



Racial coastal formation: The environmental injustice of colorblind adaptation planning for sea-level rise

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ABSTRACT

The United States' deeply racialized history currently operates below the surface of contemporary apolitical narratives on vulnerability mitigation and adaptation to sea-level rise. As communities, regulatory agencies, and policy-makers plan for rising seas, it is important to recognize the landscapes of race and deep histories of racism that have shaped the socio-ecological formations of coastal regions. If this history goes unrecognized, what we label colorblind adaptation planning is likely to perpetuate what Rob Nixon calls the “slow violence” of environmental racism, characterized by policies that benefit some populations while abandoning others. By colorblind adaptation planning, we refer to vulnerability mitigation and adaptation planning projects that altogether overlook racial inequality—or worse dismiss its systemic causes and explain away racial inequality by attributing racial disparities to non-racial causes. We contend that responses to sea-level rise must be attuned to racial difference and structures of racial inequality. In this article, we combine the theory of racial formation with the geographical study of environmental justice and point to the ways racial formations are also environmental. We examine vulnerability to sea-level rise through the process of racial coastal formation on Sapelo Island, Georgia, specifically analyzing its deep history, the uneven racial development of land ownership and employment, and barriers to African American participation and inclusion in adaptation planning. Racial coastal formation’s potential makes way for radical transformation in climate change science not only in coastal areas, but other spaces as situated territorial racial formations.

“Heard about the Ibo’s Landing? That’s the place where they bring the Ibos over in a slave ship and when they get here, they ain’t like it and so they all start singing and they march right down in the river to march back to Africa, but they ain’t able to get there. They gets drown.” – From an interview in the 1930s with Sapelo Island, Georgia resident Floyd White.

Granger, 1940

1. Introduction

As global sea level rises due to anthropogenic climate change, coupled socio-ecological coastal systems will face dramatic changes. Sea-level rise is already leading to forced displacement in the United States (Sabella, 2016a) and it is expected to continue to displace coastal residents, threatening some culturally-distinct groups (Maldonado et al., 2013; Sabella, 2016b; Shearer, 2012a). As many as 13.1 million US residents could be affected by the year 2100 with 1.8 m of sea-level rise (Hauer et al., 2016). How forced displacement unfolds for coastal

communities will take on multiple forms over the coming decades and will depend on competing discourses within governance processes (e.g., scientific vs. experiential knowledges; Hulme, 2011; Maldonado, 2014; Rice et al., 2015). More inclusive, collaborative, and democratic forms of governance, as opposed to top-down managerial approaches (Stehr, 2015), have the potential to yield more racially equitable outcomes. Achieving such success is often challenging, however, particularly across socially differentiated groups, especially when these differences are unrecognized or dismissed by those who hold power and access to resources. As researchers aim to aid communities and policy-makers with planning for these changes, it is important to recognize the landscapes of race and deep histories of racism that have shaped the socio-ecological formations of coastal regions.

If this deeply racialized history goes unrecognized, what we label colorblind adaptation planning is likely to perpetuate the “slow violence” of environmental racism (Nixon, 2011), which is characterized by policies that benefit some populations while abandoning others. By colorblind adaptation planning, we refer to vulnerability mitigation and adaptation planning projects that altogether overlook racial

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inequality—or worse, dismiss its systemic causes and explain away racial inequality by attributing racial disparities to non-racial causes. We draw on analyses of colorblind racism from critical race theorists, who critique the attribution of racism solely to individual acts of racial bigotry or prejudice rather than broader structural issues (Bonilla-Silva, 2013; Gallagher, 2003; Lopez, 2003). In colorblind education policy, for example, racial differences in education outcomes are attributed to individual or class differences rather than greater structural causes (Lopez, 2003). Vulnerability to sea-level rise on the US East and Gulf Coasts cannot be disentangled from the histories of race and contemporary racial inequities that have shaped the socio-ecological formations facing inundation and other forms of change precipitated by a warming climate. To overcome colorblind adaptation planning through antiracist perspectives with what Heynen (2016) calls “abolition ecology”, we argue that vulnerability and adaptation to sea-level rise must be understood in terms of a *racial coastal formation*.

Many geographers have built upon the concept of racial formation developed by Omi and Winant (2014) to explore the spatial dimensions of the “sociohistorical process by which racial identities are created, lived out, transformed, and destroyed” (2014, p. 109). As a concept, racial formation asserts that race is not a mask for something else, being reducible to ethnicity, cultural difference, national identity, or class inequality (Omi and Winant, 2014). Racial formations are, by turns, durable and dynamic, constantly reshaped and restructured through historical geographical processes. We argue that Omi and Winant's (2014) concept of racial formation can be extended beyond analyzing only social structures toward interrogating socio-ecological relations. By combining the analytical insights and potentials of racial formation with the geographical study of environmental justice, we point to the ways racial formations are also environmental. This merger shows that it is not just racial categories that are produced over time and through space via racial projects, but also the socio-ecological relations of racialized spaces.

Work in environmental history by Kahrl (2012) traces the social and political processes along the southern US coast that historically dispossessed racial minorities through land grabbing practices. Many communities along the US East Coast and Gulf Coast regions were predominantly black-owned prior to the 1920s, but through the coercive and corrupt business practices of what Kahrl calls “coastal capitalism” these properties were purchased at low prices and access to investment opportunities and amenities were limited for many African Americans. Although migration of affluent white people to the coasts since the 1920s has facilitated the loss of many waterfront properties by people of color, the non-white population of US coastal counties is still 48%; fourteen percent are African Americans (US Census, 2010). In the US South, African Americans comprise 20% of the population in coastal counties extending from Virginia to Texas, which is considerably higher than the percentage of African Americans nationally at 13.6% (US Census, 2010; Fig. 1). This suggests a definitive potential for non-white homeowners to be affected by rising seas in the coming decades, but also by a broader set of impacts on everyday life.

Overlooking everyday life in climate change adaptation planning has been referred to as the “climate gap”, which is the “gap between the large amount of attention given to climate change [science] on the international scene and everyday concerns of vulnerable communities” (Gaillard, 2012, p. 261). We extend the argument of the “climate gap” to include race by examining the intersection of racial inequality and vulnerability to sea-level rise in the United States. Several sea-level rise studies have examined the everyday life/science disconnect in vulnerable communities (e.g., Miller Hesed and Paolisso, 2015; Paolisso et al., 2012; Shearer, 2012a), but few, if any, have substantively engaged with critical race theory regarding the effect of systemic racism on the formation of vulnerability in relation to rising seas. We argue that understanding the “climate gap” as it relates to sea-level rise vulnerability in US coastal regions necessitates fulsome recognition and engagement with uneven racial development (Smith, 2008; Woods, 2002).

