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Conservation biopolitics and the sustainability episteme

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Environment and Planning A

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Abstract

This paper develops the idea of the sustainability episteme for the critical analysis of contemporary wildlife conservation. It takes forward recent work in conservation and more-than-human geographies that questions the biopolitical emphasis in conservation on protecting collectivities such as species. Drawing on empirical research on turtle conservation in India and on Foucault's writings, it inspects how these animals and their wellbeing come to be conceptualized and pursued in contexts marked by tensions between human-centred socio-economic goals and concern for nonhuman life. Specifically, the paper theorizes the concept of the sustainability episteme to argue that biopolitical ontologies of the collectivity enable win-win conservation that addresses incompatible normative goals. Building on these arguments, it discusses the political function of dominant conservation ontologies with reference to the global trajectories of conservation. In problematizing the taken-for-granted dominance of ontologies of the collectivity, the aim is to open up opportunities for life-forms that otherwise remain outside the bounds of conservationist care.

Keywords: *Foucault, more-than-human politics, wildlife conservation*

Introduction

A growing corpus of scholarship explores the significance of Foucault's writings on power for the analysis of more-than-human spaces. This paper builds on these literatures, and in particular, on geographical inquiry into the biopolitical character of contemporary wildlife conservation (Biermann and Mansfield, 2014). In dialogue with this work and drawing on empirical research on turtle conservation in India, this paper theorizes the concept of 'sustainability episteme' for the analysis of more-than-human social change (Srinivasan, 2014).

Specifically, the paper inspects how Olive Ridley turtles and their wellbeing come to be conceptualized and pursued in contexts marked by tensions between human-centred socio-economic goals and concern for nonhuman life. By bringing a Foucauldian lens to the social formation of conservation, the paper poses crucial questions about the politically charged nature of dominant conservation ontologies such as species, populations and ecosystems. Simultaneously, it shows how the marrying of a biopolitical lens with the concept of the sustainability episteme clarifies debates on conservation values and goals that have so far mostly run in parallel in political ecology, conservation science and philosophy, and more-than-human geography. In all, the article lays the ground for further critical engagement with processes of more-than-human social change.

In what follows, the paper discusses the scholarly background and conceptual framework for the analysis before introducing the empirical context - Olive Ridley turtle conservation in India - through which the main arguments are elucidated. The analysis is then developed with reference to the global trajectories of conservation. The empirical

materials used in this paper are derived from research carried out in Odisha in the year 2010; they comprise policy and legal texts, advocacy materials, reports from stakeholder organizations, media articles, research in conservation biology, and interviews with conservationists, fishing union leaders, government and business representatives. These materials were analysed using qualitative coding techniques (Corbin and Strauss, 2008) to map the evolution of conservation in the region, the social context, and conservation interventions and policy. Analysis was directed at examining conservation action as well as the norms, concepts and rationales underpinning it. This in turn drew attention to debates around conservation in the area, resulting in an analysis of the manners in which conservation goals and ontologies are shaped by broader socio-political conditions.

Goals and values in wildlife conservation

At the most basic level, the *raison-d'être* of wildlife conservation is the flourishing of nonhuman life (Meffe et al., 2006). Yet, as scholarship in geography, animal studies, and ecofeminism has shown, conservationist discourse and practice often exhibit a peculiar enmeshment of care and harm: culling for population control, game hunting, and captive reproduction programmes are some conservation measures that harm the very subject-objects of care (Chrulew, 2011; Kheel, 2008; Srinivasan, 2014).

Such ambiguities have been debated in conservation science and ethics in terms of trade-offs between the wellbeing of individual organisms and collectivities such as species and ecosystems (Minteer and Collins, 2005). For the most part, they have been explained as value clashes between biocentrism and ecocentrism. In general, it is acknowledged that

conservation is characterised by ecocentrism and that “conservationists are not professionally concerned with the welfare of individuals,” (Callicott, 2006: 114).

Another stream of conservation scholarship has explored the tensions between instrumental (anthropocentric/human-centred) and intrinsic values (Sandbrook et al., 2010). These have revolved around whether conservation decision-making should be directed by the benefits and risks to human wellbeing, or whether it should be motivated by the intrinsic value of nonhuman nature. In conservation science and policy, these questions have been taken up in debates between the “old” and “new” conservation, while in geography, they are seen in analyses of fortress conservation and related issues such as displacement, livelihood losses and human-wildlife conflict across the world, including in India (Agrawal and Redford, 2009; Gadgil and Guha, 2007; Guha, 2000). Proponents of the “new conservation” argue that “protecting biodiversity for its own sake has not worked” (Kareiva et al., 2012: online). They highlight the social impacts of wildlife conservation, echoing concerns raised in conservation geographies, especially political ecology, and advocate conservation activities that “jointly maximize benefits to people and to biodiversity” (Kareiva and Marvier, 2012: 962). The old conservation camp argues that the new conservation conflates human well-being with “narrow definitions of economic development”, and misrepresents normative claims about the supremacy of human interests as science (Doak et al., 2014: 78). Their concern is that embedding of human-oriented normative goals in conservation will result in the ethical de-prioritization of nonhuman nature (Soulé, 2013: 896).

In the main, these debates around the old and new conservation, and trade-offs between individuals and collectivities have run in parallel to each other, *and* to similar debates in political ecology and conservation geographies. This paper proposes that there is an important but unacknowledged connection between them. It argues that the dominance of collectivities as the ontological locus of conservation is linked to the function these ontologies serve in reconciling competing normative goals relating to human and nonhuman wellbeing. In order to do this, it draws upon Foucault's lectures and writings on biopower and epistemes as introduced below.

