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Article

Drilling through Conservation Policy: Oil Exploration in Murchison Falls Protected Area, Uganda

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Abstract

Approximately 2.5 billion barrels of commercially-viable oil, worth $2 billion in annual revenue for 20 years, were discovered under the Ugandan portion of the Albertine Rift in 2006. The region also contains seven of Uganda's protected areas and a growing ecotourism industry. We conducted interviews and focus groups in and around Murchison Falls Protected Area, Uganda's largest, oldest, and most visited protected area, to assess the interaction of oil exploration with the three primary conservation policies employed by Uganda Wildlife Authority: protectionism, neoliberal capital accumulation, and community-based conservation. We find that oil extraction is legally permitted inside protected areas in Uganda, like many other African countries, and that the wildlife authority and oil companies are adapting to co-exist inside a protected area. Our primary argument is that neoliberal capital accumulation as a conservation policy actually makes protected areas more vulnerable to industrial exploitation because nature is commodified, allowing economic value and profitability of land uses to determine how nature is exploited. Our secondary argument is that the conditional nature of protected area access inherent within the protectionist policy permits oil extraction within Murchison Falls Protected Area. Finally, we argue that community-based conservation, as operationalized in Uganda, has no role in defending protected areas against oil industrialisation.

Keywords: Protectionism, neoliberal conservation, community-based conservation, oil exploration, ecotourism, protected area

INTRODUCTION

Commercially viable oil reserves have been found in the Albertine Graben, a global biodiversity hotspot that contains seven of Uganda's protected areas (Plumptre et al. 2007). Oil extraction in Uganda has the potential to accelerate development and bring wealth to one of the poorest countries in the world (Sheppard 2013). However, oil extraction within this biodiversity hotspot presents particular risks to the continued recovery of many species decimated by decades of conflict, first during the reign of Idi Amin, but more recently as a result of an insurgency by the Lord's Resistance Army (Plumptre et al. 2007). Oil extraction has been shown to put biodiversity conservation at risk, as exemplified in the Niger Delta, where oil spills and gas flaring have damaged biodiversity, destroyed mangrove forests, contaminated beaches, coated

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birds, endangered fish hatcheries, and disrupted food webs (Ugochukwu and Ertel 2008). Even in countries with strong environmental regulatory governance, production spills, burst pipelines, and tanker spills, have devastated the environment, wildlife, and livelihoods (Peterson et al. 2003; Levy and Gopalakrishnan 2010; Kark et al. 2015). The petroleum industry has been blamed for the expansion of bush meat markets and illegal logging in Africa and the Amazon (Thibault and Blaney 2003; Haller et al. 2007; Martínez et al. 2007). Although contested in countries with strong civil societies and environmental protection policies, oil exploration continues to be authorised inside PAs (Teel et al. 2006; Kotchen and Burger 2007; Finer et al. 2008; Finer et al. 2010). Developing countries, where the economic potential of oil and the political power of elites stifle ecological and conservation concerns, are particularly vulnerable (Rabanal et al. 2010; Coghlan 2014; Stinson 2014).

In this paper, we investigate how oil exploration inside Murchison Falls Protected Area (MFPA) in northern Uganda disrupts assumptions about conservation policy. Our main argument highlights the risk of basing conservation policy on neoliberal capital accumulation, which is typically operationalised as nature tourism development. Tourism and oil companies in MFPA are competing to commodify and exploit nature in the same PA, but neoliberal economics prioritise the industry that will provide higher revenues, in this case, oil, despite its potential for greater ecological damage. In addition to this primary argument, we also discuss the influence oil exploration is having on other conservation policies that have been widely challenged in existing literature: that access to PAs within the protectionist policy is conditional and allowed with permission (Neumann 1998), and that community outreach without community collaboration provides little incentive to support PAs (Berkes 2004).

First, we review the three pillars of conservation policy upon which Uganda's conservation strategy is based: protectionism, neoliberal capital accumulation, and community-based conservation. Conservation policy in Uganda is then placed in context by summarizing how these strategies are operationalized by the Uganda Wildlife Authority (UWA), and what limits are placed on oil extraction in PAs by legislation. Based on qualitative data collected from interviews and focus groups, we assess how oil exploration has disrupted these three pillars of conservation strategy in and around MFPA. We conclude that none of these conservation policies stop oil exploration and development within MFPA.

CONSERVATION IN CONTEXT

Conservation Strategy: Three Pillars

Current conservation policy for PAs has been constructed from three primary pillars: protectionism, neoliberal capital accumulation, and community-based conservation (Brockington et al. 2008). Negotiating conservation challenges in a world increasingly shaped by global conventions on biodiversity, neoliberal concepts of nature, and demands for conservation to alleviate poverty and provide sustainable development, requires conservation authorities to build their management plans by mixing these three, somewhat disparate, conservation pillars. These three pillars of conservation strategy provide the thematic structure within which we assess the influence of oil exploration on conservation management in MFPA.

Many conservationists recognise protectionist conservation policy as the most effective means of biodiversity conservation (Terborgh and van Schaik 2002). It is modelled on the creation of Yellowstone National Park, wherein indigenous peoples were relocated outside the PA to create a wilderness, supposedly untouched by humans (Cronon 1995; Adams 2013). Excluding humans to protect wildlife habitat, the policing of which has become increasingly militarized, is the cornerstone of operationalizing protectionist policy (Duffy 2014). Protectionism is justified on the basis of intrinsic value and ecological importance of the species and habitats within the PA; habitats that must be restored and protected from further degradation resulting from human activities (Neumann 1998; Brockington 2002; Brockington et al. 2008). However, the protectionist policy is problematic because the goal is to protect and reproduce a conceptualization of nature devoid of human influence, where, in fact, the areas under protection have been shaped by human activity for generations (Anderson and Grove 1997; Brockington 2002). Protectionism has long been the dominant conservation strategy in Africa, initially as a means of isolating hunting and forest reserves for colonial elites, then as a means for newly independent countries to harness the economic potential of ecotourism (Neumann 1998).