In this article, we work to bring critical race theory and

vulnerability scholarship into conversation with recent studies that have begun to demonstrate the increased potential for harm to people of color from climate-related hazards (e.g., Bullard and Wright, 2009; CBCF, 2004; Shepherd and KC, 2015). These studies extend the work originating in the field of environmental justice and critical race studies, investigations that have demonstrated how racism operates through not only overt acts of violence and white supremacy, but much more subtle means of hegemonic, structural, and colorblind forms (Bonilla-Silva, 2013; Omi and Winant, 2014; Pulido, 2016, 2015, 2000). Based on numerous studies, environmental justice research has demonstrated the ubiquity by which people of color have been disproportionately affected by environmental hazards including, but not limited to, toxic substance releases, poor water quality, and extreme weather events (e.g., Bullard, 2008, 1996; Bullard et al., 2008; Pastor et al., 2006; UCC, 1987). Critical race theory interpretations of the disproportionate burden experienced by African Americans in New Orleans during Hurricane Katrina, for example, highlight how this significant event triggered an awareness in the US population of racial inequality as bigger than individual acts of bigotry, but that it did not result in a transformation leading to a post-colorblind world (Bobo, 2006; Lieberman, 2006).

Through producing uneven racial development, structural and colorblind forms of racism affect everyday lives and opportunities of racial and ethnic minorities (Derickson, 2016a; Woods, 2002), but especially African Americans in the US South due to its history of racial violence and legacy of slavery (Derickson, 2016b; Gilmore, 2002; Greene, 2006; Robinson, 2000). We recognize the dangers inherent to the “myth of southern exceptionalism” (Lassiter and Crespino, 2009), an “internal orientalism” in which an overemphasis on the racism of the US South negates the broader systems of racial violence pervading all regions of the racial state (Jansson, 2017, 2003; Kurtz, 2009). Studies of the US South, however, continue to document the legacies of slavery and Jim Crow legal systems in, for example, political attitudes (Archarya et al., 2016) and higher rates of African American poverty (O'Connell, 2012). Given how structural and colorblind forms of racism facilitate the persistence of white privilege (Bonilla-Silva, 1997; Omi and Winant, 2014; Pulido, 2015)—and the effect that this has on livelihood choices and life chances (Bonilla-Silva, 1997)—we argue that these systemic forms of racism work to reproduce racial inequalities by limiting opportunities to address and alleviate uneven vulnerabilities to sea-level rise through adaptation planning with underrepresented communities.

Our goal in this article is to develop the concept of racial coastal formation—as a particular form of a broader notion of territorial racial formation—in order to extend Omi and Winant's (2014) concept of racial formation into analyses of socio-ecological relations. If race and racial identities are always in formation then African American (and other non-white groups') vulnerability to sea-level rise is also always in formation in coastal regions. Our empirics derive from field research¹

¹ The lead author has worked on projects related to sea-level rise vulnerability on the Georgia coast since 2008. For this research specifically, the lead author conducted fieldwork for nearly a year on the Georgia coast in 2014/2015—six months based on Sapelo Island—including over 100 h of participant observation, 41 semi-structured interviews with local residents, researchers, and people in management or government positions, and holding a workshop on Sapelo. In interview and informal conversations, questions were asked about the local community and government and more specifically about climate change, environmental change and hazards, sea-level rise, adaptation planning, and race relations. Beyond the interview's questioner/respondent format, this work includes narrative analysis (Riessman, 2008) of everyday conversations and field notes from informal discussions with many island residents, including 22 African Americans in the coastal region on or near Sapelo Island. Informal engagement that elicits narration and storytelling and an interplay between two participants was a particularly effective approach with Sapelo Island participants due to “research fatigue” stemming from the extensive number of interviews by journalists, historians, and social science researchers documenting Geechee life and culture over the past century (e.g., Crook et al., 2003; Granger, 1940). All transcripts and field notes were analyzed for narratives on themes related to race, vulnerability, and sea-level rise, with particular attention to references to race relations and environmental knowledge.

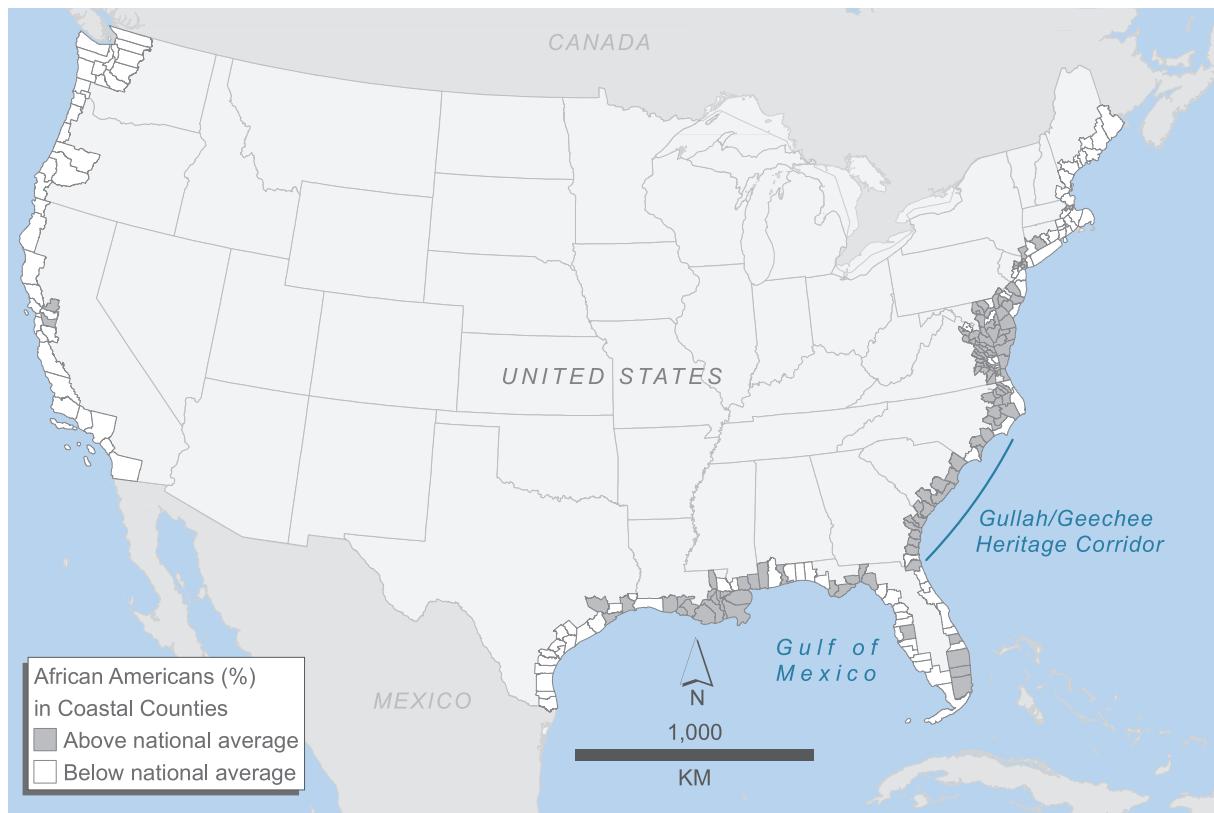


Fig. 1. African Americans in coastal counties of the contiguous United States. The map displays the percentage of African Americans above the national average of 13.6% indicated by dark grey counties (US Census, 2010). The approximate location of the Gullah/Geechee Heritage Corridor is also shown along the southeast US coast.

investigating vulnerability to sea-level rise in a predominantly African American community called Hog Hammock located on Sapelo Island, Georgia, which is only accessible by a State-run ferry that shuttles passengers two or three times per day each way. We argue that structural and colorblind racisms produce barriers to co-engagement with Sapelo's African American population, and African American coastal communities more broadly. These barriers limit the potential for collaborative engagement opportunities needed to counter colorblind adaptation planning. We argue that responses to sea-level rise must be attuned to racial difference and structures of racial inequality and, further, that such a recognition makes space for *race-aware* adaptation planning for sea-level rise in coastal Georgia and beyond. We examine Sapelo's racial coastal formation, specifically analyzing its deep history, uneven racial development pertaining to land ownership and employment, and barriers to participation and inclusion of African Americans in adaptation planning.