Epistemes and contemporary conservation

At the core of this paper lies its deployment of Foucault's theorization of epistemes to identify and examine the conditions that shape the conservationist focus on collectivities and the often attendant co-articulation of harm and care. Foucault (2002b: xii, 2002a) identifies "regularities" across different academic fields to examine the "rules of formation" of scholarly knowledge. Foucault theorizes these regularities as "episteme" - that which "makes it possible to grasp the set of constraints and limitations which, at a given moment, are imposed on discourse" (2002a: 211). Foucault used the concept of episteme to discuss the conditions of possibility of knowledge at a particular moment in a culture's history. The concept has since been reworked in the examination of other spaces such as colonial governance, and its meaning clarified as "the taken-for-granted assumptions of a regime" (Legg, 2005: 147). The episteme is therefore that which enables and legitimizes certain kinds of discourses and practices, and is not dissimilar to Kuhn's (1962) notion of 'paradigm'.

I develop from this strand of Foucauldian scholarship the ideas that 1) the dispersion of discourses in a social formation can be examined to identify regularities that cut across “things usually far apart” (Foucault, 2002b: x), and 2) these regularities are helpful in understanding the limits and possibilities of discourse in the given social formation. Specifically (in following sections), I trace regularities in opposing positions in conflicts between turtle conservation efforts and other social goals in Odisha, theorizing these as the ‘sustainability episteme’: that which enables certain kinds of discourses and interventions and *not* others in the social formation of turtle conservation. This analysis is integrated with an elucidation of the biopolitical character of conservation to develop an account of how the social context can be co-constitutive with ontologies that prevail in conservation. In developing these arguments, the paper intervenes in not only conservation geographies and social science, but also in emerging work in Foucauldian more-than-human geographies.

Foucault and the more-than-human

Although Foucault’s writings were resolutely anthropocentric, there nevertheless now exists work in geography and beyond that develops Foucauldian scholarship for the analysis of the “more-than-human” (e.g., Collard and Dempsey, 2013; Wadiwel and Chrulew, 2017). While this work has primarily studied the ways in which the governance of nature is caught up with the governance of people (Anderson, 2012; Braun, 2013; Hinchliffe and Bingham, 2008), geographers now offer analyses that focus on nonhuman life in and of itself. The attention that the concept of biopower brings to life, its care and regulation has proved to be pertinent for inquiry into the more-than-human world.

In particular, the biopolitical lens and its insights about the interplay of discourse, practice, care and harm have been deployed for the study of a range of more-than-human domains such as contemporary livestock agriculture (Holloway and Bear, 2011), animal welfare (Palmer, 2001; Srinivasan, 2013), conservation (Singh, 2013; Youatt, 2008), and biosecurity (Braun, 2013). These literatures have highlighted the limits of Foucauldian biopower in explaining more-than-human interactions (Demeritt, 2001). In response, geographers have put forward the concepts of relational (Holloway et al., 2009) and agential subjectification (Srinivasan, 2014) to clarify how biopower functions in human-nonhuman relationships.

Foucault's work on biopower has been especially valuable for the critical analysis of spaces of care such as wildlife conservation. The Foucauldian argument that power manifests in forms other than sovereign power which is negative in its articulation has been useful in investigating the trade-offs between individuals and collectivities often seen in conservation. Non-sovereign modalities of power, which Foucault theorizes variously as disciplinary, governmental, pastoral, and biopower, are geared towards regulating and promoting life (Foucault, 1977, 2003b, 2008b). Emphasis on the fostering of life, however, does not guarantee solely benign outcomes for the subject-objects of power. Foucault (2003b: 254) dwells on the twin faces of biopower in his reflections on racism as "primarily a way of introducing a break...between what must live and what must die." Racism builds a connection between the fostering of life and killing, wherein the 'letting die' of individuals deemed inferior or unimportant allows for the flourishing of the population or the 'biosocial collectivity (Rabinow and Rose, 2006) – collectivity for short. While the term "population" was used in Foucault's work to refer to peoples in geopolitical territories, subsequent work

has demonstrated its relevance to collectivities of nonhuman life under human regimes of care (Chrulew, 2011; Holloway and Bear, 2011; Srinivasan, 2013). As such, racism is about all rationalities that establish some members of a collectivity as inferior and killable for the sake of the flourishing of the larger 'whole'. Such insights about the entanglement of harm and care have been explored in relation to various domains from humanitarian action (Reid-Henry, 2013) and conservation education (Lloro Bidart, 2014), to the war on terror (Dillon and Reid, 2009).

With specific reference to conservation, geographers have argued that the focus on ontologies of the collectivity such as populations and species goes along with bio(necro)political discourses of care that are non-benign in their impacts on individual living entities (Biermann and Mansfield, 2014; Srinivasan, 2014). This work has pointed to the play of biopower in wildlife conservation, charting the calculations and techniques that underpin what is done to protect wildlife. However, even if biopower is potent in highlighting the operation of non-benign power in wildlife conservation, it remains limited in its explanation of how such spaces of care come to be marked by the enmeshment of harm and care. This paper moves the analysis of wildlife conservation beyond arguments about its biopolitical character by working with empirical materials on turtle conservation in India and a conceptual framework that integrates Foucauldian scholarship on epistemes and biopower in order to explore the conditions that underlie the infusion of biopower in conservation.