An exception to exclusion is made for tourists paying to view or hunt wildlife, leveraging nature as a lucrative capital resource for biodiversity conservation and sustainable development (IUCN 2003). In the 1990s, within the newly established global institutions created to manage climate change, biodiversity conservation, and environmental protection, a neoliberal conservation discourse emerged that no longer blamed industrialism for the declining environmental health of the planet, but rather blamed policy failures and heralded market solutions as conservation policy; "selling nature to save it" (McAfee 1999: 133). This discourse is at the heart of the second pillar, neoliberal capital accumulation or the commodification of nature as either a product to be sold for profit or a valued service to be delivered. This commodification is usually operationalised through ecotourism, payments for ecosystem services, tree planting to support carbon sequestration markets, and intellectual property rights for plants and traditional knowledge. Commodification of nature is based on a utilitarian ethic, justifying the use of nature as a means to economic growth and only assigning value to nature if it can be commodified (McAfee 1999; Duffy and Moore 2010; Büscher et al. 2012). Partnering conservation with market-based economic approaches has been criticized because human activities, shaped by capital-growth economies have been blamed for separating humans from their environment,

driving the destruction of nature, and commodifying ecological systems (Brockington et al. 2008; Duffy and Moore 2010; Büscher et al. 2012). Moreover, the disproportional buying power of the Global North relative to the Global South means a PA can be commodified as an ecotourism experience, producing higher profits than if the land had been used for less lucrative livelihood activities by local communities (McAfee 1999). The conservation community continues to look to market-based solutions to provide the much-needed funding for biodiversity conservation. However, substantial capital investment in conservation has yet to materialize, and most investment capital remains in traditional industrialized assets (Dempsey and Suarez 2016).

The third pillar, community-based conservation, arose from critics of protectionist conservation policy, who argued that protectionism was socially unjust, led to human eviction and livelihood degradation, and failed to recognize the role humans have played in shaping nature (Anderson and Grove 1987; Adams et al. 2004; Brockington and Igoe 2006). Community-based conservation advocates that conservation should not degrade human livelihoods, and, where possible, should provide benefits to local communities and allow community management inside PAs (Berkes 2004). Operational community-based conservation tactics vary with regard to the level of engagement of local communities in PA management. Protected Area outreach is the primary form of community-based conservation in East Africa, retaining conservation as the primary goal, but addressing conflicts with local communities by providing benefits to help offset losses incurred as a result of the PA. By partnering with communities, the authorities aim to generate local support for conservation and the continued existence of PAs by demonstrating the utilitarian and intrinsic value of PAs.

Conservation policy in Uganda

Conservation of PAs in Uganda is managed by UWA using a primarily protectionist strategy, coupled with a mandate to help grow PA tourism. UWA also tries to improve relationships with local communities by managing human-wildlife conflict, providing a share of PA revenues to local governments for development projects, and allowing negotiated access to some non-threatened resources inside PAs. UWA's protectionist strategy focuses on combating poaching, illegal grazing, and encroachment. Poaching continues to be a major threat in MFPA, where 20 elephants were killed for their ivory in 2011 alone (UWA 2012). The protectionist strategy is legitimised by the Uganda Wildlife Statute (1996) wherein rules against poaching, illegal PA access, and encroachment of PA boundaries are made law.

The tourism industry accounted for 3.7% of Uganda's GDP in 2012, and 85% of UWA's revenues are derived from PA visitors (UWA 2005-2011; World Bank 2013). UWA has a stated goal of financial self-sustainability, and by 2018 wants 80% of the annual operating budget to be funded by internally generated revenues (UWA 2013). To this end, UWA aims to increase MFPA tourist numbers by 50% by 2022, and plans to open new tourism activities on the route to and in MFPA, while increasing accommodation capacity.

Managing the relationship between local communities and the PA is also a component of UWA's strategic plan (UWA 2013). Five-year goals include reducing human-wildlife conflict, and increasing community participation in conservation. Sustainable tourism is important to UWA's community outreach strategy, because government legislation mandates UWA to share 20% of PA entrance fees with local government for development projects in communities bordering PAs (Uganda Wildlife Statute 1996; MacKenzie 2012). The Uganda Wildlife Statute (1996) also allows community associations to negotiate resource access agreements with UWA to collect or access non-threatened resources. Around MFPA, these agreements allow local residents to harvest grasses, collect firewood, fish, and place beehives inside PAs.

Oil extraction and conservation policy

Oil was first discovered in western Uganda in the 1870s, but commercially viable oil was only confirmed in 2006 (Rwakakamba and Lukwago 2013). There are an estimated 2.5 billion barrels within the Ugandan Albertine Graben, which could generate more than $2 billion in annual revenue, or 10-15% of Gross Domestic Product (GDP), for more than 20 years (Shepherd 2013). The Graben is divided into 10 exploration areas, three of which overlap MFPA (Figure 1): Paraa, Lyec, and Buliisa, with seven confirmed oil fields contained partially or completely within MFPA boundaries (PEPD 2014). Interests in these areas are shared by Tullow Oil plc, TOTAL S.A., and the China National Offshore Oil Corporation.

