (S.C.D. 6/9/14). Paul, a local business owner, suggested that people, 'don't go under the law, they go on top of the law, for them, there ain't no season' (P.G. 6/8/14). The activities were linked to familial and cultural ties, 'it seems to be... if someone's father, or parent, or grandparents, they did that in the past, they kinda catch on with it' (S.R. 6/10/14). Vinnie said that the whole settlement 'is probably doing it' (V. 7/10/13). Informants argued that harvest represents a necessary way of life, even if it is now illegal, because people 'do it for survival' (K. 6/6/14).

When describing illegal harvest of marine resources, informants suggested the activities were justified when carried out by locals, particularly when done in pursuit of personal and family food (22 informants considered such behaviour acceptable, and all others but one were non-committal). ‘All through The Bahamas you see that doin’ it [to feed their families]’, (A. 6/8/14). ‘I am just trying to survive, take care of my family’, (C.S. 7/13/13) said Carlos, while another man, Ryan, reiterated that sentiment, ‘we do our own things sometimes, especially in times of need, if you have to, to survive, to live, so the law doesn’t matter a lot’ (R. 6/10/14). Kyle, a fisherman, believed illegal harvest was justified for family use, saying he ‘didn’t mind if they was getting them for their family’ (K. 6/6/14), and Nick agreed that illegal harvest to feed your own family is ‘ok with me’ (N. 6/10/14). Arnold, a local subsistence fisherman, stated, ‘you come in here and get three or four tails when the season is closed, that’s ok... three or four don’t matter, it’s when you get in the thousands’ (A. 6/8/14). Dave said, ‘sometimes I’ll take a lobster or two if it’s just for me to eat’ (D. 7/9/13). Even illegal harvest intended to generate cash was accepted as a way of life to survive in the unpredictable economy on Andros. Johnny noted, ‘crawfish is the most money’ when it came to illegal harvest (J.L. 7/13/13). Carlos stated, ‘you can’t just go without money for the week, so if you can bootleg (illegally harvest) some crawfish and the government don’t find out, you can make some money’ (C. 7/13/13). Two different informants, Carlos and Connor, stated that they were ‘just trying to survive’ (C.S. 7/13/13), that ‘their family had to survive’ (C.N. 7/13/13) and that their families were supported by the resources gained from sale of illegal harvest. Harold, a local business owner, put it simply when he said, ‘a lot of fisherman, that’s their livelihood, there’s nothing else for them to do’ (H. 6/6/14).

Illegal harvest of marine resources by local people who relied on natural resources to survive was not perceived as harmful to the marine resources on North Andros. Informants believed illegal harvest for family food, ‘really do no damage...we have the Great Bahama Bank out there, plenty out there’ (A. 6/18/14). Three people claimed that the rules did not have to be followed in order to keep species around for future generations, and strongly believed that enough fish, conch and lobster existed to last forever (M., Field Notes). Mr Red stated, ‘go off the bible, which says what is needful is lawful’ (C.B. 6/9/14). Perceptions of local abundance were evident in the statement, ‘we have a lot of turtles up here...especially in Andros, there’s no reason there should be a law’ (H. 6/6/14). When asked which species were abundant, the same informant responded, ‘everything’ (H. 6/6/14). Another informant argued there were so many snapper, illegal harvesting made no impact on their populations (V., Field Notes). Oliver believed that Andros was self-sustaining, saying, ‘you’re not making [the species] less, because they reproduce, there will be more and more and more. You take some and there’s more still in ten or twenty odd years’ (O. 6/5/14). Another fisherman argued, ‘the way we fish we don’t deplete the whole area’ (S. 6/9/14), and another asserted, ‘we can fish anything and it doesn’t matter, because it will come back’ (M. 7/13/13).

Profiling poachers as outsiders

Although informants were relatively permissive of illegal harvest among local residents, they universally opposed the practice when conducted by foreigners, and labelled the latter practice as poaching. Oliver clarified, ‘when I say poachers, I mean different people from different nations’ (O. 6/5/14). Oliver regarded poachers as foreigners, but one