Protecting Olive Ridley turtles in Odisha

Olive Ridleys are marine turtles that live in the open seas, and travel to selected coastal waters and beaches for mating and nesting. They are classified as “Vulnerable” to extinction by the IUCNⁱ Red List. Olive Ridley turtles nest both solitarily and in mass nesting events called arribadas. Arribada sites are rare. Odisha in India hosts arribada sites at Gahirmatha beach and the Rushikulya and Devi river mouths. While there is an extensive corpus of published research on these turtles which dates back to the 1970s, their biogeography continues to remain something that eludes scholarly capture: “there is no exact knowledge about turtle, so we need to find outⁱⁱ” (Tripathy et al., 2009). What is known, however, is that, in Odisha, as in many other regions where Olive Ridleys nest, these turtles face threats from habitat destruction, pollution, artificial lighting, and incidental capture in mechanized fishing nets, and previously, direct exploitation of turtle eggs and adults (Shanker, 2007). In recent years, conservation action has focused on mitigating the impacts of mechanized fishing and infrastructure development, the latter especially in the form of the Dhamra Port (Rodriguez and Sridhar, 2008).

Olive Ridleys in Odisha are offered legal protections (Sridhar and Shanker, 2007). The Indian Wildlife Protection Act (1972) (WLPA) bans their hunting and sale. In Odisha, the Gahirmatha arribada site was notified as a marine sanctuary in 1997. The sanctuary status curbs human activities, including infrastructure development and fishing. Outside the sanctuary, the Orissa Marine Fisheries Regulation Act (1982) (OMFRA) protects turtles by regulating fishing during the nesting season. In addition, measures were introduced to address potential impacts of the port on turtles and biodiversity. These include an environment management plan associated with the port’s environmental clearance

(Ministry of Surface Transport, 2000) and interventions introduced through a partnership between the Dhamra Port Company Limited (DPCL) and IUCN (IUCN, 2007, 2008). The latter were directed at addressing dredging and lighting associated with the port. All dredgers used to deepen coastal waters were fitted with turtle deflectorsⁱⁱⁱ, and “turtle-friendly” lighting was installed in the port.

Conflictual conservation

The above conservation measures and laws are the outcome of decades of conservation action in the region. At the same time, as has been the case with wildlife conservation more widely (Agrawal and Redford, 2009), Olive Ridley conservation in Odisha has been subject to protests about the socio-economic impacts of conservation. Efforts to regulate fishing have been the subject of much contention among fishing communities (Sridhar and Shanker, 2007). Harassment by forest officials, decreases in fish catch and serious debt are reported impacts of the sanctuary and OMFRA regulations^{iv} (UNDP-GOI sea turtle project, 2002).

Another conflict coheres around the Dhamra port. Soon after plans to construct the port were made public, a national campaign was launched (in 2004-05) by Greenpeace India to mobilise public support for stopping the project, or for at least delaying construction pending comprehensive ecological assessments. The anti-port campaign argued that “the Dhamra port...will push the endangered Olive Ridley sea turtle closer to the slippery edge of extinction” (Greenpeace, 2009). Dredging for shipping channels, port lighting, shipping traffic, exotic species introduced through discharge of ballast water, and ancillary development were all identified as potential threats to not just the turtles, but also to other life. This campaign was not received kindly by the port company and the state government.

Greenpeace was accused of exaggerating the potential impacts of the port (DPCL, 2010: 1). The port's role in facilitating the economic development of Odisha and surrounding regions played a central part in the responses to the anti-port campaign. The Odisha government even threatened legal action against Greenpeace India for hindering the state's development (Anon, 2007).

These conflicts troubling Olive Ridley conservation in Odisha mirror the polarization of environmental and socio-economic agendas documented in different parts of the world (Apostolopoulou and Pantis, 2010). However, closer examination of these debates reveals what Foucault calls "regularities", patterns and tropes that recur in otherwise separate domains and that help identify that which enables and limits discourse (Foucault, 2002a). As discussed below, in the context of turtle protection in Odisha, these regularities take the form of a cross-cutting consensus on normative objectives relating to (human) socio-economic interests across the seemingly polarized positions in these debates. It is not just the fishing community, the port company and the state government who are concerned about the socio-economic impacts of conservation. Far from displaying an "elitist" penchant for fortress conservation, or being oblivious to human needs and interests, conservationists in this region emphasize the importance of safeguarding local livelihoods and regional development.

A senior conservationist working in Odisha, for example, believes that development goals cannot be ignored: "we need a balance between development and conservation. Scientists and policy makers have to sit together looking at livelihoods, development, biodiversity" (see Dublin, 2008 for similar views specific to these debates). A forest

department bureaucrat similarly insists that “we need to find a delicate balance between environment and development” (IUCN, 2009: 5). The issue of local livelihoods is considered even more crucial, and it is accepted that turtle protection must be accompanied by investments in human livelihoods (Greenpeace, 2007: 3). One conservation organization even offered income generation programmes for local communities (Wright et al., 2001). This kind of conservationist attention to human needs is not unique, and conservation is often seen as a means of reducing poverty (Soulé, 2013).

Turtle conservation in Odisha is thus characterized by normative consensus about the importance not only of Olive Ridley survival, but also of the importance of addressing human interests by supporting local livelihoods and regional development. This consensus encompasses normative objectives that are for the most part incompatible: socio-economic development and turtle wellbeing are not always directly correlated. Activities such as port construction/operation and mechanized fishing are harmful to turtles. Similarly, protection of turtles through bans on infrastructure development or fishing will negatively impact socio-economic development. Turtle conservation is therefore shaped by two sets of *competing* normative objectives, human and more-than-human.

