ABSTRACT

ALLEN, JASON SEAN. The Treadmill of Production and Coastal Environmental Concerns: Structural Selectivity and North Carolina's Coastal Resource Commission. (Under the direction of Dr. Stefano Longo.)

Environmental sociologists have utilized the treadmill of production and ecological modernization theories to understand the relationship between major institutions in society and environmental sustainability. This study analyzes the case of North Carolina's Coastal Resource Commission (CRC) to test these two competing theories. Both theories hypothesize contrasting roles of the state in relation to achieving sustainability. By analyzing the minutes from the CRC's meetings from 2011-2015, including the content of and processes of regulatory actions, rulings, policy prescriptions, and presentations given to the commission, this study seeks to better understand whether the state furthers or limits ecologically destructive practices. These data provide valuable insights into the policy formation process and related policy outcomes, which carries long-term ecological and human health impacts.

This study examines two major policy proposals and rulings of the North Carolina CRC during this period: sea level rise and inlet dredging. The findings support the treadmill of production theory's claim that the state is an active member in a "growth coalition" furthering economic growth. The CRC continually developed policies and made regulatory decisions that favored economic growth over environmental protection, and failed to prepare for the long-term effects of climate change, such as addressing the consequences associated with sea-level rise. This study also advances treadmill of production theory by elaborating on the role of the state in relation to environmental protection. By further incorporating political Marxist theories of the state, I argue: 1) the capitalist state should be seen as a social relationship between classes and environmental forces, 2) within the growth coalition, the

state’s relationship with the dominant class is one of organizing the long-term interests of a “power bloc”, and 3) based on this organizational role the capitalist state’s various branches and levels contains internal “selectivities” that favors pro-growth policies, which simultaneously filters out particular environmental protections.

The Treadmill of Production and Coastal Environmental Concerns: Structural Selectivity and North Carolina's Coastal Resource Commission

by
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DEDICATION

To Barbara and Frederick Orwat

BIOGRAPHY

Jason S. Allen was born in Holyoke, Massachusetts on July 30th, 1990. After graduating Holyoke Catholic High School in 2008, he attended Holyoke Community College. It was at this small community college where he found a strong interest in critical social theory as well as issues of sustainability. After graduating in 2010, he transferred to the Social Thought and Political Economy (STPEC) program at the University of Massachusetts-Amherst, where he continued studying social theory.

Upon finishing his courses in fall 2012, he elected to design and teach his own course in the STPEC program under the guidance of one his mentors, Alejandro Reuss. In spring 2013, he taught Capitalism and the Environment. Soon after the course was over, he realized that teaching was something he wanted to continue doing in the future, just not directly following graduation. After he graduated in spring 2013 with his B.A., he took nearly two years off looking for employment. He worked at a retail store during this period and eventually decided to go back to school.

He applied to several sociology graduate programs that had an environmental focus. He accepted North Carolina State University's offer and began his graduate studies in the fall of 2014 in the sociology PhD program. After completion of his Master's degree, Jason will continue working towards his PhD with a concentration in food and the environment.

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INTRODUCTION

The Intergovernmental Panel on Climate Change (IPCC) released its Fifth Assessment Report in 2014. This report provided policy-makers with the predicted effects of climate change over the twenty-first century. A primary finding documented in the report explains the implications of climate change for global sea-level rise. The report predicted that “without additional efforts to constrain emissions” sea levels could rise over 30 inches by the end of the 21st century (IPCC 2014:8). Other models produced by leading climate scientists suggested that these figures were conservative. Hansen et al. (2016) found that when considering ice sheet mass loss from Antarctica and Greenland, sea-level rise could amount to several meters. This same study predicts that most of the major cities in coastal areas will face severe negative consequences associated with sea-level rise. Rising oceans on the North American Atlantic coast are also exacerbated by land subsidence due to geological shifts from the last ice age (Titus et al. 2009).

These interrelated ecological factors create unique pressures on regulatory bodies to prepare for significant environmental problems. Environmental change in the modern era has become a serious concern for both human well-being and other forms of life. Climate change and a host of other issues require that the state, as a dominant governing body in modern society, act as a central institution for addressing these environmental problems.

Two major theoretical approaches in environmental sociology utilized to understand the causes and societal responses to environmental degradation are treadmill of production theory and ecological modernization theory. Since their inceptions, both theories have often been in direct conflict with one another. One of the main contrasts between the two theories lies in their hypotheses about the role of the state and its potential to help alleviate environmental problems. Ecological modernization posits that the existing institutions within society are entering into an era of reflexive modernity where ecological rationality is more likely to permeate decision-making and become the dominant factor shaping policy outcomes. For ecological modernization theorists, the keys to sustainability are to be found in the reforms occurring with the institutions of modern capitalism (Mol 1995; Mol 1996; Spaargaren and Mol 1992). In stark contrast, treadmill of production theorists argue that the major institutions in society are furthering environmental disorganization largely due to the commitment to maintaining economic growth. Thus, a fundamental reorganization of these institutions is necessary to achieve sustainable development (Schnaiberg 1980; Schnaiberg and Gould 1994).

This research analyzes the case of North Carolina's Coastal Resource Commission (CRC) to test these two competing theories by specifically analyzing the role of the state in economic affairs and environmental regulations. The North Carolina CRC is the political institution that was created to oversee and regulate coastal issues, including development and environmental concerns. Through a content analysis of the CRC meeting minutes from 2011-2015, this study analyzes two specific areas of policy development in the CRC: sea-level rise and inlet dredging. The analysis of these central concerns of this regulatory body is developed to help better understand the ways in which a state-level regulatory body manages socio-ecological concerns in an era of ecological crisis.

Both treadmill theory and ecological modernization make specific claims about the role of the state in environmental governance. Ecological modernization theory argues that over time the state will act as a force for advancing ecologically sustainable societies in wealthy liberal-democratic societies (Mol 1996; Mol and Spaargaren 2005; Oosterveer and Spaargaren 2011). In contrast, the treadmill approach argues that states have a material dependence on capital accumulation and will further policies that permit increasing economic growth, even at the expense of ecological sustainability (Schnaiberg 1980; Schnaiberg and Gould 1994).

This study refines treadmill of production theory by clarifying the relationship between governments and social classes. I augment treadmill theory by emphasizing the *active* role of the state in continually expanding the treadmill of production. I argue, 1) the capitalist state should be seen as a social relationship, a material condensation of the relation of class and environmental forces represented in state institutions at a given moment in time. 2) A principle role of state institutions is organizational. It manages and directs the long-term interests of a power bloc—the collection of disparate fractions of capital (Poulantzas 2014). 3) Further, I explicate how this strategic internal structure of the state in capitalist economies continually directs decision-making toward pro-growth policies, often to the detriment of the broader ecology. This expansion of treadmill of production theory enhances analysis of the variations in environmental policy across nation-states and regulatory bodies. At the same time, the approach also recognizes the structural limits of state actions in achieving more sustainable outcomes. This case study finds that coastal economic development tends to supersede environmental concerns and, as a result, long-term socio-ecological welfare. I find that the North Carolina CRC exhibits a "structural selectivity" (Offe 1973), an in-built structural bias for pro-growth policies, which maintain and further capital's long-term interests. This selectivity is also often antagonistic towards and resistant to ecological knowledge, policies, and modes of regulation.

BACKGROUND

Scope and Mission of the North Carolina Coastal Resource Commission

In 1974, North Carolina's general assembly passed the Coastal Area Management Act (CAMA). This act intends to guide coastal development to ensure the long-term vitality of coastal resources in order to sustain recreational activities, tourism, fishing, real estate development, and so forth. The CAMA Act included as part of its goals (North Carolina General Assembly 1974):

> (1) To insure that the development or preservation of the land and water resources of the coastal area proceeds in a manner consistent with the capability of the land and water for development, use, or preservation based on ecological considerations;
>
> (2) Protection, preservation, and conservation of natural resources including but not limited to water use, scenic vistas, and fish and wildlife; and management of transitional or intensely developed areas and areas especially suited to intensive use or development, as well as areas of significant natural value;

The CAMA Act therefore emphasized preservation and protection of coastal ecological systems, as well as guiding economic development and growth. Further, the CAMA Act claims that ecological considerations should serve as the basis for economic growth.

The CAMA Act also created the Coastal Resource Commission (CRC), which was charged with designating "areas of environmental concern," as well as regulating and implementing rules for coastal development in these same coastal spaces (North Carolina

Department of Environmental Quality 2016). The CRC governs coastal development and environmental concerns, determining where development can take place and how land and coastal areas should be used. The CRC also appoints scientific panels to study coastal issues, as well as adopting the rules for the North Carolina Dredge and Fill Act. There are thirteen members on the CRC board: nine board members are selected by the Governor, two from the Speaker of the House of Representatives, and two from the President Pro Tempore of the Senate.

The CRC sets the policies and regulations that the Division of Coastal Management enforces. The Division of Coastal Management also collects and analyzes data on a variety of coastal issues which it presents to the CRC during meetings. The Coastal Resource Advisory Council is another body in the North Carolina government that aids the CRC. This 20-member council serves as an interlocutor for local government, giving the CRC advice and input from the 20 coastal counties. Together, these three apparatuses oversee coastal development under the rules issued by the CRC.

These regulatory bodies develop and implement coastal resource policies for the State of North Carolina. The CRC plays a particularly important role through governing the ways in which social actors engage with coastal ecological systems. This political body sets the policy and regulatory parameters for these interactions. By analyzing the CRC, its processes, actions, and inactions, we can better understand the approach that an important state regulatory body utilizes for interacting with vital ecological systems. Through the CRC, North Carolina’s coastal resource policies can be assessed as either promoting or destabilizing the long-term socio-ecological regeneration and well-being.

