Abstract: This paper is a case study of the interrelationship between public policy and species decline in the oyster industry of Pamlico Sound, North Carolina, in the late 19th century, with some attention paid to the first decade of the 20th century. It examines the nature of the many regulatory shifts that occurred at the hands of the state legislature in the period, and it offers explanation for why these policies were ultimately less than successful at protecting and expanding the commercial viability of oystering. Tensions between smaller, local oystermen and outsiders from the Chesapeake Bay played a role, as did the influence of civic leadership in coastal communities hoping to ride the crest of economic development they hoped oysters would bring to the region. The oystermen themselves, in addition, were invited into the regulatory process rather late in the period and therefore were not inclined to work as partners with the state in efforts to preserve and restore oyster numbers. In large measure, however, the state of North Carolina sealed the fate of the oyster by responding with short-term view in its many regulatory revisions, rather than adopting a long-range mentality that might have resulted in greater stability of the species and of the coastal economy.

Keywords: oysters, Pamlico Sound, North Carolina, shellfish

1. INTRODUCTION

Commercial fisheries of North Carolina in the late 19th and early 20th centuries experienced many of the same problems that North American fishermen today are encountering: depletion of species, competition from outsiders, and debate over how valuable and possibly irreplaceable resources should be managed. This paper looks at how 19th century policymakers in North Carolina responded to rapidly decreasing yields of oysters in Pamlico Sound fisheries. It also examines the role of oystermen themselves in creating public policy that led to regulation of the fishery in North Carolina. This paper analyzes the issue of fishery depletion, which continues to affect lives and economies not only in North Carolina but around the globe. How the fishermen and government of North Carolina attempted to resolve the crisis of the late 19th century provides valuable insight into the dynamics of environmental policymaking.

Commercial fisheries of all sorts in the Pamlico Sound grew dramatically between 1870 and 1900. Pamlico Sound, a body of salt water about 1,860 miles square and 15 to 20 feet deep, teemed with both finfish and shellfish. Before the Civil War, the market for seafood in North Carolina was generally confined to farmers and merchants on the mainland who traded corn for fish or oysters. In the closing decades of the 19th century Pamlico Sound fishermen, however, began to take advantage of changes in transportation and increased consumer demand for seafood. Beginning in the 1870s, commercial ties with the mainland of northeastern North Carolina and southeastern Virginia strengthened.

With the rise of commercial fishing came concern over whether the Sound's profitable fisheries would continue to produce. Catches for some valuable species decreased around the turn of the century, leading to debate over causes of decline as well as action that should be taken to preserve the fisheries. Fishermen and government officials alike worried about decline in any species of marketable seafood, but they became especially alarmed when extremely profitable fisheries showed signs of depletion.

One case of particularly dramatic decline serves as an illustration for the period. Oyster yields decreased dramatically in the Sound during the period, after oystermen enjoyed a brief bonanza in the 1880s and 1890s. Simply put, increasing market value led to liberalization of State policies regarding oysters, which in turn led to greater numbers being harvested. Following this sharp increase in harvest came a decline in catch, followed by strict State regulation of the fishery. One important outcome was a growing recognition on the part of oystermen and government alike that careful management of the resources of Pamlico Sound would be the key to preservation of commercial oystering on the North Carolina coast. This recognition, however, did not always translate into action.

2. THE OYSTER INDUSTRY

The 1880s and 1890s witnessed growing demand for Pamlico Sound oysters and willingness on the part of oystermen to meet this demand. Prior to 1880, oystering on the Pamlico Sound was done for local use. On the
the 1880s had led them to a greater dependence on tonging Island for decades, and the increased demand for oysters in Their families had tonged the oyster beds off Ocracoke Englehard--and Ocracoke in the southern Pamlico Sound. oystermen of communities like Far Creek--today, Piedmont. On the other side of the debate were the eclipsed by the textile and tobacco centers of the wealth and progress for communities that were being canneries, particularly in Elizabeth City, represented opened by Baltimore-based companies. These oyster jobs for North Carolinians who worked in oyster canneries Carolina waters. To them, dredging of oysters meant more and more oysters from Pamlico Sound, welcoming the presence of nonresident dredgers in North Carolina. Civic leaders in Elizabeth City, New Bern, and Washington encouraged harvesting of oysters and welcomed the presence of nonresident dredgers in North Carolina waters. To them, dredging of oysters meant more jobs for North Carolinians who worked in oyster canneries opened by Baltimore-based companies. These oyster canneries, particularly in Elizabeth City, represented wealth and progress for communities that were being eclipsed by the textile and tobacco centers of the Piedmont. On the other side of the debate were the oystermen of communities like Far Creek--today, Englehard--and Ocracoke in the southern Pamlico Sound. Their families had tonged the oyster beds off Ocracoke Island for decades, and the increased demand for oysters in the 1880s had led them to a greater dependence on tonging for their livelihood. Instead of viewing dredging vessels as signs of progress, they regarded the presence of dredgers in "their" waters as a form of trespass, even in public oyster grounds. The division between cannery interests and tongers resulted in a debate that raged over several sessions of the General Assembly as regulatory laws were enacted from the late 1880s through the mid-1890s.