The sustainability episteme

Foucault’s writings on epistemes are useful in examining the influence of these competing normative objectives on turtle conservation. Following Foucault, the regularities constituted by the two sets of normative objectives (socio-economic development and turtle wellbeing) that cut across the dispersion of debates around turtle conservation in Odisha can be understood as the *sustainability* episteme. An episteme embodies normative

elements that are not easily visible. Values, assumptions and choices become normalized. Views that fall outside the limits created by such embedded norms usually “are dismissed as ill-founded” (Igoe et al., 2010: 505). Epistemes affect the thought and action of individual people. Nonetheless, the critical significance of this concept lies in its theorization of norms and assumptions that function beyond the individual, i.e., across a social formation. Epistemes describe “rules of formation [that] operate...in discourse itself; they operate... on all individuals who undertake to speak in this discursive field.”(Foucault, 2002a: 69–70)^{vi}.

In the case of turtle conservation in Odisha, such rules can be identified in the sustainability episteme. For example, the endangerment of the Olive Ridley species is accepted as undesirable even as there is a parallel acceptance of socio-economic goals as important; a port company official agrees “that something serious should be done to prevent it [OR mortality]”^{vii} even as a forest department emphasizes that “the economic development of Orissa as a maritime state is vital” (IUCN, 2009: 5). By contrast, the death of *individual* turtles in fishing nets or dredgers is not unequivocally considered ‘bad’ at the level of the sustainability episteme. In the words of an environmental campaigner working on Olive Ridley conservation in Odisha, “it isn’t about the life of an individual turtle or how it is treated”^{viii}. Epistemic norms are not totalizing - individual conservationists might consider the death of even one animal a ‘bad’. In general, however, there is no agreement about this across different positions; it does not constitute the episteme.

The norms delineated by the concept of the sustainability episteme are not unique to turtle conservation in Odisha. “Sustainability” has become a key trope in environmentalism. Before sustainability emerged as “the new avatar of environmentalism” (Lele, 2006: 7),

economic growth and development goals were seen as separate from and in conflict with ecological wellbeing. Sustainability discourse, in contrast, treats the two as compatible. As Adams (2004: 176) puts it, “the idea of sustainable development was offered as an escape from the idea that development gains inevitably brought environmental costs.”

Sustainability is about *win-win* outcomes; it is about reconciling competing normative goals related to socio-economic development and more-than-human wellbeing, and is “wildly popular as a way of thinking about how to simultaneously meet the needs of people and the environment” (Mansfield, 2009: 37). While sustainability thinking has been extensively critiqued as an oxymoron (Adams, 2004; Luke, 1997; Redclift, 2005), its win-win logics continue to significantly influence environmental (and conservation) discourse and practice across the world, including Olive Ridley conservation in Odisha (Igoe et al., 2010).

In building on critiques of sustainability and theorizing the twin normative goals about (turtle) species flourishing and socio-economic development as the sustainability episteme, I direct attention to the complexities that emerge when spaces of care such as wildlife conservation are shaped by competing objectives. My core argument is that the incompatible epistemic norms of turtle and human wellbeing, i.e., the contradictory logics of sustainability thinking, result in and are sustained by biopolitical conservation concepts and practices. For this, I undertake a closer inspection of turtle conservation discourse and interventions in Odisha, building on geographical scholarship on conservation biopolitics (Biermann and Mansfield, 2014; Srinivasan, 2014). Of particular analytical value here are two features of biopolitical and governmental power (Foucault, 2008b, 2008a):

1) the exercise of biopolitical power involves the regulation of ongoing processes in the population or biosocial collectivity (in contrast to the totalitarian approach typical of sovereign power).

2) biopolitical regulation is aimed at promoting the flourishing of life, but such care is often co-articulated with harm.

Regulating harm

In his work on biopower and governmentality, Foucault shows that the exercise of the “power of care” is characterized by the management of the population (2003b, 2008b, 2009). Such management is carried out through interventions that modulate existing processes instead of working against them (Foucault, 2009: 352). Turtle conservation in Odisha exhibits this feature. Firstly, most conservation interventions in Odisha do not display the sovereign approach of forbidding activities that are harmful to turtles. They instead work synergistically with and regulate ongoing processes in the biosocial collectivity.

The marine sanctuary, for example, does not ban fishing. Instead, as is typical of biopolitical government, it manages fishing by specifying what kind of fishing boats and nets can be used in different parts of the coast. Non-motorized boats are permitted “innocent passage” through the core area of the sanctuary, whereas in the buffer zone, fishing is allowed in traditional boats with monofilament small mesh nets. The OMFRA similarly modulates fishing in other parts of the coast instead of imposing complete bans (Government of Odisha, 1981). It requires the use of turtle excluder devices (TED) in trawlers, and provides for periodic notifications on fishing during the turtle breeding season at the mass nesting sites of Rushikulya and Devi: traditional non-motorised craft are allowed

within 5 km of the coast, with small mesh, monofilament nets that are up to 300 m long; motorised boats with small mesh nets that are less than 300 m long can fish beyond 5 km; mechanised gill netters are allowed only beyond 20 km, as are trawlers, as long as they do not fish within the turtle congregations; ray nets, pomfret nets and ring seine nets are not permitted anywhere (see Sankaran et al., 2005 for more detail).