The government of Uganda has elected not to degazette the areas of the PA where oil has been discovered. However, the same legislation that restricts access to PAs by local residents opens up PAs to industrial exploitation because besides biodiversity conservation, research, and recreation, "any other economic activity" is permitted within a national park (Uganda Wildlife Statute 1996: Section 19(5)). One of the legislated functions of UWA is "to control and monitor industrial and mining developments in wildlife protected areas" (Uganda Wildlife Statute 1996: Section 6(h)). The UWA strategy and the MFPA general management plan, have had to be modified to provide the resources and tactics necessary to oversee oil exploration, and eventual production, within the boundaries of MFPA (UWA 2012; UWA 2013).

A lack of legislative protection against industrial exploitation in PAs is not limited to Uganda. In Tanzania, although prospecting and mining is generally forbidden in PAs, "a person may prospect or mine in a game reserve if the undertaking involves or is intended for prospecting or mining of – (a) oil; (b) gas; or (c) uranium", provided the activity is initiated by the government, an environmental assessment is carried out, and the necessary fees have been paid (The Tanzanian Wildlife Management Authority Act 2013: Section 34(3)). In Zambia, the wildlife protection legislation specifies that

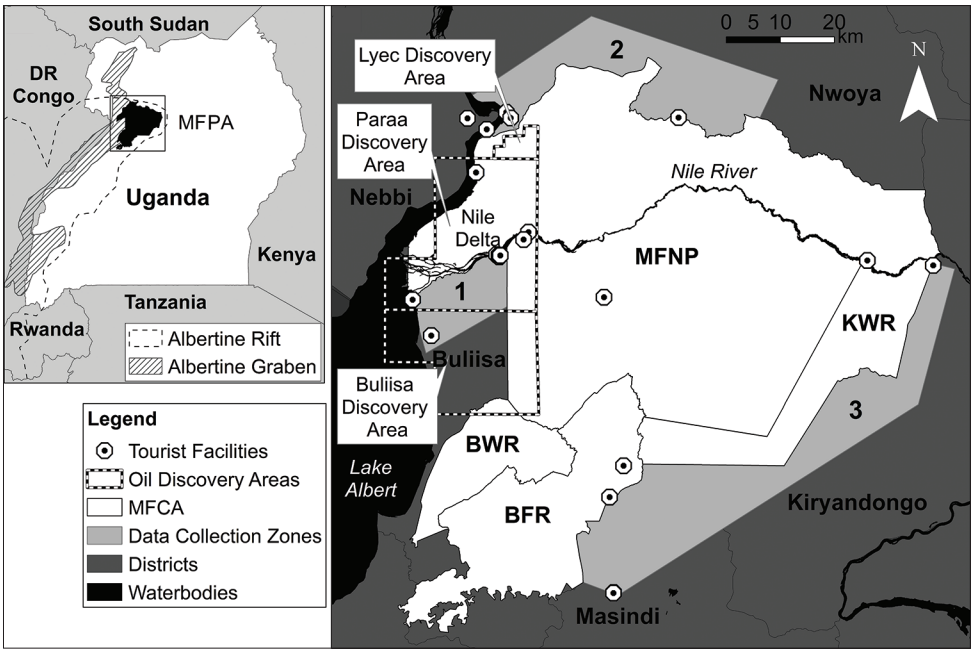

Figure 1
Oil Exploration and Tourism around Murchison Falls Protected Area. MFNP = Murchison Falls National Park, BWR = Bugungu Wildlife Reserve, KWR = Karuma Wildlife Reserve, and BFR = Budongo Forest Reserve. Original figure created by authors

mining is prioritised over conservation; "Nothing in this act shall be constructed as preventing or restricting the granting in respect of any land within a national park – (a) of any mining right, or other right, title, interest or authority necessary or convenient for the enjoyment of a mining right" (The Zambia Wildlife Act 1998: Section 13(1)). In Kenya, "No person shall undertake oil or gas exploration and extraction [in a national park] without the consent of the Cabinet Secretary", placing strict protection on PAs unless the government decides that oil extraction should be prioritised over conservation (The Wildlife Conservation and Management Act 2013: 45(5)) -- a likely occurrence given the profits that can be made from petroleum. In Botswana and Zimbabwe, conservation legislation states that mining rights are limited to those owning mining rights for land in a PA prior to the PA having been gazetted; although in Zimbabwe this limitation can be lifted by the Minister.

We reviewed conservation legislation from ten African countries[1], of these the most extensive conservation legislation that offers real protection against industrial activities inside PAs is found in South Africa, where The National Environmental Management: Protected Areas Act (2014: Section 48(1)) states that— "Despite other legislation, no person may conduct commercial prospecting or, mining, exploration, production or related activities in a protected area". Although conservation legislation in many African countries provides explicit protection of parks and reserves from illegal hunting, agricultural encroachment, livestock grazing, and the extraction of other natural resources, without stronger legislation against industrial extraction within PAs, biodiversity conservation will continue to be threatened by developing industrialisation.

METHODOLOGY

Murchison Falls Protected Area

Murchison Falls Protected Area (Figure 1) comprises Murchison Falls National Park, Bugungu Wildlife Reserve, and Karuma Wildlife Reserve. The national park was gazetted as a game reserve in 1926, then as a national park in 1952, and is now managed by UWA in conjunction with the two adjoining wildlife reserves under one general management plan (UWA 2012). Murchison Falls National Park was considered a world-class tourist destination in the 1960s, but decades of war followed by instability caused by the Lord's Resistance Army, operating in and around the northeast part of the PA, resulted in massive declines of both tourist numbers and wildlife populations (Mann 1995). Many wildlife populations have been recovering over the past few decades, including the critically endangered Rothschild's giraffe (*Giraffa camelopardalis rothschildi*), and tourist numbers have also climbed. MFPA is now Uganda's most visited PA with over 70,000 visitors in 2013 (UBoS 2015). Human population density surrounding MFPA has also risen: from an estimated 17.6 people/km^2 in 1959 to 111.4 people/km^2 in 2012 (Uganda and East Africa High Commission 1961; UBoS 2015). Most local residents engage in smallholder farming and cattle herding, although fishing is the primary livelihood at the confluence of Lake Albert and the Nile River.