Sea-Level Rise and Inlet Dredging

Between 2011-2015, the North Carolina CRC focused on developing policies and proposals on two distinct yet interrelated phenomena: sea level rise and dredging. While the CRC deliberated on many issues and actions, these two issues stood out as significant policy processes that carry long-term socio-ecological effects. In 2009, the CRC asked their Science Panel to conduct a scientific report on the effects of sea-level rise on North Carolina by 2100. In 2010, the panel presented their findings to the commission. The CRC Science Panel stated in the report: “Given the range of possible rise scenarios and their associated levels of plausibility, the Science Panel recommends that a rise of 1 meter (39 inches) be adopted as the amount of anticipated rise by 2100, for policy development and planning purposes” (Overton et al. 2010). This finding had potentially wide implications for coastal development policies as it could result in state policies that would limit or block development of coastal areas that are less than one meter above sea-level.

By 2011, resistance to the conclusions of the scientific report began to mount, led by NC-20, a non-profit organization. NC-20 claims to represent the interests of the twenty coastal counties of North Carolina and describes its mission as the following:

> Our main base of support is derived from county and city governments that are acting to promote and defend their economic interests with respect to governmental regulations and actions. We are concerned and involved with those aspects of government policy or regulation that can hamper or retard economic growth and investment in our communities to the extent that the government action in question is not equitable or is based on inadequate science or uninformed opinion. Private property rights are very much a concern of this non-profit corporation (NC-20 2016).

NC-20 repeatedly voiced opposition to the Science Panel report at CRC meetings. A combination of NC-20 and some county commissioners’ criticism of the report lead the CRC to require the Science Panel to create an addendum to their first report, answering some of the questions of NC-20. The Science Panel's findings were presented in 2012, in which they answered the criticisms of NC-20 and defended their 2010 report's findings (Overton et al. 2012). Later in 2012, North Carolina's General Assembly passed House Bill 819, which created a four-year moratorium on defining rates of sea level rise at the state level. It also directed the CRC's Science Panel to modify the sea level rise report.

Based on House Bill 819, in 2014 the CRC passed a policy that limited the scope of the future report to 30 years, rather than extending it to the end of the century as originally intended. The 2010 report was clear in arguing that acceleratory effects such as contributions from land ice, would likely cause sea level rise to rise more rapidly after 2050 (Overton et al. 2010). The Science Panel's report is in-line with the existing scientific research on the subject, such as the IPPC's reports. By limiting the 2015 science report to only 30 years, the most damaging effects of sea level rise were jettisoned from planning decisions.

The combination of land subsidence and sea-level rise exacerbates coastal erosion, necessitating constant dredging to keep ports open as well as to provide beach nourishment. Because of the high rates of coastal erosion, county officials are continually relying on the sand taken from dredging practices to "nourish" the beach, so as to sustain the beach recreation and tourism industry. Dredging windows—or periods when dredging is allowed—are in place in coastal states to alleviate the pressure on endangered species that reproduce in coastal ecosystems during certain times of the year. Dredging that takes place outside of these environmental windows can have harmful effects on eggs and larvae buried in the sand (Todd et al. 2015).

In North Carolina, there are several endangered species that reproduce on the coast, including the loggerhead sea turtle and the piping plover (U.S. Fish and Wildlife Service 2016). Dredging windows are important in terms of protecting these species' reproductive cycles as well as their habitats. The CRC and its linked institutions that inform the commission and enforce its rules—the Division of Coastal Management and the Coastal Resource Advisory Council—advocated the expansion of dredging windows. This was finalized in the CRC's 2015 Inlet Management final report given to the Governor and General Assembly. The report stated that the CRC will look into expanding dredging windows and "recognize the priority placed on providing shipping access to the state ports" as well aim to develop policies for stockpiling sand taken from dredging practices (CRC 2015). The decision to expand shipping access for state ports through extensive dredging, and the removal of regulatory power from the sea-level rise study, necessitate a rigorous framework to understand the relationship between regulatory institutions, ecological protection, and political economy more generally.

THEORETICAL CONCERNS

Ecological Modernization Theory

Ecological modernization theory emerged in the early 1980s primarily as a response to "demodernization" perspectives that placed modernity at the heart of the ecological crisis (Spaargaren and Mol 1992; Mol and Spaargaren 2000). The initial formulation of ecological modernization, which can be traced to Joseph Huber (1985), argued against the then popular “limits to growth” school, which emphasized the ecological limits of unending population and economic growth (Meadows et al. 1972). Indeed, Huber (1985) argued that the core institutions of modernity actually contained the possibilities of sustainable transformation (Mol and Spaargaren 2000). The earliest formulation of ecological modernization stressed technology as the motor of society’s ecological transformation. The theory argued that the technosphere, or industrial system, was moving away from simple “end-of-pipe” technologies to smarter, greener technologies. Ecological modernization theorists argued that the entire production and consumption process was realigning towards more ecologically sustainable production. Huber’s work suggested that ecological crisis can be overcome only “by going further into industrialization, toward hyper- or superindustrialization” (cited in Spaargaren and Mol 1992:336).

The technological determinist foundations of ecological modernization theory’s initial formulation have correctly been critiqued in its more recent expressions (Mol 1995; Mol and Spaargaren 2000; Spaargaren and Mol 1992). While technology remains a central component of ecological modernization theory, focus has shifted to include the importance of firms, markets, culture, and politics in achieving “ecological rationality” (Mol 1996). Further, ecological modernization theory now accepts that struggles among different interests are a necessary part of the (continuing) process of ecological modernization (Mol and Spaargaren 2000). As a result, non-governmental actors, social movements, and environmentally-centered consciousness are considered to provide important contributions to the shift toward ecologically sustainability. However, unlike other more radical theories of environmental change, there is no need for a direct confrontation with capitalist firms and states. New governance techniques, which include a move away from the hierarchic-bureaucratic governance mode—and which now include NGOs and other non-state actors—make it possible for a sustainable capitalism to emerge through a process of institutional reflexivity (Jänicke 1990; Mol 1995; Mol 1996; Mol and Spaargaren 2000; Spaargaren and Mol 1992).

Ecological modernization then can be considered a type of reflexive modernization. Above all else, it emphasizes that ecological rationality—the valuing and incorporation of ecology into decision-making—is now becoming a "relatively independent" sphere alongside the economic, political, and social-ideological sphere (Mol 1996). Thus, firms are beginning to redesign production practices to allow ecological rationality to catch up to economic rationality (Mol 1996). This means that societies will begin to dematerialize over time. In summary, fewer natural resources will be needed for production processes, energy will be saved through efficient technology, and the toxic byproducts of the "simple modernization" phase will be overhauled by new production schemes that takes into account production's externalities (Mol 1995; Mol 1996). Environmental regulations, social movements, non-governmental actors, and evolving cultural practices will aid in the "insitutionalisation of ecology in the social practices of production and consumption" (Mol 1996: 306).

For ecological modernization theorists, the state has an important role to play in environmental governance, though not in the traditional sense of hierarchical-bureaucratic regulations on industry. Jänicke (1990) provides perhaps the most comprehensive discussion of the state's role in environmental governance within ecological modernization theory. He argues that the old model of reactive policies aimed at correcting "market failure"—a concept used in part to describe capitalist firms' externalities—can be replaced with a preventative approach (Jänicke 1990; Mol and Jänicke 2010). States have been stuck in the "sclerosis" of simple modernization. The path forward, Jänicke argues, is through the process of political modernization, or the greening of the state as part of the larger societal ecological modernization process. A "double structure" of the State contains the previous hierarchic/centralized interventionist state form as well as a new cooperative, decentralized structure of intervention. Jänicke argues that cooperative intervention and political "steering" through "dialogue structures" with industry can bring up more effective ecological performance (Jänicke 1990; 1993). The state becomes an element among industry and civil society groups that decide on environmental policies. He argues that this avoids the top-down regulations against industry, and enables a willingness on the part of industry to innovate greener production schemes (Jänicke 1990; Jänicke 1993).

Within this second wave of ecological modernization theory, the state has increasingly lost its "authoritative monopoly" over environmental protection (Spaargaren and Mol 2008). Globalization, driven by capitalist market imperatives, has made domestic governance largely ineffective in regulating transnational production. At the same time, we witness the rise of non-state actors such as environmental NGOs, and supranational organizations like the European Union. Through decentralized "negotiation subsystems" these new actors work with states and firms to reorganize production and consumption (Jänicke 1990; Mol and Spaargaren 2002). According to these theorists, consumers become active members in the ecological modernization process by demanding state regulators deal with environmental risks inside and outside nation-states. They also can pressure firms "upstream directly" to align products with consumer demands as well as voting with their wallet (Spaargaren and Mol 2008). The main line of continuity between the first and second wave of ecological modernization theory is the acceptance of capitalism as compatible with sustainable production and consumption. This position is in direct contrast with treadmill theory which views modern capitalism as furthering ecological disruptions.

The Treadmill of Production: Past and Present

Treadmill of production theory was initially developed by Allan Schnaiberg (1980), who sought to understand the processes that contributed to ecological disorganization in advanced capitalist countries. In the United States, the period after WWII was characterized by the growth and concentration of capital, manifested in monopoly firms (Baran and Sweezy 1966). These firms relied on continually mechanizing labor (Braverman 1974), which had the effect of displacing both human laborers as well as creating larger ecological "withdrawals" and "additions" from the natural world (Schnaiberg 1980; Schnaiberg and Gould 1994). Profits generated from these monopoly firms were redirected back into production, often times utilizing new types of extractive technology that required greater inputs (i.e., fertilizers, pesticides, raw materials, etc.) and/or created larger additions (i.e., pollution, greenhouse gas emissions, etc.).

Schnaiberg's (1980) initial analysis also engaged in ongoing debates about the drivers of ecological disorganization. He criticized population-centered arguments that viewed the growing number of humans on the planet as the central driver of the ecological crisis. While admitting that humans, as a biological species, do create natural waste, utilize space for living, require food inputs for survival and emit heat, this alone cannot explain why environmental problems increased dramatically after the Second World War. Schnaiberg (1980) pointed to the massive growth of cars in the post-war period to counter populationist claims. He explained that while the poorest segments of society had the fastest rate of population growth, they had the lowest automobile ownership rate. This same period saw an explosion of multi-car households among the more affluent. Thus, Schnaiberg argued that increased production and consumption were driving environmental concerns, not population growth alone.