2. Deep history of racial coastal formation

The daily rhythm of socio-ecological processes on Georgia's coast is defined by its large tidal ebb and flow of over 2 m. This daily rhythm is being disrupted, however, by rising seas leading to increased levels of "nuisance flooding" (Sweet et al., 2014; Fig. 2). This section asks how such rhythms and disruptions are inflected with race in coastal communities. A socio-ecological study of Sapelo Island's racial coastal formation demonstrates how the land itself is "thoroughly saturated with racism" (Pulido, 2016, p. 5). To understand sea-level rise on Sapelo, it is important not to elide the "deep history" of appropriation, institutions of differential access, and the differential valuation of land structured by a long history and continuing processes of racial projects (Omi and Winant, 2014; Pulido, 2016). Sapelo Island is located in McIntosh County, which has had an extreme racial transformation in its population over the past century from 77% African American in 1910 to 37%

in 2010 (Stewart, 2002; US Census, 2010). To understand this transformation, we explore the local socio-political history that made it possible.

Racial coastal formation of the southeastern US coast has emerged from the intersection of tidal environments with plantation era slave labor and high prices for rice and Sea Island cotton, which, in the wake of massive colonial displacements and appropriations, quickly inscribed race as blackness and whiteness into the coastal landscape of the eighteenth and nineteenth centuries. The plantation owners in this region explicitly sought West African people for their expertise of farming in tidal environments (Chaplin, 1992). Tidal wetlands of the southeastern US coast were transformed through the movement of not just laborers and particular crops across the Atlantic, but through the transfer of an entire cultural system via the Middle Passage and the establishment of rice and cotton plantation systems (Carney, 2009).

The descendants of these slaves are part of the culturally-distinct Gullah/Geechee Nation, a group that today lives along the US Southeast's Sea Islands and Lowcountry extending from northern Florida into southern North Carolina (Crook et al., 2003; Derickson, 2016b; Goodwine, 2015, 1998; Walker Bailey and Bledsoe, 2001; Fig. 1). The descendants of Sapelo Island's slaves call themselves more specifically Saltwater Geechee. Even the names Gullah and Geechee, however, are enmeshed within the evolution of the American imagination and racial formations as Melissa Cooper (2017, p. 11) explains: "Re-reading the cultural interventions through which ... coastal Georgia blacks were made Gullah [in the 1920s and 1930s] as products of broader social, political, economic, intellectual, and cultural forces, as opposed to reading curiosity about their traditions as separate from these forces, transforms all that is written about them." Thus, Sapelo's socio-ecological history intimately entangles ideas of race, culture, and ecology within the coastal landscape.

Throughout most of the nineteenth century, Sapelo Island came to be exclusively owned by Thomas Spalding and his relatives or heirs

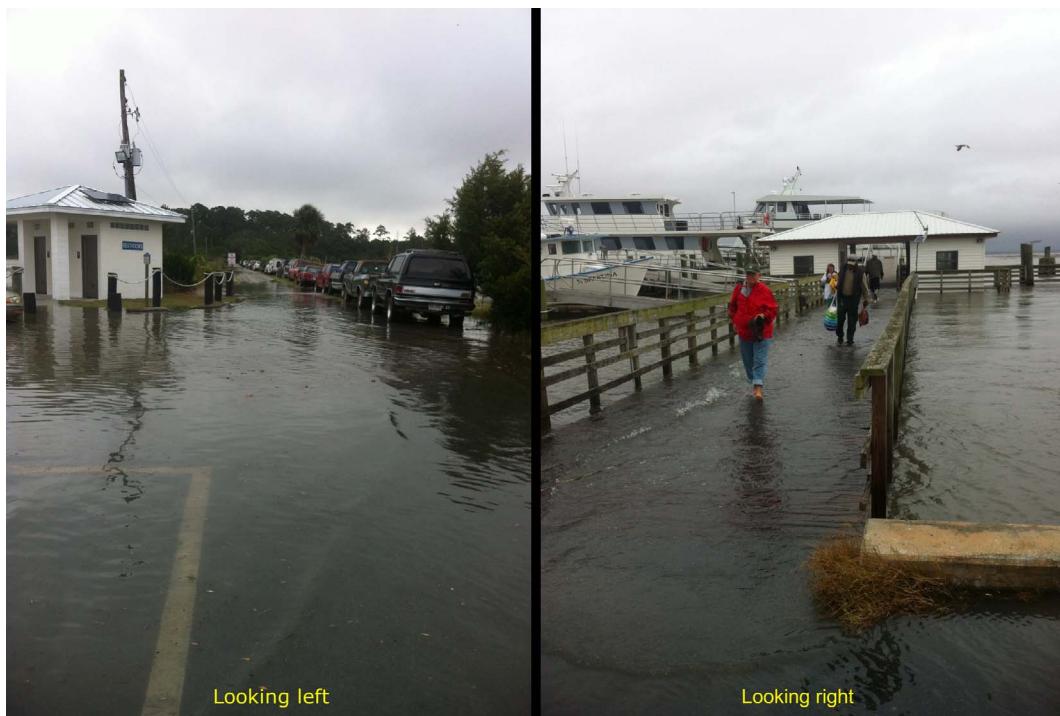


Fig. 2. Nuisance flooding at Marsh Landing on Sapelo Island. These photos were taken on October 27, 2015 during an extremely high tide event that measured 2.816 m above mean lower low water at the Fort Pulaski tide gauge, which is approximately 50 miles to the northeast. At the time this occurred, it was the third highest tide event ever recorded by the tide gage, which was installed in 1935. Credit for photographs: Dontrece Smith; Used with permission.

(Sullivan, 2001). Spalding and his family's primary activity on the island included operating a slave plantation growing rice and Sea Island cotton. A notable piece of history is that Sapelo Island is home to the earliest known Islamic text in the Americas, a 13-page document of Muslim law and prayers written in the early nineteenth century by a native West African named Bilali who was enslaved on the island from approximately 1802 until 1855 (Martin, 1994). A few of Sapelo Island's current Geechee residents have traced their ancestry directly to Bilali. While the racialized labor system of chattel slavery and the agricultural knowledge brought through the Transatlantic slave trade were key components of how the land was settled, made productive, and developed in the eighteenth and nineteenth centuries (Chaplin, 1992; Stewart, 1991), the process of racialization of the landscape continued into the twentieth century.