The main objective of these interventions is to sustain turtle reproduction by *regulating* disruption created by human activities. This is done by tweaking ongoing processes in the human-animal biosocial collectivity, rather than banning harmful activities such as mechanized fishing. These interventions are “produced with reference to the particular society...[they]...regulate” (Dean, 2010: 142), and are tailored to the situations they address. The environmental clearance process and related environment management plan for the port, and the interventions introduced by IUCN (further details below) are similarly formulated so as to *allow* the port activities to continue. There is no sovereign ban on the port, only an adjustment of activities through the deployment of turtle deflectors, turtle-friendly lights and environment management plans.

Such a modulatory approach becomes necessary given the two sets of normative objectives (socio-economic development and turtle flourishing) encapsulated by the sustainability episteme. Conservation interventions have to simultaneously address the competing goals of turtle flourishing as well as socio-economic development. Turtle protection cannot take the form of bans on mechanized fishing or infrastructure development, but instead allows for the continuation of these activities, albeit in a

modulated manner. Biopolitical modulation is tied to the win-win demands of the sustainability episteme.

Calculated care

This modulatory approach to protection goes along with the other feature of biopower mentioned earlier: the intermingling of care and harm. Biopolitical mechanisms try to shape and promote life so as to meet certain ends, and when life is not considered valuable or suitable, it is “let die” (Foucault, 2003b: 241). This often manifests through a “calculated management of life” (Foucault, 2008b: 140), wherein decisions are made about what or how many can be harmed or let die. Such calculations of the kind and extent of acceptable harm are embedded in the conservation interventions discussed.

The finely textured sanctuary and OMFRA regulations are based on estimated turtle densities at different distances from the coast, with increasingly harmful fishing practices (gill netters, trawlers) permitted with decreasing turtle density. Lower densities, however, do not mean that turtles are not harmed by mechanized fishing. It is widely known that turtles continue to die in nets in large numbers despite these regulations (Shanker, 2007)^{ix}. The turtle deflectors used in the port project are founded on similar calculations. The deflectors do not prevent turtle deaths totally: a “turtle take allowance” decides at what level turtle deaths due to dredging start to matter (IUCN, 2007). Notions of permissible harm are also embedded in the environmental clearance for the port. For example, the clearance recommends the monitoring of effluents to ensure that they are maintained within the prescribed levels (Ministry of Surface Transport, 2000). In essence, in keeping within the competing norms of the sustainability episteme, the care afforded by these

conservation interventions *is not* via measures that impose sovereign bans on all harmful activities. Rather, it is a calculated management of life that from the outset incorporates notions of acceptable harm in order to regulate activities that threaten turtles instead of stopping them completely. Such calculations of permissible harm are necessary for biopolitical modulation that addresses the incompatible norms of the sustainability episteme.

In the examples discussed above, the co-articulation of care with harm manifests *indirectly* - as a calculus of acceptable harm that produces interventions directed at reducing turtle mortality as opposed to preventing it altogether (cf. Foucault, 2009). The intertwining of harm with care also manifests *directly*, as interventions that harm in the name of care – such as sustainable harvesting which is promoted as a tool of the “new” conservation not only in Odisha (Shanker, 2003) , but also in many other regions of the world (D’Cruze et al., 2015). Sustainable harvesting is premised on the logic that the killing of turtles translates into protection because it creates wider support for conservation by providing economic incentives to local communities (Mrosovsky 2008, 14). This sacrificial logic is central to biopower wherein “welfare is conjoined to exploitation” (Gordon, 1991: 12).

Conservationist research and education (Shanker et al., 2003; IUCN, 2007; Shenoy et al., 2011), such as the tagging of turtles for data collection, and population censuses and turtle walks carried out during nesting, similarly have the potential to cause bodily harm to the turtles (in the case of tagging), or fear and stress (during population censuses and turtle walks) (Srinivasan, 2014). Here, material harm is enmeshed with rationalities of care. The enmeshment of care and harm is less obvious, but present nonetheless, in conservationist

interventions offered as best practices even when they do not mean unambiguously positive outcomes for the subject-objects of care. The turtle-friendly lighting installed in the port, for example, is based on research that shows that some kinds of light sources are *less* impactful (IUCN, 2008) to turtles than others, not that they have *no* impacts. Turtle-friendly lighting also does not address threats posed by lighting in secondary development associated with the port. Turtle deflectors push only *some* turtles out of the way of the dredger (hence the turtle-take allowances), and do not address the impacts on marine life of excavation of the seabed and subsequent dumping (see IUCN, 2007, 2008; Srinivasan, 2014: for details about these technologies).

Yet, these conservation measures are described by an IUCN representative as “cutting-edge.”^x In the same way, measures such as water sprinklers to minimize dust or the development of a greenbelt are presented respectively as interventions that will result in “an environmentally-friendly cargo handling facility” (DPCL, 2009: 6) and that will “enrich the ecology of the area” (Kirloskar Consultants Limited, 1997: 4, p.10) . In short, make-do measures that *reduce* harm are reconstructed as best practices that *positively care for* nonhuman life. The harm that is intrinsic to these protections is elided, at least to the public imagination, by terms such as ‘cutting-edge’ and ‘environmentally-friendly’.