Schnaiberg also analyzed the argument that technological change was the main causal force in environmental disruptions. Acknowledging that many forms of modern technology were destructive, he nevertheless rejected technology as the driving force. Capitalist social relations of production are the determining factor in what technology is deployed in production (Schnaiberg 1980). He also critiqued theories that placed consumer culture at the heart of ecological destruction. For Schnaiberg (1980), the problem with consumption-centered explanations was that they neglected the power relations involved in determining both what and how commodities were produced. While many claimed the United States was moving to a post-industrial society, he showed how even the service sector complemented and stimulated industrial production, as well as provided the delivery and repair work for the goods produced. Far from being a new economy that moved past industrial production, the service sector *sped up* demand and complemented the industrial sector. Schnaiberg (1980) also demonstrated that the sales effort (advertising and marketing) from monopoly firms actively created new wants that would not have existed otherwise.

Schnaiberg (1980) theorized three main actors—capital, the state, and labor—which comprised “growth coalitions,” that combined to provide unyielding support for the treadmill of production. It was argued that the dynamics of the capitalist mode of production, governed by the profit-motive, was largely responsible for the environmental disruptions that had occurred after the Second World War (Schnaiberg 1980; Foster 2005). According to treadmill scholars, capitalists at the summits of monopoly firms were not the only actors responsible for increasing the speed of the treadmill. Indeed, analysts argued that governments benefit from the treadmill dynamic because it provided funds to carry out the current expenditures as well as elicited legitimacy in the eyes of the wider society (Schnaiberg 1980). The state’s material dependence on capital accumulation meant that even government agencies and actors who questioned the ecological benefits of the treadmill of production had to still play by its rules. Moreover, tax revenue that accrued from economic activity was used to fund a range of social programs, ranging from social security to environmental protection (Schnaiberg and Gould 1994). Taxes were also used to invest in new technologies through large-scale public investments, as well as technological research in both public and private domains (Gould, Pellow, Schnaiberg 2004).

Treadmill scholars also argue that labor further bolstered support for the treadmill of production. The dynamics of the treadmill of production tend to displace workers by, for example, mechanizing labor. However, because labor lacked productive resources of its own, it had to rely upon the capitalist labor market for jobs. Therefore, labor had to accept the logic of economic growth because it was seen as the only way to supply jobs to workers (Schnaiberg 1980; Schnaiberg and Gould 1994). Big labor, or large labor unions, is regarded as particularly susceptible to the treadmill logic, as the growing economy is often considered an inevitable necessity toward maintaining its membership.

Subsequent formulations of treadmill theory continued to highlight the role of these three sets of actors, yet they were renamed as “treadmill organizations.” While labor, governments, and capital continued to be the primary driving forces of economic expansion, treadmill theory increasingly focused on its new, *transnational* structure. The free flows of finance, transnational free trade agreements, cheaper energy, the rise of technological experts, and the flexibility and portability of production meant the treadmill was operating at higher speeds across nation-states (Schnaiberg and Gould 1994; Buttel 2004).

Indeed, treadmill theorists argue that the power of capital, manifested in transnational corporations and international economic institutions such as the International Monetary Fund (IMF) and World Trade Organization (WTO) have largely transcended the control of nation-states (Schnaiberg, Pellow and Weinberg 2002). The state continues to support the treadmill for the tax revenues, as well as hopes that economic growth would provide jobs to the workers displaced by the mechanization of labor and capital flight. Yet, the state’s acceptance of union-busting, off-shore production facilities, and the move to more energy intensive production techniques were seen to be a paradox as it made public legitimacy harder to maintain (Schnaiberg et al. 2000; Gould et al. 2004).

The increased focus on transnational structures represents just one of the ways that treadmill scholars have extended Schaiberg’s (1980) original work. Following the shift to transnational accumulation, Obach (2004) argued that changes in the global economy have had the unintended outcome of pushing labor to form alliances with environmental organizations and *away* from the treadmill. These new alliances were a result of capital flight and the decrease in unionization, which had left workers unemployed and under-protected in their jobs. Other treadmill research has focused on the nature of recycling and its relationship to the treadmill logic of expansion (Weinberg et al. 2000) and the role information plays in the operation of the treadmill in forest certification programs (Overdevest 2005).

Recent treadmill scholarship has also expanded the scope and application of treadmill theory. While the approach has primarily been applied to capitalist societies, Shriver et al. (2015) utilized treadmill theory to understand the drivers of production expansion in Czechoslovakia during the state socialist period. Whereas in capitalist societies production expansion is determined by a confederation of actors (i.e., the growth coalition mentioned above), in state socialist societies production was determined by a hegemonic bureaucratic state structure. The authors' findings suggest that the state bureaucracy in Czechoslovakia pushed coal production to such an extreme that it actually incited massive citizen protest. This recent formulation of the perspective suggests that treadmill theory can be applied to a range of government and societal types.

Situating the Capitalist State: The Truth is the Whole

Both ecological modernization theory and treadmill of production theory make specific claims about the role of the state and its governing bodies in environmental deterioration. Central to the formulation of ecological modernization theory is the changing role of the state in modern liberal capitalist democracies for advancing environmental protection. As Mol (1996: 314) states:

> “the theory of ecological modernisation points to the fact that the conflict between legitimated state action on environment and related mass loyalty on the one hand, and the imperative of capitalist accumulation on the other, is not as fundamental as once thought.”

Political modernizing is an essential aspect of reflexive modernity where the transforming state and its agencies are responding to knowledge development and calls from civil society (for example, NGOs and social movements) toward a process of integrating ecologically rational decisions into policy. Ecological modernization theorists are critical of the “strong bureaucratic state” and contend that the “the role of the state in environmental policy changes from curative and reactive to preventive, …from centralised to decentralised, and from *dirigise* [directing] to *contextual* 'steering' (Mol 1996: 314; italics in original).

Ecological modernization theorists argue that through a political modernizing project, the new decentralized side of the state is now better equipped to respond to the ecological crisis (Jänicke 1991; 1993). Analysts contend that through negotiation subsystems and work with supranational organizations, firms will feel less threatened by top-down regulations and will be given incentives to restructure production through new science, technology, and knowledge. The state then becomes a major player alongside capitalist firms, environmental NGOs, consumers, and other organizations in bringing about more sustainable practices (Spaargaren and Mol 1992; Mol 1996; Mol 2000).

In contrast, treadmill of production scholars stress that the state is one of the actors accelerating the treadmill. The state’s welfare programs brought legitimacy to the state. These redistributive programs were, however, dependent on the successes of capital accumulation, which created contradictory functions within the state (O’Connor 1973).

Because of this dependency on capital accumulation for revenue, the state remains restricted in slowing ecological destruction (Schnaiberg 1980). Similarly, treadmill scholars have argued that there exists a contradiction at the heart of the state in environmental policy. Since the majority of production decisions occur through private firms, the state is faced with a policy paradox: it depends on these firms, and their often ecological destructive practices, to acquire sufficient revenue for environmental protection (Schnaiberg and Gould 1994). Further, the state relies on private firms in the processes of maintaining the public sector through, for example, contracts and outsourcing, the military being a prime example.

Both ecological modernization and treadmill theories provide insights into the role of the state in addressing environmental concerns, but both perspectives have their shortcomings. A central theoretical problem with ecological modernization theory concerns the nature of the capitalist state. Essentially, proponents of the theory maintain that autonomous "spheres" including the political, economic, cultural, and ecological interact with one another in a process of institutional reflexivity (Mol 1996: 307). This conception implicitly assumes a neutral role of the state in productive affairs. That is, the state intervenes from the outside of the economy to correct "market failures."[1] When the state fails in relieving environmental deterioration, scholars have argued that this is a case of "state

[1] The claim that externalities are a "failure" of an otherwise normally-functioning market seems disconnected from the history of capitalist development. Following Marx's analysis in *Capital*, cost-cutting and regulation-evading maneuvers, pollution, and other ecological disruptive "externalities" are inscribed in capitalist social relations. When the purpose of economic activity is profit maximization and the accumulation of capital, there is a logic within firms to avoid internalizing production costs. More generally, Marx's analysis of capitalism reveals that the system itself cannot avoid ecological crisis because its expansionary tendencies *produce* ecological rifts in nature (Foster 2000; 2010).

failure" (Jänicke 1990). A more rigorous theoretical framework is needed to grasp the integral connections of institutions within the capitalist mode of production. While the treadmill of production approach is useful for highlighting the functional relation between state and economy, our understanding of this relationship can be expanded by a deeper engagement with political theorists in the Marxist tradition, particularly Nicos Poulantzas.

The work of Poulantzas (2014) was a manifestation of an on-going dialogue with both Antonio Gramsci and Louis Althusser (Jessop 2014). Poulantzas elaborated on Gramsci's concept of the integral state (Gramsci 2012). Gramsci emphasized that the state was not only increasingly involved in the private sphere, but the state itself was the unifying institution for the capitalist class (2012:52). While the state has both an ideological role in amassing consent and a repressive role in reserve to use when necessary, Poulantzas underscored that, in a capitalist society, the state also had a major economic role. It organizes market and property-relations, trains labor through the school systems, provides research and development, develops infrastructure, provides social services, codifies the social division of labor, establishes the dominant class, contains economic crises and intervenes to ensure the stability of the system as a whole (Poulantzas 2014:176).