Data collection and analysis

As four white academics hailing from the United States, Canada, and Great Britain, we are well aware of our privileged

positions and backgrounds relative to our participants. We have previously researched in Uganda, Tanzania, and Kenya, and self-identify as pro-wildlife conservation, desiring to find solutions to people-park conflicts. None of us are fluent in the local tribal languages around MFPA. Therefore, we employed two male Ugandan research assistants to act as interpreters during interviews and focus groups. Each was interviewed after the field season to gain insight into their social position and subjectivity about the research topic so we could be vigilant about potential bias introduced by their interpretation of participants' comments (MacKenzie 2016); although no such bias was detected.

We conducted interviews and focus groups in MFPA and in three zones surrounding MFPA (Figure 1) in July and August 2013. Thirty-six semi-structured interviews were conducted with UWA staff (6), Council Chairpersons or their delegates of Local Government Districts (5), Sub-Counties (4) and Villages (9), and tourism facility managers (12); four (11%) of the respondents were women, insufficient to warrant a gender-based analysis. We held focus groups with community residents in six villages (Figure 1): one, west of the park (Zone 1), three, north of the park (Zone 2) and two, east of Karuma Wildlife Reserve (Zone 3). Oil companies were contacted but none responded to our request for an interview.

We conducted interviews and focus groups in English, Kiswahili or local languages, with one of the two Ugandan research assistants translating and facilitating the meetings. Participants did not want to be recorded, so comments were written down by research team members during the meeting; this was facilitated by the extra time needed for translation of questions and comments. Of necessity, the meetings were held in the open leading to larger than recommended participation. In total, 241 people participated in the focus groups; 53% were women, although we did not identify participant comments by the gender of the speaker, we believe both genders were equally represented with the exception of one focus group. In our first focus group, the discussion was dominated by men, and women would not speak. Thereafter we asked for separate male and female focus groups, but in the remaining focus groups women insisted on participating with the men and were as vocal as the men.

In compliance with our Institutional Review Board approval, all participants were read an informed consent that explained the research topic, how confidentiality would be managed, and that participation was voluntary. This was done orally because from our prior research we were aware that literacy was limited to typically less than 30% of the adult population. Verbal agreement to participate was given by all participants before questions were asked. Although we recognise that 'Complete confidentiality in research is impossible because the purpose of gathering data is to obtain new knowledge, to synthesise this knowledge and to disseminate it' (Wiles et al. 2008: 426), we anonymised our participants by not recording their names, by identifying quotes by generic titles such as 'village chairperson', by ensuring the content of quotes published did not infer the identity of the participant, by enlarging the study zones in figure 1 to make specific locations difficult to identify, and by not identifying from which zone a specific quote was collected.

All comments collected during interviews and focus groups that related to oil exploration were coded into *a posteriori* codes derived from the transcripts. These codes included— impact on tourism, benefits, access to oil-based employment, land tenure conflict with oil companies, pollution, biodiversity conservation, environmental issues, changes in human-wildlife conflict, in-migration to the area, and the fear that oil would bring more instability. During secondary thematic coding, we extracted only comments that intersected with protectionist, neoliberal, and community-based conservation strategies, to provide contextualisation of the influence of oil on the three conservation strategy pillars. Finally, where possible, interview comments were triangulated with data from literature, government documents, non-governmental reports, and communications pamphlets distributed by the oil companies.

OIL EXPLORATION AND CONSERVATION STRATEGY

Oil and the protectionist conservation policy

Setting aside land as protected habitat has long been the primary focus of biodiversity conservation, and protecting recovering wildlife populations remains UWA's primary objective (Terborgh and van Schaik 2002; UWA 2013). To this end, efforts have been made to protect MFPA during oil exploration, including environmental protection safeguard clauses in loans from lender banks, environmental assessments, regular monitoring of environmental indicators, and technological innovations by the oil companies to minimize environmental impact (Thomas 2015; NEMA 2012). TOTAL appraise oil fields using cableless 3D seismic surveys, which do not require removal of vegetation along seismic lines (Ocowun and Okethwengu 2013). TOTAL and Tullow use horizontal rather than vertical drilling to minimize the surface footprint by reducing the number of drill pads constructed inside MFPA (100 m x 100 m plus roads; Kagolo 2014). In 2008, to perform their legislative responsibility to monitor industrial development in PAs, UWA created a department responsible for monitoring oil development within all PAs in the Albertine Graben, reporting to UWA administration, the Environmental Impact Assessment Group, and UWA's Conservation Planning Group.

> Oil exploration came in very fast. UWA had to update our management plan to incorporate oil. So UWA decided to have a unit to monitor oil/protected area/biodiversity impact and monitor compliance to legal requirements. I am worried about longer-term ecological services: tree cover and carbon sequestration, nutrient cycling, erosion control, and firewood for resource-access agreements. (UWA Warden)

As pointed out by Northrup and Wittemyer (2013) in their review of energy development and impacts on wildlife, threats exist throughout the process, including pollution, removal of vegetation for roads and oil pads, increased poacher access and altered animal migration and foraging habits. There are few assessments of African systems, but an assessment of wildlife activity inside MFPA found that human activity around the oil pads was 'leading to lower densities of the large mammals and birds in Murchison Falls National Park', although animals could simply be avoiding the drill pads and moving to other locations within the PA (Prinsloo et al. 2011: 3).