Biopolitical ontologies

In highlighting these co-articulations of harm and care in the social formation of conservation, I am not suggesting that this is the outcome of greenwashing. Interviews with conservationists in Odisha suggest that these interventions are motivated by genuine concern for turtles and nonhuman wellbeing. This claim is supported by research which

suggests that conservationists are often motivated by the intrinsic value of nonhuman life (Sandbrook et al., 2010). However, the concern for Olive Ridley turtles is for them as a *species* or as a *population*, and for the regional ecosystem (Shenoy et al., 2011).

Collectivities such as species and populations are the principal ontologies of conservation everywhere (Biermann and Mansfield, 2014). Even those interventions that operate through individual turtles (such as turtle deflectors) do so in order to protect turtles as a collectivity. This emphasis on collectivities is a feature of biopower which is first and foremost concerned with “the optimization of the life of a population” (Dean, 2010: 119).

The conservationist concern for collectivities is understandable: all living beings depend on and contribute to groupings of other life-forms and geological processes. Olive Ridleys cannot be protected in-situ without also protecting their habitat. This provides one explanation for the prevalence of ecocentric values in conservation and the concomitant focus on collectivities. But an *exclusive* interest in populations and species can have troubling implications for the individuals who constitute these collectivities. As Foucault (2009: 42) observed, the significance attributed to the fostering of the population in biopolitics means that the individuals that make up the population become “the instrument, relay or condition for obtaining something at the level of the population”. It is this valorization of the population – the collectivity - that leads to the enmeshment of harm and care in biopower (Kheel, 2008; Srinivasan, 2014).

In Odisha, the biopolitical focus on turtles as a collectivity means that harm to individual turtles does not really count as harm. In the words of a forest department official: “the mortality rate [for turtles] must be analysed. Is it really high? There are numerous

turtles...casualty numbers may be high, but rate might be low. 10-15,000 deaths might be nothing”^{xi} Conservationists in the region take pains to emphasize, both in interview and writing (Shanker, 2002), that they are not concerned about the lives and wellbeing of individual turtles. If turtles are not present in large enough numbers, they are deemed unworthy of conservationist care: “Vishakapatnam and its nesting beaches represent a fairly *minor* nesting population of Olive Ridleys along the east coast...the naval museum is likely to take up a 200 metres along the beach...perhaps the sacrifice of this nesting space could have been compensated by using the museum for furthering education and awareness about sea turtles” (Shanker, 2001: 30). Thus, the calculations that determine how many turtles can be killed by dredging or fishing before it becomes a “harm”, or the sacrificial logics that underlie sustainable harvesting, are all made possible by the predominance of ontologies of the collectivity.

It is not that conservationists working in Odisha are oblivious to individual turtles and their vulnerabilities. Conservation action in the region first gained momentum when attention was drawn to the suffering of turtles being sold for meat in the 1980s (Lenin, 2006). Yet, the overwhelming tendency is for individuals and their wellbeing to be considered sacrifice-able in the pursuit of conservationist care (Shanker, 2002).

Win-win mentalities and the collectivity

The biopolitical analytical framework casts useful light on the links between dominant ontologies (collectivities) and the co-articulation of care and harm in conservation. However, it is limited in explaining how this space of care comes to be characterised by such ambiguities, or how collectivities have come to dominate conservationist imaginations.

Here, the concept of the sustainability episteme is useful in developing scholarship on the more-than-human social change. As discussed earlier, turtle conservation in Odisha is directed at producing win-win outcomes that meet the competing demands of the sustainability episteme. This is evident in conservation measures (e.g., fishing regulations, deflectors, turtle-friendly lighting, sustainable harvesting, environmental management plan) that *regulate* socio-economic activities harmful to turtles rather than banning them. This win-win ethos is key to understanding the biopolitical focus on collectivities and the associated enmeshment of harm and care in conservation.

Win-win conservation that promotes the wellbeing of the turtles even while safeguarding socio-economic interests is rendered possible when turtles and their wellbeing are conceptualized as species, population or ecosystem - a collectivity. The ontological construction of turtles as a collectivity means that individual turtles can be killed or otherwise harmed in the pursuit of economic goals without it being understood as harm *per se*. Mechanized fishing and port activities can continue as long as their impacts on the turtles do not exceed calculated limits that endanger turtles as a collectivity. Biopolitical measures such as flexible sanctuary and fishing regulations, deflectors and turtle-friendly lighting become *win-win* conservation techniques that accommodate the pursuit of *both* turtle wellbeing and socio-economic development. By contrast, if *individual* turtles were recognized as valid ontologies and loci of normative concern in wildlife conservation, then the pursuit of win-win conservation becomes far more challenging as the socio-economic goals of the sustainability episteme would become difficult to address^{xii}.

The valorization of collectivities as the appropriate ontologies for conservation therefore fulfils a fundamentally political function: it allows for the mitigation of conflicts that emerge when the pursuit of nonhuman wellbeing comes up against prevailing socio-economic or other human interests. These conflicts are evident in Odisha: as the debates reviewed earlier demonstrate, forbidding mechanized fishing or demanding a halt in infrastructure development in order to protect turtles would invite significant opposition and most likely be politically unviable. But by focusing on turtle *collectivities* and *not* turtle *individuals* win-win conservation that remains within the boundaries of the sustainability episteme becomes possible.