During the interval between 1865 and 1912, at least thirteen communities around the island were settled by former island slaves and their descendants with the African American population hovering around 400–500 individuals during this time (Crook et al., 2003; Sullivan, 2001; Walker Bailey and Bledsoe, 2001). The US Civil War ended most large scale industrial activity until automobile industrialist Howard Coffin purchased most of the island in 1912 for agricultural and recreational purposes (Sullivan, 2001). Tobacco industry magnate R.J. Reynolds Jr. purchased the majority of the island from Coffin in 1934, except for five privately held Geechee communities (Fig. 3). Throughout his 30-year tenure as primary landowner on Sapelo Island, Reynolds relocated all but one of these communities, consolidating hundreds of Geechee people from the remaining postbellum communities into one community (Sullivan, 2001; Walker Bailey and Bledsoe, 2001). Hog Hammock is the only privately held community remaining on Sapelo Island; an area of about 166 hectares with approximately 50 year-round residents.

Residents expressed that these relocations and the displacement of four Geechee communities by R.J. Reynolds occurred through acre-for-acre swaps, coercion, threats, and broken promises of new homes with electricity and tin roofs (see also Walker Bailey and Bledsoe, 2001). It is possible, and even likely, that some people willingly relocated, but the

relocations were at least influenced by the unequal power relations between Reynolds and the island's Geechee landowners. Reynolds held power over employment opportunities as the only employer on the island and he also controlled access to the mainland (approximately 10 km away by boat). If a person lost his/her job, finding other sources of income would become extremely challenging, often necessitating being on the mainland away from friends and family during the workweek. Reynolds also controlled access to electricity on the island until 1953 when it was connected to the mainland power grid, which served as another mechanism of influence and control over island residents (Walker Bailey and Bledsoe, 2001).

The ramifications of these historical processes of uneven racial development continue today as a number of Geechee residents of Hog Hammock are employed by the Georgia Department of Natural Resources (DNR) Parks and Recreation Division² as service staff at the only mansion on the island, originally built by Thomas Spalding in the early 1800s, and restored by both of his wealthy white successors, Coffin and Reynolds. Local Geechee residents referred to the mansion as "the Big House" in conversation and interviews, citing examples of disagreement when white tourists staying at the house would sometimes reminisce of the "good ol' days" and how pleasurable they must have been, the visitors ostensibly oblivious that the staff were

² Sapelo and the State of Georgia: The State purchased the northern end of the island in 1969 followed by the southern end in 1976 from R.J. Reynolds' widow, Anne Marie Reynolds. The Georgia DNR has since managed 97% of the island, mostly as the R.J. Reynolds Wildlife Management Area. Prior to these purchases and during Reynolds' time, the University of Georgia (UGA) began conducting ecological research on Sapelo in 1948, facilitated by the relationship between ecologist Eugene Odum and R.J. Reynolds (Craige, 2002). This relationship led to the establishment of the UGA Marine Institute in 1953, being housed in Reynolds' former guest residence and dairy farm areas. In 2000, the UGA Marine Institute became the host of one of the National Science Foundation's Long-Term Ecological Research (LTER) programs (currently there are 25); Sapelo's is called the Georgia Coastal Ecosystems LTER, which focuses on the long-term effects of climate change, sea-level rise, and human perturbations on estuaries and marshes. In 1976, the National Oceanic and Atmospheric Administration created the Sapelo Island National Estuarine Research Reserve (see Fig. 3).

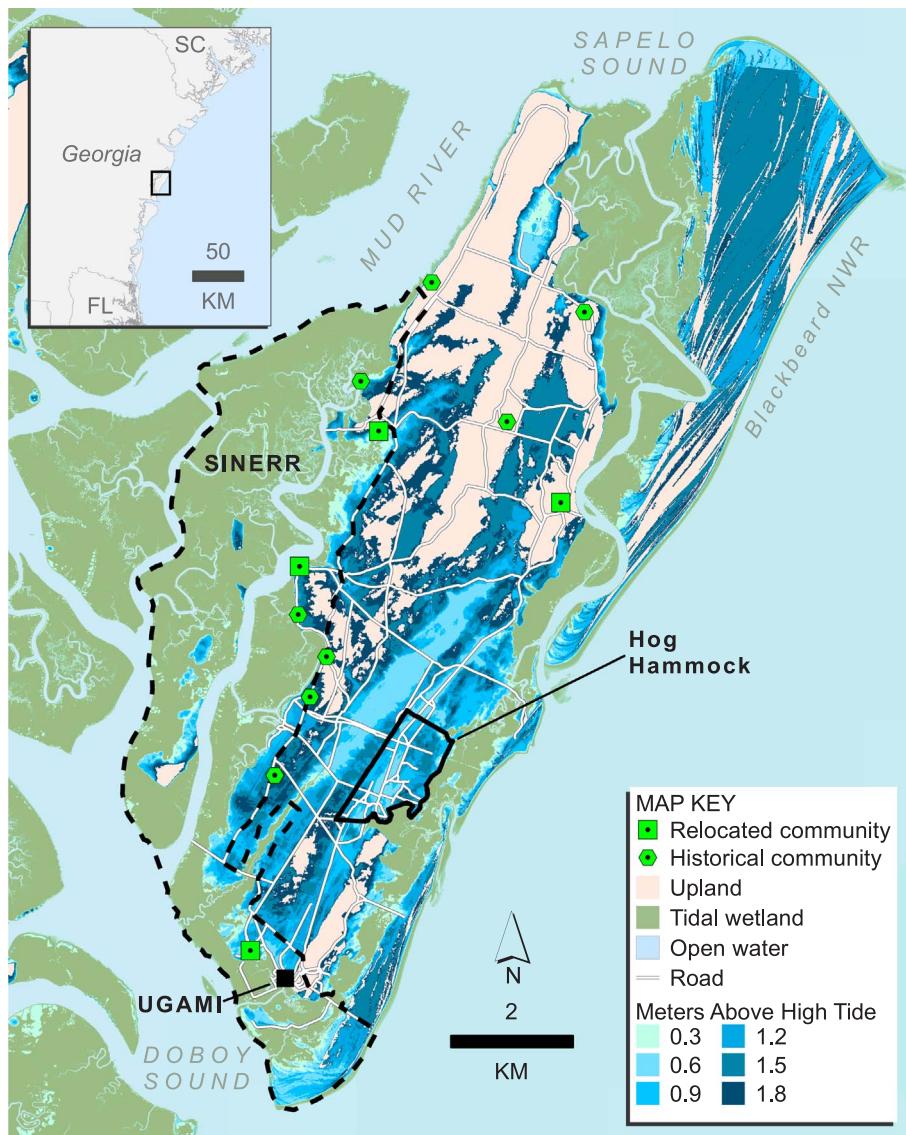


Fig. 3. Sapelo Island elevation relative to high tide. The map shows the island's elevation relative to high tide. It also displays the current community of Hog Hammock (boundary shown as a solid black line), the approximate locations of eight historical Geechee communities, and the four Geechee communities that Reynolds relocated in the 1940s (Walker Bailey and Bledsoe, 2001). UGAMI refers to the University of Georgia Marine Institute (black square); SINERR refers to the Sapelo Island National Estuarine Reserve (boundary shown as dashed black line).

descendants of African Americans who would have worked as slaves in that very location. We argue that the landscape, through the continued presence of its antebellum structures, slave dug drainage ditches (Stewart, 1991), as well as current labor, property, and governance relations, maintains an inscription of race and legacies of slavery that resonate in the everyday lives of local Geechee residents.