The inaccessibility of market limited the oyster fishery on Pamlico Sound at first. By the 1880s, however, interest in the economic potential of oysters grew. During the decade, the state funded an extensive survey of oyster grounds in the Pamlico Sound. This survey, completed in 1886, revealed the presence of abundant natural beds of oysters throughout the Sound, in both shallow and deep waters. In 1887, the state responded to this interest with a major revision of its oyster laws.

2.2 State Governmental Responses of the 1880s

The oyster laws of 1887 clearly were designed to encourage local, small-scale oystermen to cultivate private beds while allowing dredgers access to publicly held oyster grounds. The laws created a board of shellfish commissioners to oversee the harvesting of oysters and charged the commissioners with undertaking a survey of all public and privately held oyster grounds in the Pamlico Sound. The laws also laid down the ground rules for private claims to oyster grounds.

Of critical importance was the fact that, after 1887, state residents could lay claim to 10-acre plots of bottom ground within two miles of shore, and they could cultivate oysters on these plots "in perpetuity" for a fee of 25 cents per acre. Even more important, however, was another provision of the law. Both residents and nonresidents could stake 640-acre claims in waters deeper than eight feet and more than two miles off shore. On these vast private beds, dredging was permitted. The owners of franchises to these 640-acre plots were also permitted to take seed oysters from public grounds for the purpose of planting on their claims.

The survey of Pamlico Sound's oyster beds was done under the direction of Francis E. Winslow, a Naval lieutenant with surveying experience detached on special assignment to North Carolina. Winslow's report suggested that Pamlico Sound's potential as a source of oysters was largely untapped, compared with the booming Chesapeake Bay. His survey, the results of which were made public in 1888, sparked an oyster "bonanza" during the following several years as local oystermen and out-of-state dredgers alike took advantage of the new laws and the rich oyster beds.
2.3 Results of 1887 and 1889 State Revisions in Oyster Law

By 1889, the oyster fishery had developed great commercial importance for Pamlico Sound and indeed for much of coastal North Carolina. Baltimore canners and dealers established branch operations at Elizabeth City, New Bern, Washington, Beaufort and other locations. Pamlico Sound oysters were processed locally and shipped to Baltimore, where they were then sold as Chesapeake oysters.

With the canneries came Chesapeake oystermen, who introduced more efficient harvesting techniques. These included using longer-handled tongs with iron heads rather than the wooden implements Pamlico Sound oystermen had used. Of greater importance was the introduction of dredging, which enabled harvesting of more oysters as far as two miles off-shore in the Sound.

If the arrival of oystermen from the Chesapeake meant introduction of more efficient techniques, it also meant increasing resentment and hostility on the part of native Pamlico Sound oystermen. The oyster beds of the Sound yielded over 2,700,000 bushels in 1890, compared with only 100,000 bushels in 1887. In 1887, however, the entire harvest had gone to Pamlico Sound oystermen, whereas the 1890 harvest yielded 914,130 bushels to Pamlico Sound oystermen and an estimated 1,800,000 bushels to about 250 dredging vessels hailing from Maryland, Virginia, Delaware and New Jersey. Although the catch increased ninefold for Pamlico Sound oystermen in three years, pressure developed to eliminate the competition of Chesapeake oystermen in North Carolina waters.

This pressure took the form of legal restriction and stringent enforcement. In 1889, a State law prevented nonresidents from dredging and limited the dredging season for North Carolinians. Enforcement was left in the hands of local counties, whose sheriffs were unequipped to deal with violators. Therefore, the 1889 law went largely unobeyed. Out-of-state dredgers continued to work the Sound, much to the distress of local oystermen.