The "initial scaffolding" of the capitalist state's institutional materiality is rooted in capitalist social relations—relations based on the radical separation of the laborer from the means of production (Poulantzas 2014:53). While feudalism was founded on the lord's exploitation of peasants, labor still remained connected to the land and the means of reproduction (Wood 2002). Political power was fused with economic power and concentrated in royal authority. With the removal of the peasantry from the countryside and enclosure of the commons, peasants were forced to sell their labor-power on the market to ensure social reproduction, what Marx called “the silent compulsion of economic relations” (1976:899). The social relations associated with the capitalist mode of production are a historically unique system in that social life is mediated through the market to an unprecedented degree. Both producers and appropriators are dependent on the market for their survival. These social relations force market imperatives on economic actors so that competition, profit maximization, increasing labor-productivity, and capital accumulation become the guiding principles of economic life (Wood 2002). But what does this mean for political power under capitalism?

At that the most general level, Poulantzas (2014) argues that the capitalist state is the organizing and regulating institution in capitalist society. The state sets the property-relations, codifies market relations, expands markets through free trade agreements, contains economic crises, becomes a lender of last resort, develops specialized institutions for accumulation (for instance, the Federal Reserve and Federal Treasury), creates the necessary infrastructure for trade, and promotes capital accumulation more generally (see Panitch and Gindin 2012 for a detailed analysis of the American state). Further, the capitalist class is divided into fractions—such as monopoly, non-monopoly, industrial, financial, and commercial capital. Because the capitalist class is divided and focused on short-term profits driven by the “coercive laws of competition” (Marx 1976:433), it is unable on its own to formulate the long-term political interests of its class. Although state managers that occupy the heights of state may and often do come from the capitalist class, the “institutional differentiation” between state and economy—one of the defining characteristics of the capitalist system—imputes a different logic to government and governing (Wood 1981; Panitch and Gindin 2012; Poulantzas 2014). This structural differentiation of economic production and political power constitutes the basis for the capitalist state's "relative autonomy" vis-à-vis the dominant class(es), which allows for the long-term political interests of the capitalist class to be secured (Poulantzas 2014). As Panitch and Gindin (2012: 4) assert, the state's relative autonomy from the dominant class means it alone has the "autonomous capacities to act on behalf of the system as a whole" while being "ultimately limited by their dependence on the success of capital accumulation." This does not mean that the state intervenes "from the outside." Rather, the state is present in the relations of production by establishing the dominant class politically and guaranteeing its long-term dominance. The state's various branches, divisions, and agencies are "power centers" through which the long-term political interests of different fractions of capital are represented and codified. Because these fractions at times may disagree on policy or how to handle working class struggles, the state mediates class conflict both between and within classes. In this light, policy-making institutions organize the long-term interests of the fractions of capital in the "power bloc" to ensure continued capitalist domination (Poulantzas 2014).

By situating the capitalist state in relation to its differentiation from the economy, we have only clarified the first "moment" of the capitalist state's materiality. The other "moment" of the state's materiality, specifically its institutional form, is a product of class struggle. Poulantzas argues, above all else,

> The (capitalist) State should not be regarded as an intrinsic entity: like 'capital', *it is rather a relationship of forces, or more precisely the material condensation of such a*

> *relationship among classes and class fractions, such as this is expressed within the State in a necessarily specific form.* (2014:129) [emphasis in original]

In viewing the state as a social relationship based on the struggles between and within classes, he was able to better explicate variation in state-policy in different nations. I contend, drawing on previous sociological work, that the state is simultaneously a material condensation of class and ecological relationships. This constitutes a further elaboration of Jessop's suggestion that Poulantzas's work can and should be ecological (2007). This theoretical contribution to environmental sociology gives us the tools to deepen our understanding of the so-called "environmental state" (see Schnaiberg, Pellow, and Weinberg 2002), including why the state passes environmental acts, such as the Clean Air Act or the establishment of the Environmental Protection Agency, and not others.[2] Poulantzas (2014) maintains that struggles are at the core of state institutions, and policies passed that even modestly protect the environment should be considered victories imposed on capital by subaltern groups. This is consistent with the treadmill scholars' emphasis on social movements and political conflict as the motor for environmental sustainability (Schnaiberg and Gould 1994; Gould et al. 2004).[3]

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[2] Schnaiberg (1980) discusses the possibilities of using state power to regulate the treadmill of production. He states, however, "that much of the regulation of the treadmill has in fact been regulation by the treadmill" (1980: 244). In some ways, this parallels other analyses by ecological modernization theorists (Jänicke's "bureaucracy-industry complexes") by viewing this relation as one of exteriority. Class and environmental struggles traverse the state apparatus. The capitalist state is a strategic terrain where struggles between classes are condensed and materialized. Passing policies that benefit monopoly capital is not the *cause* of the capitalist nature of the state, but a consistent effect of its strategic, organizational design.

[3] Even when environmental legislation is passed in response to social struggle, I do not mean to suggest that there is a one-to-one ratio of policy to enforcement. Capitalist states can

As the organizing institution for the capitalist class, the state's internal structure exhibits what Poulantzas (1976:75) calls "structural selectivity."[4] This includes a selectivity for pro-growth policies for the whole economy, as well as a negative selectivity against anti-capitalist interests (Offe 1973). In addition, I add policies that would mean a transition to a more ecologically sustainable economy. As one of the three actors in growth coalitions, states, absent enormous environmental struggles, will filter out policies that slow the treadmill. This can occur actively, through pro-industry policies, or passively through "non-decision making." To summarize, this means that policies that reflect dominant thinking will be given priority and policies that challenge the structure of power relations will likely be ignored or suppressed before they are ever voiced in a decision-making arena. What we see

choose to not enforce certain laws, and capitalists continually find ways to avoid regulations. The point is that even the passage of these laws reflects how the state mediates relations between classes.

[4] Jessop (1990; 1999; 2016) argues that the more accurate term for the relationship between the state apparatus and the state actors attempting to pursue policies should be called "structurally-inscribed strategic selectivity." In his words, "this involves examining how a given structure may privilege some actors, some identities, some strategies, some spatial and temporal horizons, some actions over others; and the ways, if any, in which actors (individual and/or collective) take account of this differential privileging through "strategic-context" analysis when choosing a course of action" (1999: 51). While my use of structural selectivity encompasses this definition, I also emphatically stress the selectivity towards maintaining the "hard core" of capitalist social relations inscribed in the state's materiality (I use structural in two senses—the structure of the state as an institution differentiated from the economy and the structure of the state apparatus itself). In other words, the state is a capitalist state because regardless of the current balance of forces represented in the state, without a radical transformation of the social relations of production and the capitalist state itself, the pressures of capitalist competition and capitalists' hold of societies' surplus will mean that the state must conform to capital accumulation, and hence support the treadmill.

as final policies being passed or voted on are only a fraction of the possibilities that have been sorted out, discarded, "forgotten," or moved to sub-committees where they fizzle out.

By grasping the (capitalist) state as a material condensation of class and environmental forces, charged with organizing the long-term interest of the capitalist class, we can begin to analyze the processes of the North Carolina Coastal Resource Commission as an agency of the state government at the intersection of economic development and environmental concerns.[5] This institution can be considered a "power center" that represents and manages the interests of fractions of capital as diverse as the real estate, home construction, fishing, recreation, insurance, dredging, and shipping industries. These industries form the "power bloc" in coastal North Carolina, where their long-term interests are established and codified through state policy. It is also the site where ecological interests are either protected or neglected.

METHODS

To analyze the role of the state in ecological outcomes in coastal North Carolina, I collected and examined the minutes from the North Carolina CRC's meetings from 2011-2015. The data were freely available from CRC's website.[6] North Carolina's CRC meets on

[5] For clarification purposes, Poulantzas' view of the state includes governing bodies and agencies that oversee and direct state policies. While the North Carolina CRC is not a nation-state level agency, it still constitutes a body of the state, generally speaking, simply at a different (regional) level.
[6] http://deq.nc.gov/about/divisions/coastal-management/coastal-resources-commission/crc-meeting-agendas-minutes

average between four to six times per year to establish policy, consider policy changes, rule on variance requests, host presentations on coastal issues, as well as to provide communications to other North Carolina governmental bodies. The CRC met 25 times during this time period, and the minutes' total page count amounted to 411 pages. The minutes data collected included the content and processes of regulatory actions, rulings, policy prescriptions, and presentations given to the commission. These data provide a window to how policy is developed as well as the final policy outcomes (Holleman 2012). The CRC's decisions on how to manage coastal development carries long-term ecological and human health impacts.

The 2011-2015 minutes are the latest available. Further, this was a period of significant deliberations on the current and future impacts of climate change. This included debates on the effects of sea-level rise on the coastal areas of North Carolina. During the last decade, the effects of climate change have become more apparent and leading scientific organizations have urged policy makers to start preparing for the future effects of climate change (IPCC 2014). The process contained a great deal of political wrangling, making national headlines, and resulted in significant environmental policy development. Also, this five-year period extends over two different state administrations, Democratic (2011-2013) and Republican (2013-2015).

I used a directed approach to thematic content analysis (Hsieh and Shannon 2005) of the CRC's minutes. Thematic content analysis is appropriate and well suited for this study because institutional processes, in this case the actions of the North Carolina CRC, contain the push-and-pull of policy debate among different social actors (Krippendorff 2004).

Content analysis aims to reveal patterns in policy prescriptions and rulings. I based my initial theoretical categories on Schnaiberg's (1980) treadmill coalitions (industry, state, labor), subsumed under an economic growth category, as well as an ecological protection category. Drawing from ecological modernization theory, this ecological protection category was reserved for instances where the CRC expressed a "reflexiveness" and incorporated ecological rationality into policy. For example, if the CRC incorporated scientific findings on the ecological impacts of dredging on marine life into policy, it would be coded as "reflexiveness." The treadmill of production codes allowed me to organize the data in a manner that clarified which sectors demonstrated most interest and activity in coastal policy matters associated with the CRC, and what the central concerns were that drove policy decisions.