As Pulido (2016, p. 5) argues, “Just as labor arrangements and economic and social policy are constitutive of economic formations, so too are ecologies of resource extraction, processing, and disposal.” Taking a cue from this insight we argue that sea-level rise is not the inundation of neutral land, but that the land facing inundation is racialized land—land that has been appropriated, settled, cultivated, and distributed through a long history of deeply racialized projects. This process of racial coastal formation continues today in “how the landscape … work[s] in reproducing everyday life and all of its social relations” (Schein, 2006, p. 10). We contend that this deeply racialized history currently operates below the surface of contemporary apolitical narratives on vulnerability and adaptation to sea-level rise. Such a dissonance between the palpability of race in everyday life and the absence of race in colorblind planning discourse likely undermines the credibility and traction of sea-level rise vulnerability outreach efforts with people of color. As such, it is important for researchers and policymakers to recognize that sea-level rise does not simply affect

coastlines but complex socio-ecological formations with deep histories of inequality. Racial coastal formations are sites of difference and sea-level rise adaptation planning requires both a cognizance of this difference and a commitment to resist the reproduction of and reinvestments in racial inequality in responses to climate change.

3. Uneven racial development

During our time on Sapelo, we have talked with Geechee residents line fishing off the island's bridges and docks, casting nets into the tidal creeks, pulling seines along the beaches, or crabbing and clamming in the creeks and on the mudflats. If seining, the day's catch was split evenly among all involved and sometimes a portion of the catch was distributed to community elders; the same for crab hauls. While this subsistence fishing may not be as necessary as in the past due to easier access to off-island resources, it still supplements local diets and continues to contribute to local identities and community heritage. Sea-level rise may trigger salt marsh habitat decline (e.g., Craft et al., 2009; though see Kirwan et al., 2016) and estuarine species declines (Hunter et al., 2015; Nuse et al., 2015), both of which could significantly disrupt important elements of Sapelo Island's Saltwater Geechee culture, such as these subsistence fishing practices. Concerns that resonated in interviews and conversations with Geechee residents, however, did not

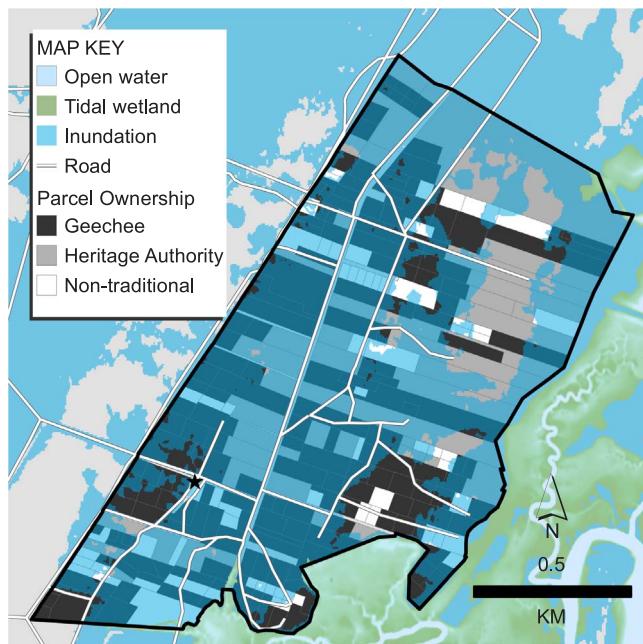


Fig. 4. Hog Hammock property ownership status. Heritage Authority refers to the Sapelo Island Heritage Authority (see Section 3.1 for an explanation); Non-traditional refers to non-Geechee property owners. Parcel data are from the McIntosh County Tax Assessor's Office (obtained May 2015). The inundation flooding extent is based on 0.9 m of sea-level rise.

reflect sea-level rise or climate change as a threat as much as more pressing matters of retaining land ownership and improving employment opportunities.³ This is an example of what Gaillard (2012) means by the “climate gap”, where the technical details of climate change science are not aligned with the everyday concerns of vulnerable communities.

Rather than worrying over future flooding due to rising seas, Sapelo's Geechee people expressed concerns for coping with the more pressing challenges of keeping the title to Hog Hammock land in Geechee hands and securing access to living wage employment. One resident captured these sentiments succinctly when asked what the major challenges were facing the community by replying:

“Land, selling, taxes going up, and pretty much turning into St. Simon's [a nearby developed island]. A lot of people feel like given the next 10–15 years, taxes are going to go up to the point that a lot of people cannot afford it. I mean, it ain't nothing but a bunch of elderly people over here, anyway, getting a Social Security check. And that's not enough to even live on plus pay bills and taxes, like over \$2000, that's not enough.”

When asked what the community would be like in 50 years, for example, this resident replied, “*it'll be all white people.*” These quotes captures not only the issues of land retention and employment opportunities, but also concerns over racial identity on the island.

3.1. Land politics

Based on observations in 2015, we estimate that Sapelo Island's resident population is about 64% African American. The status of ownership within the community is moving toward more non-traditional property owners (or “outsiders” as Geechee residents often refer to them), however, which is based on findings from interviews. We

³ For example, the concern of elimination of African American presence from the island is captured in one participant's memory of an island map that hung in the DNR office in the 1970s and 1980s with a red circle drawn around Hog Hammock and “to be acquired” written next to it.

captured the current status of ownership as a snapshot via a participatory mapping exercise, which included having two separate in-depth conversations with two island residents and labeling a paper map of parcels in Hog Hammock with ownership categories: Geechee, non-traditional, or Heritage Authority. The Heritage Authority properties are overseen by four official board members: the State Governor, the Sapelo Island DNR Manager, and two Geechee representatives. Of the 292 property parcels within the community, 180 are owned by families who are Geechee, 69 by non-traditional property owners, and the remaining 45 are held by the Sapelo Island Heritage Authority (Fig. 4). The majority of land (87 hectares,⁴ 52%) is still owned by Geechee people, though a few of these properties were auctioned to non-traditional parties due to delinquent property taxes in the spring of 2015. We return to this point below. In the participatory mapping exercise, we attempted to account for any changes due to these auctions, but we were not entirely sure of the outcome for all of them; in other words, who held title. Also, some of the auctions were won by partnerships that included Geechee and non-traditional people complicating our classification.

The concern expressed by Geechee residents that the community will transition to being a majority of white residents is based on recent land sales and delinquent property tax auctions (Darien News, 2015a, 2015b).⁵ Land dispossession and worry over land losses is in part due to amenity migrants seeking low cost coastal properties in the US South, which is displacing Gullah/Geechee people from the region, as is happening in Bluffton, South Carolina (see Finewood, 2012). With the increased interest in low cost coastal property, demand in Hog Hammock has increased in the past 10–20 years and as a result the sale of property to non-Geechee people has become more frequent. Recognizing the substantial investment many amenity migrants and retirees moving to the area have made, we contend that the lost asset of a physical home or property (especially for second home owners) due to sea-level rise or storm surge will not intimately affect their identity. At least not nearly as much as that of a Saltwater Geechee person whose identity is tied to the landscape and has been since his/her ancestors were forcibly brought to the Sea Islands some 200 years ago (Goodwine, 2015, 1998; Stewart, 2002; Walker Bailey and Bledsoe, 2001).