The sustainability episteme is not universal in its reach or coherent in a totalizing fashion. Turtle conservation in Odisha displays practices and ideas that deviate from the norms of the sustainability episteme. For example, the WLPA imposes a ban on the intentional hunting of turtles, and in November 2014, a seven month ban on fishing within the sanctuary during the turtle nesting season was announced because of heightened concern about incidental turtle death (Outlook, 2014). Greenpeace's initial campaign against the Dhamra port also indicates the ruptures in the influence of the sustainability episteme. More broadly, ecofeminist literatures (Clement, 2003; Kheel, 2008) as well as emerging work on compassionate conservation (Ramp and Bekoff, 2015) and in more-than-human geographies (Biermann and Mansfield, 2014) recognizes the individual beings that comprise the collectivities that dominate conservation imaginaries, thus allowing for critical attention to the harm done in the name of care.

All the same, the political function of dominant ontologies is not fully recognized in conservation. Rather, collectivities such as ecosystems are accepted as “facts of nature” as opposed to being socially constructed categories with political implications; for most conservationists, “species *are* the building blocks of ecosystems” (Adams, 2004: 128). Proponents of compassionate conservation (Ramp and Bekoff, 2015) who argue that individuals should be taken seriously continue to remain on the margins of conservation discourse and practice. The conceptualisation of the sustainability episteme thus plays a crucial role in foregrounding the political functions of ontologies of the collectivity.

Ontological politics in global conservation

The above analysis of Olive Ridley conservation in Odisha has wider implications. Wildlife conservation all over the world is aimed at protecting collectivities of nonhuman nature and involves the juggling of competing, human-centred and more-than-human, normative demands. Conservation geographers have argued that conflicts between human interests and nonhuman wellbeing has over time led to a shift from “preservation” to “neoliberal” approaches in global conservation (Igoe et al., 2010), and to the debates between the “old” versus “new” conservation outlined earlier. As numerous scholars have documented, wildlife conservation was initially concerned with protecting nonhuman life from the adverse impacts of human activity and was based on the intrinsic and/or aesthetic values of nature (e.g., the wilderness preservation movement) (Adams, 2004; Guha, 2000). This typically involved safeguarding landscapes and valued species by excluding most types of human activity.

With the global spread of protected areas over the 20th century, however, conservation was criticised for the serious social impacts it often had: displacement, involuntary relocation, and significant social disruption often went alongside the establishment of protected areas (Agrawal and Redford, 2009). Responding to these critiques, conservation started to reflect the view that “conservation goals should be integrated with the development objective of meeting human needs” (Adams, 2004: 121). This includes Indian conservation where critiques of protected areas have over time made conservationists take social concerns seriously (Karanth et al., 2013; Rangarajan et al., 2014; Sridhar and Shanker, 2007). Conservation, often bearing the prefix of “community-based”, therefore came to include *human-centric* goals. Community-based conservation, while taking on diverse manifestations, generally incorporated one or more of three features: the re-legitimization of the property and resource claims of people living in and around protected areas; the pursuit of local development goals through conservation; and the involvement of people in conservation through the provision of incentives (Adams, 2004).

This integration of social justice concerns with ecological or more-than-human concerns however has since shifted towards the blending of wide-ranging socio-economic goals with conservationist agendas (Minteer and Miller, 2011). It is no longer just the subsistence needs of local people that conservation needs to take into account, but regional, national and global economic growth, which are usually seen as intertwined with the profit-making activities of private business (with trickle-down benefits for communities). Conservation has to contend with the socio-economic pressures posed by trade networks and development agendas simultaneously local, regional and global (Anguelovski and Martinez-Alier, 2014; Tsing, 2005). In Odisha, mechanized fishing caters not to the subsistence needs of local

communities alone, but much wider regional and international markets (Govt of Odisha, 2014). Conservation, like other domains of environmentalism, therefore has come to be synchronized with the demands of globally interconnected economies.

These processes have been described as neoliberal conservation, a term that attempts to capture the embedding of assumptions about “free market” economics in conservation. Neoliberal conservation can take varied forms and can have varied social impacts (Castree and Henderson, 2014; Holmes, 2015; Schwartz, 2013). But most crucially, the win-win ethos of the sustainability episteme has arguably never been more prevalent as it is in the current forms of neoliberal conservation (Adams, 2015) - even if individual conservationists might display skepticism (Sandbrook et al., 2013), disrupting the reach of the sustainability episteme. For Collard, Dempsey and Sundberg (2015: 325), conservation increasingly exhibits acceptance of “modernist development...as a teleological necessity.” It is precisely this that is referred to as the “new” conservation.

The pursuit of these competing imperatives is seen in popular conservation measures such as ecotourism, biodiversity offsets, game hunting, sustainable commercial exploitation, ecological restoration and rewilding, invasive alien species control, and captive reproduction programmes which offer ‘safety nets’ for development-induced extinctions in the wild (Adams, 2016; Chrulew, 2011; Holm, 2012). These measures, emblematic of the “new” conservation, address the incompatible goals of socio-economic growth and more-than-human wellbeing. These measures are also characterized by the biopolitical feature of entangled harm and care: while harm caused by hunting, direct exploitation and captive reproduction programmes is clear, the less obvious adverse impacts of interventions such as

ecotourism, ecological restoration, and biodiversity offsets on their nonhuman subject-objects of care are increasingly documented (Bull et al., 2013; Mathews, 2012). All these win-win interventions of entangled harm and care are rendered possible by the ontological focus on collectivities.