These categories allowed me to consider several questions while coding including: whose interests do the CRC prescriptions and policies serve? Were policy decisions based on ecological considerations as emphasized in the CAMA Act? Did the CRC utilize the findings of their appointed science panels in a manner consistent with the scientific results? Are all of the pillars of the growth coalition equally active in driving policy?

While my main categories were derived from treadmill theory and ecological modernization theory, I remained open to the possibility of emergent codes that did not match either theory's propositions on the role of the state. In that way, coding was an iterative process between thematized and inductive coding. After initially coding the data using the theoretical categories described above, I enhanced the analysis by coding for instances of structural selectivity. For example, if the CRC held presentations on whether to expand dredging windows, and all of the presentations focused exclusively on the economic benefits of expanded windows, it would be coded as structural selectivity. This code emerged during analysis as an important analytical and theoretical contribution for understanding the case study. The code “structural selectivity” allowed for analytical precision in describing the consistent policy proposals that reflected economic rationality over ecological protections.

As a reliability check, coding was repeated and reviewed by a second coder. Several meetings between the two of us occurred to ensure consistency in the coding procedure and inter-coder reliability. All coding was completed in the NVIVO software program. NVIVO aids content analysis by helping organize data from different sources and allowing greater efficiency in building an empirical analysis. NVIVO offers the ability to easily move between sources while maintaining a common analytical coding structure (QSR International 2016).

THE GROWTH SELECTIVITY OF POLITICAL INSTITUTIONS

North Carolina CRC as Coastal Power Center: Sea Level Rise Policy

As discussed above, there was ongoing opposition to the CRC Science Panel’s sea-level rise report first produced in 2010. Resistance to the 39-inch sea level rise planning benchmark in the 2010 report came from industry, county- and state-level representatives. At the CRC meetings, industry representatives and elected officials voiced several concerns regarding the economic implications of the Science Panel’s findings on sea-level rise if they were included in policy, as well as the quality and accuracy of the science.

In February, 2011, Sharon Spencer, the Hyde County Commission Chairman, voiced her concerns over the sea level rise report:

> …I hope I don't have to tell everybody to go get a house boat or a boat to travel around in for Hyde County. We are concerned about sea level rise. But we are also concerned about policy. We know when you make policy that means regulations. When you make regulations that means restrictions. *We are desperate for economic growth. We are trying so hard to create a good infrastructure so we can do it.* Everybody is struggling and we just hope that you use the good solid scientific data and remember that there are people in this equation that will be greatly impacted by what you decide. [emphasis added]

Spencer expresses caution about using the findings of the scientific report. While acknowledging concern about sea level rise, she quickly follows up by expressing concerns over economic growth. The Hyde County Commissioner recognized that the 39-inch planning benchmark would mean that some development would have to be halted or moved back away from the coast. As a County Commissioner, Spencer has the responsibility of overseeing the business climate within her county. She states that the county is “desperate for economic growth,” implying that accepting the report would do further damage to a struggling economy. The comment that “good solid scientific data” should be used is common among groups that are skeptical of climate science (McCright and Dunlap 2010). In the process of making sea-level rise policy, the sentiment casts doubt that the Science Panel’s report is valid.

A similar sentiment of economic concern was echoed by Larry Baldwin, a member of NC- 20. Baldwin stated during the same CRC meeting in February 2011:

> This sea level rise policy has done damage already. It is already in the paper. When you start airing this in public it gets into the paper that there is a 39 inch sea level rise projection. The banks and insurance have already looked at this. The County tax base could be impacted by it. Maybe not directly, but just by the demand and supply of

> land. There has been damage done. Insurance and costs to do D.O.T. roads with a 39 inch sea level rise is billions and billions of dollars. I would caution you before you start trying to educate the public that we try to keep the specifics out of it and then get into specifics later.

Baldwin, like Spencer, resists the implications of the report on economic grounds. He claims that banks and insurance companies are already being affected by the 39-inch benchmark. Counties will have tax problems, as regulations relating to sea level rise will alter the market value for land on the coast. He adds that not only will taxes be impacted by regulation, but the costs of adapting to sea level rise on transportation infrastructure and insurance would be extremely high, and thus suggesting that it is fiscally dangerous to specify the scientific details. Another member of NC-20 voiced similar opinions. Tom Thompson, the Chairman of NC-20, stated during the October 11 CRC meeting,

> We have a serious concern with the sea level rise projections of the Science Panel. I am sure you are aware of that, but I did not want to miss an opportunity to let you know in person some of our concerns. *We do question the science behind it. We have had no problem finding qualified scientists that dispute any acceleration in sea level rise. If the 39 inch sea level rise recommendation is maintained we think there will be serious economic consequences.* [emphasis added]

Thompson continues,

> I represent Beaufort County as an economic developer. This is a very poor county with twenty percent poverty. If they take the existing flood levels that we have had and add 39 inches to that then a substantial portion of our land will be by and large worthless. You can use it but you would have to build up to accommodate this hypothetical sea level rise. I am asking you, if you will, please reopen this study and allow us to present and take part in a dialogue which brings in scientists of different opinions. There is adequate science out there showing that 39 inches is an extremely aggressive number.

Both Thompson and Baldwin, NC-20 members, as well as Spencer, all argued that preparing for sea level rise by establishing a 39-inch benchmark would lead to “serious consequences” for the economy. Thompson, like Spencer, argues that the current economy is already faltering, and regulations will lead to even worse outcomes for the counties. Thompson also casts aspersions on the science by saying the 39-inch benchmark is too high. All of their criticisms of the science are accompanied by anxiety over the future effects on the economy if sea level rise regulations are implemented.

During the February 2011 meeting, CRC Chairman Bob Emory acknowledged this resistance to the report from NC-20. Emory states,

> Without intending to, the CRC has incorporated some things in the original policy that are premature of where we are on this issue. The CRC's one meter rate came from the Science Panel, but NC-20 has an alternate view. When we asked the Panel to give us an estimate of sea level rise for the state we did not give them much time or opportunity to develop different estimates for different parts of the state. It would be helpful for the CRC to ask the Panel to take some time to see how sea level rise will affect different parts of the state. I would also like the Panel to help us understand the alternative view from NC-20. The bottom line is we need to be careful as we address sea level rise. We need local government to be our partners as we talk about how sea level rise is going to affect the coast.

The one-meter benchmark came under criticism from NC-20 as well as this rate being applied to the entire coastline. Emory suggests that NC-20's alternate view of sea level rise should be addressed by the science panel, implying that NC-20's view is also a valid scientific position. However, there was no evidence provided to substantiate these claims, only economic concerns were mentioned and that scientists could be found to dispute the Science Panel's models. Emory suggests that care should be taken to develop a more nuanced report so that local governments are more likely to collaborate with the CRC, suggesting that NC-20's views correspond with those of local governments.

At the same meeting, Tancred Miller, the Division of Coastal Management's Coastal and Ocean Policy Manager summarized the overall consensus against the planning benchmark. The Division of Coastal Management enforces the CRC rules and provides data analysis on coastal issues to the commission. Miller stated during the February 2011 meeting,

> …Another concern was that one single rate should not apply to the entire coast. The one meter rise rate was also a concern. There is a lot of discomfort about the one meter rate and there is probably no need to talk about a one meter rate. The CRC has no desire for a direct result to be the immediate action of the local government. The land use planning provisions also were a concern because it causes local governments to immediately apply a one meter benchmark to their land use plans, but that is not the intent and it is something that we should amend. We have made some changes to the draft policy approach. There is no rush so we abandoned a timeline. We want to focus on education and awareness at the local level. The CRC should reconsider using a benchmark. We should take it out completely.

Miller asserts that leaders from multiple counties have expressed opposition to both the planning benchmark and the one-meter sea level rise rate. She criticizes the Science Panel's report by arguing that the 39-inch benchmark should be abandoned by the CRC as a tool for policy. During the same February 2011 meeting, the CRC voted to remove the benchmark from the sea level rise policy. By removing the benchmark from sea level rise policy, the CRC accepted what is essentially an economic critique of regulations made my county officials and NC-20, and in effect rejected the findings and implications of the Science Panel's report.

The resistance to the Science Panel's report expanded after 2011 from criticizing the use of a benchmark to an even harsher criticism of the science itself, including the rates of sea level rise and the dates used in the report. The criticism, however, was still rooted in economic concerns. Tom Thompson, the Chairman of NC-20, stated during the April 2012 CRC meeting,

> Our primary concern is not the science, per se, but the economic and social costs that could be imposed on coastal Carolina by a rush to judgment.

Thompson again emphasizes the perceived economic costs if sea level rise regulations are implemented. While he says that the primary concern is not the science, he states during the same meeting,

> Since there is no statistical evidence of acceleration in sea level and since the economic consequences of trying to impose rules, regulations, or even suggestions to people that make up rules and regulations we find 39 inches as statistically unjustified and economically dangerous.

Clearly, Thompson does in fact take issue with the science. By stating that there is no statistical evidence of acceleration he is in effect denying the science report all together.

The CRC was aware, however, of the economic and ecological effects of inaction on sea level rise for at least one of its counties since 2011. Jeff Allenby, a graduate student at Duke University, gave a presentation on the socio-economic effects of sea level rise on Bogue Banks at the May 2011 meeting. He stated clearly:

> The socio-economic effects of sea level rise will be significant to Bogue Banks with between $1.67 and $4.36 billion dollars of property value being at risk and thousands of property owners having to make important decisions about how to manage the effects of sea level rise. Even in the low scenario, which is a direct extrapolation of the historic rate of sea level rise, will cause extensive damage on the island causing a drastic loss in tax revenue for the island's communities and the county. Due to its low elevation and the slope of the coastal plain, much of eastern North Carolina will feel the effects of sea level rise. Wetlands will migrate into land that is now dry, causing a number of zoning issues. Septic tanks will have a higher rate of malfunctioning with a higher water table, which has the potential to release raw sewage into coastal ecosystems. Flooding and storm surges will affect properties that were previously safe and cause insurance and zoning issues. Finally roads may become impassable

> due to higher sea level and the issue will not be whether or not they happen, but the extent to which they will happen.