informant, Steve, spoke negatively about poachers from the Berry Islands and Spanish Wells (other Bahamian islands) harvesting in Androsian waters (R. 6/5/14). Foreign fisherman fishing in Androsian waters had become a point of contention among local residents. Mrs Red opposed ‘poaching, because we don’t go inside somebody else’s waters and do it, so why come here. Stay where you belong. It’s simple, stay where you belong!’ (C.B. 6/9/14). The Dominican Republic represented the most frequently mentioned country that participated in poaching—throughout 37 different interviews we heard a variation of, ‘the people who come from the Dominican Republic they don’t have it (marine resources) in their town because it’s here, because of the same thing, they break the law and get it out of season, so they overfish it and they don’t have no more, so that’s the reason they come in our water, because we have a lot’ (C.S. 6/5/14). Alex, a commercial fisherman, reiterated that sentiment saying, ‘we got a lotta foreign fisherman around here, like the Dominicans, they come in and poach when the season is closed for us while we sitting and waiting, and they poaching our spawning crawfish and killing our grouper’ (A. 6/8/14). One local restaurant owner argued, ‘when they from The Bahamas we don’t give a shit, but when the Dominicans do it we have a problem’ (C.N. 7/13/13). Respondents viewed harvest from external actors as both wrong and a threat to their own livelihoods insisting, ‘they breaking the law, and broken our economy down’ (C.B. 6/9/14). Foreign harvest was consistently described as a problem, and its negative impact on the marine resources was considered irreversible (Field Notes). Methods employed by non-local harvesters were also scrutinized by Androsians; they claimed poachers used air compressors to ‘sleep under water’ (A. 6/9/14) and poachers used ‘illegal stuff, like long-lining...and air compressors, they use that’ (G. 6/12/14). Regardless of methods employed by poachers from foreign counties, informants agreed, ‘they are people who come in our waters and steal our fish. They thieves!’ (S. 6/9/14). Local inhabitants ‘know the type of catch we supposed to get, so if we have other poachers coming in and taking our products, we will see a decline in the things we used to having’ (M. 6/10/14). These poachers were blamed for ‘kill(ing) a whole season’, and Miguel insisted, ‘they raping our land, they raping our seas’ (M. 6/10/14). Both law enforcement officials and locals consider the impact of foreign fisherman on marine resources as representing a much larger problem than illegal harvesting by locals for food or profit (M.G. 6/6/14).

Perceived drivers of illegal harvest

The most obvious drivers of illegal harvest include limited understanding of regulations and characterization of illegal harvest as acceptable in most contexts for locals. Informants identified other, additional causes, including lack of alternative livelihoods (16 informants focused on employment, 12 focused only on income stability and 11 focused on education), lack of credible enforcement (16 informants mentioned inadequate or corrupt enforcement), perverse feedback from harsh punishments (4 informants) and belief in divinely appointed dominion over marine resources (5 informants). Informants suggested lack of alternatives as a key reason why they illegally harvested marine resources. They said residents only ‘break the rules because they have bills to pay. And if you have to live off of fishing then there’s not much else to do’ (Z. 6/8/14). ‘There ain’t really nothing happening on the island. You ask most people what their occupation is and most of them tell you fishermen’ (C.B. 6/9/14). Consistently we

heard, ‘there’s nothing really to do so you have to leave from home to look for other jobs’ (M. 7/14/13) and, ‘there are no jobs available so most people...make it by the straw weaving or scale fishing, snappering, or sponging’ (p. 7/13/13). Thus, illegal harvest was depicted as a reasonable outcome of traditional livelihoods clashing with new regulations. Rico asserted, ‘we do our own things sometimes, especially in times of need, if you have to, to survive, to live’ (R. 6/10/14). Law enforcement suffers from a lack of resources on the island, one informant, Thomas, stated that the ‘island isn’t developed enough to have the kind of enforcement they need’ (T. 6/8/14). Conversely, when easier and more lucrative employment was available, informants believed illegal harvest became unnecessary. In one community where fishing represented the predominant source of income, several informants switched occupations over the course of our study from fishing (often illegally) to construction, and then back to harvesting marine resources. Construction work at that time was associated with The Bahamas Agricultural and Marine Science Institute, a new expansion of the College of The Bahamas (Field Notes, The College of The Bahamas 2013). Norbert described this shift saying, ‘no, no, a lot of the guys that used to do [illegal harvest] they don’t have any reason to do it now because they working. You know now they workin’ for the University of The Bahamas. Some got a job there, so they don’t need to do that no more’ (N. 6/10/14). Carlos said, ‘the government should give us more jobs that we can wake up... and go to work. But that doesn’t happen so we have to lie and steal’ (C. 7/13/13). Another claimed that addressing illegal harvest required the government to ‘do more for getting us jobs’ (C. 7/11/13). The construction project was partially burned down in January 2015, purportedly by disgruntled workers who were not being paid their earned wages, leading to a political scandal in Nassau and a return of local workers to harvesting marine resources (Field Notes).