The transfer of property from Geechee to non-traditional people is facilitated also by heirs' properties, or property that has passed down to multiple family members after the title holder has died without a will. Heirs' properties are vulnerable to dispossession, especially in Gullah/Geechee communities (see Grabbatin, 2016). Accordingly, two local Geechee residents told us that land is where the value is at in Hog Hammock and that heirs' property holders have little interest in keeping the land when the value is high. These participants also said that some heirs' property holders, many not having grown up on the island, have less personal investment in the place or island life and consequently have limited sentimental value for the community. Consequently, legal land sales and delinquent property tax auctions are leading to a shifting demographic for the community.

Another contributing factor to the increase in property transfers to non-traditional people has been delinquent property tax auctions. A 2012 *New York Times* article titled “Taxes Threaten an Island Culture in Georgia” ignited national media attention when it reported how rapidly increasing taxes, driven by exurban development, threaten to displace the remaining Geechee residents in the community. According to

⁴ This area calculation is based on an analysis of polygons of parcels in a GIS database obtained from the McIntosh County Tax Assessor's Office in May 2015 and are not based on legal titles or land surveys.

⁵ At the front of the McIntosh County Courthouse, the lead author observed one of these delinquent property tax auctions and the emotional toll experienced from losing land that had been in a family for generations; nine generations as the Geechee descendant mentioned in an interview a few weeks after having the land auctioned for over \$60,000 for a delinquent tax of approximately \$6000. If the property owner is unable to pay the tax owed as well as the auction price to the bidder within one year of the auction, then the property is turned over to the bidder for the price paid at auction.



Fig. 5. Road closure on newly purchased property. Such closures can lead to land access issues and increased social tension. The location of this road is shown as a star on Fig. 4.

McIntosh County government officials, the State of Georgia mandated that the County reassess all property values, stating that the reassessment was long overdue. County Tax Assessor records show that many Hog Hammock properties have recently sold for as much as \$150,000 per acre or more, significantly increasing the “neighborhood” property values. Even though McIntosh County did not raise tax rates, the mandatory reassessment of properties increased values to as much as 300% of their previous value, which in turn raised annual property taxes substantially. This property value reassessment has subsequently been nullified through court action by a group of Hog Hammock residents. Many Geechee residents, however, have expressed that it is just a matter of time before the annual taxes owed will increase significantly again. While a State-mandated action, a few of Hog Hammock’s Geechee residents expressed that the increased tax values were a racially motivated action to run all black people out of Hog Hammock.

While all of Sapelo’s Geechee residents and non-traditional property owners appear genuinely congenial and friendly with one another, there is a tension for some of the Geechee residents regarding “outsiders.” This tension resonates around sentiments of racial inequality and concerns over the persistence of Saltwater Geechee heritage, which are threatened by the land sales and few opportunities for employment that exist in the area. Racial tension is evident on Sapelo Island in our experience with more optimistic statements revealing this issue including hoping the relationship with white people would hold. Moreover, referencing an interaction with a non-traditional property owner, one Geechee resident alluded to class and racial inequality by referencing wealth differences between newcomers and descendants, but also the former days of being told what to do being gone stating, “Folks come here and have more money than me or you, and they think they can change the place because of it. They don’t own the island, and they can’t tell me what to do. The days of them doing that are long gone.”

This tension with outsiders was also evident in comments regarding property rights and trespassing, specifically about closing of “roadways.” There is an extensive network of roads that run through Hog Hammock, however, few of these roads have associated public right-of-ways as the majority cut across private property (see Fig. 4). As more non-traditional residents have moved into the community, some Geechee descendants have suggested blocking these roadways to prevent people they do not know well from driving on their land. At least a couple of times, however, we heard stories from Geechee residents about non-traditional landowners blocking these roadways on their newly purchased property, which has led to heightened tension over land access and mobility in Hog Hammock between Geechee and non-traditional property owners (Fig. 5). If the existing network of unofficial

roads becomes more contentious, some Geechee and/or non-traditional landowners could lose access to their property, a problem that inundation of roads due to sea-level rise will only exacerbate in the future.

3.2. Employment opportunities

Another major consequence of uneven racial development is the lack of employment opportunities. In an interview, one Geechee resident asked, “Without jobs, what good’s the land?” As the only major employers on the island are the University of Georgia’s Marine Institute and the Georgia DNR Wildlife Game Management Division, the Sapelo Island National Estuarine Research Reserve, the R.J. Reynolds Mansion, and the ferry, on-island employment opportunities are limited. Geechee people work for the majority of these entities, but currently no Geechee person works for the Marine Institute. This raises another point of contention expressed by one Geechee resident, which is that despite the fact that many of Sapelo’s Geechee people have achieved higher education degrees, none are scientists. This lack of Sapelo Geechee scientists was pointed out during an interview as quite ironic since there has been ongoing academic research on the island since 1947. Having no Geechee scientists affiliated with the research on and around Sapelo maintains the distance of Sapelo’s Geechee descendants from the scientific social network, which is linked to broader racial inequalities in the US context regarding a lack of diversity in science more generally. This further exacerbates the problem of including the experiential knowledge of underrepresented communities such as Sapelo’s Geechee people, who have their own language and discourse for environmental change rooted in place-based narratives and histories collected through everyday experiences (see Section 4.2).

The legacy of slavery and continued uneven racial development persist for many of Sapelo’s Geechee people. Some community elders are old enough to have known people who were born into slavery and still alive when they were young children. This is the lens through which daily experiences are filtered for some Geechee residents as evidenced in statements made in interviews and conversations about the poor government services and the ways racism has influenced employment opportunities on the island—contending that the few jobs that do exist have been given to non-Geechee people too readily. Of course, we recognize that this is not the case for every Geechee resident, as a few of them mentioned that they believed race had little to do with the current struggles regarding land and employment.

The issues of land politics, the social tension created by a shifting demographic, and gaining access to employment could all be salient topics in other rural communities experiencing rapid change—rural

Appalachia, for example (see Rice et al., 2015). The key difference for Hog Hammock, however, is that the narrative of stories told and experiences shared by many local Geechee residents is embedded in the broader context of ongoing uneven *racial* development. Moreover, that Geechee people are more concerned with these issues than they are future inundation from sea-level rise could be misconstrued by those in the adaptation planning community. In an interview with a government official, this was described in the context of Geechee residents allocating their limited “worry capital” to other issues rather than rising seas. For Geechee residents, however, the fate of the island’s physical environment 50 years from now is of little consequence if none of them or their descendants will still live there or even own property. We contend that without sensitivity to these specific place-based historical relations on the island, particularly the race-based relations, sea-level rise adaptation planning aimed at mitigating vulnerability will become fraught with misunderstandings and miscommunications. It is crucial to understand how this local history is embedded in a broader context of limited inclusion of African Americans in climate change discourse and knowledge creation, another result of uneven racial development at the national scale having local scale consequences.