Mechanisms to oversee environmental threats do exist, such as the Ugandan National Environment Act, Cap 153 (1995) that requires all developers to conduct Environmental Impact Assessments (EIAs). The EIA process has been criticised because the oil companies are responsible for hiring and paying the environmental practitioners to conduct EIAs, raising concern about biased results and limited restrictions placed on oil operations (Womakuyu 2012). An Oil Warden explained, that EIA reports identified ecologically sensitive locations, and recommended buffers to protect wildlife and water resources. In the USA, assessments of habitat needs and consequent buffers are developed in consultation with state and federal agencies for each impacted species. In New Mexico, no drilling activity is allowed within 200 m of breeding grounds for the lesser prairie chicken (*Tympanuchus pallidicinctus*; Jankowitz and Gruber 2007). In Colorado, conservation buffers of 400 m – 5 km are required for sage grouse (*Centrocercus urophasianus*; Manier et al. 2014). Extractive activities in the USA are also subject to the Clean Water Act, requiring evidence for compliance with pollution standards for human and wildlife safety, not just a distance buffer from waterways. However, the buffers recommended in the EIA reports for MFPA are much smaller than those used in the USA, suggesting there may be a need for more independent environmental assessment.

> The oil company cannot go close to wallows where elephants and buffalo go to mud. Oil cannot be nearer than 30 m to a wallow, 5 m from termite mound, and 3 m from palm trees that feed elephants. The nearest rig to the Nile is 800 m but oil takes precedence over conservation. NEMA [National Environment Management Authority] and UWA have defined a least conservation cost route for a pipeline, but conservation, cost and politics all influence these decisions. (UWA Warden)

At the time of our interviews, oil activity in Murchison was limited to exploration, requiring many test drill sites to be assessed, after which oil pads were 'restored' to minimise environmental impact (access road decommissioned, native grasses replanted, and oil well capped and sealed). When asked about the impact of these pads on wildlife numbers, UWA felt they did not yet have sufficient scientific results to assess the full impact.

> I have the impression that animals move away from areas with oil rigs initially but eventually come back. Even elephants who are very sensitive to vibrations do not seem to be bothered. The restored rigs are very low visual impact so you cannot even tell they were there. (UWA Warden)

However, the UWA strategic plan acknowledges that oil exploration has resulted in degradation of habitats, disturbance to wildlife, and environmental damage (UWA 2013). Studies by Wildlife Conservation Society have shown elephants avoid seismic activities in MFPA for up to 8 km, and that elephants and several other wildlife species avoid active drill pads for up to 1 km (Prinsloo et al. 2011; Plumptre et al. 2015*a*). In Loango National Park, Gabon, elephants did not move away from oil exploration, but their diurnal activities decreased and nocturnal activities increased (Wrege et al. 2010). A camera-trap study in MFPA conducted post-appraisal period found no evidence that wildlife avoided restored drill pads, although the study was unable to assess impacts on rarer species such as lions (*Panthera leo*) and leopards *(Panthera pardus*; Fuda 2015).

Since poaching is the primary threat to the conservation of animals in MFPA, UWA expressed concern that oil development will facilitate increased poaching, as has been experienced in Ecuador and Central Africa where oil roads increased poaching for bush meat (Thibault and Blaney 2003; Suarez et al. 2009).

> We fear an increase in the market for bush meat because bush meat is sold on the main roads and wealthy people are looking for it. Seismic surveys employ about 90% local people, therefore local people have more access to the park and see animals. So, when off the payroll, we fear they will come back (UWA Warden).

To help counter the potential for increased poaching, oil companies have funded 15 additional UWA rangers for a period of two years. Local residents illegally hunt animals inside MFPA, in part because it is a cultural tradition, but also because they like the taste of wild game. Motivation for poaching was high as government officials and focus group participants reported poachers entering the PA and never coming back, accusing UWA of killing the missing poachers, although they may have been killed by other poachers or wild animals. Existing legislation, aimed at excluding poachers, legitimises UWA to increase policing to counter the threat of increased poaching as oil companies expand access to the PA. The willingness of oil companies to help fund the increased policing effort, coupled with the implementation of more environmentally friendly drilling practices shows the oil companies are adapting their operations to the reality of oil extraction inside a PA.

Oil and the neoliberal conservation policy

The government of Uganda hopes that oil extraction in MFPA will not harm the tourism industry. Visitor numbers to MFPA doubled between 2008 and 2014, attributable to recovering wildlife populations and the departure of the Lord's Resistance Army in 2006 (Rwetsiba and Nuwamanya 2010; UBoS 2015).

The primary visitor attractions are the 45m waterfall along the Victoria Nile River, and the opportunity to view 144 mammal species, including the critically endangered Rothschild's giraffe, and 556 bird species (Plumptre et al. 2015*b*). At least 10 new tourist facilities have opened since the region returned to stability, and in 2013 there were 22 tourist facilities in and around MFPA (Figure 1).