Allenby covers the various scenarios described in the initial report. Even in the lowest sea level rise scenario, he describes vast damage caused by sea level rise if no action is taken in the near future. Thus, the CRC was also aware of the economic stakes involved with sea level rise if they did not include the Science Panel's estimates in policy development. They also heard support for the original scientific findings. Mark Hooper, a president of the environmental organization Carteret County Crossroads, stated during the April 2012 meeting,

> I must state however that NC- 20 does not represent the views of Carteret County Crossroads on this issue. As we look at the graphs and lines and numbers and projections from various sources and delve into the data and numbers and statistical manipulations and try to look 100 years into the future Crossroads feel it is now important to fold these estimates of future water levels back into the current situation.

Hooper defends the science in the report and even pushes for the information to be incorporated in current decisions. He also distances himself from the scientific doubt of NC-20. Hooper, however, was not the only person to support the findings of the scientific report. Chris Voss, a coastal ecologist, stated during the February 2011 meeting:

> There is a preponderance of information that suggests that sea level rise is accelerating. I, as a scientist, think that you are missing the boat if you don't try to capture the acceleration. What you do with it as far as policy down the road is something to be decided later, but sea level rise is accelerating. As far as looking at sea level rise rates, there are various cycles and water level patterns that run on about a 20-year cycle. If you look at very short term periods then you might get information that actually conflicts with the longer term patterns. I also want to say that the goal of the Commission is to protect the tax payer. Let's be proactive. It is more cost effective in the long term if you are prepared for what is coming down the road. Fortunately, sea level rise is a very slow process and we have some time. Please let's be proactive and don't back down from the science. It is truly what is guiding us.

Voss reinforces the accuracy of the report. She also, like Allenby, recognizes the enormous long-term costs and impacts if no action is taken to address sea level rise. Even within economic parameters, Voss states that it is the lack of governmental preparatory actions that will lead to larger costs on taxpayers, not the implementation of coastal development regulations. Further, she emphasizes the problems associated with ignoring the long-term picture for a shorter time window. However, the CRC passed policies that disregarded these warnings.

One of these policies involved the timelines in the 2010 report. The criticisms of the timeline also came from the Coastal Resource Advisory Council, an arm of the CRC that acts as an interlocutor between the commission and local governments. Spencer Rogers, a Coastal Resource Advisory Council member, stated in the June 2012 meeting:

> The Science Panel has recommended a one meter prediction by 2100, which is 90 years in the future from when the report came out. This is a pretty scary number. But in terms of using that number, no one is planning for anything in 2100. Probably no one in the room is alive in 2100. So is this the most realistic way to look at a one meter rise in sea level? I think it isn't. As the CRC has done in the past, I think a better way to look at it is in a 30 year time limit which is the lifetime of a typical mortgage or for setbacks in the CRC's case.

Rogers proposes that sea level rise policy should match the structure of mortgages, placing ecological matters within the parameters of common economic timeframes. The scientific report was produced to provide the best estimates of the effects of sea-level rise on the State of North Carolina. In doing so the Panel complied with standard scientific methods and parameters in the field, most notable as developed by the Intergovernmental Panel on Climate Change (IPCC 2014). These scientific assessments are based on available climate data and computer models, and aim to show the short and long term effects of sea rise. The

30-year mortgage window is generally irrelevant to the scope and approach of these studies. The suggestion that the 30-year period is more appropriate has no basis in ecology or climate science, but demonstrates the emphasis of economic rationality over ecological rationality—or short term profits over long term socio-ecological costs. The report documents that the acceleratory effects of ocean rise will occur after 2050, which surpasses the 30-year lifetime of a mortgage. The criticism of 90-year timelines found support from Frank Gorham, who became the chair of the CRC in 2013. Gorham stated in the May 2014 meeting,

> One of the things that bother me about the first report is the date 2100. No one in this room knows what it will be in 2100. There is a lot more certainty in a shorter time period. The CRC uses a thirty-year time frame for a lot of policies. We could add credibility to this study if we limit the time frame that we are asking the Panel to look at to 30 years. This would be a rolling 30 years and we would ask the Science Panel to update it every five years and they would come out with a new report. There is agreement in the first 30 years. Our job is to make policy. A rolling 30 years seems like a sound business way to address this issue.

Gorham casts doubt that the sea-level prediction given in the 2010 sea level rise report could be accurate. He accepts the criticisms of a 90-year timeline and frames his decision in economic terms, by calling it a "sound business way" to handle the scientific report. Bob Emory, the former chair but still a member of the CRC stated during the same May 2014 meeting:

> We could ask the Science Panel to look the literature and there may be significant new literature that has been published in the last five years and talk in terms of scenarios or some other way to talking about sea level rise other than a specific rate by a specific year. It gives us the opportunity to incorporate the segment of the scientific community that doesn't support accelerated sea level rise. This perspective can be represented in the study and the study can respond to that. Even thought the Science Panel did highlight the uncertainty the first time around, it got lost in the discussion. A comprehensive report would be the opportunity to make it clear that this is an area of great uncertainty especially if you try to predict certain rates by a certain time. We can make it clear that based on 85 or 100 year forecasts we are not

> calling for regulation. We would be providing this information to local governments and the general public for information and education.

Instead of accepting that preparatory action for sea level rise will be needed to buffer some of the long-term social and environmental harms, including damaging coastal communities and livelihoods (IPCC 2014), Emory argues that a 30-year study is more appropriate. Both Gorham and Emory, two CRC members, are thus questioning the validity of the science report. They justify NC-20's position that the original report was based on questionable science by asking them to incorporate dissenting opinions in the 2015 sea level rise report. The CRC cultivates the view that any call for regulations should be reconsidered. The CRC passed a motion during the same May 2014 meeting limiting the 2016 sea level rise report, moving the timeline from 90 years down to 30 years.

Growth Selectivity and Sea Level Rise Policy

Both ecological modernization and treadmill theorists juxtapose states and markets. These perspectives see these two sets of actors as external to and separate from each other, and both theorize the different interventions the state can take in either alleviating or furthering environmental degradation. Treadmill theorists argue that the state supports economic growth because of the legitimacy and tax revenue gained from economic growth. Ecological modernization theorists view the state transforming in a process of institutional reflexivity, as scientific knowledge and ecological rationality begin to enter the state. However, by viewing states and markets as external and/or in conflict with one another, it misses the affinities between the two, and the ways in which the specificity of capitalism changes the logics of these institutions.

More specifically, these views are less likely to specify how class power is exercised inside the state, and the ways in which the capitalist state furthers processes of capital accumulation. Treadmill theory tends to neglect what Jessop describes as “the state’s general task of organizing the balance of forces in favor of the expanded reproduction of capital” (2002: 201). For example, even claims that the Science Panel’s original report was accurate and should be taken seriously were couched in economic development terms. The constant concern for expanding the economy reflects the class nature of the state, or in other words, that the state is a *capitalist* state.

Both Chairman Gorham and Emory voiced opposition to 90-year timeframes and sea level rise regulations. This was shown in the commission’s policy outcome. During the CRC minutes from 2011-2015, the commission passed policies that were ultimately *non-reflexive* in an ecological sense. Ecological modernization theorists argue that the incorporation of science, or ecological rationality, will permeate through societal institutions including the state, altering their decision-making processes to better include scientific insights and increasingly become a dominant factor in policy decisions. In the case of the CRC and sea level policy, we see the opposite, what scholars call anti-reflexivity (McCright and Dunlap 2010). Not only are the scientific findings disregarded by the commission, but they are weakened and shortened in scope, bypassing the most socio-ecological destructive aspects of the original report.

These findings show opposition on the part of industry, represented by NC-20, county commissioners, and even agreement among members of the coastal commission's state network on the critiques of the initial sea level rise report. The Division of Coastal Management, the CRC, and the Coastal Resource Advisory Council all expressed a selectivity towards economic concerns and the potential growth, and away from scientific findings. Spencer Roger, an advisor to the commission, argued that 30-year timelines would be more useful in that they coincide with mortgage life spans, which would serve as the CRC's basis for the reduction from 90 years to 30 years. Tancred Miller, the Division of Coastal Management's Coastal and Ocean Policy Manager, argued that the CRC should abandon any benchmarks for planning purposes. Both Bob Emory, the former chair of the commission, as well as Frank Gorham, the current chair, both agreed with Miller that any regulatory power of the sea level rise should be abandoned.

The decisions to alter the initial report were made in light of some environmental opposition. Different scientists and environmental groups voiced their concern over NC-20's anti-reflexive position and urged the CRC to follow the Science Panel's recommendation that a 39-inch rise be used for planning and policy purposes. The commission also heard a presentation describing the billions of dollars' worth of damages resulting from inaction on sea level rise. These concerns were abandoned by the CRC, as they passed the 30-year timeline motion as well as ensuring coastal counties and businesses that there would be no governmental regulation on development related to sea level rise science.

The importance of altering the timeline from 2100 to 2045 for predicting sea level rise cannot be overstated. While the initial report predicted a 39-inch rise by 2100, the 2015 updated sea level report predicts that the high estimate within a high-emission scenario is only 8.1 inches (Overton et al. 2015). In addition, even with a substantially lower estimate of future sea level rise, the report still cautions the commission that “regardless of the rate of rise, as sea level increases North Carolinians should expect more frequent flooding of low-lying areas” (Overton et al. 2015:22). The science panel also warns that the smaller predictions in the updated report reflect the shorter timeline used, and that, with a 60-100 year forecast, “more rapid climate change is expected” (Overton et al. 2015:22).