Pressure to break regulations associated with perceived lack of viable livelihood alternatives was compounded by a perceived lack of credible enforcement. Two informants believed enforcement was exceptionally lenient with wealthy sport-fishing tourists as compared to local fishers (Field Notes 2014). Informants perceived limited enforcement of regulations among locals as well. Nancy, a woman affiliated with commercial fishing, insisted, ‘the cops don’t bother with you, only the inspector bother with you. So why even follow the rules? You don’t gotta worry about the rules’ (M. 7/13/13). Similarly, Paul suggested the inspectors were never around, and that, ‘they ain’t doing no moving... I don’t see any law, anybody can do anything they please. Police! There ain’t no police here. You see any police around here? No.’ (P.G. 6/8/14). Mike, a fisherman, said, ‘they don’t have no one to man the water out there so, all kinds of stuff going on out there in the water. But this water is so large, The Bahamas are so big, there’s not enough man power to cover the water. So that’s one of the problems that we have. There’s no way to monitor what’s going on, especially in the family islands. That’s what kill most of the fish in The Bahamas. We don’t have the man power here’ (M. 6/8/14). Miguel argued, ‘they need more fishing wardens in the area’, because ‘they don’t have no one to man the water out there’ (M. 6/8/14). Another man, Alex said that law enforcement was ‘too lazy to do anything’ (A. 6/8/14). When asked why people break the marine harvest laws in North Andros, Alex replied, ‘the reason they break the law is because they ain’t much law enforced’ (A. 6/8/14). One informant, Heath, claimed that corruption within the local law enforcement allowed for some citizens to break the law without punishment, stating that ‘some people commit a crime and [law enforcement]

looks the other way' he went on to say that 'they are all corrupt, matter of fact I went to the police station the other day and I cuss all of them' (H. 6/8/14). Our observations corroborated informants' belief that law enforcement was inadequate. There were only two fisheries officers in the northern area of Andros, and they did not possess permanent access to a boat (Field Notes). 'Can you imagine a marine officer without a craft?' said Grant (G. 6/12/14). Residents who had broken regulations reported calling a friend at their home boat ramp to ensure an officer was not waiting there before returning with an illegal catch. 'If I can go out and not get caught why would I stop breaking the law?' said Carlos (C.S. 7/13/13).

Four informants indicated perverse feedback from harsh criminal penalties, including those levied against convicted poachers, as another driver of illegal harvest. Specifically, informants suggested they used the income from illegal harvest to pay off tickets and avoid going to jail for other crimes (Filed Notes). 'In The Bahamas if they catch you [breaking the law] you are going to suffer some serious consequences' (C.N. 7/13/13). Harsh penalties such as thousands of dollars in fines and jail time force many who are 'brought up on charges...to go back out and do the same thing to help pay the fine' (G. 6/12/14). One citizen flatly said a person is 'gonna have to steal cause he has to survive' (H. 6/6/14). Another informant reiterated this idea, suggesting that when someone is caught breaking the law, 'don't put him in the court and give him a \$5,000 (fine) because to pay the fine, he gotta go back again and do the same thing' (P.G. 6/8/14). 'Say I have to go out and get a few lobster off season to make that money just so I don't go to jail, I would break that law (even though) if I get catch breakin' the law, I would get a double fine on my head' (p. 7/13/13).

Discussion

Refusal to characterize illegal harvest of marine resources as deviant behaviour for local North Andros residents, despite its pervasive nature, may reflect rejection of state-imposed alienation from marine resources. Informants did not accept what [MacDonald \(2005\)](#) described as 'green governmentality', where marine resources reflect state-sanctioned entitlements, rendering local resource users as de facto poachers. Further, most residents did not consider the regulations legitimate enough to either learn about, or to use as moral guideposts for personal harvesting behaviours. Interestingly, informants were willing to accept colonial governance when imposed on illegal harvest conducted by people from other nations or Bahamian users from other islands with more expensive equipment as a way to protect local resources from depletion. Indeed, poaching was not recognized except in association with outsiders. Not only did informants characterize poaching as morally wrong when applied exclusively to outsiders, they also tended to consider illegal harvest conducted by outsiders (but not locals) a serious threat to local ecosystems. Thus, despite rejecting colonial governance in local contexts, they tacitly recognized its potential conservation benefits when applied to outsiders. This finding adds complexity to scholarship suggesting illegal harvest in similar contexts may be explained by locals rejecting neo-liberal colonialism ([Peterson et al. 2016](#)). Rather than simply rejecting the approach, locals strategically accept elements that are most likely to protect their own livelihoods. This should not be surprising as research on protected areas has begun to illuminate how local actors exert what power

they have to protect their livelihoods in strategic ways, rather than operating as passive objects (Holmes 2007).