The influx of oil company employees, consultants, and construction workers has increased business for lower budget tourist facilities. Some were so heavily booked it was difficult to get reservations (personal observation 2013). Although this increase in business was noted by some tourist facility managers, many more explained that tourist accommodation was too expensive for oil workers. Instead, tented camps were built outside the PA to accommodate oil and construction company employees. In the western region of the PA, where exploratory drilling has occurred (Figure 1), tourism operators complained most about oil—

> Oil! No other threats. We [referring to himself and other tourism operators] are not against drilling of oil, but drill from other places outside the park and pipe it underneath. It is unfortunate that where they found oil is where the animals love. (Tourist Operator)

> Starting at 6 am at the Tangi gate [Northwest entrance gate], oil vehicles enter before tourists can even get in. The animals are feeding at that time and the traffic interrupts their feeding and they are scared off and run away, so when tourists enter the park they don't see the animals. (Tourist Operator)

Photo safaris in Uganda are designed to showcase African wildlife in an 'unspoilt' landscape, even though this construct of nature as a pristine wilderness unaltered by humans misrepresents reality, as humans have long played a role in shaping the lands that are now under exclusionary protection (Anderson and Grove 1987; Fairhead and Leach 1996). This construct of a pristine wilderness has been the model for PAs since the creation of Yellowstone National Park and African reserves for use by colonial elites (Neumann 1998; Cronon 1995). Tourist operators market this fantasy of wild Africa to tourists primarily from the Global North, and oil rigs in holiday photos (Figure 2) are detrimental to business growth, and future profits. However, this also highlights the contradiction created by justifying conservation through commodification (Büscher et al. 2012). A pristine landscape populated by wild animals is the product being marketed for monetary gain by tourism operators, and yet most tourists could not get to Africa without oil. Tourism operators benefit from petroleum-based transportation to get the customers to MFPA, but when extraction of oil spoils the experience marketed by these same tourism operators, they don't want oil exploration in their own backyard.

Tourism operators have started briefing their clients about oil exploration activities inside the PA, prior to going on game drives, but 50% of the operators we interviewed still

Figure 2
The Oil Extraction-Conservation Nexus exemplified: A Uganda Cob (Kobus kob thomasi) stands in front of an Oil Rig in Murchison Falls Protected Area. Photo credit: Catrina A. MacKenzie

reported visitor complaints. Long queues at MFPA entry gates are being resolved by building separate entrance kiosks for tourists and oil company vehicles. Competition between tourist vans and oil company trucks for space on the ferry to cross the Nile, heavy traffic on animal viewing roads, and closed roads were also causing conflict. UWA imposed a ban on oil company vehicles using the first two ferries of the morning, and mandated that tourist vehicles in the PA must be given right-of-way. However, not all impacts from oil exploration are negative. On the eastern side of the PA where animal numbers have historically been lower, safari guides are spotting more large game since drilling started, leading to better viewing experiences for tourists. Oil companies also hold stakeholder meetings with the tourism operators to try and resolve conflicts. Sensitive to the need to preserve the image of pristine wilderness, UWA negotiate with the oil companies to mitigate the impact of oil on the tourist experience, and to protect their own tourism revenues that significantly contribute to the sustainability of UWA and Ugandan PAs.

> Inside the protected area we want the pipeline to be buried and for oil companies to use existing roads, if possible, to minimise footprint and visual impact. We don't want tourists to see rigs because tourists that are conservationists will complain. We don't want there to be any visual intrusion to the viewing of animals and we worry that higher traffic will influence bird watching because birds will be scared by the traffic. The oil is temporary but conservation is sustainable so we do not want to jeopardise conservation for oil. (UWA Warden)

In this quote, UWA conflate sustainable tourism revenue with conservation, exemplifying one of the primary critiques of neoliberal conservation that 'Non-human natures tend to be flattened and deadened into abstract and conveniently incommunicative and inanimate objects, primed for commodity capture in service to the creation of capitalist

value' (Büscher et al. 2012: 23). Although UWA is vocal about negative impacts, oil companies have invested in the tourism industry and hence conservation by refurbishing an airstrip in the PA, and by repairing and building roads that facilitate tourist access to the PA. Also, UWA 'revenues have overshot plan' (UWA Warden) because UWA charges oil companies park entrance and vehicle fees. As a result, UWA are faced with the contradiction of oil exploration being problematic for the tourism experience, but beneficial for UWA revenues which fund conservation. UWA has mandates to manage oil company activities to minimise environmental impact, while growing the tourism industry, and becoming financially self-sufficient, leaving them in a position where they must manage the contradictions in their own mandates to find a middle ground where oil exploration, tourism and conservation can co-exist.

Paradoxically, tourism and extractive industries are often found in the same locations. Oil extraction co-exists with tourism in national parks in Belize, Cameroon, the Democratic Republic of Congo, Rwanda, Ecuador, and now Uganda (Suarez et al. 2009; Holterman 2014; Stinson 2014). Büscher and Davidov (2014) contend that this unexpected coexistence of tourism and extractive industries is not rare but under-studied. Both extractive industries and tourism move into frontier environments, expanding the spatial extent of nature commodification (Duffy and Moore 2010; Arsel and Büscher 2012; Kark et al. 2015). Both oil extraction and tourism continue the long tradition of colonial elite capture of nature in East Africa, but instead of colonial elites taking the valued resources from the earth and protecting lands for recreational hunting, it is now oil corporations extracting petroleum and tourists who can afford to take an African safari who benefit from the PAs.

Oil and the community-based conservation policy

Both tourist and oil company entrance fees to MFPA contribute to UWA revenues, funding the principle component of UWA's community outreach program where 20% of PA entrance fees are shared with local communities for development projects. Tourist numbers visiting MFPA are the highest in the nation, resulting in revenue-sharing disbursements around MFPA comprising as much as 50% of a sub-county's annual budget, and to date, over 800,000 USD has been distributed to local governments around MFPA.