The decision to shrink the scope and regulatory power of the sea level rise report indicates an avoidance of what ecological modernization theorists called ecological rationality by the CRC. And while the CRC incorporated science during the deliberations, it was not ultimately the major force shaping sea level rise policy. Institutional reflexivity, the process of incorporating the latest science into policy outcomes did not occur in the CRC. Economic rationality was the dominant factor in sea level rise policy which protected the interests of particular fractions of capital at the expense of the broader public and ecology. The scientific report’s timelines and predictions were removed over the course of the 5 years in favor of an anti-regulatory decision that would not restrict coastal development, shrink the timeline to 30 years, and avoid discussions about coastal developmental retreat.

The CRC’s decisions reflect a “growth selectivity” in the state apparatus. The state’s relative autonomy from any individual capitalist interest allows it to act on behalf of particular fractions of capital, even at the expense of some long-term concerns as a whole. In this specific case, the CRC’s decisions signify its commitment to capital’s coastal interests, as well as protecting its long-term political interests against ecologically-based regulations.

NC-20 is a group representing various fractions of capital, including real estate, insurance, and home-building. These fractions have the most to lose by governmental regulations on coastal development. If shoreline development is restricted, these industries' profits are at stake. Larry Baldwin, a member of NC-20, commented on the effects of a 39-inch benchmark by saying its already affecting banks and insurance industries, by altering "the demand and supply of land." Tom Thompson, the former chair of NC-20, stated "we find 39 inches as statistically unjustified and economically dangerous." The CRC itself, based its decision to shorten the timeframe from 90 to 30 based on a "typical mortgage." The CRC Chair, Frank Gorham, called the decision a "sound business way to address the issue." Ultimately, ecological rationality was filtered out of the final policy decisions in favor of coastal economic growth. This reestablished the consent of the fractions of capital represented in NC-20. The CRC, as a principal organizer and regulator of capital on the coast, secured capital's long-term political interest against the scientific findings even in the face of some ecological opposition and resistance on behalf of concerned scientists and environmental organizations.

North Carolina CRC as Coastal Power Center: Dredging Policy

Sea level rise policy was only one of the policies developed by the CRC that reflected the dominance of economic rationality over reflexivity. During the period for which minutes were coded, the commission discussed dredging policy on multiple occasions. Dredging is used to keep ports and inlets clear for shipping and often times the sand recovered from dredging is used for beach nourishment projects. This involves placing sand on beaches that suffer high erosion rates in an effort to keep the beaches as they are presently constituted. Dredging windows are in place to protect species, including endangered species, reproductive cycles from the negative effects of dredging. The current windows in North Carolina run from the end of November through April.

At the November 2014 CRC meeting, the commission presented a number of coastal issues to Governor McCrory. Ken Willson, the Client Program Manager of CB&I, and Layton Bedsole, Shore Protection Coordinator at New Hanover County, stated in their Dredging Policy presentation:

> We did a quick economic analysis to look at the potential benefits to the costs of dredging using some efficiency curves that have been developed by the Corps of Engineers using existing projects and dredge costs. We looked at the projects that have already been estimated by the Corps and looked at what they would cost if we could use the best part of those efficiency curves being in the summer as opposed to the winter. What we found was that we could see anywhere from 14-35% reduction in the costs of these projects if we could build them year round. When we look at the environmental information perhaps we can't build these things year round, but even widening those windows could see some relief for the costs of these projects.

Willson and Bedsole's presentation presents expanding dredging windows in terms of economic costs, suggesting that they need to be alleviated. In this presentation, there is no analysis of the ecological effects of expanded dredging windows. Their presentation remained within the parameters of economic rationality, looking only at the economic costs and benefits without discussing non-economic impacts. In another presentation at the same meeting, Todd Roessler, from Kilpatrick Townsend & Stockton Attorneys at Law, gave a presentation on federal regulations and the Endangered Species Act. The Endangered Species Act creates critical habitats for endangered species to help conserve populations. Roessler said at the November 2014 meeting,

> In the economic analysis that was done by the federal agencies, the US Fish and Wildlife Service said that designation of critical habitat for the loggerhead turtle will result in $1.2 million of impacts over the next ten years. That comes down to $26,000 annually for North Carolina. There are a number of reasons for that. The first is the method they use to evaluate economic impacts. It vastly underestimates the economic impacts. There are a number of activities that occur at the coast that could be impacted by this designation. Our beaches drive our economy and it is important that this is addressed.

Similar to Bedsole and Willson's presentation, Roessler focuses on the economic aspect of government regulations. Instead of dredging windows, his presentation focused on how endangered species federal regulations impact economic growth. He criticizes the Fish and Wildlife Service report, arguing that its estimated $1.2-million-dollar cost of critical habitat designations "vastly underestimates economic impacts" to the coastal economy. His concern for the coastal economy over coastal ecology reflects an economic rationality. The CRC did not host a presentation arguing for the protection of coastal ecology in any of the meetings from 2011-2015. For instance, a presentation focused on the ecological effects of expanded dredging windows on endangered species, was never given in all the discussions around expanding dredging windows, or in any of the presentations given to gov. McCrory.

Similarly, Ken Willson and Brad Rosov from CB&I gave another presentation at the July 2014 commission meeting on dredging. CB&I is a firm that provides dredging services among many other infrastructural services. While talking about the costs of dredging, they state, "If dredging could take place in the summer when the sea conditions are more favorable, then the costs would go down." Rosov continues,

> As interpreted, the environmental dredge window commences on November 16. April 30th is the end of the environmental dredge window. These dates correspond almost

> perfectly with turtle season. If the dredge window was expanded by a month on either side of the window then only 7% of the total nests would be affected.

In some ways paralleling Willson's later presentation to McCrory, this presentation actually acknowledged ecological effects, before discounting the ecological damage because of the cost-saving benefits that would accrue by disregarding the dredging limitations.

The costs of dredging as well as dredging windows' economic impacts on the coastal economy were two elements in the CRC's support for their expansion. House Bill 819 not only put a 4-year moratorium on defining sea level rise rates, it also directed the CRC to study the feasibility of eliminating the inlet hazard area of environmental concern. The CRC's main responsibilities are regulating the development that occurs within these areas. There are four broad categories of areas of environmental concern, including the Estuarine and Ocean System, the Ocean Hazard System, Public Water Supplies, and Natural and Cultural Resource Areas. The Ocean Hazard System area includes ocean erodible areas, high hazard areas, and inlet hazard areas—the areas the General Assembly sought to eliminate. Each designation requires specific restrictions on development size because of the dynamic nature of coastal shorelines.

In their Inlet Management final report, the CRC stated,

> The Commission will begin development of separate, distinct deep-draft Inlet Management AECs [Areas of Environmental Concern] that would result in Beaufort Inlet and Cape Fear River Inlet having specific management objectives and associated development standards. The management objects will recognize the priority placed on providing shipping access to the state ports through channels maintained by the United States Army Corps of Engineers (CRC 2015).

The commission's decision to prioritize shipping access in their report means expanded use of dredging to ensure that depth requirements are met. This is reinforced in the same report where the commission lists expanding dredging windows as a long-term priority. In the report, they state that groups are working on a study looking at the feasibility of expanding the current dredge windows, with the objective of mitigating "possible impacts to biological resources" (CRC 2015). However, as Willson stated earlier, expanding the windows means losses to endangered species such as the Loggerhead Turtle, which reproduces during the warmer months. The decision to expand dredging windows in the future means that the impact on endangered species will only increase.

Growth Selectivity and Dredging Policy

In the realm of dredging policy, the dominance of economic rationality over ecological rationality is demonstrated by the CRC once again. The CRC hosted different speakers on the economic benefits of expanding dredging windows during 2014, a handful of whom were from the dredging industry. When the ecological effects on coastal species were discussed, it was always with reference to the economic costs to coastal counties. There were no presentations on the ecological importance of preserving endangered species or protecting coastal ecology. The fact that these concerns were not voiced indicates an ecological "non-decision." The members of CRC did not express any concerns about avoiding an in-depth ecological discussion while emphasizing the economic aspects of the issue. The overall sentiment coming from the CRC was that this was foremost an economic matter. This prioritization of economic growth demonstrates the agency tendency to favor capital's interests over ecological sustainability—contrary to its stated mission.

The pro-growth bias of the CRC was evident in its final Inlet Management Report, which was sent to Gov. McCrory and the General Assembly. Ultimately, the CRC's plan to expand dredging windows in the future serves multiple economic purposes. The first is to continue beach nourishment, where dredging material (sand) is placed on beaches in an attempt to combat coastal erosion and sustain the beach recreational and tourism economy. The other economic purpose relates to North Carolina's role in sustaining infrastructure that supports both state-level as well as national trade.

At the November 2014 meeting referred to above, in which McCrory heard presentations on coastal issues, the governor presented his "25-year vision" for North Carolina. Explaining his coastal vision he stated,

> Our coastal solutions include sustainable beach nourishment to protect roadways, improve highway connections to help relieve congestion and provide greater emergence access; replace aging bridges; stabilize inlets to keep shipping and ferry channels clear, and transform North Carolina ports. We will a pursue a recommendation in the Army Core of Engineer Chiefs report to deepen and widen channels to support movements of the newest generation of shipping vessels; enhance rail service to make it easier to get containers off of ships and directly onto trains in the port of Wilmington; seek opportunities for inter-modal facilities along I-95 corridor to enhance fright movement; and leverage public-private partnerships to complete the development of radio island, and support landside improvements in interstate quality roads and enhance rail access to the port of Morehead City (McCrory 2014).

His vision requires what Schnaiberg (1980:23) called increasing "additions" and "withdrawals" from the larger environment. Expanded dredging will heighten strain on endangered species that reproduce in these areas. His commitment to expanded dredging, here described as widening and deepening channels and stabilizing inlets, marks a clear selectivity toward economic growth, overlooking ecological concerns. Both the CRC's policies on sea level rise leading up to the final report in 2015, as well as their Inlet Management Report, reveal the structural affinities between different branches of the state system for economic growth. While McCrory's 25-year vision priotizes economic growth over protecting the environment, the CRC itself had the institutional space to at least voice ecological concerns in its Inlet Management Report. Instead, it looked to altering the inlet management designation so as to protect shipping access to state ports.