2.4 Industrial Aspects: Oysters as “Progress”

But lack of an enforcement mechanism does not fully explain why the law was ignored so extensively. Even more importantly, the economies of some coastal towns were fast coming to depend on dredging, whether by residents or nonresidents. By 1890, Elizabeth City could boast 12 oyster canneries lining her waterfront. Most had been established by Baltimore-based oyster companies. The canneries employed local workers to shuck, pack and can oysters and to load crates of cans onto vessels for shipping north. By one account, Elizabeth City had a population of about 5,000 in 1890, and 1,700 of these residents worked in oyster canneries. Jobs not filled by local workers were taken by Bohemian immigrants who came down from Baltimore. With an expanding population and nearly full employment, Elizabeth City welcomed the canneries and the progress they represented.

The same story unfolded in New Bern, Washington, Beaufort, and elsewhere, although to a lesser degree. In each of these towns, at least one and generally several Baltimore-based canneries opened between 1889 and 1890. To newspaper editors, chairmen of local industrial associations, and city leaders, dredging and the presence of “foreign” business were wholesome and progressive things. If any change to oyster laws were needed in these civic leaders’ eyes, it would be in the direction of allowing more widespread dredging, to keep the oyster canneries operating at full tilt.

2.4 The Voice of the Small Oysterman Is Heard

But there were many constituencies whose interests were at stake in these developing oyster wars. Representing the interests of residents of Hyde County in the state Senate was Wilson H. (Wilkes) Lucas, who presented convincing arguments in the fall and winter of 1890-91 in favor of eliminating dredging and protecting the right of small tongers to oysters in the Sound. By January 1891 Lucas had built a powerful coalition in the General Assembly in support of outlawing dredging entirely on public grounds and restricting the shipping of oysters out of state to North Carolina residents only.

To achieve this, it appears that Lucas and others in favor of the tongers exaggerated and sometimes fabricated stories of Virginia dredgers armed with rifles and cannon. One rumor current in January of 1891 had it that a member of the House, Metrah Makeley of Hyde County, had been shot and killed by an illegal Virginia dredger while tending to his small 10-acre oyster garden. Although Makeley quickly appeared, unscathed, to announce that rumors of his demise had been greatly exaggerated, sentiment in Raleigh in favor of a stricter law to eliminate murderous Virginians and Marylanders from North Carolina waters grew.

2.5 The “Oyster War” of 1891

Over the protests of lobbyists and General Assemblymen representing the interests of canny towns, the Assembly passed a new law in 1891, which authorized the governor of North Carolina to use military force against dredgers for a period of three months, presumably enough time to rid North Carolina's oyster beds of out-of-state poachers and
illegal dredgers. The General Assembly was also buying itself time to construct a permanent law providing for effective enforcement against dredgers.

The exact nature and extent of the military force to be used had not been established by the General Assembly. Governor Daniel G. Fowle, himself a native of Washington, N.C. and no stranger to oyster controversy, delayed signing the bill while he spent a frantic two days assembling a regiment of the State Guard and locating arms and ammunition for the patrol vessel Vesper.

Fowle had little trouble in calling up the Pasquotank Rifles out of Elizabeth City. But the problem of how adequately to arm the patrol vessel was perplexing. Fowle sent a hasty telegram to the Secretary of War requesting a large-bore cannon and ammunition; the Secretary of War responded that North Carolina's fiscal situation was such that the War Department would not extend credit to the State government in this way. After another equally unsuccessful attempt to borrow a cannon from South Carolina, Fowle finally sent an appeal by telegram to the governor of Virginia, who responded with the loan of a Howitzer gun and ammunition.

Once the gun arrived in Elizabeth City, Fowle signed the bill into law. Implementation was swift. The Norfolk Virginian's correspondent in Elizabeth City, N.C., reported on January 21, 1891, the day the law took effect, that “One or two hundred vessels owned and manned by non-residents of this State, have been poaching upon the oyster beds in the lower sounds of North Carolina. . . . [T]oday, the Pasquotank Rifles . . . left on the steamer Vesper for the purpose of driving off the poachers and enforcing the laws of North Carolina . . . .”

North Carolina clearly meant business: "[I]f any dredgers are found continuing to ravage the oyster beds they will be arrested, even if their boats have to be blown out of the water and their crews killed." A similar expedition against non-resident oystermen was launched in February 1891 from New Bern "abundantly supplied with arms and ammunition. . . . All violators will be arrested and taken into port for trial." Despite armed, quasi-military patrol of the Sound, the captain and crew of only one vessel were arrested and brought to trial for violation of the new law.