> We receive 20% of the revenue, which is distributed to the district, then to the sub-county, until it reaches the villages. Sometimes we build schools, hospitals, or buy goats so that people don't go into the park for poaching. (Village Chairperson)

However, there is disagreement over how the money should be used. The people residing adjacent to the PA believe that the money should be spent on projects that provide direct compensation to them for the losses they incur living next to the PA. District and Sub-county councils believe the money should be used for longer term investments for development infrastructure that will benefit a wider segment of the population for years to come. The intent of the revenue sharing program according to UWA is to improve local people's perceptions of conservation, reduce illegal resource extraction, and demonstrate that PAs can result in economic benefit (UWA 2000). To this end, UWA issued new guidelines for the program in 2012 requiring funds to be preferentially used for crop raiding defenses or income generation projects.

Oil companies in Uganda are using a similar tactic to legitimise oil exploration by funding community centres and medical clinics through their Corporate Social Responsibility Program (CSRP; Hanlon and Fleming 2009; Holterman 2014). One of the differences between these programs is that tourism revenue sharing is legislated and collected by UWA, a government institution, while CSRPs are a corporate donation from the oil companies subject to corporate budget fluctuations. In a recent review of 52 studies about the linkage mechanisms between extractive industry revenues and poverty reduction, CSRPs were found to have a very limited effect on poverty alleviation (Gamu et al. 2015). In Uganda, local government decides on the projects undertaken with revenue sharing funds received from UWA, but the oil companies have the final say on CSRP projects. As with the tourism shared revenues, the projects to be funded are contested:

> The District provides priorities … to the companies. Tullow is constructing a resource center in the community, which will include a community hall, library, and internet café. In addition, TOTAL is constructing a health centre. This health centre took one year to negotiate with TOTAL, where TOTAL wanted to use the money for something else, but the District insisted on this health centre. (District Chairperson)

In addition to providing development projects, oil exploration and ecotourism are often seen as employment opportunities for local communities (Stinson 2014). Ecotourism has in some cases brought real benefits to African communities (Nelson 2012), but whether these benefits balance losses incurred as a result of the PA's existence is dependent upon the degree of local ownership, and the communities' location relative to tourism attractions (Brockington et al. 2008; MacKenzie 2012). Tourism managers we interviewed said they try to hire locally. The number of employees per facility around MFPA ranged from eight to 120, with larger, higher budget facilities having more employees, and smaller, lower budget facilities having a higher percentage of local hires. None of our focus group participants had jobs in tourism, but this might be a result of where we conducted our focus groups, as many of the tourism facilities are located in and adjacent to the western side of the PA.

The economic oil boom, recognised by council chairpersons, is also geographically limited to the area west of MFPA and closest to the drill pads, tempering local enthusiasm for oil production in most areas around the PA. Unfortunately, local people are not trained in the skills the oil companies need, so most full-time employees are being recruited from urban

centres in Uganda or from outside the country. Residents and village leaders said they saw no benefit from oil, but a few men in focus groups west and north of the MFPA did acknowledge casual labour jobs. Although touted as opportunities for development, neither tourism nor oil has provided significant employment opportunities around MFPA. In fact, negative livelihood impacts of both tourism and oil were more frequently voiced in focus groups. Crop raiding and predation by protected wildlife is the most frequent issue that residents near PAs encounter in Uganda, often resulting in substantial losses to household livelihoods (MacKenzie and Ahabyona 2012). Around MFPA, elephants cause the most crop damage, a problem exacerbated by the combination of recovering animal populations and, following the expulsion of the Lord's Resistance Army, internally displaced people returning to their land only to find it occupied by elephants. The resentment towards conservation as a result of crop raiding was strong. People openly expressed a desire to get retribution for crop raiding from the PA— "when trouble animals come and destroy crops, poachers then go kill animals" (Sub-County Chairperson). The existence of the elephants was blamed on tourism, because UWA 'keep' the elephants to attract tourists. However, people living along the north-east borders of the PA insisted that crop raiding had become worse since oil exploration started.

> The problems became worse five years ago. The animals now come farther out of the park than they used to. The big machines in the national park are chasing the animals. (Village Chairperson)

Since elephants typically raid crops at night, and increased nocturnal activity due to oil exploration has been documented for elephants, oil exploration could indeed result in more elephant crop raiding in adjacent communities (Wrege et al. 2010). UWA has been building an elephant trench inside the PA to aid in crop raiding deterrence, and the elephants might be moving east to get around the trench in order to access crops. UWA is skeptical that oil has driven the elephants to the east, but do concede that elephants may have moved east because their migration routes have been altered by oil development. UWA now must handle more human-wildlife conflict, and have partnered with the African Wildlife Foundation to train local men to be crop defense scouts. The perceived increase in elephant crop raiding is degrading UWA's relationship with local communities, who are becoming angry.

> The UWA people should first start by creating a relationship with the community. Secondly, they should also know that the community has their rights—they [UWA] are saying that the animals are more important than people. (Focus Group)

Creating a collaborative environment between PA management and local communities to allow for transparent communication and clear understanding of conservation policies is a key requirement of community-based conservation (Berkes 2004). However, participants in our focus groups and local village chairpersons felt neither the oil companies nor UWA were willing to communicate and build a relationship with them.

> Some days back we had a good relationship with UWA but not anymore. We asked UWA to be allowed to pick firewood, grasses and maybe be allowed to fish on the other side. I sent a letter in 2011, 2012 and 2013 but no reply. We know nothing [about oil] because we did not go look at the drilling and the oil company does not come to talk to us. (Village Chairperson)

The lack of communication and collaboration between communities and UWA highlights that UWA's community outreach policy is not driven by a desire to share responsibility for conserving the PA with local people. Rather, it reflects a concern to balance the costs associated with living near a PA, and a desire to improve livelihoods to minimize local people's dependence upon natural resources that can be found inside the PA (MacKenzie 2012). This concern is typically associated with protectionism rather than community-based conservation that aims to engage local communities to protect PAs (Brockington 2002). The lack of engagement of local people with PA conservation means that communities have no incentive to help protect MFPA against the exploitation of the oil companies, other than the concern raised in focus groups that 'outsiders will come to fight over oil' (Focus Group).