By keeping state ports open through extensive dredging of channels, North Carolina is supporting the entrenchment of development as it currently stands. The state's role in organizing and securing the long-term interests of capital also means maintaining infrastructure so that capital accumulation can continue. As a coastal state, North Carolina has the responsibility to ensure the easy movement of commodities through state ports and transportation systems. Justin McCorkle, the Assistant District Counsel for the US Army Corps of Engineers, Wilmington District, expressed concern at the October 2014 commission meeting over the issue of dredging ports, "The 40-foot ships cannot come into Morehead City right now." Concerns about the effects of extensive dredging in ports and channels on the wider ecology were never voiced in any of the minutes. Instead, the CRC's decision to enlarge state ports to the benefit of both capital's interest and economic growth in general reveals the growth selectivity inscribed in state institutions. Ecological concerns were never raised in their final Inlet Management Study in favor for expanding economic growth.

CONCLUSION

Both the sea level rise and dredging policy developments reflect the continued domination of what ecological modernization theorists have termed “economic rationality,” where concerns over short to medium-term economic growth dominate other considerations, such as ecology (Mol 1996). The findings of this study give support the claims of treadmill of production that the growth coalition, in this case the CRC, the state legislature, the governor, and industry groups, push forward policies that expand economic growth. At the heart of the treadmill of production theory lies the claim that the state is a major member in the “growth coalition” alongside capital and labor that promotes economic growth. The state, through various policies, supports economic growth because it is dependent on the tax revenues to carry out its activities. The other reason for its support lies in the fact that economic growth helps maintain legitimacy in the eyes of the wider society. While these two reasons remain true, this study identifies an expanded role for the state within the growth coalition.

While Schnaiberg (1980) viewed the relation between the capitalist class and the state in functional terms, this study argues that this view misses the *active* responsibilities states have for accumulation within capitalism. This is perhaps best exemplified in Schnaiberg’s discussion of regulatory capture (1980: 244). This way of theorizing perceives the state as a class-neutral institution that acquires a class nature only after becoming “captured.” The institutional differentiation between the political and economic spheres unique to capitalism, and the ways it changes the logic of each, is lost in this theoretical framework. This differentiation of political power and the class structure marks the state as a terrain for organizing the long-term interests of the power bloc. This creates a structural selectivity within state institutions for economic growth and against ecological protection.

By viewing the state as external to social classes, the treadmill of production theory also neglects how the state is the field of political class struggle. More specifically, the original formulation of treadmill theory does not emphasize how class power is exercised *within* the state apparatus. Class power is articulated within the state through its active role of organizing the long-term political interests of a power-bloc, which consists of different fractions of capital. In this study, the CRC organized the long-term interests of capital as diverse as real estate, home construction, insurance, fishing, shipping, and dredging through policies that promoted the expansion of coastal development. It is important to note that the interests of labor, originally a part of the growth coalition, were not mentioned directly, but only indirectly in the sense that struggling communities needed economic development and jobs. Labor interests did not have an immediate role in deliberations.

Throughout the five years of CRC meetings, two major policy developments within the minutes reveal the “growth selectivity” inscribed in the state apparatus. This concept refers to in-built biases within state apparatuses for economic growth, or a structural selectivity, rooted in the capitalist state’s institutional differentiation from the economy. On two major policy proposals and rulings—sea level rise reports and dredging practices—the CRC consistently laid emphasis on economic rationality, choosing economic growth over ecological and social protections. While the CRC’s Science Panel was initially clear on the effects of future sea level rise—that the state should expect at least a meter of sea rise—the CRC’s response reflected a lack of institutional reflexivity. Taking the scientific findings seriously would have meant incorporating them into policy and to begin preparing for sea level rise. This created great concerns in the business community and among the local and state political leadership, including the members of the CRC. Once the implications of the Science Panel's results were understood as having a great potential to hamper economic growth, the deliberations at the CRC took on a more business friendly character.

While the proceedings and decision on sea-level rise clearly demonstrate the state agency's emphasis on economic rationality over ecological matters, the process associated with inlet dredging may more strongly demonstrate the structural bias toward economic development. During CRC proceedings, which discussed inlet dredging, the absence of serious dialogue and debate regarding the ecological consequences of the agency's decision is striking. That these proceedings could transpire in this manner is a clear indication of the CRC selectivity toward maintaining economic growth. These concerns are presented in a way that makes apparent the hegemonic narrative of coastal economic development and the benefits of advancing trade as a central force in these proceedings. This research makes clear that the notion that this political agency can somehow be separated from the economic interests or fractions is dubious. These processes are linked in complex ways that have serious socio-ecological implications.

Mol (1996) characterizes the modern ecological changes in societal institutions as "the constant examining and reshaping of social practices in the light of new incoming information about those very practices, and thus means the end of the idea that social and natural environments would increasingly be subjected to rational ordering" (303-304). The CRC's decision to abandon the regulatory power of the initial sea-level rise report, shrink the timelines of the report, and to pursue expanding dredging windows in the future to keep state ports open and beaches nourished did not advance ecological rationality or express institutional reflexivity.

Coastal retreat, a policy that is frequently considered in the scholarship on sea-level rise, was never discussed by the CRC during the five-year period that was analyzed. This is another remarkable example of "non-decision." Scientific research points to the necessity of beginning coastal retreat, which "involve the movement of people and associated infrastructure away from coastal areas into less exposed areas, with significant potential for the long-term resilience of communities" (Thomsen, Smith, and Keys 2012:4). Rather than beginning the process of coastal retreat, the commission chose to "manipulate" the coast through expanding dredging windows and beach nourishment to facilitate economic growth (Riggs and Ames 2003:23). Coastal geologists have argued against "superimposing" "human superstructures" on fragile coastal systems. Instead, they advocate for allowing wetlands to migrate in response to sea level rise, and "if the natural migration processes are recognized and honored with continued rise in sea level, the net expansion of new wetlands along the inner zone should equal the loss of wetlands on the outer shoreline zone" (Riggs and Ames 2003: 147). These wetlands serve as important buffers from storms and flooding that can impact human structures farther inland. If these concerns are never voiced within an agency that is charged with overseeing and protecting the coastal areas, they clearly cannot enter into policy approaches, unless environmental activism increases to the point where the commission is pressured into action.

While the CRC held presentations on the economic benefits of expanding dredging windows, an alternative ecological presentation on the importance of environmental windows and endangered species never occurred. The commission's decision to prioritize maintaining and deepening state ports so that larger ships can enter has serious ecological implications. Increased mobility of trade requires increasing "additions" and "withdrawals" from the environment, including fossil fuels and dredging (Schnaiberg 1980). In this light, the CRC's policy decisions exacerbate already existing ecological problems.

This analysis focuses on a case in what is generally considered a politically conservative state. This could be regarded as a limitation of the study, specifically its generalizability. However, it is important to consider that nine of the CRC's members are selected by the governor, while two are selected by the Speaker of the House of Representatives, and two from the President Pro Tempore of the Senate. North Carolina's governor seat had been held by the Democratic Party from 1993-2013. This means that Democrats selected a majority, more than two-thirds, of CRC members, and their selection also coincides with the first three years of the sea-level rise study. There is thus a continuous pro-growth bias within the CRC running through Democratic and Republican governor administrations. These facts point to the political complexity of the case and its broader generalizability, as it is not limited to a state run by a specific party or individual. It also highlights the necessity of a deeper analysis of the relationship between states and the economy, one that moves past analyses based solely on the political affiliation of state personnel.

The CRC, as a state apparatus governing development on the coastline, is responsible for organizing the long-term political interests of the power-bloc, the collection of different fractions of capital. Even in the face of their own alarming scientific evidence, the CRC remains the organizer of capital's long-term interests. To put it another way, my analysis points to the necessity of understanding the social whole—the capitalist mode of production—and the specific ways the *totality* gives meaning to the elements within it. By grasping the capitalist state as a social relation, the site where class and environmental forces are condensed and materialized in state apparatuses, so-called "regulatory capture" becomes not the cause of the state's class nature but a consistent effect.

My analysis, however, does not completely write off the state in terms of addressing environmental problems. The state's relative autonomy from the dominant class can be stretched through social struggle, though within structural limits. A change in the balance of class and environmental forces both outside and within the state can force the state to act in some capacity on behalf of the dominated classes and wider environment. As earlier research as noted, accelerating ecological problems can mobilize social protest (Shriver et al. 2015). With the increasing severity of storms, flooding, and coastal erosion, coastal actors could begin mobilizing against the current structures of power inside the state. This could force institutions like the CRC to change their policy approach and consider options such as coastal retreat.

Conflict could arise not only from popular pressure, but also from certain fractions of capital in the power bloc. While there was no conflict on the coast between the different fractions of capital over how to handle sea level rise and dredging policy, this may not be the case under other circumstances. For example, the continuing expansion of off-shore energy development could impact the local ecosystems and land use that tourism and real estate depend on. This conflict might necessitate the state mediating between these various fractions in the power bloc to secure their general long-term interest. The fractions of capital represented in the CRC—real estate, home construction, fishing, tourism, dredging, and shipping are largely immobile. Their future profits depend on maintaining their geographical location on the North Carolina coastline. In other cases, capital may be able to move production to avoid the direct effects of climate change. As climate change continues to have worsening impacts on the planet, profits may begin to be affected to a large degree for certain fractions. This could lead to conflicts within the power bloc, in which the state would have to act in order to secure capital's long-term interest.

Future work in treadmill theory could analyze cases in which strict regulations are imposed on capital, specifically looking at the balance of class and environmental forces within and outside the state that make this possible. These studies could use comparative analyses to determine the set of factors needed for more ecologically-rational outcomes. Future research can focus on cases where climate change's effects are already directly being felt. Non-capitalist political-economies should also be explored to analyze their degree of selectivity towards ecological protection.

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