2.6 Serious Restrictions Descend upon the Sound

By March 1891, the North Carolina General Assembly had hammered out a new, permanent, comprehensive oyster law. It outlawed all dredging on public grounds, even by North Carolina watermen, established a licensing system for oystermen, and restricted the season to the period between October and May. The law also provided for culling of oysters taken from public grounds, so that very large oysters would be returned to their beds to breed and to serve as anchors for immature oysters ("spat"), which fastened themselves onto the shells of large oysters before growing to maturity. Finally, the law set up a system of inspection under an Oyster Commissioner who had the power to patrol the waters of Pamlico Sound.

Problems with the new system began almost immediately. At his own suggestion, Senator Wilkes Lucas was appointed the first Oyster Commissioner in April 1891. He continued holding Senate office while drawing salary as Oyster Commissioner for the next several years, at an annual rate of $1200. No evidence proves conclusively that Lucas worked to create the position of Oyster Commissioner for himself as a political sinecure, although he certainly enjoyed the advantages of steady income and greater prestige among his constituency. He administered the Oyster Commission with great vigor, although not always with impartiality.

Another problem with the new legislation was the fact that effective enforcement of the law depended on revenues generated from licenses on individuals and vessels and taxes on oysters taken out of state. Revenues under the law never kept pace with the expense of maintaining the patrol steamer Lillie and the cost of employing numerous oyster inspectors throughout the Pamlico Sound area.

Still another complication lay in the fact that the law was nearly never enforced on residents. Most of the cases involving oysters that were brought before superior courts in the various coastal counties concerned two types of offenses: trespassing by a resident on another resident's private bed, or state charges that residents were claiming public grounds as private beds. In cases of trespass, the courts

2.7 Harvest Results

Nevertheless, the anti-dredging laws and their strict enforcement resulted in an immediate decrease in harvest throughout most of the 1890s (40,000 bushels, for example, in the season of 1896-1897). Finally, in 1897, with the belief that the oyster beds had recovered from the excesses of the 1880s, the State eased restrictions on dredging for North Carolina residents. This had the effect of increasing the catch dramatically (nearly 859,000 bushels in 1897-1898). By the season of 1898-1899, 115 dredge boats and 950 tong boats worked the waters of the Sound, and set a state record for oysters harvested--2,450,000 bushels taken by North Carolinians. Biologist Caswell Grave, who observed oystering in the Pamlico Sound from 1899 to 1900, noted that "many new and extensive beds were discovered, and the supply of oysters seemed to be inexhaustible. . . ."
The oystering bonanza came to an abrupt in the 1899-1900 season, much to the consternation of Pamlico Sound oystermen. The harvest dropped by 25 percent overall, and by 53 percent in grounds that had been heavily dredged in previous years.

### 2.8 Early Twentieth Century Responses

Debate immediately began over why the harvest had declined and what to do about it, and over the next decade the State called for study after study of oysters and oyster cultivation in response.

Oystermen themselves blamed two causes for the rapidly decreasing numbers of oysters. Some attributed the decrease to overharvesting of the beds during breeding season. Others, however, claimed that the oysters had been killed by a natural phenomenon, possibly severe storms occurring in August and October of 1899. Whatever the reason, the Pamlico Sound's heyday as one of the richest oyster grounds of the Atlantic coast had come to an end. By the turn of the century, nonresident oystermen and canneries were no longer showing interest in the Sound.

In 1907 a State feasibility study of oyster culture in the Sound reinforced the idea that factors other than over-dredging of oyster beds may have been responsible for the decline. The study concluded that the salinity of Pamlico Sound was reasonably uniform throughout and suited to cultivation of oysters. Other natural conditions such as shifting currents and bottom sands, on the other hand, might have created problems. The study provided no firm documentation for its theories about natural reasons for decline, however, and public policy throughout the early 20th century was made on the assumption that overharvesting was the real culprit. Certainly an abundance of evidence supports this view.

Regulation of the fishery again quickly followed. So did State interest in leasing bottom tracts to oystermen who would then cultivate new beds. By 1908 a Shellfish Commissioner, responsible for enforcing laws governing the oyster fishery, had been appointed. In addition to enforcing existing laws, as had been done by the now-defunct Oyster Commissioner, the Shellfish Commissioner was to monitor the shipping of oysters out of state, presumably to Chesapeake Bay canneries and dealers. The salaries of the Commissioner and his inspectors were to be funded by license fees, taxes on oystering equipment, leasing of oyster and clam bottoms, and fines.