CONCLUSION

Commercially viable oil reserves have been found inside the boundaries of MFPA in Uganda. For the Ugandan government, the economic promise of oil provides considerable political leverage to expedite oil development, even in the face of conservation concerns. This co-existence of extractive industries and PAs is rarely reported in the literature (although see Büscher and Davidov (2014) for examples), perhaps because it disrupts conservation strategy narratives.

The primary conservation policy in Uganda is protectionism, an approach grounded in the exclusion of human activities inside PAs, and focused on restoring landscapes damaged by prior human activity (Brockington 2002). The secondary Ugandan conservation policy is neoliberal capital accumulation, typically operationalised as nature tourism development (McAfee 1999; Büscher et al. 2012). Finally, UWA engage in community-based conservation by helping to mitigate human-wildlife conflict, allowing limited access to PA resources, and providing funds for community projects (MacKenzie 2012). Our research finds that none of these policies stop oil exploration and development within MFPA. Our primary argument in this paper is that neoliberal capital accumulation as a conservation policy actually makes PAs more vulnerable to industrial exploitation. This occurs because nature is commodified, allowing the economic value and profitability of land uses within the PA to prioritise how nature is exploited within the PA. Our secondary argument is that the conditional nature of PA access inherent within the

protectionist policy actually permits oil extraction within the PA. Finally, we argue that limited communication with, and participation of, communities with PA management, results in the community conservation policy having no role in defending the PA against industrialisation.

Growing the tourism industry is the primary component of the neoliberal conservation strategy in Uganda, marketing a particular nature experience that in turn helps fund conservation within the PA. Tourism operators are reluctant to adapt to the presence of the oil companies, as industrial human activity inside MFPA disrupts the socially-constructed image of 'pristine African wilderness' that is the nature commodity they are selling to tourists. However, this conflict between oil and tourism companies highlights the most significant flaw in the neoliberal conservation strategy evident within this case study. Tourism and oil companies in MFPA are both competing to commodify and exploit nature, but when a more profitable, and potentially more ecologically damaging industry like oil wants to use the same land as the tourism industry, neoliberal economics prioritise the oil industry because it will provide higher revenues. Overshooting the UWA revenue plan as a result of increased entrance fee revenues from oil vehicles also highlights the challenge UWA encounters when trying to carry out conflicting neoliberal and protectionist conservation policies: growing revenues to become financially sustainable versus protecting PA habitat for recovering animal populations.

Given that the protectionist policy focuses on exclusion of human activity, one might expect that PAs would be safe from extractive industries such as mining and oil drilling. However, human exclusion within the protectionist strategy has always been conditional (Neumann 1998). Paying tourists are permitted inside PAs to view or even hunt wildlife, and industrial extraction of valuable natural resources such as minerals and oil from the PA is often permitted by national legislation. The Ugandan Government permits oil extraction inside PAs, and the management activities of UWA have been expanded due to oil exploration to include monitoring environmental guideline compliance, negotiating with oil companies to minimise negative tourist experiences, increasing policing against poaching, and expanding human-wildlife conflict measures.

The relationship between UWA and local communities has been strained by the prohibition on hunting, the minimally-perceived benefits of revenue sharing, and crop raiding by growing park-protected animal populations. It appears that oil exploration may be worsening this relationship by exacerbating human-wildlife conflict, for which UWA need to provide more resources to help defend local livelihoods and manage community-PA relations. If not addressed, this may fuel local poaching in an attempt to seek retribution for crop losses, and will definitely not garner community support for conservation. Rather than community-based conservation being a defense against oil exploration in the PA, community engagement in conservation is lacking, and tolerance for the PA appears to be weakened by the presence of the oil companies. Ultimately, there is little to differentiate conservation and oil development in the eyes of local residents. Both try to legitimise their existence through the provision of community projects, neither provide significant job opportunities, both add risk to subsistence livelihoods, and neither offer an open communication channel with local communities.

Operating inside a PA has also placed extra environmental requirements on the oil companies as a result of lender bank provisions and environmental assessment actions. The oil companies have responded by using less environmentally damaging technology, restoring exploratory drilling sites, and even funding additional UWA rangers to police against the potential for more poaching as oil exploration opens up the PA to oil workers. Preliminary research indicates that oil exploration is influencing animal behavior, but after exploratory drill pads are restored animals return to these locations (Prinsloo et al. 2011; Fuda 2015; Plumptre et al. 2015a). Wildlife, UWA, and the oil companies are adapting to co-existing within the boundaries of MFPA.

Although this paper reports on the situation in MFPA, oil exploration and extraction is ongoing in many developing countries, often in ecologically sensitive areas, either within or near PAs. Our arguments elucidate the flaws in current conservation narratives to protect against the industrialisation of PAs. In particular, the neoliberal conservation policy that commodifies nature, makes PAs particularly vulnerable to industrialisation because neoliberal economics prioritise the industry that will provide higher revenues. The profits that can be made from nature tourism remain low relative to industrial commodities like oil, gas, and minerals. Conservation of an oil rich PA cannot be argued based on economics alone, especially in a world still dependent upon fossil fuels.

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NOTE

1. Botswana, Ethiopia, Kenya, Mozambique, Rwanda, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe.

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