It is important to emphasize that the conservationist focus on collectivities is *not* a tactic deliberately chosen to facilitate win-win conservation. Rather, biopolitical collectivities such as species, population and ecosystems are taken-for-granted as elements of reality that have been, and always will be, the definitive loci of conservationist care, even in the “old” conservation. Similarly, the biopolitical intertwining of harm and care (more prevalent in “new” conservation because of its win-win orientation) is either overlooked or justified as being necessary and inevitable - as “trade-offs” for practical decision-making (Leader-Williams et al., 2010). In Odisha, it could be argued that flexible sanctuary regulations are necessary to protect livelihoods, that the installation of turtle deflectors is better than dredging without deflectors, and that it is unreasonable to worry about turtles as individuals.

Foucault observes that discourses and practices of non-sovereign power often emerge as compromises responding to particular socio-political demands, but over time, become “altogether natural, self-evident and indispensable” (Foucault, 1991: 75). To Foucault (2003a), the task of analysis is to complicate self-evident claims as anything but. As such, this paper has queried the naturalness and inevitability of established conservation ontologies and practices, raising questions about the contours of contemporary more-than-human social change, and the win-win logics of the “new” conservation.

Conclusion

These are times that are marked by widespread concern about the adverse impacts of human civilization on the other living beings that share the planet. The role of the social formation of conservation has arguably never been more important. In such a context, it is crucial that the assumptions and ontologies that underpin conservation are subject to careful examination. While others (e.g., Lorimer and Driessen, 2011) have explored the different ontologies that underlie conservation, this paper draws upon Foucault's writings on biopower and epistemes to investigate the predominance of *collectivities* as the ontologies for conservation. By theorizing the concept of the sustainability episteme, the paper has shown how the dominance of biopolitical ontologies and interventions in wildlife conservation is linked to the embedding of human-centred values and assumptions relating to economic development which are otherwise incompatible with the goal of nonhuman wellbeing. The paper thus takes forward scholarship on conservation biopolitics by explaining *why* biopolitical practices and concepts in conservation have prevailed, i.e., because they sustain the contradictory logics of sustainability.

The lens of the sustainability episteme foregrounds how ontologies of the collectivity serve the political function of enabling win-win conservation, thereby denaturalizing them as the only appropriate ontologies for conservationist care. This raises the question whether conservation discourse and practice must necessarily ontologically and ethically marginalize the individual beings without which collectivities wouldn't exist. In the context of turtle conservation in Odisha, this means that interventions such as the introduction of sustainable harvesting in a region where there is no current demand for turtle meat or eggs, or the unequivocal promotion of ecotourism, or invasive conservation research, might no

longer manifest as unambiguous acts of conservationist care. More broadly, even if the wider social context demands trade-offs, a closer attention to individuals would require a more careful evaluation of trade-offs and the reconsideration of measures of entangled harm and care that would otherwise be accepted without question. In Foucault's words, it would "make harder those acts which are now too easy" (2003a: 172).

These analyses have conceptual and empirical significance. In developing the concept of the sustainability episteme to trace the political functions of predominant conservation ontologies, this article brings closer debates in conservation science, political ecology, and conservation geographies that have hitherto run parallel to each other. By arguing that the human-centric demands posed by the wider social context are associated with the predominance of a particular *type* (ecocentric) of intrinsic value and ontology in conservation, and by exploring the dynamics between biopolitics and sustainability, the paper offers fresh insights on complex interrelations between these debates. It suggests that a closer recognition of the contingent and political character of ontologies of the collectivity, and by corollary, the legitimacy of ontologies of the individual, might open up lines of inquiry into possibilities and futures for nonhuman life that otherwise remain outside the imaginaries of conservationist care.

More crucially, the article advances literatures in Foucauldian more-than-human geographies for the critical examination of more-than-human social change. Through the idea of the sustainability episteme, the paper elaborates how "truths" in the conservationist space of care can be co-constitutive with "truths" from another incompatible domain (human flourishing in terms of socio-economic growth). Similar processes have been

observed in international development (Nagaraj, 2015). In both situations, the effort to synchronize means and techniques of care with established systems and knowledge-beliefs about the value of economic growth has the effect of biopolitically contouring the ends and goals of care. This then, points to the need for inquiry that cuts *across* different spaces of care, human and more-than-human, to examine how biopolitical logics and win-win approaches in different domains circulate, intersect with, and inspire each other, and work together to shape the very terms of what it means to care for vulnerable life in the contemporary world.

ⁱ International Union for Conservation of Nature.

ⁱⁱ Interview, forest department official, Odisha.

ⁱⁱⁱ To push turtles out of the way of the dredger draghead.

^{iv} Interviews, fishing unions, Odisha, 2010.

^v Interview, Odisha, 2010.

^{vi} While the episteme refers to assumptions and norms that operate at the scale of the 'rule' rather than the 'exception' at a particular point in history, the *dispositif* "refers to a set of discursive and more-than-discursive practices that are specified and particular to a social domain (for instance, the penal system), and that operate within and are co-constitutive with an episteme" (Foucault, 1980; Srinivasan, 2015: 206). Thus, turtle conservation in Odisha can be understood as a *dispositif* that functions within the sustainability episteme.

^{vii} Interview, Odisha, 2010.

^{viii} Interview, Odisha, 2010.

^{ix} This is partly because the highly textured fishing regulations make enforcement difficult.

^x Interview, Odisha, 2010.

^{xi} Interview, Odisha, 2010.

^{xii} Animal protection groups working on turtle conservation in India and in the region are dismissed by conservationists because of their interest in protecting individual turtles which

is seen as both nonsensical – “founded on soapboxes” (Shanker, 2002: 3) and incompatible with other socio-economic demands (Shanker, 2001).

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