4. Barriers to participation and inclusion

To achieve successful sea-level rise adaptation planning with underrepresented communities, geographers and anthropologists have called for explicit inclusion of multiple forms of knowledge (Maldonado, 2014; Miller Hesed and Paolosso, 2015; Rice et al., 2015). The value of incorporating experiential knowledge into climate change discourse is threefold: “It enables and legitimates more diverse communities of action, it resists the extraction of climate change from its complex socio-natural entanglements that have place-based meaning, and it provides culturally specific understandings of what is at stake with climate justice” (Rice et al., 2015, p. 254). This can be challenging, however, as “knowledge is embodied within and imperfectly translated across power-laden social networks” (Goldman et al., 2011, p. 16, emphasis original). Thus, it becomes important to understand how existing power inequalities (e.g., across racial difference) affect the collection, translation, mediation, and representation of various knowledges (Brosius, 2006) as rising seas continue to increasingly affect everyday lives.

Including multiple knowledges in sea-level rise adaptation planning is fundamental to achieving equitable and just adaptation outcomes (Maldonado, 2014; Nijbroek, 2014). This argument is supported by work on “embodiment climate praxis” and embracing local forms of knowledge to not only undermine the hegemony of science in climate discourses, but also the “[silencing of] vulnerable communities and [reinforcement of] historical patterns of cultural and political marginalization” (Rice et al., 2015, p. 253). Treating local knowledge simply as alternative discourse can be dangerous and counter-productive (Bankoff, 2004; Lazarus, 2009). Or worse, when marginalized people are “excluded from the decision-making, power, and resources involved in governance of risk and disaster” their knowledge and understanding of the challenges can be completely overlooked (Lazarus, 2009, p. 247).

4.1. Climate change and African American inclusion

The hegemonic paradigm of climate change action rests on the discourses of science, climate science in particular, which has commonly led to calls for technocratic solutions defined via objective “upstream” science informing “downstream” policy decisions (Demeritt, 2001; Rice et al., 2015). This is the model of the Intergovernmental Panel on Climate Change that translates scientific findings into policy recommendations, but with an explicit effort toward

separation of these two “groups,” scientists and policy-makers (Hulme and Mahony, 2010; Miller, 2001). Scholars examining the politics of science studies have presented strong arguments that these purportedly separate groups have a “pattern of reciprocal influence” where the policy questions drive the scientific practice as much as the scientific results influence the policy (Demeritt, 2001, p. 308; also see Forsyth, 2003). Consequently, the politics of knowledge on climate change, or the discursive framing of climate change as a global technocratic problem, influences the “production, application, and circulation of environmental knowledge” around how to adapt to climatic change (Goldman et al., 2011, p. 2). If African Americans are not represented in the discourse on sea-level rise science and policy in Georgia and elsewhere, then the exclusion of their voice becomes part of the institutional structure around adaptation planning, which works to reinforce marginalization.

The discursive practices of climate change science are not easily transgressed for many African Americans whose representation in the science, technology, engineering, and math (a.k.a. STEM) fields in the United States is increasing more slowly when compared to other groups (NSF, 2015). This has repercussions for scientific practice in climate change as well as adaptation planning, specifically regarding what types of questions are considered to be important—worth funding and investigating—as well as how adaptation planning includes or excludes environmental and climate justice initiatives. Moreover, action on climate change is part of the broader US environmental movement, which suffers from a significant lack of diversity and inclusion of African Americans (Finney, 2014). We argue that the underrepresentation of African Americans in science and the environmental movement more generally work together to perpetuate colorblind adaptation planning in sea-level rise vulnerability projects.

Seeing sea-level rise vulnerability through a technocratic lens as only a physical inundation problem encourages pursuing solutions that are engineering and/or technological in nature. Based on nearly 10 years of experience working on sea-level rise research in Georgia, we contend that projects are skewed toward assessing the physical, ecological, and economic impacts of inundation rather than how sea-level rise may affect everyday lives on the coast, especially in underrepresented communities. The benefits from the public funding supporting these projects are aimed at alleviating impacts of sea-level rise through local government adaptation projects such as beach re-nourishment, stormwater drainage retrofitting, and potential shoreline armoring (e.g., Evans et al., 2016). These technocratic assessments are needed and beneficial, but the current discourse limits the framing of the problem and calls too narrowly for spatial or economic impact assessments while not recognizing the issues as also cultural and socio-spatial. This undermines efforts to mitigate the social causes of vulnerability and to include non-scientific ways of knowing in sea-level rise planning. The climate gap is a result of this overly technocratic emphasis. Moreover, the disproportionate representation of African Americans in climate science creates a “racialized climate gap”, one where the cause of uneven vulnerability for the African American population—systemic racism—is more easily dismissed and/or its importance in adaptation planning underestimated.

4.2. Local representation and knowledge

Based on nearly a decade of experience, we have observed that white people—at 56% of coastal Georgia’s population—are disproportionately represented in many of the scientific and public meetings held on the coast that are related to climate change and sea-level rise. This underrepresentation of African Americans and other minorities reproduces and perpetuates uneven racial development by facilitating flows of funding and research attention away from alleviating the vulnerability of

marginalized social groups who no longer occupy the majority of waterfront properties in Georgia (see [Collins, 2010](#) for more on the concept of facilitation).⁶ This focus on predominantly white communities in Georgia is likely unintentional, but it is perpetuated by a racialized social system that creates persistent inequalities in class and educational status across racial groups ([Pew Research Center, 2016](#)), limiting African American access to the social networks focused on mitigating vulnerability to sea-level rise. We argue that it is more than class, educational status, facilitation of funding flows, or limited access to resources that minimize African American participation in these meetings and projects. An attribution to class was commonly stated as more important than race in interviews and discussions with white residents and government officials, however, evincing how colorblind racism can lead to colorblind adaptation planning.

During all interviews and conversations with Geechee residents, knowledge about environmental or climatic change was situated within personal memories, observations, and stories. With white participants on Sapelo and coastal Georgia more generally, however, these discussions largely resonated around the science of climate change—its anthropogenic origins or not—and the potential for technocratic solutions to the global problem (e.g., mitigation). When the discussion topic turned to the local scale, it concerned engineering to prevent inundation of property or policy-based measures for when buy-outs would be appropriate. For African Americans living on Sapelo Island, however, climate change was viewed as a global problem that one could do little about. One Geechee resident said, “Climate change, I don’t worry about it because there’s nothing that I can do about it.” We argue that such views are the result of the discursive distancing of climate change as a global and scientific problem, one that has limited value for many African Americans outside of the practice of climate science or environmental movements more broadly ([Finney, 2014](#); [NSF, 2015](#)).

We witnessed an effect of the disparity between local knowledge, often related through storytelling and “everyday talk” ([Kohl and McCutcheon, 2015](#); [Yen-Kohl and Newtown Florist Club Writing Collective, 2016](#)), and technocratic approaches to climate change during a workshop we held at the Hog Hammock Public Library on Sapelo. During the workshop, we presented a map of inundation that would occur for Sapelo Island and Hog Hammock under various levels of sea-level rise (one to four feet). Upon seeing these maps, a non-traditional landowner suggested bulkheading or damming of the creek where most of the inundation seemed to originate for the community. In response, a Geechee resident said, “Action in a salt creek keeps it open; no action, tends to close up. It’s gonna overflow somewhere. We know because we live here. We don’t need no one to tell us, because we know. We don’t have science, but we know because we’ve been here. We see it with our eyes.”