Creation of a regulatory position and laws, however, did not ensure that oystering itself would be better controlled and limited. Regulations did not cover certain important issues, such as minimum size for harvested oysters. C. H. Sterling of Beaufort County, a buyer of oysters, reported in 1911 that a shellfish inspector on the Sound routinely allowed very small oysters to be sold instead of returned to the beds to grow. The inspector told him that if small oysters were returned to the beds, no oysterman would have any to sell.

Some oystermen were so convinced that overharvesting had brought on a serious problem in the oyster beds of Pamlico Sound that they advocated more stringent regulation of the fishery. At the State Fisheries Convention of 1911 Charles H. Scarborough, an oysterman from Mann's Harbor, suggested that "about the best thing to be done for oystering would be to stop dredging for a number of years" while permitting tonging to continue. Scarborough, a former dredger himself, attributed the decline of oysters "overwork" of beds and underenforcement of existing regulations. His opinion was reinforced by other oystermen like P. T. Meekins, who reported that he had been an oysterman for 20 years "and the time has come in Dare County when you can not make a living at it. . . . I would propose to stop dredging altogether [for at least two years]."

Others rigidly opposed the outlawing of dredging. A Captain Nelson testified at the 1911 Convention, "When you stop the dredging you stop the market, and there are not enough tong oysters caught to supply the market." Nelson pointed out that cultivated oysters were replenishing supply, and the price per bushel was rebounding up to 75 cents from a low of 25 cents the previous year. As late as 1911, Nelson still blamed the problems of the fishery on the storms of 1899.

Enforcement of the season was an impossible task, Nelson said, since oyster inspectors were not employed by the State outside of the season and therefore did not monitor or report off-season dredging. Nelson was himself an inspector, which pointed to another problem in regulating the industry--the possibility of conflict of interest that resulted when oystermen were serving as inspectors of the oyster grounds they themselves worked. Nelson reported routine, flagrant failure on the part of inspectors to enforce the law.

By 1911, then, the oyster fishery had survived under State regulation that was becoming more and more strict. Many oystermen supported the State by accepting regulation as essential if the fishery were to be preserved for future use. Others circumvented regulations that were sometimes impossible to enforce and financially tempting to violate. Oystering was, however, regulated early enough in its decline so that it would continued to provide income for the Pamlico Sound for another century--although never again to the level of the 1890s.
3. CONCLUSION: LESSONS LEARNED?

What, if anything can be learned from the case history of oystering in the Pamlico Sound? Several observations emerge: first, early policymakers erred in taking a short-term view rather than formulating long-term strategies for resource management. In changing the law every two years, the State displayed a notable lack of vision that would carry effective management of the resource into the 20th century.

Secondly, there was a delay in engaging native oystermen in the policymaking process. Until 1911, that process remained in the hands of officials in Raleigh, who generally responded to the business development interests of the cannery towns rather than inviting oystermen themselves to share in decisionmaking. Notably, after 1911, when oystermen were invited to contribute to policymaking through public hearings and other such venues, the oyster population in the Sound stabilized and began a process of some modest recovery.

Thirdly, the story of oyster policy presented here must be seen within a larger economic framework: the rise of New South industry. Just as textiles and tobacco were revitalizing the Piedmont of North Carolina during the same decades, so did policymakers hope that the abundant resources of Pamlico Sound could be extracted in such a way as to produce economic vitality for the coastal regions of the state. In short, lawmakers viewed oysters as more or less similar to cotton and tobacco plantings—a resource that could be cultivated, that could be produced efficiently and in great quantities, and that would form the raw material for industrial enterprises in sleepy, undeveloped communities. This perception, together with a general ineptness at species management in the Pamlico Sound, compromised the oyster in North Carolina waters before the twentieth century began.

Two separate dynamics seem to have operated in oyster policymaking in the case study presented here. First, the problem by 1891 had become clearly identified as out-of-state dredgers. The interests of local oystermen and State economic wellbeing were well served by legislation directed specifically against this problem. Therefore, the oyster policies of the 1890s received strong support from Pamlico oystermen themselves, who were also willing to submit to some regulation in return for future ability to control the entire oyster harvest themselves.

The greater divisiveness seen among oystermen involved in public policy formation after the turn of the 20th century is perhaps related to the fact that the Pamlico oyster grounds had become reserved only for North Carolina fishermen, many of whom were full-time oystermen. With the elimination of an external "enemy," and with heavy dependence on profits from oystering, some Pamlico oystermen seem to have become less committed to the notion that intense regulation was healthy for their economic future. Others, however, continued to support State regulation as a way of ensuring their livelihood for years to come.

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