The legacy of colonialism also may contribute to why residents did not characterize illegal harvest of marine resources by local residents as poaching or even problematic (Peterson *et al.* 2016). Marine resources were vital to the survival of marginalized peoples on Andros since the island was settled by the Lucayuns in 500 AD (Craton and Saunders 1992), but modern marine harvest regulations and protected areas on Andros were initiated by the British Colonial Empire (Prendergast and Adams 2003), and maintained and expanded upon by the Bahamian government and BNT with a process that our informants considered largely independent of local influence. Such a model of colonial and market dominance over harvest regulations in rural areas is not unique to Andros. Indeed, such hegemony over governance creates the context for fisheries and wildlife crime in much of Africa and Asia (Mkumbukwa 2008; Peterson *et al.* 2011; Davis and Ruddle 2012). As documented in Kamwengo (1999), the people of Zambia did not regard poaching as a crime. Steinhart (2006) suggested conservation triumphs in British post-colonial Kenya represented tragic events that disenfranchised local people and converted traditional livelihoods into social deviance. The government, under the mask of conservation, used new wildlife regulations to reserve resources for wealthy off-site hunters willing to pay for their use (Prendergast and Adams 2003; Steinhart 2006).

We found that many Androsians with strong reliance on natural resources believed this practice also occurred in The Bahamas, in the form of governance intended to protect sport-fishing for the valuable tourism industry (Department of Fisheries 2003). Our informants considered several marine species now labelled as sport fish by the government, including bonefish (*Albula vulpes*), as food sources, and were unhappy about perceived control over harvest regulations by social elites. Reinforcing this notion, prior work in The Bahamas found that residents with greater reliance on fishing had lower support for creation of marine protected areas (MPAs), while Bahamians with greater reliance on tourism had greater support for MPAs (Broad and Sanchirico 2008).

Our findings highlight the potential value of including provisions protecting indigenous hunting and fishing rights within legislation of protected areas (Hockings *et al.* 2004; Langholz and Krug 2004; Osherenko 2005). On Andros, regulations banning harvest of sea turtles, immature queen conch and spawning Nassau grouper, and establishing harvest sizes and seasons for many other species were drafted without clear evidence of influence from Andros residents (Department of Fisheries 2003). Rather, these regulations were instituted by educationally and economically privileged people largely from other islands and countries operating under a benevolent, though paternalistic, model of using evidence-based decisions to protect resources for the future. Although great strides were taken to incorporate social and ecological sciences into decision-making processes associated with development and management of MPAs in The Bahamas, such as The Bahamas Biocomplexity Project (Brumbaugh 2014), we found that informants generally felt uninvolved in, and uninformed about, these processes. Further, notes from stakeholder meetings suggest that residents who attended these meetings view the parks as a given, and only hope to express fear of future decisions excluding them from marine resources (e.g. Bahamas National Trust 2014: Appendix 7). Research supported by The Bahamas Biocomplexity Project noted that some Bahamian residents who supported MPAs in theory were hesitant to support them in practice because they were denied participating in design and management of MPAs (Stoffle and Minnis 2007). Consequently, many informants felt no compulsion to follow

regulations after their establishment, feeling they should be exempt from the regulations due to their long-standing use of marine resources. A recent study in The Bahamas found that strict harvest regulations, such as no-take MPAs, can have greater negative impacts on subsistence fishermen than most other professions (Stoffle and Minnis 2007). Moreover, that study found that the community of Barraterre believed an MPA would destroy its more than 220-year-old community identity. Future stakeholder involvement in MPA establishment and governance would benefit from providing what Senecah (2004) labelled ‘trinity of voice’ where participants are given access (all stakeholders have both information and transportation needed to participate), standing (stakeholders can influence decisions) and influence (stakeholder input influences outcomes in documented ways) in the decision process. Without these key elements, stakeholder involvement typically lacks legitimacy.

The version of colonialism experienced on Andros, and much of The Bahamas, may reflect modern developing economies struggling with neo-liberal hegemony more than historical nations struggling with colonialism. Indeed, the boom-bust cycles experienced throughout The Bahamas differed from many historical colonial empires whose economies depended on one relatively stable export like cotton, coffee or sugar. Such colonial economies remained stable, even if poor, due to the prevailing cash crop (Ochonu 2013). Andros and most other Bahamian islands, however, experienced boom-bust cycles linked to several cash crops (e.g. pineapple, cotton, sisal) and waves of illegal trade (e.g. piracy, blockade running during wars the United States engaged in and prohibition), so the island had a tendency to fall on marine resources for survival during frequent depressions (Craton and Saunders 1992).