What the above quote captures is a number of significant points regarding local environmental knowledge and the relationship of local Geechee with outsiders and outsider knowledge and expertise. The first part conveys an experiential knowledge related to witnessing the dynamic nature of how tidal creeks and ditches shrink (and expand) over a lifetime of living on the island. It conveys a rather sophisticated understanding of hydrology both in the sense of flow being necessary to maintain a stream, but also that bulkheading would lead to sedimentation and displace the water to another low point of entry ([Michener et al., 1997](#); [Titus, 1988](#)). The second part alludes to the relationship with outsiders generally, but specifically scientists and the strained historical relations between at least some of Sapelo’s Geechee people and people prospecting for land, journalists, and social and scientific researchers visiting the community.

⁶ In Georgia, the number of non-Hispanic white residents in communities along the shoreline (defined as US Census block groups intersecting the shoreline and in one of the six Georgia coastal counties, $n = 142$) is a higher proportional average at 66% than the coastal region at 56% (defined as Georgia coastal counties intersecting the shoreline, $n = 6$) ([NOAA OCM, 2016](#); [US Census, 2013](#)).

The overwhelming sense gleaned from interviews and participant observation is that scientific knowledge and discourse about climate change and sea-level rise comes from outside Geechee life, and, conversely, that knowledge from the Hog Hammock community will not be considered valid, valued, or welcome in such fora. While colorblind adaptation planning tends to ignore the deeply racialized history described in Section 2, the prevalence and persistence of this deep history in the narratives, stories, and interactions of local Geechee residents identifies a relation between insiders and outsiders, both in island life and in climate change science and planning. Such a history creates a barrier to engagement by disrupting the flows of scientific knowledge to the community, but also the flows of local knowledge to the scientific community. This disrupted knowledge network makes inclusive sea-level rise adaptation planning even more challenging. For example, when asked during interviews about ways to adapt to rising seas and what might be done, if anything, Geechee and non-traditional residents talked about moving to higher ground via acre-for-acre swaps. The higher ground is now owned by the State and managed by DNR. According to many Geechee residents, the idea of acre-for-acre swaps invokes memories of betrayal as these previously occurred via coercion, threats, and broken promises made by the island’s previous majority landowner, R.J. Reynolds. In this context, such an adaptation planning “solution” is unavoidably linked to deeply racialized histories and power inequalities related to land ownership for current Geechee landowners. The discrepancy between an immediacy of awareness about racial power relations held by Geechee residents and a sustained silence about racial difference among climate science and policy practitioners undoubtedly complicates planning processes aimed at mitigating local vulnerability. We contend that a race-aware adaptation planning process that genuinely confronts and engages with the history of uneven racial development on the island and uneven knowledge relations between insiders and outsiders would be much more likely to succeed.

5. Conclusion

Our analysis of a racialized deep history, uneven racial development, and the lack of African American inclusion in climate science and planning is specific to Sapelo Island in its details, but issues of land, employment, and knowledge have shaped racial coastal formations well beyond Sapelo in other African American, immigrant, and indigenous communities along US coasts (see [Carney, 2009](#); [Kahrl, 2012](#); [Stewart, 2002](#)) and they continue to today under a changing climate (see [Maldonado, 2014](#); [Maldonado et al., 2013](#); [Miller Hesed and Paolisso, 2015](#); [Paolisso et al., 2012](#); [Shearer, 2012b](#)) as well as when environmental hazards turn to disasters for some groups, as it did for many African Americans in New Orleans during Hurricane Katrina (see [Bobo, 2006](#); [Bullard and Wright, 2009](#); [Gilman, 2006](#)). Racial coastal formation’s merger of the geographic scope of environmental justice with the socio-political process of racial formation in the United States advances the possibility of examining socio-ecological relations as constantly unfolding processes. Racial coastal formation’s potential makes way for radical transformation in climate change science not only in coastal areas, but other spaces as situated territorial racial formations. Citing then Senator Barack Obama, [Gilman \(2006\)](#) states that “the poor response to Katrina [for African Americans especially] was not ‘evidence of active malice,’ but merely the results of ‘a continuation of passive indifference.’ These structural exclusions matter very much for one’s total life opportunities...” Racial coastal formation provides a conceptual lens through which to avoid such “passive indifference” and counter colorblind adaptation planning by making space for antiracist, race-aware adaptation planning.

Pelling suggests that “Climate change adaptation is an opportunity for social reform, for the questioning of values that drive inequalities in development and our unsustainable relationship with the environment” ([2011, p. 3](#)). Such a shift in thinking would open up the potential for

climate change research to be a transformative moment, especially if democratized and inclusive of multiple forms of knowledge (Rice et al., 2015; Stehr, 2015). Thinking about sea-level rise as a social-ecological phenomenon—and not just as a physical or ecological problem—has the potential to shift the scientific discourse around planning for, coping with, and adapting to the impending impacts expected to occur from major changes to the US's socionatural coastlines and beyond. A conceptual shift of this magnitude in mainstream climate change and sea-level rise science would improve the chances for overcoming the barriers to engagement with underrepresented communities, such as the one on Sapelo Island outlined in this article. More importantly, it would permit calls for climate justice to reverberate through the discursive practices of sea-level rise science by making space for race-aware adaptation planning that encourages discussions at the onset of project formation to include issues of power and racial inequalities. It has the potential to change the conversation to one that raises questions of environmental justice by shifting the emphasis away from inundation exposure and economic impacts toward evaluating how everyday lives of coastal residents will be affected by rising seas in the coming decades.

Focusing on livelihoods and everyday lives would necessitate a more complex policy process whereby investigations on the historical conditions that led to uneven racial development and vulnerability across social difference would not only be taken into consideration, but treated as of equal importance to proposals for inundation exposure assessment or economic impacts. The prevailing modes of inquiry into sea-level rise vulnerability research in Georgia and beyond are valuable, but they miss out on the environmental justice issue by avoiding the history of racial violence in the US South and the ramifications that continue to result from uneven racial development. Specifically, projects that partner with organizations from underrepresented communities and groups and bring local knowledge into the research design and planning phases are likely to reveal new and insightful adaptation possibilities and futures and move toward Heynen's (2016) notion of "abolition ecology." At the very least, such a shift would encourage projects to address the existing inequalities that continue occurring across racial difference due to structural and colorblind forms of racism and be in a better position to understand the processes of territorial racial formation, or more specifically racial coastal formation.

In an era characterized by increasing media attention and public awareness of anti-black violence by the police, horrifying environmental injustices as witnessed in Flint, Michigan, and other forms of white supremacy in collusion with a racial state, the posture of color-blindness is becoming less tenable for academics, professionals, and officials. We may be entering a new racial formation and moving beyond the colorblind racism carefully examined and challenged by critical race theory in recent decades. In light of this moment of particularly salient systemic racism and the potential to change it, an abolition ecology approach to adaptation planning and vulnerability mitigation research becomes an ever more pressing issue. The analytical lens of racial coastal formation and the practice of race-aware adaptation planning offer pathways to resist "passive indifference" and the persistence of systemic racism that allows the continuation of racial inequalities in wealth and education—inequalities that perpetuate uneven vulnerability to sea-level rise.

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