Our findings may provide insight for how colonial governance may interact with boom and bust economic cycles in developing nations (Craton and Saunders 1992) to promote illegal harvest of marine resources. Fisheries can provide a form of natural insurance for residents with low incomes and unreliable employment during times of economic uncertainty (Pattanayak and Sills 2001). Our results suggest this phenomenon may render illegal harvest of marine resources particularly acute during recessions not only due to increases in poverty, making costs of law breaking less important, but also because traditional use of resources involves peak harvesting during times of crisis. Repressive colonial governance outside the domain of marine resources (e.g. large fines for unregistered vehicles which lead to prison time if not paid) reportedly exacerbated illegal harvest by creating personal economic crises, spurring illegal harvest of marine resources as natural insurance. Although this interpretation may be novel in marine resource literature, it has been identified in studies related to other types of poaching where regulations violating historical traditions and the payment of state debts helped contribute to illegal harvest (Mykrä and Pohja-Mykrä 2005; von Essen *et al.* 2015). If economic hardships really do partially drive illegal harvest of marine resources, one possible economic mechanism for reducing this effect on Andros might be the development of ecotourism, though ecotourism itself may contribute to colonial governance (Pires and Moreto 2011; Peterson *et al.* 2016).

Conclusion

Our results suggest that efforts to address the paper park phenomenon on Andros, and potentially other post-colonial regions, must move beyond forms of governance emphasizing improved public process and draconian enforcement to instead provide

alternative livelihood options for local residents that account for traditional marine resource use. Neo-liberal forms of colonial governance which commodify ecosystem services, tourism values and aesthetic values and shift harvest-based livelihoods to conservation-based livelihoods may work in some contexts (Rodrigues *et al.* 2009). However, locals must possess the skills and interests needed to conform to the model of an eco-rational subject dictated by such an economy (e.g. becoming tour guides; Peterson *et al.* 2016). Studies addressing how communities traditionally reliant on wildlife and fishery harvesting conform to the commodification of nature suggest that locals are most likely to engage the market in servile roles such as guiding the wealthy to exotic wildlife and artefacts (MacDonald 2005; Duffy 2010). This seems to be the case on Andros, where operating as a bonefishing guide chartered with a small number of lodges represents the highest paying alternative to harvesting marine resources (Field Notes). However, this occupation remains largely out of reach for most local residents. Perhaps few local residents serve as full-time guides precisely because most residents possess subsistence-based livelihood skills, but not the resources required of an eco-rational entrepreneur, such as social networks containing wealthy tourists.

Although we believe our findings demonstrate the value of questioning colonial governance of marine resources on Andros, we would not advocate eliminating top-down external models of marine resource conservation. Our informants believed they were powerless to protect the vast Great Bahama Bank from international poaching and welcomed such governance when applied to outsiders. A more important question would be how traditional colonial governance might blend with other forms of marine resource management to provide respect for small-scale, traditional harvest by residents of Andros Island. Many established MPAs have integrated the needs of local commercial and subsistence fisherman, as seen in Algerian Taza National Park (Bustamante *et al.* 2014). Park staff consulted with fisherman after providing data on their rights and the proposed area, and then negotiated a multiple use zoning scheme which included sensitive habitat protection and creation of specific areas for sustainable development. Many case studies in the Caribbean and Mediterranean are in the early stages of implementation, so it is difficult to judge the success of these multiple use MPAs. However, preliminary results indicate an increase in marine biodiversity, as well as satisfaction among stakeholders, indicating that the process succeeded in both addressing environmental concerns and satisfying the need for sustainable fishing areas (Bustamante *et al.* 2014). The Income Security Program, which provides guaranteed income to Cree hunters choosing subsistence livelihoods in north Quebec, provides another compelling approach to addressing illegal wildlife and fisheries harvests in contexts of colonial governance (White 2013). This program removed incentives to over-exploit resources, and experienced declines in enrolment over time as participants voluntarily moved into labour markets.

Finally, our critique of colonial governance is not an attempt to justify illegal harvest, which is a crime and reflects deviation from socially acceptable behaviour within the larger society shaping governance (Holmes 2007). Rather, we hope to encourage an increased awareness of how illegal harvest can emerge from socially marginalized people rejecting forms of governmentality that criminalize their livelihoods. We suggest mixed models of governance that provide opportunity to persist in traditional livelihoods may reduce crime without threatening sustainability. Future research comparing the efficacy of traditional and mixed models of governance would represent a valuable contribution to the literature.

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